



OECD Reviews of Tertiary Education

ICELAND

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Jørgen Gulddahl Rasmussen, Roger Smyth
and Thomas Weko**

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ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

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This report is based on a study visit to Iceland in September-October 2005, and on background documents prepared to support the visit. As a result, the report reflects the situation up to that point.

1. Introduction

1.1 Purposes of the OECD Review

This Country Note on Iceland forms part of the OECD Thematic Review of Tertiary Education. This is a collaborative project to assist the design and implementation of tertiary education policies which contribute to the realisation of social and economic objectives of countries.

The tertiary education systems of many OECD countries have experienced rapid growth over the last decade, and are experiencing new pressures as the result of a globalising economy and labour market. In this context, the OECD Education Committee agreed, in late 2003, to carry out a major thematic review of tertiary education. The principal objective of the review is to assist countries to understand how the organisation, management and delivery of tertiary education can help them to achieve their economic and social objectives. The focus of the review is upon tertiary education policies and systems, rather than upon the detailed management and operation of institutions, although clearly the effectiveness of the latter is influenced by the former.

The project's purposes, methodology and guidelines are detailed in OECD (2004a).¹ The purposes of the review are:

- To synthesise research-based evidence on the impact of tertiary education policies and disseminate this knowledge among participating countries;
- To identify innovative and successful policy initiatives and practices;
- To facilitate exchanges of lessons and experiences among countries; and
- To identify policy options.

¹ Reports and updates are available from www.oecd.org/edu/tertiary/review

The review encompasses the full range of tertiary programmes and institutions. International statistical conventions define tertiary education in terms of programme levels: those programmes at ISCED² levels 5B, 5A and 6 are treated as tertiary education, and programmes below ISCED level 5B are not.³ In some countries the term higher education is used more commonly than tertiary education, at times to refer to all programmes at levels 5B, 5A and 6, at times to refer only to those programmes at levels 5A and 6. An additional complication is presented by the practice, in some countries, of defining higher education or tertiary education in terms of the institution, rather than the programme. For example it is common to use higher education to refer to programmes offered by universities, and tertiary education to refer to programmes offered by institutions that extend beyond universities. The OECD thematic review follows standard international conventions in using tertiary education to refer to all programmes at ISCED levels 5B, 5A and 6, regardless of the institutions in which they are offered.

The project involves two complementary approaches: an *Analytical Review strand*; and a *Country Review strand*. The Analytical Review strand is using several means – country background reports, literature reviews, data analyses and commissioned papers – to analyse the factors that shape the outcomes in tertiary education systems, and possible policy responses. All of the 24 countries involved in the Review are taking part in this strand. In addition, 13 of the tertiary education systems have chosen to participate in a Country Review, which involves external review teams analysing tertiary education policies in those countries.

Iceland was one of the countries which opted to participate in the Country Reviews and hosted a review visit in September-October 2005. The

² The International Standard Classification of Education (ISCED) provides the foundation for internationally comparative education statistics and sets out the definitions and classifications that apply to educational programmes within it.

³ Programmes at level 5 must have a cumulative theoretical duration of at least 2 years from the beginning of level 5 and do not lead directly to the award of an advanced research qualification (those programmes are at level 6). Programmes are subdivided into 5A, programmes that are largely theoretically based and are intended to provide sufficient qualifications for gaining entry into advanced research programmes and professions with high skills requirements, and into 5B, programmes that are generally more practical/technical/occupationally specific than ISCED 5A programmes. Programmes at level 6 lead directly to the award of an advanced research qualification. The theoretical duration of these programmes is 3 years full-time in most countries (*e.g.* Doctoral programme), although the actual enrolment time is typically longer. These programmes are devoted to advanced study and original research. For further details see OECD (2004b).

reviewers comprised OECD Secretariat members, and academics and policy-makers from Denmark, New Zealand, Spain and the United Kingdom. The team is listed in Appendix 1.

1.2 The Participation of Iceland

Iceland's participation in the OECD Review is being co-ordinated by Stefán Stefánsson, Head of the Higher Education Division, Ministry of Education, Science and Culture. Iceland's Country Background Report (CBR) for the OECD Review was prepared by the Educational Testing Institute of Iceland for the Ministry of Education, Science and Culture, and was supported by the National Advisory Committee and various stakeholders of the tertiary education system (details provided in Appendix 2).

The review team is very grateful to the authors of the CBR, and to all those who assisted them for providing an informative, analytical and policy-oriented document. The CBR covered themes such as the background and content of tertiary education reforms; the structure of the tertiary education system; the role of tertiary education in regional development, the research effort of the country, and the shaping of labour markets; the challenges faced in resourcing, governing, achieving equity in and assuring the quality of the tertiary education system. Some of the main issues identified by the Icelandic CBR, and which are taken up in this Country Note, include:

- the uncertainty about the profile and specific role of the new institutions in the tertiary education system which resulted from the recent expansion and diversification;
- whether Iceland can sustain more than one university with extensive research activities;
- an incipient system of institutional monitoring, quality assurance and national accreditation;
- the gender gap in the academic profession;
- whether the expansion in student numbers is financially sustainable;
- a lack of a comprehensive system of information and data about the outcomes of the tertiary education system which could assist the formulation of policies.

The Icelandic CBR forms a valuable input to the overall OECD project and the review team found it to be very useful in relation to its work. The analysis and points raised in the CBR are cited frequently in this Country

Note.⁴ In this sense, the documents complement each other and, for a more comprehensive view of tertiary education policy in Iceland, are best read in conjunction.

The review visit took place from 26 September to 3 October 2005. The detailed itinerary is provided in Appendix 3. The review team held discussions with a wide range of educational authorities and relevant agencies and visited all institutions of tertiary education in the country. Discussions were held with national and local authorities; representatives of Ministries such as education, science and culture, agriculture, and finance; tertiary education institutions; student organisations; representatives of academic staff; employers; the business and industry community; agencies responsible for funding and quality assurance; and researchers with an interest in tertiary education policy. This allowed the team to obtain a wide cross-section of perspectives from key stakeholders in the system on the strengths, weaknesses, and policy priorities regarding tertiary education in contemporary Icelandic society.

This Country Note draws together the review team's observations and background materials. The present report on Iceland will be an input into the final OECD report from the overall project. We trust that the Country Note will also contribute to discussions within Iceland, and inform the international education community about Icelandic developments that may hold lessons on their own systems.

The review team wishes to record its grateful appreciation to the many people who gave time from their busy schedules to assist us in our work. A special word of thanks is due to the Icelandic National Co-ordinator, Stefán Stefánsson, for whom nothing was too difficult in ensuring that the review team was facilitated in every way possible. We are grateful to him for providing us with his unique expertise, kindness, and very pleasant company. The openness to cooperation, comparison and external views provided ideal conditions to the review team for a successful review exercise. The review team is appreciative of the informative and frank meetings that were held during the visit, and the helpful documentation provided. The courtesy and hospitality extended to us throughout our stay in Iceland made our task as a review team as pleasant and enjoyable as it was stimulating and challenging.

Of course, this Country Note is the responsibility of the review team. While we benefited greatly from the Icelandic CBR and other documents, as

⁴ Unless indicated otherwise, the data in this Country Note are taken from the Icelandic Country Background Report (Educational Testing Institute of Iceland, 2005).

well as the many discussions with a wide range of Icelandic personnel, any errors or misinterpretations in this Country Note are our responsibility.

1.3 Structure of the Country Note

The remainder of the report is organised into five main sections. Initially, in Section 2, the national context is outlined. Section 3 describes the key factors shaping tertiary education in Iceland. It tries to assist international readers by identifying what is distinctive about tertiary education policy in Iceland. Section 4 then identifies the main strengths of Icelandic tertiary education policies, but also the challenges and problems that the system faces.

Section 5 uses the analysis in the previous sections to discuss priorities for future policy development. The suggestions draw on promising initiatives that the team learned about during the visit. Section 6 has some concluding remarks.

The policy suggestions attempt to build on and strengthen reforms that are already underway in Iceland, and the strong commitment to further improvement that was evident among those we met. The suggestions are also offered in recognition of the difficulty facing any group of visitors, no matter how well briefed, in grasping the complexity of Iceland and the factors that need to be taken into account.

2. National Context - Introduction to Ingólfr Arnarson's Island: Iceland

The origins of higher education in Iceland may be traced back to 1911 when the University of Iceland was formed out of the merger of three recently created schools of Theology, Medicine and Law. The University of Iceland was to retain its monopoly over higher learning until the early Nineties, when six other state sector establishments of higher education were founded to extend university level education. Over the thirty years from 1960 to 1990, student numbers rose more than six times from 850 to 5 150 (Joseppson and Sizemore, 1992, Table 1, p. 301). Since then, growth in student numbers has accelerated further and very especially during the latter part of that decade. The reforms this Note examines stand then as a third phase in the historic development of Iceland's higher education.

2.1 Geography

Iceland is one of the Islands of the North Atlantic, situated between Greenland, Norway and the United Kingdom, and close to the Arctic Circle. Settled in the year 874 by the Norwegian, Ingólfr Arnarson and his followers, Icelanders today number some 300 000 in a country of almost 103 000 square kilometers, of often spectacular beauty and savage harshness, mountains and fjords, volcanoes and glaciers. Of this land surface, only 40% is inhabited. A further 35% is given over to upland grazing. Settlements in Iceland are found only along the coastline and in the valleys that penetrate into the interior (Lárusson, 1998). The population distribution, despite a high degree of concentration around the capital Reykjavík and the South West Peninsula, which in 2003 accounted for almost seven Icelanders out of ten, is that of a sparsely populated land with a national average of 2.8 individuals per square kilometer. Though the numbers of immigrant workers, particularly from Eastern Europe have risen in recent years, Icelandic society remains remarkably homogeneous in origin. Foreign nationals account for only 3.6% of Iceland's population.

2.2 Government

Iceland is a constitutional Republic whose national Assembly, the Althingi, is believed to have held its first session in the year 930. Along with that other Viking Assembly, the Tynwald of the Isle of Man, the Althingi stands as one of Europe's most enduring institutions to have survived in recognizable form from the Middle Ages, together with the Catholic Church and the Universities (Kerr, 1964). Currently, and following the Electoral Law of 1999, the Althingi has 63 members, elected from a minimum of six and a maximum of seven constituencies across the country. They are elected for four years to the unicameral Assembly. Iceland's President is elected by direct suffrage for a mandate of the same duration. The current President, Olafur Ragnar Grimsson, now on his third mandate, was first elected to the Supreme Magistrature in 1996.

Since Independence from Denmark in 1944, all governments have been coalitions of two or more parties. Such a characteristic still operates. Since March 2005, the Government is drawn from a Right leaning alliance of the conservative Independence Party and the Progressive Party.

2.3 Economy

In common with other European economies, major changes took place in the course of the Nineties. Over the past ten years, Iceland's economy has "considerably bettered that in the OECD and in particular in other European countries" (OECD, 2005a, p. 2). Personal income has risen fast. Today, it stands as one of the highest in Europe, a situation that has been attributed to policies of financial stabilization, de-regulation and the liberalization of the market introduced during the decade. Income per head, already one tenth above the OECD average in 1995, had by 2003 risen to one fifth above the same datum line. The 2004 estimate places the Gross Domestic Product per capita at the equivalent in purchasing power parity to USD 32 600. Against this, however, both households and businesses carry with them a high level of debt in comparison to their international counterparts.

As with most Northern economies over the post-war period, Iceland has moved from the traditional occupations of fishing and farming to industrialization and is now in process rapidly of transforming itself into a service economy which today employs some 71% of the labour force. Of the remainder, 22% are employed in industry, 4% in agriculture with 3% in the fishing sector as of 2003.

2.4 Environmental Ethics

The drive towards a service economy has, however, to be set against a very particular ethical context that permeates Icelandic society namely, an acute sensitivity to environmental issues, to natural resources, their judicious usage and their conservation. Whilst long evident in such sectors as fisheries and agriculture, such considerations also stand as a constant dimension of debate in the drive towards a service economy, which is no less reliant on energy sources. In effect, the industrialization of Iceland is in greater part coterminous with the harnessing of home-based energy resources, hydro-electric and, more recently, geothermal which provide a more stable base in both political terms as well as by their renewable nature for economic development than fossil fuels.

2.5 The Strategic Challenge

The pace of change towards a high technology economy grounded in such specialities as medical equipment, the construction of food processing and fisheries equipment, biotechnology and pharmaceuticals has drawn heavily on human resources. The national unemployment rate in June 2005 amounted to 2.1%. This figure, though an important pointer to the buoyancy of the economy, also points to some of the constraints it faces, and very specifically in the area of human resources. Clearly, if the competitiveness of new, high technology industries and services is to be sustained, and the element of value added is to be injected into a rapidly diversifying economy, further investment is required and most especially so in view of the gap in the labour force, often commented by outside observers (OECD, 2005a) between those with minimal and those with high skills. These factors have been central in the Government's strategy *vis à vis* higher education which took shape beginning with the Universities Act of 1997, which was in effect the first comprehensive legal instrument to deal with higher education as a system.

2.6 The Foundations of the School System

Tertiary education in Iceland builds upon a two-tier school system consisting of a compulsory primary school covering the age ranges 6 to 16, followed by a four year secondary school covering the age ranges 16 to 20 (Lárusson, 1998). Following the administrative reforms of 1996, responsibility for oversight of compulsory schooling was transferred from the Ministry of Education to the municipalities. Municipalities are responsible for teacher appointments at the compulsory level whereas for

upper secondary schools, this is exercised by the Headteacher. Compulsory schools are operated by local municipalities, which also have responsibility for buildings and their up-keep. Upper secondary schools, however, are operated and funded wholly by the State, though local municipalities contribute to 40% to the cost of new buildings. For its part, the Ministry supervises the budgets of upper secondary schools, school work and issues a curriculum for both compulsory schools and their upper secondary counterparts which is laid down in law and applies to the country as a whole. There is, however, room for latitude. Most schools devise their own study programmes within the framework thus laid down and may determine the balance and time budget between subjects.

There is, however, a further aspect to the otherwise routine notion that tertiary education rests upon the bedrock of primary and secondary schooling. In many respects, the programme of reform, which the University Act of 1997 ushered in, bears similarities to earlier revisions in the school system. Amongst some of these commonalities are devolution of responsibilities hitherto vested in the Ministry of Education, Science and Culture onto the municipalities and a greater degree of latitude left to individual schools. Nevertheless, there is a wide and enduring general consensus that upper secondary education should be free of charge and at this level, this consensus still holds. It is then all the more noteworthy that the reform of higher education, involved the creation of private sector universities. Opening up a private sector in higher education was to be one of the salient features – if not the major element – of the third phase in the development of higher education in Iceland that the legislative Act of 1997 introduced.

3. Context and Main Features of Tertiary Education Policy⁵

3.1 Governance, Planning and Regulation

From the early 20th century, Governance in Iceland focused on the internal management and the development, of one single University. Certainly, the years intervening and very particularly the period from 1971 to 1988 saw new establishments created and others elevated from the status of secondary schools. The University of Education attained university status in 1971, Bifröst School of Business the same stature in 1987 and the University of Akureyri was founded in 1988. In 2005, five public institutions and three private institutions were operating at the tertiary educational level under the jurisdiction of the Ministry of Education, Science and Culture, although two public tertiary education institutions specialised in the field of agriculture come under the auspices of the Ministry of Agriculture.⁶ The overall reforms ushered in by the Parliamentary Act of 1997, however, had major consequence for the complexity of the system of Governance. Institutional differentiation and differentiation in funding sources stand well to the fore.⁷ Compared to many OECD Member States, a higher proportion of the funding for Iceland's higher education comes from public expenditure (Appendix 4). More to the

⁵ Throughout the text the expressions “tertiary education” and “higher education” are used interchangeably since in Iceland no distinction exists between them.

⁶ The system is characterised by one large public institution (the University of Iceland) and seven other public and private institutions: two agricultural institutions (Agricultural University of Iceland and the Agricultural College at Hólar), one academy of arts (Iceland Academy of the Arts), one institution of education (Iceland University of Education), one business school (Bifröst School of Business), and two other institutions offering a wide range of studies (Reykjavík University and the University of Akureyri).

⁷ The private institutions enrol an increasingly larger share of students, from 4.4% in 1998 to 13.5% in 2004.

point, research and higher education funding now flows from Ministries other than simply the Ministry of Education, Science and Culture.

At a basic level, planning and steering revolved around the individual academic disciplines, organized into faculties and departments within one comprehensive university. The subsequent development of other institutions specialized in art, agriculture and business administration not only multiplied the programme and subject range covered. It also introduced a basic feature into the pattern of Governance, namely a high degree of variation between institutions in respect of their individual management structure and the principles by which it was inspired. Today, for example, the University of Iceland is grounded in the historic form of academic collegial management. Reykjavík University, as a private establishment founded with the blessing of the Reykjavík Chamber of Commerce, reflects an executive model largely derived from the world of business and entrepreneurship.

Institutional Autonomy

Such variation, particularly noticeable between public universities and their private counterparts, is equally present within the former. Whilst the traditional scope of autonomy has long existed at the University of Iceland as the Nation's sole university, recent developments have seen autonomy further reinforced for all establishments, largely as a result of their introducing long-term planning to the internal budgeting process.

Increasingly, and not just in Iceland, institutional autonomy is construed as the latitude for the individual institution to devise a particular strategy to compete with its fellows for research funding and to demonstrate excellence publicly (Thorens, 2006). Competition is seen as the main driver of change at the institutional level and at system level. One retains the impression however that it is more actively pursued in the areas of institutional niche and identity building *vis à vis* the public and directly between research groups contending for funds than, for instance, competition for students. Competition in its present state serves primarily as an instrument for internal mobilization within the establishment and to define the institutional profile.

Diversity enhanced – whether applied to the range of new programmes introduced, or to the variety of institutional strategies to compete – compounds the complexity of steering at system level. Programme expansion, with the attendant risk of overlap and duplication across institutions, requires national central administration to perform a task very different from the earlier and relatively minimal style of regulation. Programme approval, contracting, laying down new funding mechanisms for

research, evaluation and overall financial management are now amongst the prime functions that Governance in Iceland has recently assumed.

The Burden of Planning

That the burden of planning is currently drawn to these domains reflects that despite the very real growth in financial support higher education has received over the past few years, the number of students and programmes bid fair to outstrip it. Whether such expansion can be sustained is a cause for concern both to Ministry officials and to members of the ruling coalition, which accounts for the weight attached to analyzing how the higher education system functions and the choice between different management procedures to sustain system efficiency *in toto*. This is the background to the new Act on Higher Education Institutions, which became effective as of July 2006 and which updates the legislation of 1997 (Althingi, 2006).

The key to system steering lies in the annual approval of the State budget. Expanding numbers of programmes have led to a tightening up on financing undergraduate studies, and to a certain degree, a hiving off of research from institutional funding and the strengthening of “second stream” money flows (see Section 4.6).

Governance and regulation in Iceland have shifted rapidly from an historic model of state management to one wedded to competition, contract management and a greater distance between national administration and individual establishment – a pattern that elsewhere some have associated with a “facilitatory model” of relationship between higher education and government (Neave and van Vught, 1991).

3.2 The Resourcing System

Participation in higher education over the last decade has grown very substantially in Iceland. Historically low compared to other Western European lands, participation in 2002 by students aged 20 – 29 accounted for 32% of this age group which places Iceland fourth out of twenty seven systems for which information was available (see Appendix 4). In addition to this “core age group” enrolments by older people are a marked characteristic of Icelandic society. Thus, for example, those aged 40 years and over registered as students were 2.3% of the total age group, a level of participation that places Iceland sixth amongst twenty three countries (see Appendix 4). Amongst this second group will be those for whom attending higher education provides a second chance, missed earlier. For others, mid

career enrolment forms part of a strategy to up-grade existing qualifications or to obtain new ones.

The government's commitment to have higher education expand has provided the essential impetus to this "growth spurt". The government has raised funding of higher education substantially. It is equally committed to increase both the number and the variety amongst the providers of higher education. Against this backdrop of increases in funding, in capacity, within an enhanced diversity of institutions and programmes and a system that places particular weight on the upholding the autonomy of institutions – Iceland has developed a system both dynamic and competitive. That dynamism has also contributed to its growth.

The basis of government funding for higher education revolves around a three year funding contract which each University signs with the Ministry of Education, Science and Culture.

Contractualisation of educational component and its Benefits

Contractualisation of the educational component brings a number of benefits in its train. It lends transparency to the funding system. That it covers three years provide a measure of certainty and stability – important for institutional planning. By the same token, it also permits a considerable degree of flexibility. Whilst the contract lays out broad parameters for funding, the obligation to carry out planning in detail falls to the institution. Institutional planning takes place within the limitations imposed by government expenditure plans. It must also be in keeping with the conditions government lays down for cooperation between providers as well as the conditions set out with respect to quality (see Section 3.3). The contract also sets out the Ministry's conditions for developing international linkages.

Contracts are passed with both public and private universities. For both, the funding rates are the same. Whilst not being overly prescriptive, the contracts stipulate:

- How the total amount is to be arrived at.
- The University's obligations in terms of quality, joint projects and international presence.
- The distribution between enrolments on campus and in distance teaching mode, and between undergraduate and post graduate level study.

- The obligations incumbent upon the university to report back and to account to public authorities.

Certain items – for instance, the funding per student and per discipline, the number of places to be funded – are determined each year independently of the contractual procedure.

Registration fees are set by the government. They are modest. In addition, universities may seek grants and private sources, often known as the Third Money Stream as well as charging for continuing education. Save in the case of continuing education, public universities cannot levy tuition fees. This stricture does not apply to private universities.

The Government also funds the two Agricultural Universities through the Ministry of Agriculture. Funding is set out in the Agricultural Training Act of 1997. Arrangements made in respect of accountability and funding differ markedly from the non-agricultural sector.

Resourcing University Research

Research Funding in Iceland may be classified in terms of three money streams. The first stream is the lump sum made over by the Ministry of Education Science and Culture to the University according to the terms set out in the Research Contract. The second money stream is competitively awarded by the Icelandic Centre for Research (RANNIS). The third money stream flows from private firms or from non profit-making bodies, whether public or private. The system of research financing is currently under revision, following the government's priority to develop the research capacity of universities. The first three year Research Contract between the Ministry of Education, Science and Culture and the University of Iceland was signed late in 2003. Indications are that it will be the template for negotiating research contracts between the Ministry and public universities generally. Whilst sharing certain features with tuition contracts in respect of institutional latitude to determine its research strategy, the research contract requires the university to take account of national priorities, to work with other research establishments, to tender for international funding and manage the quality of its research.

The research contract will provide general basic research funding unrelated to particular projects but on the understanding that competitive tendering for national or EU funding sources as well as Third Stream revenue from organizations in the private sector is actively pursued.

3.3 Quality Assurance

The setting up of both new procedures of quality assurance and mechanisms for a more sensitive form of accountability coincide chronologically with the strengthening of institutional autonomy. In Iceland, however, both are at a relatively early stage of development. Oversight for supervising quality in higher education comes under the Ministry of Education, Science and Culture. Until recently it had been exercised through the Division of Evaluation and Supervision, created in 1996, the remit of which covered the school sector as well as higher education. This role is currently being passed onto the recently established Office of Evaluation and Analysis at the Ministry of Education, Science and Culture. There is no separate agency for quality assurance.

Under current legislation, the Ministry verifies that institutions meet standards for teaching and research and that their plans are implemented. The purpose of quality control is to raise the quality of teaching, to improve organization, promote greater responsibility and to ensure the international competitiveness of higher education establishments, both public and private. For the two Agricultural Universities, responsibility in this domain falls under the Ministry of Agriculture. So far, though no formal procedures are in place, it is expected that the Ministry of Agriculture will take on rules and regulations similar to those used for quality assurance by the Ministry of Education.

Complementary Approaches

Two complementary approaches are present in Iceland's quality assurance system. The first requires establishments of higher education to set up internal quality control procedures and to describe them publicly. Such an approach calls for the systematic internal evaluation of academic staff with the purpose of improving the quality of teaching. The Ministry retains the right to audit such schemes. The second approach sees the Ministry undertaking selective external evaluations which may involve the institution as a whole, specific departments within the institution or a particular discipline across a number of establishments.

When an evaluation takes place, its scope, as to the institutions involved, are at the Ministry's discretion. An evaluation team, external to the Ministry and composed of three to six members, including one from outside Iceland, is nominated by the Minister. External evaluations include a self-evaluation report prepared by a group of academic and administrative staff and students. During the visitation the Evaluation Team follows up on the institution's self evaluation report and draws up its own report. Institutions

thus evaluated have the right of reply. The external evaluation, together with the institution's response to it, are both made public. Responsibility for following up on recommendations made falls to the Ministry.

Limited Resources

Resources set aside for quality assurance are very limited (see Sections 4.3 and 5.3) as is the number of external evaluations conducted each year. There is little follow-up of evaluation results. The approach to quality assurance does not seem to correspond to a well-defined strategy.

Accrediting new establishments, including the permission for private institutions to operate, as well as validating programmes comes under the remit of the Ministry of Education, Science and Culture. In reality, the Ministry has limited resources at its disposal systematically to approve new programmes with the result that establishments have sometimes embarked on new initiatives without the Ministry's prior approval.

Leverage and Research Quality

In the research domain, quality assurance mechanisms are under development. At present, no formal process is in place. With some institutions, the research contract (see Sections 3.2, 4.6 and 5.6) stipulates that internal quality evaluation mechanisms for research should be set up. In practice, much reliance is placed upon the well-established incentive and bonus system, which is based on the individual research output of academic staff.

It is generally held that this "bonus" scheme is effective in ensuring academic staff are individually accountable for the quality of their research. There is, however, another leverage for ensuring the quality of research and one that bears much official weight. The aim of the current government is to tighten up the allocation of research funding by making it subject to competitive tendering in the belief that competing for funds will *eo ipso* assure quality in research (see Sections 3.6, 4.6 and 5.6).

3.4 Equity

Advancing equity today just as earlier the strengthening of equality of educational opportunity have been the prime driving forces in reshaping higher education. To this Iceland is no exception. Beneath the upgrading of institutions of higher education to full university status, lies a more subtle but no less important change in the basic principle that guides the Nation's

policies in higher education. This is the shift from equality of opportunity to equity. Does equality of opportunity carry the same overtones in Iceland as it did elsewhere? Is equity understood and operationalised in comparable fashion?

Briefly stated, whilst equality focused on the progress of the individual into and subsequently within the higher education system, equity focuses on the conditions for acquiring operational skills that ensure the individual's employability and the success or failure of higher education to provide them.

Icelandic Exceptionalism

Five crucial features define Icelandic Exceptionalism. The first is the chronology of the higher education explosion. Beginning in 1999, it came later than in the rest of Western Europe, where the "second student wave" was already evident in the earlier part of that decade. However, fundamental differences also characterize the way both equality of opportunity and equity have been operationalised, differences that may be attributed to the high degree of social homogeneity and a relative absence of marked social stratification that set Iceland apart since the earliest times (Byock, 1988).

Whilst Iceland subscribes with other systems of higher education to the components that make up both equality of opportunity and equity, their weighting and emphasis are particular. The commitment to gender equality, enshrined in the Parliamentary Act of 2000, applies to all areas of social activity. In higher education, though there is some way yet to go at post-graduate level and in the Academic Estate itself, at undergraduate level women have been in the majority since 1985. In 2004, 63.7% of all tertiary level students were women.

The second dimension to distinguish the Icelandic version of equality of opportunity are the criteria used to allocate the Student Loan Scheme. The scheme does not distinguish on the basis of parental income level but rather the student's own condition – single, married, married with children or single parent family. This is a "strong" interpretation of equality.

The third feature, also partially reflected in the Student Loan Scheme as well, is that no account is paid in official statistics to that aspect which elsewhere often stands as a yardstick for measuring how far equality or equity have advanced – or not: namely, the social class background of students. There may be pragmatic reasons for this. But what may appear to some as a startling omission may also be seen as a statement of the way Iceland views itself – as a classless society. Thus, it would appear that social class as a policy indicator is replaced by gender as the key datum in assessing higher education's response to change.

The fourth distinguishing feature is less a matter of difference than of degree. It relates to the particular age at which individuals “consume” higher education. The five years from 2000 to 2004 have seen a remarkable shift in the pattern of social demand by mature students – that is, by those 25 years old and above. In 2000, enrolments of the younger age groups – 24 years and under – accounted for 45% of the whole; those aged 30 and above, 28%. Five years on the corresponding statistic stood at 37% for both groups.

The final point that illustrates the very specific way in which Iceland considers equality of opportunity and equity, relates to some of the conditions that underpin student finance (for a more ample discussion of this see Sections 4.2, 5.2 and 4.8 in particular). Some of the assumptions inbuilt into student financing stand then as valuable pointers to the particular manner equality of opportunity is construed in Iceland. In effect, neither equality nor equity is limited to the domestic system of higher education. It is not confined within national provision but purposefully incorporates cross border training as an established practice – an issue that elsewhere, has become a matter of debate only in the past decade.

3.5 The Regional Dimension

The regional dimension in higher education revolves around three major perspectives. The first is the spatial application of equality and equity, namely to ensure that access and participation for those areas of the Nation with a particular cultural, social or economic identity are, at very least, in keeping with those of the Nation as a whole. The region stands as the independent variable. The differences in equality and equity, and the impact higher education may have upon both, are compared either to the system as a whole or against other regions.

The second sees higher education as the independent variable and the region as its framework. Its main focus is upon the structures of administration, coordination, lines of control that, previously vested in national administration, have been delegated to a different administrative level. It concentrates on the consequences decentralization or devolution have for both higher education and the region with the latter’s assuming a stronger role in coordinating institutional priorities in line with those of its immediate administrative and physical environment.

The third facet is a sub-set of the second. Rather than dwelling on changes in procedure and coordination between region and higher education, its prime scrutiny is directed on the ways and means by which policy is articulated between regional authorities and institutional management. It

focuses on funding patterns as channels for injecting regional priorities into the institutional fabric of higher education.

If analytically distinct, in reality these dimensions are closely intertwined. Equity, devolving political oversight together with relocating administrative control and assigning financial powers to the region within the Nation State have their battle honours in the on-going campaign of reforming higher education in Europe. Amongst those systems of higher education where the regional aspect has figured prominently over the past 30 years are Belgium, France, Finland, Italy, Sweden, Spain and the United Kingdom *entre autres* (Diez-Hochleitner, 1989; ICED, 1987; Varia, 2003).

Sparsely populated Areas

Against this backdrop, both context and rationale underpinning the ties between region and university in Iceland stand out from the rest of Europe and do so for one predominant factor: with the exception of the Reykjavík region, where 70% of the island's population lives, the rest of the country is a sparsely populated area. Regional development faces very specific issues and enduring concerns and that to a degree far higher than in other Nordic lands: the upkeep of infrastructure and communications, the provision and maintenance of services amongst which health and education and – last but not least – an economic base to sustain them.

Over the past 50 years, the rural community has been weakened by flight from the land, a trend amplified further by substantial decline in the staple activities that once sustained the rural way of life – fishing and agriculture. Manpower demands from these occupations have halved each decade, though their value in Iceland has grown constantly (*Interview with Ministry of Agriculture*). The latter places a premium on their good husbandry, management and efficiency.

Administrative Oversight

In Iceland, the regional dimension of higher education falls under the purview of the Ministry of Education, Science and Culture and under the Ministry of Agriculture. The former serves the education and training needs of the broader rural community. The latter caters for the technical, consultative, research and professional needs of the farming community *stricto sensu*.

In agricultural education, the Parliamentary Act of 1999 extended to the rural world that mobilizing impulse which, two years earlier, redrew Iceland's map of higher education. It laid upon the Minister of Agriculture

the responsibility to provide agricultural education, to advance research, to coordinate regional and rural development and in the former to work with the Ministry of Education.

If similar in basic purpose, reform in the agricultural sector proceeded along another route with institutional mergers rather than creating new establishments, an absence of privatization and a reinforcement in coordinating policy by the Minister's appointing the Board for Agronomic Education, the sectors' main consultative agency for formulating general policy and coordination (Althingi, 1999). A further difference lay in funding on the base of historic incrementalism, voted within the overall agricultural budget by the Althingi.

Two Dynamics of Institutional Development

In the setting of the regional role tertiary education plays in Iceland, two clear and complementary patterns of institutional consolidation stand forth. One involves upgrading towards university status with particular store set on strengthening research capacity. It falls into the ambit of the Ministry of Education, Science and Culture. The second is pursued by the Ministry of Agriculture. It revolves around strengthening the teaching base, building back from a strong research tradition whilst giving a wider definition to the constituencies it serves.

3.6 Research and Innovation

Amongst the priorities the Icelandic Government set higher education was to increase research capacity, to build up research training and to impart a better coordination to research and innovation policy. Accordingly, research policy and operational procedures were reorganized and re-focused around the Science and Technology Council. With a remit of setting the Nation's main policy objectives, the Council is chaired by the Prime Minister. It includes 4 Ministers and 14 prominent personalities. It reflects the weight assigned to research and innovation as an integral part of the country's reform strategy. The Icelandic Centre for Research (RANNIS) is a public institute under the auspices of the Ministry of Education, Science and Culture. It serves as a framework for the implementation of science and technology policy. Its main role is to provide professional services and back-up for the policy of the Science and Technology Policy Council and of its sub-committees, which *inter alia* is taken up with the management of the research funds under the ambit of various ministries.

Streamlining the definition of ends requires the means to carry them out. The level of the Gross Domestic Expenditure on Research and Development (GERD) as a percentage of Gross Domestic Product which Iceland set aside in 2002 was 3.09% - well above the OECD average of 2.26% and more than double what Iceland had budgeted in 1991 (Appendix 4). In terms of national expenditure on R&D, Iceland occupies third position amongst OECD countries.

Nuances

Once broken down according to sector, a more nuanced picture emerges, however. The share of R&D expenditure assigned to higher education is, in effect, slightly below the OECD average. By contrast, funds directly injected by government are well above it. The latter may be explained by the combination of Iceland's traditionally strong system of public research organizations as well as the significant rise in government appropriations for research applications now linked to competitive tendering.

Growth in public expenditure for Research, Training and Development is particularly marked in such strategic sectors as genomics (OECD, 2002) and on the future development of nano-technology and health related industries. Added to this are initiatives in the establishment of regional innovation clusters and the increase in RANNIS funds.

Growth driven by the Public Sector

The impressive growth in Iceland's GERD reflects the massive effort of the public sector, which the private sector has only partly matched. Though growth of the high technology and knowledge intensive sectors has been exponential since the early 1990's, nevertheless, they "are still small by international comparison" (OECD, 2005a). That private business investment in research and development has not risen as fast as investment from public sector may well reflect another dimension in the "problems of scale". Small- and medium-sized firms often lack the financial strength to undertake investment over the long-term that such activities demand. Thus the scale of business in Iceland may well act as a structural limitation to the capacity of the private sector to act as a long- term agent of mobilisation.

In Iceland's innovation system, the Universities play a central role. The Nation's goal to re-dynamize higher education, judged from the perspective of research and innovation, has been successful. Universities have increased their research income dramatically. Over the period 1991 – 2001, research revenue more than tripled from EUR 16.9 million to EUR 53.5 million as

have international research contracts, which rose from EUR 0.7 million to EUR 3.9 million for the same decade.

Furthermore, growth in the number of higher education institutions has sharpened the competitive element in research funding. Such growth, however, lacks balance insofar as 79% of all university research income is harvested by the University of Iceland.

Yet, Iceland still lags behind its OECD partners in respect of the proportion of full-time research staff which amount to 27.7% of the Academic Estate. Compounding this situation is the fact that the breakdown of institutional income and expenditure between research and teaching reveals that in some establishments, research is financed by income derived from teaching. In the medium term, this is not sustainable.

Significant efforts have been made to stimulate research output generally. Most universities have put in place an incentive scheme which is designed to raise the productivity of individuals – whether academics or research staff - by tying a certain proportion of the individual's salary to his or her research and publications output.

Bringing the University to Industry

At the national level, sustained efforts are in hand to bring university research closer to industry. Examples of such initiatives emerge in the intention of policy to create “knowledge clusters” centred around universities. The project for a Technology Park, near to both the University of Iceland and the private Reykjavík University together with a Health Science Park close to the national hospital, correspond to this priority.

At the international level, Iceland participates actively in the cross-national cooperative research programmes of the Nordic Council as well as in those of the European Union. An increasing number of joint research projects is undertaken in conjunction with foreign universities and international teams. The latest estimate of income Iceland's universities derived from such ventures shows that in 2001 7.4% of total income came from such sources.

3.7 The Labour Market

Earlier in this Note, attention was drawn to a number of aspects in the area of values and their interpretation that contribute to what was termed “Icelandic Exceptionalism”. Primarily, they related to the weight and interpretation that Iceland's higher education policy places on a number of

practices identified with equality of opportunity and equity (see Section 3.4). The notion of exceptionalism, however, may be extended and applied to other areas of the country's social and economic structure. Extended to the labour market, there are sufficient differences of a substantive nature to justify applying this term here as well.

Today, the Icelandic economy, when set against other OECD countries, is set apart by three major characteristics. These are:

- A very high labour force participation rate.
- Very long working hours.
- A comparatively low level of unemployment.

In 2004, Iceland's labour force participation rate was the highest of all OECD member states, a position explained in particular by the very high participation amongst three groups - the young, senior citizens and women (OECD, 2005b). Hours worked were also unusually long. As a survey undertaken in November 2001 showed, the average working week was 46.21 hours – with 49.2 hours for men and 35 hours for women. Effectively, the number of hours worked per year is substantially higher than the corresponding statistic in other Nordic lands (Invest in Iceland Agency, 2002). And, in respect of the percentage of the labour force out of work in 2004 the rate in 2004, which averaged 3.1%, stood well below the OECD average.

Structural Change

Over the past two decades, Iceland's economy has moved away from the staples of agriculture and fishing and today is centred on the service sector which currently employs slightly over seven out of ten workers (71%), with a further 21.7% in industry and 6.9% engaged in agriculture and fishing.

Recently, authoritative sources have expressed concern over the articulation between labour markets and Iceland's educational outcomes. Two items in particular fuelled such misgivings: the modest levels of attainment in test scores at the level of the compulsory lower secondary school and high levels of early leaving in upper secondary education (see Section 4.4). Also subject to questioning has been the number of vocational qualifications being taken up in post 16 schooling, though the Ministry of Education, Science and Culture is currently moving to tackle this problem by broadening the choice of subjects available and reducing study duration in the upper secondary school by one year.

Second thoughts are not confined, however, to secondary schooling. Students obtaining qualifications at tertiary level in the fields of science and engineering are, it is felt, too few.⁸

With these issues in mind, it would appear nevertheless that Iceland's system of higher education is broadly in keeping with the demands of its labour market.

3.8 Internationalisation

The International dimension is both an enduring feature of higher education in Iceland and, moreover, one that permeates deeply into higher education policy, into institutional practice and the social tissue of both the Academic and the Student Estates. Such an international sensitivity is in part imposed by the geographically peripheral nature of the Island and the determination, sometimes evident in other Nordic lands as well,⁹ to offset such isolation by careful attention to sustaining the circulation of people and the intercourse in ideas. Only with the foundation of the University of Iceland in 1911 was it possible for the native elite to study at an advanced level in the country. From this it follows that the international dimension in Iceland carries with it associations, connotations and principles which only today are beginning to assume a strategic importance elsewhere in Western Europe.

Paradox

Paradoxically, seen from the standpoint of students moving abroad to study, the point could well be argued that the expansion of Iceland's higher education system in the latter part of the 90's served from a quantitative point of view to alter the traditional nature of the links with cross-frontier education. From this perspective, expansion "repatriated" higher education –

⁸ *The Country Background Report* (Educational Testing Institute of Iceland, 2005) cites data from the OECD publication *Education at a Glance 2004*, Table A4.1, "Tertiary Graduates by Field of Study". In other areas, for instance, in computing Iceland is well above OECD averages. However, the real issue is not the number of graduates compared to their counterparts in other tertiary systems. It is rather the balance between supply and demand on the labour market.

⁹ The notion of distance between mainland Europe and Sweden for instance is not dissimilar and emerges in the allusion in popular speech to Europe as "The Continent" - a strangely insular viewpoint also shared by other Islands in the North Atlantic.

brought it home - in the sense that those studying abroad are no longer, as they were in two decades earlier, a very substantial minority of Iceland's students. This mechanism is easily demonstrated. In 1988, the year when the highest number of students was enrolled at foreign universities, around one third of Iceland's Student Estate studied abroad. The impact of growth in the home system is evident (Jonasson, 2004, Figure 4.6, pp. 175-6). By 2004, the number of wandering scholars as a proportion of all Icelandic students enrolled in higher education dropped to 13%.¹⁰

Growth in the home system whilst reducing the probability of going abroad to study did not, in terms of absolute numbers, reduce it. Rather, from the standpoint of "outward bound" individuals, the flow stabilized. Stabilization, however, did not necessarily reduce the importance of the international dimension so much as change the level at which international ties continued and very particularly those at the graduate and doctoral stage. Considered in this light, the more specialized traffic that follows after the first degree is potentially of high importance once one places it against the background of Iceland's drive to reinforce its research capacity. Put dramatically, Iceland's long established student mobility may be seen as playing the part of a very real influence to accelerate the country's drive towards a Knowledge Economy.

¹⁰

If one remembers that the objective of the original ERASMUS programme, launched by the then European Community (EC) in 1987, was for 10% of higher education students of the then Twelve to spend at least one semester at another EC University, one begins to appreciate the full significance of this statistic, despite its decline as a percent of all Icelandic students in higher education.

4. Strengths and Challenges in Tertiary Education Policy

4.1 Governance, Planning and Regulation

The growth in institutional diversity and the thrust towards a system of higher education both differentiated and comparatively complex is as much a challenge to political determination as it is to the administrative capacity successfully to implement it. Though Iceland has come late to the type of generic reforms in governance, planning and regulation that began elsewhere in Western Europe in the late Eighties and early Nineties, the speed of its implementation reflects the deeply-rooted consensual nature of Icelandic politics. Such agreement is reflected throughout the exchanges we had with all three of higher education's Estates – Administrative, Academic and Student – namely, the conviction that change is necessary, that the national research capacity must be developed further and that competition is the driving force to realize such a strategy.

In short, the ability of Iceland's higher education to assimilate – in a very short space of time – institutional upgrading, the change and multiplication in patterns of ownership and their attendant divergence in patterns of institutional financing as well as the need to ensure the boundaries between competition and cooperation as much between establishments of higher education as between the various Ministries responsible for the different aspects by which higher education serves the national community, all point towards a high “adaptive capacity”.

Diversity in Management Structures

This strength is all the more remarkable precisely because it emerges in the midst of a system of higher education where institutional diversity has developed within a relatively restricted time frame. The expansion from one national university to eight establishments, the introduction of alternative patterns of ownership – private versus public – the equally marked differences in institutional management style, ranging from the traditional collegiality in the University of Iceland through to the more enterprise

rationale evident, for instance in Reykjavík University and Bifröst Business school – stand as evidence of the higher education system’s ability to tolerate the coexistence of very different methods of institutional steering and oversight.

Yet, the variety between old and new forms of steering and regulation, the different boundaries between strategic management and day to day administration, the varying patterns of linkage and association that tie the individual establishment to the external world and the degrees and nature of the participation of external interests in individual committees, is itself a strength. And whilst some of the more innovative and entrepreneurially oriented models are remarkable in their sensitivity to the outside community, it is not out of place to note that in system so rapidly evolving, each particular model of management that has emerged within the confines of the individual institution is itself in a state of implicit evaluation. Thus, the coexistence *de facto* of different modes of institutional management begs the question whether in the future a further synthesis between collegiality and an entrepreneurial culture will not emerge. Indeed, the potential for developing such a synthesis between the tried and tested and the innovative within the range of management models present in Icelandic higher education may be counted as one of the strategic strengths that stands as one of the positive advantages of smallness in size.

Government - University Relationship

This condition is backed by that other characteristic of the relationship between university and government in Iceland, to wit, the degree of institutional autonomy, a relationship, akin to what has sometimes been termed “the facilitatory State” (Neave and van Vught, 1991). In operational terms, such autonomy revolves around the freedom of institutions to define new objectives and to focus on new tasks. The opportunity for each institution to devise the best possible range of services it may provide society and the particular priority it will place upon the demands of particular sectors or interests places a premium both on Board and Management Team to be as efficient as possible in the usage of the resources at its disposal in meeting the tasks it has set itself. Such responsibility is no less evident in the relationship the private sector institutions have to government since the latter both lays down the general framework within which they operate, and is also their major single source of funding. Yet, such autonomy is itself in a state of tension. For whilst it permits the individual establishment to determine the range of services offered to stakeholders, it has also to bear in mind that the goals of research and development may not always correspond to prevailing political trends.

Tensions

Such tension between the servicing function of the individual institution to external interests and the innovative pursuit of knowledge generation raises broader issues, not least the way in which the priorities of individual institutions may be reconciled with the broader priorities as they are perceived by Icelandic society. The challenge of reconciling and prioritising national purpose with institutional initiative is, in effect, accentuated by the introduction of management by performance and outcome into the higher education system itself. Seen from the standpoint of governance, the Parliamentary majority works through a relatively complex series of channels. In effect, it sees competition between institutions as the prime instrument to bring about convergence between institutional initiative and national objectives. It presumes that the promotion of competition between establishments with very different objectives, formal tasks and different forms of internal governance, is sufficient to meld the two levels of perceived interest and priority together. And this in turn rests on another presumption, namely that establishments of higher education in effect operate within a common domain. It is, however, this presumption that presents one of the major challenges in the area of Governance, Planning and Regulation if only for the fact that the sheer range of diversity in institutional purpose, patterns of stakeholder participation would seem to work against the emergence of a series of objectives common to all establishments.

In short, the tension between bottom up institutionally generated servicing and top down statement of national priority and purpose deserves further clarification, if only to ascertain how far the former is in keeping with, and contributes to, the latter as well as clarifying the degree of latitude the institution has in pursuing its own self-determined objectives.

A very specific example of the linkage between institutional initiative and national purpose is to be seen in the evaluation of already existing Bachelor, Master and PhD programmes (see Section 4.3). Though the resources set aside for this activity are extremely limited and whilst it must be recognized that the highly structured evaluation systems found elsewhere (Schwarz and Westerheijden, 2004) may not lend themselves to being transplanted to Iceland, one may question whether the current practice of summary approval for new programmes will prove adequate to ensure essential quality in the long-term, (see Section 4.3) and especially in view of the large numbers of programmes created over the past few years.

Contrary Imaginings

A further challenge Iceland faces in the area of planning and regulation involves those mechanisms that identify new programmes, the criteria of their demand and their feasibility. Reliance on “market mechanisms” as an analogue for individual demand as against social or societal demand does, however, raise a number of delicate issues. Individual demand can of course justify setting up new programmes on the grounds of their “consumer popularity”, and particularly so in areas where institutions see themselves as strong and which place them in a position of competitive advantage. Difficulties begin however, where society sees a new programme as having societal benefit, whereas the institution, for its part, can see no self-advancement or advantage whatsoever. Or, to take another scenario, a programme deemed important by the institution for – say – underpinning its further development at the research level, is in effect so limited in demand that it fails to reach the level of viability, either in respect of students enrolling or staff resources devoted to it.

4.2 Resourcing the Tertiary Education System

A central issue that any expanding system of higher education faces is to provide the ways and means of funding it. In most countries, the costs of higher education grow faster than GDP because of the very nature of higher education itself and very particularly so when higher education is the prime instrument for making the transition towards a Knowledge Economy. The reasons for this situation are clear. If the higher education system is to provide and to sustain the dynamic the Knowledge Society requires, it needs to recruit staff with the highest qualifications and with very specialized knowledge.

These people are rare and in an economy driven by competition, higher education can no longer count, if ever it did, on an assured monopoly of drawing in the highly qualified. Not only is increasing competition for such rare human resources no longer confined solely to institutes of higher education. Competition is no less fierce between higher education and other sectors of the national economy, in addition to which is the emergence of an international labour market for the academically talented. This situation is compounded in many fields by the rising costs of research – in the sciences and in other domains (see Section 4.6). As technology evolves, so research becomes more costly at the very moment when public expectations in respect of quality and service provided by higher education are themselves on an upward spiral.

In Iceland, growth in student numbers coupled with a radical restructuring of higher education has given a particular acuity to the general challenge of resourcing. Indeed, resourcing is rendered even more delicate by problems of scale. Tertiary education is small. Despite recent growth, by world standards most of Iceland's eight institutions of higher education are extremely small. Thus, it has not been possible for institutions to find economies of scale to offset rising costs.

Against this, however, the buoyancy of Iceland's GDP growth over the past decade created a window of opportunity for government to increase the funding of higher education very substantially. On the basis of enhanced public investment, reform was driven forward. Yet, significant financial pressures remain and several universities in recent years have run operating deficits.

Values and Social Ethics

The challenges that Iceland faces over the medium term in finding ways to sustain the dynamism now evident in its higher education are not wholly technical, nor are they confined to the rigours of income flow or the bottom line, though they may very certainly be presented in this form. The ways higher education is resourced also express a particular vision of society. From this perspective, funding may also be seen as the operational expression of the weight attached not simply to efficiency and productivity but also to the upholding of such deeply-rooted social values as equality of opportunity and social equity which, as with other Nordic societies, stand as one of the identifying traits of Icelandic society (see Section 4.4).

The notion that government should provide its people with higher education "free" to the user is a prime feature in the educational culture of Iceland. In its current mode, funding both institutions and students resides on the principle, that access to higher education is construed as a "right" rather than a "benefit". Obviously the exercise of that "right" does not exclude, far from it, benefits that may accrue both to the individual as well as to society in terms of the enhanced skills and knowledge the individual has gained from the experience of higher education. Whilst there are clear indications that the principle underlying resource allocation in Iceland is shifting from equality to equity (see Section 4.4), the main challenge lies in the near future. The challenge is posed foursquare by very strength of the long established consensus, which has built up around higher education as a "right". There is also the attendant risk that the quest to provide additional resources to higher education through policies of "cost sharing" may place that consensus under great strain.

Nevertheless, the necessity to create resources other than those derived from public expenditure is likely to become acute in the medium term and this for two reasons: first, the likely slowdown in demand for higher education amongst the “core age” group; second, because economic forecasts anticipate a less buoyant growth in GDP over a similar period. Both imply that those managing the system of higher education should take stock, on the one hand, of its likely profile in the coming ten years and on the other take full account of the possible implications such scenarios pose for resourcing in general and for generating alternative sources of funding in particular.

Anomalies

Supplementing the existing flow of resources to higher education and finding alternative sources is then the foremost challenge facing Iceland’s higher education. It is, in effect, a challenge of considerable political delicacy precisely because it bids fair to replace the notion of participation in higher education as a right by participation conceived as an individual benefit. It is also unavoidable, if only for the fact that certain issues – amongst which tuition fees – have been thrown into sharp relief by the creation of a private sector within higher education, authorized to levy tuition fees whereas the public sector is not. Whilst the charging of tuition fees gives concrete expression to the principle of “cost sharing” in higher education, it also highlights the fact that this principle has long operated – and is currently accepted – elsewhere in the education system – for instance, in early childhood education and post school continuing vocational education (see Section 4.4).

The arguments posed in terms of equity for extending the principle of cost-sharing to study in Iceland’s public sector universities, are telling. Those studying at university level are amongst the most privileged in the community and, in the course of a life-time, will reap substantial return on investing in their abilities. Whilst society also benefits from a more knowledgeable labour force (see Section 4.7), such benefits, it is argued, are nevertheless outweighed by the advantages that accrue to the individual.

Benefits of Cost Sharing

From a pragmatic standpoint, the justification for extending “cost-sharing” to public sector universities is equally persuasive. It would remove the anomaly in funding private and public sector establishments. Indeed, given that the government’s subsidy for tuition costs is the same for public and private universities, the current situation affords an advantage to the

private sector in the total tuition revenue they receive. It would give governors and management in public universities an additional leverage and purchase over their own strategies. It would eliminate the current practice in public sector universities of seeking to generate extra revenue through charging high costs for programmes by re-designating them as continuing education.

Any change to the public funding of universities will have immediate impact on the student loans system, which forms the complementary element in this diptych. Long in place and widely accepted, Iceland's student loans scheme supports access by providing liquidity upfront for students. Loans are linked to performance – to be in receipt of a loan, students must pass three quarters of their courses each year. It is also “portable” – in effect, it may be used to support study overseas (see Section 4.4). Repayment begins one year after completing study. It is *income linked* – a part of the obligation to repay depends on income.

Income-contingent Loans

This latter feature stands in contrast to many student loan schemes elsewhere which are *income contingent*. In effect, repayment is wholly dependent on the borrower's income. Rather than relying on flat rate installments on repayment, the *income contingent* model takes account of the reality that some, despite being graduates, are not high earners and adjusts their repayment schedule accordingly. If the principle of cost-sharing is to be extended further in the domain of student loans, there may be considerable advantage in reviewing the different models found elsewhere and their impact on both access, throughput and qualification rates.

Iceland's funding approach has in part accelerated the dynamism in higher education. It is transparent, flexible, predictable and formula based. The funding formula itself is linked to volume and relatively unconstrained on disciplines. It is open to private universities. It permits freedom to innovate (see Section 4.6). It is sensitive to institutional autonomy and, because demand-driven, has rapidly accommodated to that competitive ethic which has facilitated and encouraged speedy growth.

4.3 Quality Assurance

The issue of Quality in higher education goes hand in glove with institutional autonomy. Greater latitude for institutional management to take initiatives, the delegation of greater powers of responsibility down to the institutional level are not only trends common to many of the systems of

higher education in Western Europe (Schwarz and Westerheijden, 2004). Such “offloading” is also seen as a prior condition for improving and maintaining quality. This is not to say, however, that the role of central authority is either absent or diminished. Rather, the role of central national authority shifts from exercising oversight and control over input to monitoring output – ensuring that quality is upheld, resources and support are sufficient for institutions to discharge their new responsibilities and – if need be – action taken in the event of institutional failure (Neave and van Vught, 1991).

New Constructs

Constructing a new version of the culture of evaluation and integrating quality assurance are part of the major tasks that Iceland is today engaged upon. This is reflected in the prominence the new Act on Higher Education Institutions, which came into effect in July 2006, assigns to Quality Assurance. Naturally, the “new” culture of evaluation builds out from the strengths already present in the old. All institutions have set up mechanisms for quality assurance. Despite some criticism, directed towards the follow up of teaching evaluation presented to the Review Group, most departments have initiated procedures for assessing and improving the quality of educational service. The Centre for Teaching Excellence at the University of Iceland, which regularly conducts appraisals by students of staff teaching, is one instance of this obvious strength.

Though at the early stages of implementation, a framework for carrying out external evaluations is in place and the need to exercise it further in improving quality is acknowledged by the Ministry of Education, Science and Culture (*Interview with Division of Evaluation and Supervision*). A number of basic principles have been enunciated amongst which the requirement that all institutions develop procedures for the internal assessment of quality; the place of self-evaluation in the exercise of public external evaluation; the institution’s right of reply and clarification to external public evaluation; and, finally, the laying down of guidelines for preparing the self-evaluation report.

As yet, procedures for the external evaluation of quality in research remain to be established. Even so, well-honed practice acts to ensure a high degree of accountability, which encourages improvement in quality. Amongst them are individual pay incentives based on research performance and output (see Section 4.6). This “bonus”, which operates at institutional level, is well-embedded and accepted, as is staff promotion based on individual accomplishment in research. To this the increasing weight

attached to allocating research funds on a competitive basis is a spur to excellence.

Way to Go

Iceland – and it is not alone here – needs to press on and in doing so tackle a number of related issues. Evaluation is still embryonic and the resources set aside for it, limited. So far, the wide latitude that institutional autonomy bestows has not yet linked up with evaluation that is formal and systematic. Indeed, the Division of Evaluation and Supervision in the Ministry of Education, responsible for these tasks until recently, had three full-time staff whose responsibilities included quality at all levels of education, not simply higher education. The recently established Office of Evaluation and Analysis in the Ministry of Education, Science and Culture, currently taking on that role, has six full time staff.

Inevitably, such economy of resources undermines the implementation of a policy of quality assurance that is coherent, sustained and effective, a situation reflected in the limited number of evaluations carried out each year in higher education – no more than one or two (*Interview with Division of Evaluation and Supervision*). They have focused on specific programmes in a single institution or across establishments. Between 2003 and 2005, the three private universities were evaluated. It is not altogether surprising therefore that the National Audit Bureau recently took the initiative to extend its purlieu to education, though its focus has tended to concentrate on whether formal objectives are being achieved and whether the processes employed to achieve them are effective (*Interview with National Audit Bureau*).

Ambiguity

In its current setting, quality assurance appears bereft of a clear strategy. Both the purpose and the outcome of external quality assurance suffer from a certain ambiguity amongst different stakeholders (see Section 4.1). Limited resources at the disposal of the body uncharged with coordinating quality assurance appears to weaken its legitimacy in the eyes of the academic community. Academia is less ready to bring change about when the agency calling for change lacks authority, professional know-how and is unable actively to advance the very change the agency advocates. That the system of quality assurance seems unable to advise, give consultation and provide institutions with assistance in improving quality must be considered as a weak link in this overall strategy.

Externally conducted evaluations are few, though to offset this situation, the internal evaluation of all courses by students has been in place for more than a decade. Nor does the choice for external evaluation seem to fall in with a well-defined plan. A formal and regular cycle of external evaluation is absent and the ability to follow up on plans for improving quality, at the very least, rudimentary. The absence of adequate follow-up procedures dissociates quality assurance from quality improvement. Nevertheless, efforts have been made to include representatives of both employers and students in the external evaluation groups.

Indelicate Questions

As it functions at present, the quality assurance system draws in the main upon its internal institutional counterpart, which, in turn, lacks the weight and legitimacy that an external validation body would otherwise confer. Yet, even when one concentrates upon quality internally assessed with respect to teaching, it is evident that the “bonus” system of performance-based incentives does not take adequate account of this. The instruments to assess quality of teaching shine by their absence. It is also fair to say that the regular monitoring of indicators is similarly lacking – a singular lacuna in the management of quality. Nor is it clear that those internal procedures currently in place do lend themselves effectively to identifying at departmental level the conditions and priorities for future development. In short, one has to question how far the system of individual incentives is sufficiently sensitive to the full range of institutional mission now present in different forms within the expanded system of higher education and very particularly to those activities such as community service and publications for learning rather than scholarship and science (see Section 4.5).

These are some of the points that occur within the confines of Iceland’s quality assurance system in its present condition. There are, however, others that are less internal to that system but which nevertheless bear upon the way in which the present system functions. One of these seems to be the gap between legislative scope and administrative capacity. Formally speaking, legislation provides for the Ministry of Education, Science and Culture to accredit new programmes. In reality, the Ministry is constrained by lack of resources to do this in a timely manner. Thus, programmes are drawn up and placed on the university’s list of offerings before accreditation is granted. Certainly, this may be taken as evidence of entrepreneurial initiative by academia. But the fact that most programmes are subsequently validated cannot greatly contribute to the standing of quality maintenance and even more so if one bears in mind that standards of accreditation are not currently available.

Parthian Shot

Finally, though perhaps less pressing in its immediacy, is the issue of how to include distance learning in the purlieu of quality assurance. Whilst student enrolments in distance education nearly tripled between 2000 and 2003 and represent approximately 17% of all enrolments in Iceland's system of higher education, it possesses no specific legislative framework. Some concern about the quality of provision in this sector was expressed in the course of our interviews. We retain the impression, however, that as little is known about the contribution this sector makes as is known of its quality.

4.4 Equity

Five features characterize the Icelandic vision of equality of opportunity: a dominant focus on gender issues, a strong definition of equality in the rationale of student funding (see Sections 4.4 and 4.3), the absence of any marked preoccupation with social class, the successful integration of life-long learning into the mainstream establishments of higher education and a student culture that takes study abroad as the natural course of things (see Section 4.8). Each of these dimensions contributes to the reality of Icelandic exceptionalism. At the same time each has another significance. Viewed from inside Iceland, each provides a species of marker points against which to place the achievements of current reforms. From an external standpoint, however, these five dimensions illustrate the specificities of higher education in Iceland. They also permit developments within the latter's system of higher education to be placed in a broader international backdrop. They present an alternative perspective to the reform measures that took place between 1997 and 2005.

From Equality to Equity

The 1997 Higher Education Act is a watershed in the definition, organization and governance in Iceland, just as it is in moving the fundamental construct of policy applied to higher education on from equality of opportunity to equity. The Act shifted the focus of policy from access as a primary objective and instead concentrated on outcome, product and the internal efficiency of institutions. Institutional upgrading – a method of expanding provision that earlier decades had tried and tested at the secondary level – is not without its ambiguities, however. If equity in institutional status and purpose is one of the reform's central features – all establishments for instance, are called upon to undertake research (see Sections 3.6 and 4.6) – some are more equal than others in their ability rapidly to assume this responsibility, though all are equal in their ambition

to do so. The shift towards equity, though lying at the heart of national policy, creates certain tensions both in the operational domain and in what are perceived as radical alterations to institutional role and established status.

The transition from equality to equity redefines the key function of higher education less as a matter of access to knowledge so much as the maximization of individual choice between different institutes of higher education, which prepare and train for different sectors of the labour market (see Section 4.7). In effect, the basic issue in a system driven less by social demand than by demands of the labour market mediated through the constituencies institutes of higher education elect to service and through the principle of “consumer choice”, certainly demands a higher level of efficiency. It also poses the question whether the forces of privatization and competition are sufficient on their own to offset the forces of potential institutional fragmentation implicit in rapid specialization whilst upholding an overall diversity and coherence of provision, coverage and adaptation that Knowledge Society demands (Sorlin and Vessuri, forthcoming; see Section 4.3).

Challenges

The current thrust of policy rests on the strategy that institutions compete for students rather than students competing for a place in higher education. For the expanded “private sector”, policy also involves competing for the additional inducement of student fees, which, so far, the University of Iceland does not exercise (see Section 4.3). Yet the transition from equality of opportunity to equity serves to underscore certain problem areas the presence of which, if not a hold over from earlier times, is very certainly made more anomalous by the expansion of higher education. One of the more enduring challenges remains the issue of vocational and technical education which, as elsewhere so in Iceland, suffers from a lack of parity of esteem and very particularly so at the upper secondary level. Whilst authoritative opinion holds that some 70% of upper secondary school students ought to opt for this track (*Meeting with Education Committee of the Althingi*) in reality only 30% do so. Furthermore, the drop out rate of those opting for this track is high indeed (see Section 3.7). It is a situation of grave disquiet to employers, anxious at the shortage of skilled individuals in the service sector. To the Trades Unions, it is a source of evident injustice. The opportunities life-long learning opens up later only partially off-set the weak articulation between upper secondary school and higher education (*Interview Icelandic Employers’ Federation and Trades Union representatives*).

Priming the Pump of Prestige

Amongst the initiatives taken within higher education to strengthen the technical/vocational track is the merger in 2005 of Iceland's Technical College with Reykjavík University. Engineering and Applied Sciences were brought together with Business Administration and Management to form Reykjavík University, significantly located in the private sector. Whilst this initiative may well raise the social prestige and standing of technical education by identifying it with one of the more dynamic private institutions, the origins of the problem are not in higher education so much as in the secondary school. Nor does it address another fundamental anomaly, namely that vocational education and training are largely part of an informal system, paid for by student and employer. In effect, adult education may be seen as a sub-set of a privately-run training system at best only tenuously articulated with higher education.

The coexistence of other sectors at school and pre school levels that are fee-paying has already been commented upon in connection with resourcing (see Section 4.2). Such an anomaly, however, is not simply a question of resources alone. It also raises basic questions about the particular model of equality or equity which underpins Iceland's policy of higher education and which differentiates between the formal and the informal, between those who follow the academic track into higher education and may count upon public funding for their studies and those who, in their quest for continuing education, have largely to finance themselves.

School-University Links

In turn, this situation raises other issues that have to do with curricular diversity at the secondary level. In Iceland, the articulation between upper secondary education and a system of higher education undergoing rapid diversification in mission, constituency and programme content appears to rest on a tracking system which, whatever the original intention, is in reality made highly homogenous in curricular content and occupational purpose by the patterns of student inflow from school to university. Iceland, largely one suspects, because of problems of scale and population distribution, has not passed through the equivalent of that reform which, in the larger school systems of Western Europe, deliberately linked non-academic tracks in upper secondary school with non-university sector provision in higher education. This reform, undertaken in the Sixties and Seventies in Western Europe, notably in Belgium, Italy or, in the case of France with the creation of a Technological Baccalaureat giving access to higher education (Neave, 1983), went under the general rubric of the "*omnivalence des diplômes*". Effectively, institutional diversity within higher education was closely

associated with curricular diversity in the upper secondary school and with the recognition of tracks beyond the academic or theoretical as valid for access to higher education. It may well be, however, that diversification in the general orientation between school-based tracks as a means of sensitizing students to the opportunities present in a higher education system, now characterized by an unprecedented diversity in institutions and programmes, is not open to Iceland. Questions of cost and the viability of class size above all in rural areas (see Section 4.5) are ever-present structural constraints.

Nevertheless, from this it follows that one of the clear challenges Iceland faces as a consequence of an expanding higher education system is the nature of the articulation with secondary education. This becomes particularly pressing for two reasons: first, the proposal currently under consideration to reduce the length of study in upper secondary school by one year shows that the issue of articulation is recognized as important; second, because if recent trends in the pattern of student inflow continue, direct entrants from school may in effect become a minority of all entering in any one year.

4.5 The Regional Role of Tertiary Education

Regional policy in Iceland is served by four universities: the Agricultural University of Iceland, the Agricultural College at Hólar, Iceland University of Education and the University of Akureyri, the two former coming under the purview of the Ministry of Agriculture, the latter two under the Ministry of Education, Science and Culture. The creation in 2005 of the Agricultural University from the merger of highly specialized research institutes sets it apart from the remaining new university foundations. For whilst the main thrust of its current development turns around the construction of a teaching base from a well-recognized standing in research, the other two “regionally oriented” establishments by contrast have the task of developing a research capacity atop a well-honed teaching function.

However, because an establishment provides services within a regional setting, does not mean its priorities are necessarily shaped by the needs of the region or of the communities in it (McAllister, 1997). The University of Education has a regional engagement in its provision of courses, services, curricular development projected into a regional setting, a role underscored by the fact that 55% of its students attend in a distance-teaching mode (*Interview with Rector and Administration, University of Education*). For the University of Education, training in primary schooling is a sub-set in a broader range of interlinked activities, focused on regional development.

Succinctly put, the University of Education has a national remit injected into the region. The University of Akureyri has a specific regional remit, projected across the Nation. The two establishments may be seen then as complementary to one another.

Strategy of Development

Clearly, the University of Akureyri is a major example of government intervention to shore up regional development. However, when viewed from the standpoint of coordinating both university and regional development in Iceland, development appears to fall into two analytically distinct phases: first, consolidating the social and occupational infrastructure and the nurturing of a regional pool of talent; second, the attraction of firms and enterprises to the region.

This strategy emerges clearly in the disciplinary build-up at Akureyri. Starting with Business Education and Health Sciences, its coverage subsequently extended to Natural Resources Sciences – which concentrated mainly on fisheries management – later adding Teacher Education, Information Technology, Law and Social Sciences. The importance of these disciplines lies, however, in their often-radical adaptation of content and approach to the specific needs of the region. Thus, Business Education concentrates on the requirement of small and medium-sized firms on the one hand, and, on the other, on training to encourage graduates to found their own businesses in the region. It is a strategy with a dual purpose: to attract back to the region those who left to study elsewhere; second, to reduce the outflow from the region of already trained human capital.

The mission to develop a regional edition of “enterprise culture” has a second dimension more precisely aimed at maintaining the quality of essential services – nursing, pre and peri-natal care as well as child care at pre-school and primary level. In this way, regional development seeks to sustain the social infrastructure at the same time as provide it with the skills to sustain a modern economic base.

Distance Education

Regional development draws considerably upon distance education. 35% of Akureyri’s student enrollment studies through this setting. Whilst both the University of Education and the University of Akureyri are dual mode establishments, combining both on-site teaching with distance education, the task the latter fulfils differs considerably. For the University of Education, distance teaching follows a center-periphery model, with national standards being projected into the region. For the University of

Akureyri, however, distance teaching works from periphery to center within the region and is tied in with eight Life Long Learning Centers. Each of these centers is located in small communities, distributed across the country, and whilst independent from the University, are linked to it via Internet and video conferencing facilities (*Interview with Rector and Staff, University of Akureyri; interview with Coordinator of Lifelong Learning Center*).

Regional strategy and the response of higher education to it, clearly rests on the conviction that if revitalizing the regional economy is the prime objective, the prevention of further rural depopulation depends on upholding the quality and availability of the educational, social and medical services in the region. There is much to recommend this two-part approach. Without attention to improving the social infrastructure and directly engaging the university to develop programmes specifically designed to meet the particular demands of the region in this domain, developing an “entrepreneurial culture” alone could well risk contributing to the very opposite of what is sought – namely, precipitate a further acceleration in the flight from the countryside rather than stemming it.

Stakeholder Collaboration

Strategies to alleviate the obvious weaknesses in the social and economic infrastructure are necessary. They are not sufficient. The regional interest needs to make itself heard at national level and to do so must draw on the skills and appropriate leverage to woo industry and firms from outside into the region. This pro-active stance has been strengthened through the Growth Agreement passed between Akureyri municipality and the University in the wake of the 2002 Parliamentary Act for Regional Development (*Interview with Mayor and City Counselors, Akureyri*). Amongst the programmes the purpose of which is to provide the local community with skills crucial for attracting foreign industry to settle in the region, are innovative initiatives in Law and Social Science: the first, to strengthen legal, financial and contractual acumen in negotiating terms with potential incoming firms; the second to strengthen the coverage of rural affairs in the national media.

Coherence, Convergence and Complementarity

Innovative though such programmes are, the question remains how far a greater degree of coherence may emerge from the work carried out across different Ministries with oversight for the regional dimension. And whilst coordination between Ministry and constituent interests has been reinforced in the purlieu of the Ministry of Agriculture, a similar level of entente

between Ministries responsible for development in the region, may deserve further consideration.

There are clear signs of convergence at least in the curricular domain between both the Agricultural College at Hólar and the University of Akureyri. Ecological tourism is a particular example, a specialism simultaneously under development at the University of Akureyri and the Agricultural College at Hólar (*Interview with Rector and Academic Staff, Agricultural College at Hólar*). Such complementarity would appear to be a function of differences in administrative oversight, institutional history, differences in subject area covered and finally in funding procedures, competitive in the case of Akureyri, incremental in the case of the Agricultural College. If one looks at those fields where competition is held to be at its fiercest – Law, Business Studies, Computing and Management (*Meeting with the Education Committee of the Althingi*) it is very clear that complementarity takes the form of institutional niche building rather than entering into direct competition with one another. Law at Akureyri is very different from Law as taught, for instance, at the University of Iceland.

The regional dimension and the relationship between institutes engaged in serving the rural community raise the issue of how far competition does in effect drive institutional development. Competition for funding, standing and identity – the gold coin of academic exchange (Clark, 1983) - appears to occupy a lesser place in shaping the relationship between those Universities that serve the region. Rather competition seems to lie between those universities that have an explicit regional mandate and those the identity of which is coterminous with a national remit.

4.6 Research and Innovation

The mobilization of Iceland's universities has as its prime purpose to strengthen their capacity for research and innovation. This is reflected in the rapid growth in research activities and in a spectacular rise in the funds assigned to Research, Training and Development – currently more than 3% of Gross Domestic Product. Over the decade 1991 to 2001, university research income, most of which comes from public expenditure, tripled. Expansion in research very closely mirrors the collective vision that permeates Icelandic society about the role research and research-based knowledge both have for economic and social progress. Regardless of size or disciplinary configuration, most universities are committed to advancing their research activities at national and at international level, a purposiveness that has been present in successive University Acts (Jonasson, 2004) and in particular that of 1997.

To this end, the government has created a range of incentives to stimulate scientific productivity and output. At the system level, foremost amongst them is the research contract drawn up between government and the University of Iceland. It assigns a lump sum for research to the university, which is responsible for the way the lump sum is allocated internally. Research funds for competition between projects and for tendering have been increased. Complementary to this and working at the level of the individual researcher are the various “points schemes” (see Sections 4.2 and 4.3) put in place by the governing bodies of most universities. The general significance of this instrument has been discussed in relation to resourcing. In a research setting, it serves to boost individual productivity by setting minimum standards each researcher must attain to benefit from it. Output criteria are higher for Professors than for other ranks in the academic profession.

In the current plans for development around the Reykjavík area and elsewhere (see Section 3.5) universities occupy a central place. Science and technology parks and regional development plans aim to bring university research into closer ties with the productive sectors. In the area of research and innovation policy, recent changes at the political and administrative interface appear well set to implement these strategic options and particularly in the case of research sectors that need significant investment and a more determined multi-disciplinary approach. The strong international ties of Icelandic society are also to the fore with a significant number of agreements for joint research with the United States and with the Nordic lands.

Five Challenges

Against this backdrop of the gathering momentum in embedding research and innovation firmly into the higher education system in general, Iceland faces five particular challenges.

A. Funding Research

Earlier in this Note, the funding of research in Iceland was analysed in terms of three money streams (see Section 3.2). Here, the first and the third money streams are subject to a closer scrutiny for it is they that present a challenge.

To date, the only Research Contract currently signed, dates from 2003 and involves the University of Iceland and the Ministry of Education, Science and Culture. As a performance-related instrument it displays certain lacunae. Whilst the general purpose and objectives are set out in detail in

Articles 1 and 2, and whilst the university is requested to draw up a five year plan (Article 6) it appears to lack robustness in the matter of implementation. Article 6 requires the university only to *include* research in its planning. The overall framework, content and dimensions the university should take into account, are minimal. The University is not required to define scientific priorities, nor strategic lines of action in its research strategy. Effectively, the lump sum is unconditional and divorced from the purpose of the university plan. There is provision for internal research evaluation, which the Ministry will monitor. Here however, monitoring should take account of the priorities and strategy set out earlier in the University's multi-annual plan. The need for research priorities to be set out for Iceland's universities has already been commented upon in an independent evaluation (EUA, 2005a).

In 2001, university revenues from third stream sources amounted to 10.9% of research income (Appendix 4) – one of the highest levels in OECD states and in Nordic lands. In 1991, the corresponding statistic was 4.9%. Similar moves to strengthen third stream funding are evident in other Nordic countries (Fagerlind and Stromqvist, 2004) and in Europe as well (EUA, 2005b). The ability to sustain this trend in the future and very particularly given the need further to diversify the sources of research income, remains firmly on the agenda.

B. Integrating the universities fully into the Innovation System

Universities are key organizations in the knowledge economy and in the Nation's system of innovation. Cross sector collaboration with the world outside the Universities, seems limited in Iceland. For example, the Centre for Technological Innovation at Reykjavík University reports minimal inter-university collaboration. And the status of cross-university work is more limited still (Sigfusdottir *et al.* 2005, p. 66). Bringing both old and new universities fully into the innovation system requires the strengthening of working together on projects co-financed, jointly carried out between universities, between firms and university with a view to dissemination and exploiting such joint outcomes. Complementarity and competition are very far from being antagonistic driving forces (see Section 4.5).

C. Disseminating outputs

In respect of knowledge dissemination, the most important structure – technology transfer offices at university, patent regulation and sectoral development plans linking up university and industry – are in place in Iceland. Their mere presence, however, in no way guarantees the expected

outcomes in terms of industrial development and social progress. Iceland cannot rely wholly on existing instruments and procedures to disseminate knowledge produced by its universities. A strategic approach to dissemination is required, both at the system and the institutional levels.

D. Measuring Research Outputs

Conventionally, research points schemes that measure outputs tend to emphasise books, peer-reviewed articles and learned conferences. And whilst successful in producing knowledge more and better, they also tend to confine it to scientific and academic milieux. If, however, knowledge is to enhance the productive sector and contribute to social betterment, it needs to reach out further. Iceland may wish to consider adjusting incentive procedures so that university researchers are made aware of the value of output disseminated which gives it relevance both social and economic.

E. Research and Human Resources

Iceland anticipates an acute shortage of students in the area of Natural Sciences and Engineering (OECD, 2002). If high technology manufacturing and knowledge-intensive services are to expand and grow, the issue of human capital is vital. The challenge for higher education in Iceland remains precisely how to qualify individuals sufficient for the Nation's needs. It is then imperative that, in developing and expanding doctoral programmes, universities are aware of this situation. The shaping of such programmes should take full account of the contribution the quality of training and social application their research brings as well as bearing in mind the implications that arise for the type of human capital they produce.

4.7 The Labour Market and the Relationship with Tertiary Education

That it is expected higher education should respond to “the market” is one of the more obvious changes that two decades of reform and debate have brought about in Europe. There are, however, as many “markets” as imagination and precision care to focus on. There is the market of production and services to which knowledge acts as an indispensable value added. There is the student market, which exerts that pressure once termed “social demand”, now associated with higher education's own version of consumerdom. Then there is the market for research as a negotiable good. These are powerful interests and Iceland has put considerable effort into bringing them together.

Growth in the number of higher education institutions and their upgrading to university status has had a significant impact on nature of the links between higher education and the market in Iceland. With the exception of the University of Iceland, which is a comprehensive research university with broad ranging, long established and multiple ties to the labour market, the remaining establishments appear to align themselves around relatively precise market sectors – Education, Agriculture, Business and the private sector (see Sections 4.5 and 4.6).

The Market and Institutional Identity

De facto, expansion has brought institutional specialization in its wake. In turn, the nature of institutional links with particular sectors of the labour market largely defines institutional identity. To an increasing extent, institutional differentiation formally speaking is less a matter of status – all are held to be universities – or, for that matter, the possession and development of a “research mission” for that is a common national as well as an institutional objective. Differentiation is rather the consequence of operational alignment by individual institutions upon specific sectors within the national labour market. This characteristic is further reinforced by the often highly specific vision individual institutions have of their task and purpose in relation to the particular market segment they hold to be a source of institutional strength and competitive advantage.

That institutional differentiation is effectively market defined and defined by the institution *vis à vis* the niche it seeks to create for itself, reflects another noteworthy characteristic in what may be termed Iceland’s “administrative style”.¹¹ Such a style may be summed up as “deeply non-interventionary”. It has no tradition of urging individuals to particular sectors of activity (*Interview with Ministry of Education, Science and Culture*). This “hands-off” stance may be seen as a species of “*laissez faire*” were it for the fact that its origins are far older than the economic ideology currently associated with this term (Byock, 1988).

¹¹ Administrative style, of course, can be seen as one element in a broader series of national features that together go to make up what Premfors has termed “policy style” (Premfors, 1980). In this instance, however, we restrict this concept simply to the relationship between the Ministry of Education, Science and Culture with its university constituency.

Administrative Style

Seen from a labour market perspective, the essential role of the Ministry of Education is to “facilitate” – that is, to lay down the conditions, whether legislative or financial - that allow the institution to define its own mission and its own priorities, shaped on the one hand by the direct influence of the market and on the other by the principle of competition.

The perception of being an institution at the cutting edge, developing a new niche and a new range of services in response to a buoyant market, of breaking out from set ways of teaching and research, in short the backward flow the market has upon the institution in terms of motivation, innovation and commitment amongst staff, is striking (*Interview with Rector and Academic Staff, Reykjavík University; interview with Rector and Academic Staff, Bifröst Business School*).

Four Sources of Strength

Yet, there are other ways in which Iceland’s higher education interacts to the labour market. And these in turn derive from four very specific strengths.

The first is that numbers enrolled, whether per establishment or defined by discipline, are largely driven by student demand, rather than by a fixed pre-determined number of places or by the application of place restrictions in certain subject areas. The absence of limitations through the *numerus clausus* means that students may respond to signals coming from the labour market and adapt to changes in the market place. The absence of place limitations does not artificially distort the interplay of market forces and student demand. Thus, it makes for an efficient allocation of human resources.

The second has been subject to comment earlier in this report (see Sections 4.2, 4.4 and 4.6) in connection with the Student Loans Scheme. Within the setting of higher education’s relationship to the market, however, this provision takes on another significance. By dealing with the issue of credit constraint – that is, the inability to raise money in the absence of any collateral – and by offsetting any possible deterrent that the incurrence of debt may have upon individuals considering higher education, not only more are students likely to benefit from further study. They are also able to meet both tuition fees at private sector establishments and the maintenance costs that student life incurs. In this respect, the Loans Scheme enhances the equitable and efficient tapping into the Nation’s talent. Arguably, by removing finance as an obstacle to further study, students may give

particular attention precisely to the signals that the market is making, thereby amplifying and building upon the first strength.

The third source of strength in Iceland's articulation between labour market and higher education evokes the principle of complementarity (see Section 4.5) this time at the international level (see Section 4.8). Since the Student Loan Scheme is valid for fields not available or not viable domestically, this arrangement permits the development a broader range of skills and abilities than would otherwise be possible if one relied on the provision available on the home front alone.

This form of optimization raises substantive issues, however, and very particularly so at the level of research training and the development of research capacity. Clearly, the general problematique is subject to considerable variation according to discipline or area of application. In essence, the question is this: on what substantive knowledge should the national research labour market draw upon that is available on the international market? Should foreign study focus on highly *specialized* fields? Or should it have another strategic purpose – namely, to bring home *general* and *basic* knowledge, the better to concentrate on the specificities and particular issues local conditions create? (*Interview with Ministry of Agriculture*)

Finally, it is worth pointing out that instructional practices appear to support robust ties between the labour market and Iceland's higher education. Between academic staff and communities of professional practice – secondary school teachers, architects and business executives, for example - (*Interview with staff of the University of Education; interview with group of researchers on Higher Education; Interview with Rector and Academic Staff, Iceland Academy of the Arts*) close ties exist. The interplay between the academic and the professional communities is felt to be especially important. One of its outcomes is to give students the opportunity to hone skills by closely matching the demands of the labour market. As a result, students, it is argued, have a better grasp of the opportunities employment entails, not to mention the salaries involved.

4.8 Internationalisation

That successive Icelandic governments have encouraged their nationals to study abroad for part at least of their higher training (*Interview with Officials of the Ministry of Education, Science and Culture*) carries a range of other associations with it. First, the international dimension has direct consequences upon the way equality of opportunity is applied (see Section 4.4). In effect, access to higher education in its Icelandic

interpretation is not limited to the home system. Indeed, the Student Loan Scheme does not differentiate between those who study in Iceland and those who go abroad. For the latter, loans are available to cover both living costs and tuition fees.¹² Second, the transition from equality to equity, from access to choice is, if anything, given a stronger expression when integrated into a system of higher education, which has been long characterized by substantial cross-border student flows. That equity of choice is operationally inseparable from the opportunity to study abroad is noteworthy for other reasons too. Objectives which, at present in the European Union, are both desirable and yet to be attained – the return to the true *peregrinatio academici*, for instance¹³ – stand as established practice in Iceland. And the vexed question of whether in the near future student grants in the EU should be “portable” (Vossensteyn, 2004) – that is, used to finance study abroad – in Iceland would appear to command only polite curiosity.

By contrast, the inflow of foreign students in any substantial numbers is a more recent phenomenon, and would appear to reflect trends in student mobility beyond Iceland. It also coincides with the period of reconstruction post 1998. In the four years to 2002, foreign student numbers rose by 70%. By 2002, they represented some 4.1% of all enrolments (see Appendix 4).

Attracting foreign students is a matter for the individual university, which has the latitude to determine the range of services it will commit to this head. Amongst initiatives taken to stimulate foreign student presence are the setting up of an Office of International Education to deal with the logistics of student exchange, the organization of post-graduate programmes to encourage cross frontier mobility and the teaching of programmes in English.

¹² At undergraduate level, loans to pay tuition fees are available only if a similar programme is not available in Iceland.

¹³ This practice, derived from the German tradition of students moving from one university to another in the course of study, is very different from simply passing one or two semesters abroad and returning home for the final degree. The typical Icelandic student abroad tends to remain in one university for the whole length of study (*Interview with the Federation of Icelandic Students Abroad, SINE*). Though not directly comparable to the *peregrinatio*, it is clear that for the typical Icelandic student, studying abroad is lengthier than the “student round trip” or “quick excursion” model, supported by European Union undergraduate mobility programmes. 40% of Icelandic students abroad are studying in Denmark (*Interview with SINE*).

International Dimension, national objectives

The international dimension takes on a particular importance when placed against the national objective of increasing the number of doctoral students and, as a means to this end, the setting up of joint degrees with foreign universities. At this level, most doctoral students have part of their training abroad as an integral part of their study programme, as good an illustration as one might wish of the principle of complementarity between higher education systems as a means to accelerating change and improvement in one.

Commitment to the conditions of the Bologna Agreement of June 1999 is steadfast and its implementation unproblematic largely because the Icelandic degree structure is largely compatible with the “Bologna” model. In addition, all institutions of higher education issue the Diploma Supplement.

Iceland’s Educational Diaspora

The existence of what may be seen as Iceland’s equivalent to an “educational diaspora” is a significant pointer to the strategic importance of the international dimension to the Nation’s higher education policy. The “Diaspora” has already played an important part in urging on the pace of change and growth. The mobilization of the higher education system and indeed in certain instances, the establishment of new foundations has advanced thanks to the ability to attract back those who left to study or to start a professional career elsewhere (*Interview with Academic Staff, Reykjavík University*). From this perspective, the deliberate backing given to study abroad creates a pool of talent, which, if it cannot immediately be sustained within the country, nevertheless may be mobilized when circumstances are favourable.

That a high proportion of Iceland’s Academic Estate has personal experience of foreign study, and of the scholarly advantages of networking, which comes from that experience, merely reinforces the embedded nature of the international dimension (*Interview with Rector and Staff, University of Education; interview with Rector and Academic Staff, Bifröst School of Business*). It emerges in the significant level of international research cooperation between individual academics, a claim substantiated by the fact that between 1999 and 2002, 70% of the papers published by the staff of the University of Iceland were joint publications with colleagues abroad.

A Proportionate Leader

These are very evident strengths that follow from Iceland's long-term and substantial commitment to internationalization, which, by comparison with other systems of higher education in Western Europe and expressed as a percentage of all Icelandic higher education students, surpasses them still. Iceland today may be qualified as being amongst the leaders in terms of the proportion of its students enrolled abroad, in the generosity of the funding provided and the years individuals spend abroad.

Though it is a matter of debate how far the ability of the country to rally so speedily around reform was eased by the readiness of its academic Diaspora to return from foreign parts, arguably at the very least, the Diaspora's contribution was not negligible.

Research Capacity

International ties are a key aspect in training doctoral students and, on this account are central to sustaining an enhanced research capacity, which is already in process of development (see Section 4.6). Yet relatively little is known of the social profile and career paths of those students who obtain their qualifications abroad. Information is certainly to hand in respect of the grants and loans they take out. But are the talented and adventurous examples of "brain gain" or "brain drain"? Hearsay and tantalizing exchanges with our interlocutors suggest that many do return. But if monitoring the Nation's investment in cross-border higher education as a means to overhaul its own universities - quite apart from its research and innovation system - (see Section 4.6) is to be based on firm evidence, information on this category of student is indispensable. Is Iceland's long commitment to internationalization bringing about the benefits authorities hope for? Does the "wandering scholar" wander back to the national labour market or does she find fortune on the international labour market?

5. Pointers for Future Policy Development

5.1 Planning and Regulating the System

Section 4 analysed the strengths and challenges present in Iceland’s tertiary education system. It dwelt on the changes and initiatives that took place within eight dimensions of national policy, their intent, the initiatives taken by national authorities and the response they met from the individual universities, and from the prime constituencies, stakeholders and interests. To use a military metaphor, we scrutinized the plan of campaign. We traced the unfolding of system and institutional mobilization and noted the initial advances. In any campaign, however, there comes a moment when advance requires consolidation. This does not rule out further advance. Far from it. But further advance and deeper penetration into the territory of reform, which is not always benign, can often be hazardous if no account is taken of the implications that arise from what has been achieved so far.

Stocktaking and “Midcourse Corrections”

Whilst a general **stock-taking** in circumstances such as those in which Iceland currently finds itself is a **good general principle**, it is particularly appropriate in the areas of governance and regulation. Whether at central or at institutional level, the range and sweep of reform are impressive. **It is all the more appropriate then for an interim assessment to take place** since it opens the opportunity for a species of “mid course correction” and further adjustment, where relevant, to those aspects that may display a certain “drift” from the original objectives of the strategy of reform. Such a debate around the elements to be considered in this “mid-point course correction” might draw upon such obvious key actors as the Ministries, the Rectors of all establishments of higher education with input from those representing the major stakeholders.

Three Suggestions

In the area of Governance and Regulation, three elements in particular call for further attention. The first involves the overall system of resource allocation (see Sections 3.2 and 4.2). **Especially important is the way the three money streams** (see Section 4.6) – in particular how those dealing with research funding, funding of a strategic nature and the funding of programmes – **may be coordinated to give optimal outcomes in the area of quality, efficiency and system responsiveness.**

The second element should focus on the system of contracts – more specifically on ways to ensure closer links between the terms of the contract and university generated research initiatives. Attention to this aspect should install **a higher degree of transparency between what is expected by the contract and what results in terms of university strategy and outcome** (see also Section 4.6).

The third element lies in the management structure currently in place, especially the relationship between the Board and the daily executive administration. **External representation at Board level and the interplay between them is worth considering.** It has a special bearing on the way the profiles of individual institutions and strategy shape both the establishment's management structure and the direction it will assume in the future.

Validation and Evaluation

When attention turns to the national level, the one issue that stands out is **finding more effective procedures for the validation, approval and evaluation of educational programmes.** To state this is not necessarily to suggest a particular model. Iceland's circumstances are specific and problems of scale will in all likelihood require government and administration to devise an appropriate arrangement. Nevertheless, fully to activate programme evaluation poses a number of delicate questions. Should this mandate be included within the purview of the Ministry of Education, Science and Culture? Should it be part of a quasi-autonomous agency? What role will be played by the individual university in these procedures? Since universities possess much of the expertise needed, it is a ticklish matter since it raises the possibility of a conflict of interests between those advising on assessment and who later may also be involved as the assessed.

Weighing up Competition

Viewed from the perspective of the long-term, the weight that the Parliamentary majority has placed upon competition as the prime mobilizing instrument in higher education has certainly served to inject a new dynamic

into the area of governance and regulation. Careful attention has been paid to the workings of competition both internal to the individual higher education establishment and external to it. Internal competition will be central in consolidating the type of contractual relationship between individual university and those responsible for distributing public funds in the furtherance of efficiency inside the institution. Arguably, it will be especially important to develop that type of contractual relationship which, whilst it avoids rigidity, at the same time opens the path to on-going planning and budgeting on the one hand and on the other, setting of institutional performance targets.

In the area of competition at system level – that is, competition external to the individual establishment – **defining a set of ground rules on which competition rests is also an important point on the agenda for “mid course correction”**. As currently framed, the risk is very real that competitive pressures acting in the short term may be reconciled only with difficulty to the long-term interests of continuity in research. The risk of sacrificing the long term for the short is all the greater for the fact not only that all of Iceland’s universities have the ambition to undertake research but that the public funding available for research may not be able to display the generosity to back this activity that it did in the recent past.

5.2 Resourcing the System

It can be no part of a review to propose how a country shall deal with an issue as complex and sensitive as resourcing. It may, however, point to areas that deserve active consideration. Of these, three in particular have attracted notice. They relate to:

- A. Distortions in the funding system;
- B. Aspects in the functioning of the Student Loan Scheme;
- C. Some observations on Resourcing Contracts.

A. Distortions in Funding

Distance Learning is essential in providing access to higher education for Iceland’s rural communities (see Section 4.4). It is, however, costly. For this reason, **government might consider whether, compared to more classic methods of delivery, it is appropriately supported**. Life-long learning centres are an important point of physical linkage between higher education and local communities. They serve as study centres. They provide teleconferencing facilities. The resources thus committed are considerable,

though unrecognized by the funding system. Nor is the revenue Universities derive from joint enrolments at these centres shared with them.

Post-graduate training is more costly than undergraduate studies, especially when a research component is included. At present, this difference is not recognized. Yet, as Iceland's post-graduate stream expands, the issue of cross-subsidization from undergraduate to post graduate programmes could generate tensions. It could also send contrary signals to universities.

This issue may be addressed in two ways: by differentiating between post graduate and undergraduate funding levels; or, as another possibility, to tie a university's performance in post graduate training to funding its research system. This issue will become more pressing as Resource Contracts become embedded in higher education's standard procedures.

B. Aspects in the way the Student Loan Scheme functions

Earlier in this report (see Section 4.2) a number of observations were made about the Student Loans Scheme. These were set out in terms of broad principles. Here, however, a number of minor suggestions are put forward that may contribute to improving further the way the Loan Scheme functions at present. They are four:

1. Income-based means testing.
2. Determining who is eligible for loans on a retrospective basis.
3. The entitlement of part-time students.
4. The treatment of those not passing 75% of their courses.

1. Income-based means testing

Currently, the amount an individual student can borrow is calculated on the basis of his or her previous year's income. For those who have been a year or more in employment prior to entering higher education, this is especially onerous. They face an often substantial cut in what they may borrow for their first year of study. Since this provision applies to all those entering from the labour force, its impact would seem to be broad-ranging and may in effect run counter to the legislator's intent. **It penalizes self-reliance and for that reason the Icelandic government may wish to review it.**

2. Retrospective Eligibility

Only at the end of each semester are students able to draw on their loans. Until then, many find themselves obliged to take out commercial loans at commercial rates until the first semester is completed. Though the Student Loan Scheme removes the more obvious aspects of “debt aversion” (see Section 4.7) this aspect of its operation would appear to create a short-term “liquidity constraint”. As it operates at present, the Loan Scheme shifts the transaction cost onto the student rather than having it born by the Scheme. **This too merits further attention.**

3. Entitlement of Part-time students

Only if their study load is 75% of a full-time course are part-time students eligible for loans. Effectively, this stipulation de-bars most part time students from the Loan Scheme and **on that account alone may justify further consideration.**

4. Rules of performance and attainment

Students who do not pass 75% of their courses are disqualified from applying for a loan in that semester. Whilst clear, the consequences the individual faces are no less dramatic: to leave university altogether in an effort to find ways to repay the debt already incurred at commercial rates. This too would appear to fly in the face of broadening access to higher education, which characterizes much of official thinking in current policy. **In the event of poor performance, should the level demanded be cumulative on a sliding scale as opposed to revolving around one single level? Should a second chance be considered?**

C. Resourcing contracts

Determining the level of funding which the tuition contract is to cover involves the Ministry of Education in a number of trade-offs, not least the allocation of places between universities. Important though place allocation is, the criteria used by the Ministry are not understood by the universities, still less whether they are used in a strategic capacity. **Yet, to understand how the Ministry chooses is essential and most certainly so when there are limits on public spending.**

Related to this is the fact that some universities have enrolled more students than funding provided. For public universities, this has the effect of lowering the average per capita funding they receive. And whilst this decision falls in the purlieu of the Trustees of the university, it also raises

the issue of whether in the longer term driving down the effective unit of funding may not have adverse consequences in the area of quality (see Section 5.3).

5.3 Quality Assurance

Several trends in Iceland's higher education policy converge around the organization of quality assurance procedures. Whilst Higher Education has grown, the limits of public spending have been reached. Private higher education appears to enjoy better standing. Course provision is more diverse. Distance learning is growing and the international dimension takes on a new vigour. In the recent past, resources were directed towards mobilizing higher education. **It is not unreasonable therefore to anticipate a new priority in the setting up of a comprehensive system of quality assurance to give coherence and purchase over the newly emergent system.**

A clear strategy for quality assurance serves two prime ends – improvement and accountability. The latter informs various stakeholders and constituencies amongst which students, employers and the purveyors of funds. The former is essential and, to be effective, should be both credible and valued by the Three Estates – academic, administrative and student. **It should also avoid degenerating into a culture of compliance and imposition.** Improvement and accountability exist in a state of tension and require therefore a balance to be struck that is both dynamic and sensitive.

Concentrating on the Internal Dimension

There are two reasons for **concentrating on the internal aspect** of quality assurance procedures and in assigning **a complementary role to its external dimension.**

First, without trust and commitment within the institution, neither improvement nor transformation are achievable. If the values and expectations of academe, students and administration, are left aside, neither improvements in teaching and even less in learning may be sustained. Quality should engage Academia's commitment and motivation to bring improvement about. Second, a strategy that underlines the external dimension of quality assurance procedures may turn out to be both costly and not overly effective in sustaining improvement. External quality monitoring from time to time across the entire higher education system is likely to see costs outweighing benefits. Such resources are better employed to improve internal quality procedures. Significantly, the New Act on Higher Education Institutions which took effect from July 2006 lays down

that establishing mechanisms of internal quality assurance is a prerequisite for institutional certification.

Several considerations bear upon internal accountability. **Quality procedures are most effective when non-invasive.** Amongst the most effective arrangement for improvement and enhanced learning is an informal form of internal quality monitoring that revolves around **professional dialogue and exchange of ideas.** Peer observation of teaching, however, should be kept separate from those other institutional procedures involved in probationary assessment, promotion or under-performance. Many of these procedures may benefit from setting up Centres for Teaching Excellence within the institution, to draw on existing expertise in evaluating teaching, to lay down pedagogic styles and to develop teaching materials.

Concentrating on internal procedures does not exclude the presence of external instruments. Indeed, lasting improvement as opposed to temporary revisions appear to require that the results of monitoring involve a degree of coordination between internal and external procedures (Harvey and Newton, 2004). In turn, **the external aspect of quality assurance may build upon three main elements.** These are:

- Internal quality assurance procedures, **externally validated.**
- **An advisory capacity** to help institutions sustain their drive to improvement.
- **Selective** external evaluation either of institutions or disciplinary fields, within or across individual establishments.

Periodic external assessment has an important part in legitimising procedures of internal quality assurance. The Norwegian experience, drawing on the example of NOKUT – Norway’s agency for external quality assurance (Stensaker and Harvey, 2006) – may prove useful here. From time to time, NOKUT monitors the obligatory internal quality assurance systems of individual institutions. A good example of the potential use of selective external evaluations is **the current need to undertake a comprehensive review of distance learning in tertiary education.**

Coherence

If coherence is to advance at system level, external quality assurance must demonstrate **clear aims and expectations.** It should command consensus amongst different stakeholders. It must also **possess legitimacy.** Without legitimacy in the eyes of those called upon to carry improvement forward, little improvement is carried forward. The principle of legitimacy also extends to the composition of external review teams and most

especially to the level of involvement of academia, the degree of expertise, and the formal preparation of those reviewing. These are important dimensions since they contribute as well to the effectiveness of evaluation committees.

To include and visibly so, other stakeholders – students, graduates, employers and government – is essential. In Denmark, for example, the representatives of employers are present on expert groups. Surveys are conducted on employers' views, as well as the other three categories just mentioned (Thune, 1998). The presence of such “external personalities” and academics from other countries in quality review delegations is on the way to becoming standard practice elsewhere.

Following Up

In the absence of evident improvement, resources invested in the exercise of quality assurance become a loss. For cost to become benefit, however, demands **appropriate follow-up procedures once the evaluation is complete**. This condition requires establishing formal follow-up that goes beyond simply asking the institution to show what it has done. If quality assurance at programme level is to be sustained, the institution itself must be both committed and ready to take the initiative in the follow-up procedure (Thune, 1998).

The external quality assurance agency should have a reactive role. It steps in when the institution does not act on the recommendations made by the evaluation group. **However, evaluation ought to follow a regular cycle for this allows it to view change across time**. If the monitoring of quality is seen as an event rather than a process, the probability is that its impact over the long term may be minimal.

5.4 Equity

In common with many systems of higher education in Western Europe, the basic ethic that drives policy in Iceland has moved from equality of opportunity to equity, from equal chances for equal talent to enter higher education towards equal chances to acquire “employability”, appropriate and relevant skills to stand them in good stead on the labour market (see Section 4.4). In obedience to this shift in the referential framework of policy, the criteria used to judge and to weigh institutional performance have been reset and have moved from input to output. This is very clear both in Iceland's national objectives and in public attention to the “productivity” of higher education – whether expressed in terms of the numbers of skilled graduates or highly qualified and trained research students.

Briefly put, what determines whether higher education has fulfilled its mission and responsibilities to society no longer rest on *who* embarks on study. Rather, it rests on *what* intellectual baggage and competencies an individual has assimilated by the time he or she leaves higher education and how he or she fares subsequently in the employment stakes. Indeed, much of the thrust of reform elsewhere – whether presented in the area of pedagogy in terms of guidance counselling, the taking into account of student opinion in the valuation of programmes or at systemic level in the shape of institutional evaluation of the quality of the services an institution provides (see Section 5.3) - all have one central purpose. **That purpose is to furnish information that allows the individual to optimise his or her choice of study and to choose *en toute connaissance de cause* those skills he will seek to acquire in the light of what is understood that the market is signalling** (see Section 4.7).

Lacunae

We were struck by the relative paucity of systematic information that follows students once they have left the higher education system and entered the labour market. This is not to deny the very considerable effort that individual establishments of higher education make in following the careers of their graduates and alumni. Indeed, small numbers make it relatively easy for institutional and individual memory to keep track of them. Equally encouraging in this regard has been the attention certain institutions pay to the courses individuals followed, the perceived relevance of such courses in terms of career later pursued and the contribution to personal advancement in it.

If higher education in Iceland is to show that the intentions of policy have been translated into institutional practice and that public expectations have been met without peradventure, **further systematic attention ought to be paid to dimensions other than those usually and classically associated with scholarly output**. That a broader application of the principle of monitoring and follow up is justifiable, none would gainsay (see, for instance, Section 5.3).

Yet justification for closer and regular attention to institutional performance made in the name of quality may also be made from the standpoint of equity, unless that is, policy is to uphold a formal division between the two and of this we have had no indication at all in the course of a very considerable number of interviews.

Monitoring student progress inside the confines of the higher education system is not an issue. It is already monitored through the administration of Student Loans (see Section 5.2). However, the situation is very different

when attention turns to student inflow – whether from school or from employment – just as it is at the point immediately after graduation when those qualified enter the labour market. In effect, neither the Icelandic government nor the establishments of higher education have carried out systematic analyses for labour market outcomes for the graduates of that system (see for instance Educational Testing Institute of Iceland, 2005, p. 27).¹⁴

Nor at a more basic level is much known about the subsequent lot of students who apply to one establishment and are not accepted. Do they find a place elsewhere?

Benefits of Size

It could be argued that, given the buoyant state of the economy and the current shortage of labour in the service sector, this function is an unwarranted luxury and that the type of information which in larger systems requires formal channels to be created to diffuse it, in Iceland already relies on other sources that derive word of mouth or personal networks. This may indeed be one of the advantages of smallness. Another argument that merits consideration is whether, in view of the undoubted additional burden such an “intelligence system” would place on both Academic and Administrative Estates, the game is worth the candle. **Another possibility would be to combine such basic information as part of Quality monitoring procedures.**

The new instruments to raise institutional efficiency that have been introduced in the shape of competition for second and third stream finance (see Section 4.6) and, for the private sector, the stimulus of being able to charge tuition fees, themselves require evaluation. This said, we would make one *caveat*: monitoring outcomes in terms of equity goals cannot be justified if one of its consequences is to reinforce national oversight – an issue to which both Ministry and Universities are rightly sensitive.

Need to Know

Yet, **individual institutions need to know how they fare on systematic criteria**, which correspond closely to the expectations that both the public and the Three Estates entertain about the social priorities of the country’s system of higher education.

¹⁴ “However, neither the government nor higher education institutions carry out a systematic assessment of the labour market demand or supply of tertiary graduates and their earnings.”

Finally, it is worth noting that, whilst the economy remains buoyant, none can foresee the future. In less fortunate times, it is certainly in the interests of university leadership, stakeholders and constituents to be able to count the achievements of their institution in systematic comparison with other establishments, if only to reach a consensus on what is to be done.

5.5 Regional Role

Strengthening the regional role in higher education is one of the important sub-dimensions in Iceland's policy of reform. The administrative responsibility for universities with a regional remit, however, is split between the **Ministry of Agriculture** and the **Ministry of Education, Science and Culture**. **Such a dual oversight poses the issue how far a greater degree of coherence and coordination may develop between the two Ministries that serve the rural community.**

Though working from different disciplinary bases, both the Agricultural University and the University of Akureyri appear to be converging around areas of common interest – ecological tourism being a good example. Both are engaged in extending their constituencies. Both are committed to serving the interests of the rural community: the former by the classic formula of research, advice and service; the latter by a slightly different route through developing key skills to sustain the region's economic viability, by consolidating its social underpinning and by strengthening the region's ability to represent its interests both at home and abroad (see Section 4.5). These are complementary activities.

Complementarity

Such complementarity appears to be a happy result of differences in administrative oversight, institutional mission and history, of differences in subject areas covered, in research emphasis and finally in different systems of resource allocation (see Section 5.2). So far, regional development has seen each establishment engaged in niche-building that is not in direct competition with one another. If one takes the four domains where inter-institutional competition is said to be at its most ferocious – law, business studies, computing and management (*Meeting with the Education Committee of the Althingi*) – competition in these programmes appears to be less between establishments serving the regional interests than between the latter and those with a national remit.

Whilst competition serves as a major agent in mobilizing for change and excellence, there is good reason for considering as a separate issue those

institutions associated with regional development. There is certainly some degree of protection in the way agricultural education is funded. But, the boundaries of agriculture *stricto sensu*, are changing. Other fields, no less promising for rural development, are emerging – ecological tourism, landscaping and aquaculture, for instance. Whether as vehicles for training or for research, they bid fair to permeate and cross hitherto established administrative boundaries.

Reviewing Incentive Schemes

The first aspect that deserves further consideration is the issue of incentives to urge progress onward. Incentives, based on academic output, have been a powerful lever in amplifying competition, in expanding graduate study and advancing the university-based research system (see Section 4.6). A slightly different incentive system is present in the Agricultural University, largely as a legacy from its earlier status as a government research institute. In effect, there are de facto, *two* incentive systems, both of which reflect the bi-cephalous oversight of the two Ministries.

It is then accepted – though perhaps not recognized – that it is appropriate for institutions with a specific and dedicated mission to have that mission driven forward by incentives exactly shaped to their purpose – at least in the Agricultural sector. This situation opens the way to a number of delicate issues.

Enterprise and Scholarship

So far, excellence and entrepreneurial culture – the twin objectives in the Nation's higher education policy – are operationalised around strictly academic criteria. Perhaps for this very reason they are less accommodating to other forms of initiative, adaptation and servicing. Nor, as it stands at present, is the non-agricultural incentive scheme sensitive to community service and development, a situation that some feel to work to their great disadvantage (*Interview with Academic Staff, University of Education*).

There are many arguments in favour of a modulated incentives scheme, sensitive to activities and initiatives beyond those defined simply in terms of academic output and scholarship. This is not to deny the paramount importance of these two qualities. For whilst it is necessary for universities with a regional remit to be assessed according to the usual norms of scholarly excellence, it is very certainly not sufficient. Nor is excellence in fulfilling a dedicated mission necessarily the same thing as excellence in scholarship, though scholarship can most certainly result from excellence in

a mission met. Moreover, in a system which is in process of recognizing the importance of stakeholders, there is one thing that ought not lightly to be passed over: excellence is not always perceived the same way by stakeholders. “Farmers”, we were told, “do not read peer-reviewed journals” (*Interview with Academic Staff, Agricultural University of Iceland*).

Converging Trends: Complementarity between Sectors

The issue of developing modulated incentives within the overall policy of regional development in Iceland calls for the closest attention. It does so because success in raising the levels of sustainability in rural areas may well depend on it. This, as well as other issues dealing with common criteria of quality and performance, will very certainly demand sustained negotiations between the two Ministries. If one takes account of the fact that already some institutions for which each Ministry has oversight, are already building towards complementarity across administrative boundaries, the matter becomes more pressing still. If grass-roots initiatives sometimes run ahead of policy, it is surely an opportunity for those in charge of policy to build further upon the advance others have already achieved.

5.6 Research and Innovation

Improving the role of Research and Innovation carries much strategic weight in Iceland’s national objectives for higher education. There are a number of issues, we would wish to comment on in respect of improvements for the future. Some of them lie in the immediate future, others in a less immediate time frame. In identifying these issues, the order in which they are presented does not constitute an order of priority nor an indication of their (relative) urgency or its absence. We simply note the presence of aspects that, if dealt with, would in our view bring about significant advance in the development of Research and Innovation in Iceland’s higher education.

Performance driving Research

One of the main points of leverage in the research domain in general relates to research contracts passed between the Ministry of Education, Culture and Science and the universities. So far, one research contract has been signed with the University of Iceland, which alone accounts for 79% of all research undertaken by the higher education system (*Interview with Rector and Administrative Staff, University of Iceland*). **The research contract should be strengthened, particularly in those aspects that**

explicitly set out and identify research priorities thereby giving greater weight to its role as a performance-related instrument. In addition, **encouragement should also be given to alternative ways of funding research.** With an **explicit performance-oriented dimension incorporated into this type of research contract, consideration could be paid to examining how far it is appropriate for other research establishments** (see Section 4.5).

Project Management

Third stream research funding from non-governmental and private sources, becomes increasingly important as universities diversify their revenue base (see Section 4.6). **The encouragement of an entrepreneurial culture in universities would seem to be the logical follow on** from this both in respect of institutions and individuals. Negotiating third stream funding demands very particular skills. Amongst them are project management and risk assessment. Third stream funding tends to demand a higher degree of management and risk assessment than, for instance, funding from either first or second stream sources. Yet, whatever the reason, not all first rate scholars and researchers are good project managers. **Whether provision be made and initiatives introduced to improve the managerial skills of researchers and project leaders is an issue that cannot be postponed for long.**

Integrating Higher Education and Innovation Systems

Amongst the enduring challenges that Iceland currently faces and will do so into the foreseeable future is the integration of universities both new and old into the country's innovation system. Aspects of this Leitmotif have been evoked earlier and in other dimensions, principally that of coherence within the higher education system in respect of quality procedures (see Section 5.3) and regional development (see Section 5.5).

Current plans for setting up Centres of Excellence in certain fields together with a Technology and Science Park in Reykjavík are clear steps towards integrating the two systems of higher education and innovation. These Centres will concentrate on those fields of Science and Technology in which Iceland has clear strength and advantage. Nevertheless, their establishment in no way obviates **the need to consolidate, and make more efficient use of, provision already in place, particularly those institutions that have a “bridging” function and are involved in technology transfer. To bring universities into closer ties with existing elements of the innovation system,** with Reykjavík University is a case in point, serves to underline the on-going nature of this task.

...and in the Region

Closer links between university and region may also be seen in this particular context. Analysis of some of the initiatives to foster regional entrepreneurship and to encourage graduates to found their own firms, were noted earlier (see Sections 4.5 and 5.5). The regional dimension – that is, **linking regional universities to the regional innovation system** – is merely reinforced by the strategic importance of its national counterpart.

Disseminating Research

In the more long term and as was emphasized earlier (see Section 4.6) much benefit is to be had by **attaching operational importance to disseminating research-based knowledge** beyond the Groves of Academe **and to considering this activity as part of the criteria figuring in the individual incentive and promotion procedures**. In suggesting that special points are attached to knowledge dissemination outside the university, we are well aware that the possibilities to do this are not equal between disciplines. Nor can a proposal made within the context of Science and Technology development be considered in isolation from the remaining fields in higher education if only for the fact they involve the majority of undergraduate students.

Whilst the nature of incentives and their adjustment is an important dimension that cuts across many domains (see Sections 5.3, 5.4 and 5.5) it is for that reason an issue especially sensitive. **At the very least, further attention should be paid to the possibility of closer linkage between the reward system and the individual university's strategies for research and dissemination**. When criteria that reward the outstanding effort of individuals also reflect the institution's overall strategy of research and dissemination, individual effort bolsters collective purpose. Viewed from this angle, **closer coordination between institutional objectives and individual points schemes stands**, potentially, as a powerful enhancement to institutional efficiency and visibility.

Complementarity resurrected

Finally, any improvement to systems of research and innovation depends on having sufficient numbers of the appropriately qualified to hand when needed and most especially so in Iceland's growing high technology sectors. In effect, this setting poses in a slightly different form the issue that elsewhere in this Note, has been termed "complementarity" - between institutions (see Section 5.5) and between systems (see Section 4.8). Here, however, "complementarity" may be applied to post-graduate and doctoral

programmes in the form of **developing cross-institutional programmes, national in scope and drawing on the foremost resources across Iceland's universities**. Such “national” complementarity could have the added attractiveness of linking in with that other dimension of complementarity – namely, the international – to integrate such nationally coordinated programmes to other specialist components abroad. The new Act on Higher Education Institutions, effective as of July 2006, provides for this possibility (Althingi, 2006).

5.7 Links to the Labour Market

Iceland has made the transition from having a university to developing a university system. As yet, however, it appears not to have completed that other task such progress usually requires. It has still to construct a fully developed policy infrastructure for its higher education system. Individual institutions have institutional student identifiers and data systems on students. However, the higher education system as such is without any common student identifier, which applies nationally. Nor does it have a common and integrated national data bank on students.

In principle, the establishment of a student level, system wide, data archive would give public authorities additional insight into the functioning of the higher education system both at national level and at different levels of disaggregation. For example, such a service would permit the linkage of student records to information relating to employment and wages either through unemployment insurance files or tax records. Such linkages could provide the basis of labour market outcomes on the one hand to feed into student information on choice of discipline or combination of disciplines and on the other, to clarify signals being put out by the market. Such outcomes analysis could be undertaken on an intermittent basis by either Iceland's Central Bank, by Statistics Iceland or by another official agency.

Two Key Domains

Two domains in particular could benefit from systematic analyses of labour market outcomes. These involve the key functions of programme validation and accreditation (see Section 5.3). By providing national background information on such system level concerns as student flows into and out of higher education, such data would furnish a comparable frame for institutional performance against national benchmarks, contribute to enriching the procedures and sensitivity of quality assurance, regardless of whether the latter is internal or external in focus and execution.

Attending to labour market outcomes is in effect a specialized sub-set of that more general task of “system monitoring”. As such, this Leitmotif has already been raised at different points in this Note: in connection with putting in place Quality Assurance procedures, with the task of demonstrating how far individual institutions have responded to public expectations *vis à vis* equity, regional development and cross institutional collaboration in research training programmes (see Sections 4.2 and 4.6).

University and Information

When taken as a particular example of this broader function, the desirability of attending to labour market outcomes merely underlines **the fundamental role – both strategic and political - that reliable information and communication play in ensuring that higher education demonstrates responsiveness and adaptability**. And whilst those who are at all levels responsible for demonstrating the state of higher education’s progress have thus to render accounts to stakeholders and constituents, they too stand as much in need of such information if they are on their own behalf to justify claims for further support. The need for such data becomes more evident when the base of that support itself begins to diversify – and very especially when the process involves financial diversification or the diversification of revenue sources.

Take for instance, one area of higher education which has experienced marked growth – PhD training. From 1999 to 2005, PhD programmes rose from 7 to 22. The number of students enrolled in these programmes quadrupled from 35 to 144. Viewed against the backdrop of the modest arrangements for validating and certifying programmes and the nascent state of quality assurance procedures, such growth does pose questions about the linkage of these qualifications to Iceland’s labour market requirements on the one hand, and the return on investment those holding them will obtain.

Careers and Placement

Finally, career advice and placement appear not to figure in the forefront of the student services provided in establishments of higher education. A number of factors may account for this: the small size of the labour market and one particular feature – that it is more closely knit than in any other OECD member state. In these circumstances, it may well be that informal social networks based on personal relationships and professional communities still function as they did elsewhere and in earlier times when higher education was the domain of a small elite. The possibility is very real

therefore that despite expansion and growth, these networks still effectively function to pass on information about the opportunities and information the labour market presents.¹⁵ Even so, **Iceland's universities may wish to weigh up the efficacy of their informal arrangements and to consider whether to organize careers advisory and placement services formally.**

5.8 Internationalisation

Internationalization, an issue that generates much enthusiasm and excitement particularly in those higher education systems that form part of coalescent trading blocs – the European Union, the North American Free Trade Area and in Latin America's MERCOSUR which seeks to bring closer together the higher education systems of the Southern Cone – is deeply embedded as a routine and long-accepted part of Iceland's academic and student cultures. Earlier in this Note, a number of observations were made about this. In Iceland, the international dimension has long been construed as a natural means by which equality of opportunity to study and equity to choose the skills higher education may offer were extended beyond the capacity of the home country to provide them within its own territory. Issues that are currently subject to heated debate in Europe – portability of grants, recognition of diplomas, transferability of credit units – are part of a well-exercised and stable routine in Iceland (see Sections 4.4 and 4.2).

Complementarity as a dynamic phenomenon

Many of the arguments currently advanced as cutting edge thinking in mainland Europe in relation to inter system collaboration, for instance, stand in Iceland as practices well proven, constantly tested and – largely taken for granted. Take for example the issue of complementarity between systems of higher education. Highly specialized programmes in one system may train students whose home system is either less specialized in a specific domain or lacks it entirely. Complementarity has long been recognized at the research level in Europe. It is rapidly penetrating backwards, extending choice at the level of the first degree. It stands as the principle underpinning both the European Higher Education Area and the European Research Area.

Though perhaps not recognized in these terms, Iceland has an excellent claim to be amongst the earliest of Europe's systems of higher education to build on the principle of inter system complementarity as an integral part of its higher education policy. There are, nevertheless, operational aspects to both internationalization as a general domain and complementarity as a sub

¹⁵ See Calvó-Armengol and Ioannides (2005).

set of it, which bear further scrutiny and particularly in view of the importance the international labour market has for the development of the internal labour market (see Section 5.7).

Cross-border Student Flows

So far, Iceland's higher education system at national level appears to have a limited capacity to identify individuals, to assess their characteristics and to trace the career path of those who earned their qualifications abroad. **In this respect, keeping track of careers of those who have benefited from the operation of complementarity extends the argument for grounded data, already made in respect of the national labour market (see Section 5.7) to its international counterpart.** If the country is to ascertain the degree to which such provision assists national development, such strategically central information ought to be based on hard data rather than on hearsay and on anecdotes.

Agreed, on the basis of what we were told in the course of our interviewing, we have the impression that most students who study abroad, return home. This needs confirmation if only to know whether Iceland draws a benefit from the principle of complementarity or whether, as an alternative possibility, complementarity does not develop from voice to exit, that the "brain gain" which appears to operate today, is not in process of becoming a channel for "brain drain". At the very least, **information about whether and how such students are assimilated into national or international labour markets is desirable in view of the fact that such students are in receipt of public funds.**

6. Conclusion

The findings, observations and comments in this Note contribute to two very different settings. From one perspective, it may be interpreted as focusing uniquely on Iceland. There is, however, a second perspective, which is explicit in our remit. It is broader and has to do with what Iceland can tell us about a more general *problématique* namely, the dynamic and evolutionary path that moves higher education on towards tertiary education. Here Iceland provides a particularly valuable case study not just because in its current condition it has yet to make that latter transition – it is rather at an earlier stage, which bears greater kinship with the transition from elite to mass higher education – but because one of its advantages of scale is that it reveals with special clarity some of the generic problems associated with this transition. In the wider-ranging exploration of how systems adapt to the changes society faces and the expectations that it has of tertiary education as a result, few Visitation Teams will be able to boast of having been to every single institution of higher education a country possesses. Scale has worked most assuredly to our advantage and hopefully, to our understanding as well.

Whilst a case can most certainly be made for dividing this conclusion into two parts, the first dealing with the pervasive themes that have emerged from the exchanges we have had with our hosts and a second of a more theoretical nature dealing with the implications that follow for the wider issue of tertiary education, it is in all likelihood more profitable – and certainly more challenging - to try and combine both.

Generic Challenges

Any system of higher education, irrespective of the particular point it finds itself along the path from elite to mass or on to tertiary education, is subject to a number of tensions and conflicts that are at first sight, irreconcilable. Coherence *vs.* diversity, coordination *vs.* “steering”, “contractualisation” *vs.* intervention stand as some of the generic tensions that change in objective and in public priorities bring in their wake to the system level of higher education. Others emerge at the institutional level: self-government *vs.* accountability, strategic planning *vs.* pragmatic

adaptability, performance set by public purpose vs. performance driven by disciplinary paradigm, collegiality as a management principle vs. institutional Caesarism (Fuller, forthcoming) or, if one prefers a more routine terminology, management of the Academic Estate by itself vs. management driven by executive and operational line models and by the Administrative Estate.

Information Flow and Tacit Knowledge

Such tensions are very present in Iceland's higher education system. They have been extensively documented and commented upon in this Note. Looking behind those issues, which recur across the eight dimensions this Note examined, reveals an underlying and pervasive theme. The underlying theme relates to different aspects contained in the processes of informing, reporting and follow up. It is a Leitmotif that embraces student flows into, through and out of, the higher education system and within individual establishments. It re-surfaces when the intensity and regularity of the evaluation cycle are examined. The flow of regular information becomes especially critical when the issue of internal quality assurance is raised. Without a regular flow of verified and credible information it becomes difficult indeed for stakeholders to judge whether higher education is meeting expectations, *vis à vis* the changing labour market or advancing the Nation's research and research-training capacity through higher education.

Many of the challenges we identify may be resumed under this head. That we identify such points of difficulty, however, may well be precisely because those systems with which we are familiar, either as students of policy or as those active in its advance, have been at considerable pains over the past ten to fifteen years to develop precisely these aspects. Could it be that our perceptions of Iceland's dynamism are filtered through our own tunnel vision, which is focused literally on medium to large-scale systems?

We are not insensitive to the problems that come from size, scale – or their lack. Nor do we discount the often limited opportunities that higher education in Iceland has to take advantage of economies of scale. In this connexion and in parenthesis, it is worth noting that the complementarity Iceland has long drawn upon in cross-border training shows that such economy of scale does operate - outside the national territory. There is, however, another perspective to the problem of information and in-system reporting. It sheds a very different light both on the issue of scale in general and small systems in particular. For this reason, it would be wrong to cast this perspective aside, unmentioned or unrecognized. Finally, it is worth pursuing because it casts a slightly different and not altogether uninteresting light on recent reform elsewhere in Europe.

Informal Social Networks: Strength, Challenge or both?

One feature struck us time and again in our exchanges. It was the importance of what is sometimes alluded to as “informal social networks” both as channels of communication and as ways of reaching informal understanding, entente and accommodation between individuals and, by extension, though unofficially, between groups of individuals and doubtless institutions. One may speculate, of course, how far this “archaic” networking has been preserved by smallness of size just as one may also speculate about whether, for instance, the “non interventionary” stance that characterizes the basic relationship between the Ministry of Education, Science and Culture and higher education generally, may well be an expression of a social and legal construct far earlier than the contemporary economic construction of *laissez faire*, convenient though it is to use this latter term to describe it today.

What appears as a source of difficulty, when viewed by outside observers, becomes one of the prior conditions that ensures the functioning of Iceland’s higher education, when viewed by insiders participating and acting in it. Indeed, the point was often put to us that the absence of formal, authoritative knowledge about – say – student flows – does not mean that knowledge lacks. It is, on the contrary, present in an informal, word to mouth and tacit form, circulated amongst informal social networks. In its way, it seems no less efficient though obviously it is difficult to prove that particular claim. In truth, what one man deems a challenge, another brandishes as his strength!

The point is very far from being peripheral. It casts a very different light on the expansion of higher education in Iceland. What might be learnt from Iceland’s experience is that below a certain scale of operation, higher education can indeed be run through the workings of informal social networks. In effect, it was precisely the informal role of such small groups, which largely shaped the running of higher education as a whole when it functioned in its elite mode elsewhere.

Drive to Rationalization and Formalization as part of the Thrust to Tertiary Education

The evidence we have been presented shows very clearly that, faced with rapid expansion, though informal networks are necessary and may even sustain a higher education system in a position of stability, they are not sufficient on their own either to accelerate that growth nor necessarily to impel it in a more adventurous direction. One of the consequences of mass higher education and *a fortiori* the onward thrust towards tertiary education

is that both demand the progressive formalization of procedures and the extension of formalization to activities hitherto untouched. This is the drive towards rationalization, the further identification of new administrative responsibilities, the general subdivision of academic and administrative labour, their further reconfiguration and re-assignment. Sometimes, this same process is seen as the fragmentation of those “organic responsibilities” once vested in and exercised by, the academic Guild. Knowledge that was once the tacit possession of academia is now drawn out from it, projected outside it and placed in the public domain, a process variously marked by the rise of accountability, performance indicators, quality assurance exercises, research assessment and in more general terms by the rise of different constructs of advantage and obligation that accompany the transfer of such explicit knowledge. This broad ranging drive to “rationalize” is presented in a variable and varying shorthand, sometimes as the rise of the Service University, the advent of Stakeholder Society or the emergence of the Evaluative State.

Main Dimensions and their Exploration

Just as Information and Communication provided a Leitmotif, so other themes emerged as a species of refrain across the eight Dimensions this Note analysed. We believe they deserve further attention. They are:

1. Articulation between functions carried out at national level and their institutional embeddedness – the prime of which are quality assurance and evaluation.
2. Coordination between national priorities and institutional responsiveness – above all in research, but also in disciplinary balance at undergraduate level.
3. The establishment of specific links between institutional intention, capability and performance as much in the use of resources as in the linkage between mission, policy and output and very particularly the regional aspect.

This situation reflects two elements both of which are important. The first - and it tends sometimes to be passed over - is that higher education is bottom heavy (Clark, 1983). That is to say, for decisions to become embedded at the institutional and sub institutional level requires further internal negotiation between base units, Departments and Faculties. The bottom heavy nature of Icelandic higher education is recognized - even encouraged - by the legislator and is reflected in the variety of management models that coexist cheek by jowl in different Universities.

Facilitatory Relationship

This bottom heavy characteristic is recognized in the relationship the Ministry of Education, Science and Culture upholds with the higher education system. This is a facilitatory relationship - one that seeks to shape institutional response to national priority by what may be seen as a higher education equivalent of an indirect approach through the principle of competition and competitive tendering rather than by *dirigisme* centrally imposed. Both Government and Ministry have been careful indeed to ensure that institutions have the latitude to decide their profile and activities. This principle was made explicit by recent legislation.

The long-term issue that arises from this situation is in effect closely linked to the dynamic in the relationship between Government and Higher Education. Expanding Higher Education involved making explicit those procedures, responsibilities and activities which in an earlier and institutionally more straight-forward configuration, were assumed, were tacit, and had largely grown up as the result of practice accumulated organically over decades within the internal domain of one single institution.

Implications

The successive Parliamentary Acts of 1997 for Higher Education and 1999 for Agriculture operationalized and rationalized this earlier arrangement. They confirmed the high degree of self-responsibility that had evolved within the Island's single University and extended it as a governing principle to the system as a whole. The issue which tightening up the operational dimension in areas such as quality, evaluation, injecting a more sensitive range of criteria of performance, adjusting incentives as much for individuals as for institutions to take better account of differences in mission, niche and purpose – poses four fold is not whether such suggestions can be accommodated within the current framework that surrounds the institutions of higher education. It is whether such steps might be perceived – erroneously no doubt – as reinforcing the weight of “government presence” in higher education and that relatively soon after the passage of legislation which confirmed institutional latitude.

Oversight and the Head to Tail Ratio

Equally germane – and not just to Iceland, though there size may serve to reveal tensions far earlier than in larger systems that may have a greater capacity to tolerate the further division of academic labour in the shape of a stratum of oversight and verification – is how such extra tasks are to be distributed, where they are to be located and how they are to be paid for.

That such oversight is necessary to prove enhanced efficiency and to ensure an acceptable financial future for individual universities, none can doubt. But it does place at the forefront of the debate an issue that deserves a little more attention. It is an issue akin to what is often known in other spheres as the “Head to Tail Ratio”. Put brutally, how many are needed to demonstrate improvement in teaching, research and institutional output who are themselves involved in neither teaching nor research?

There are reasons for suspecting that this is an especially acute problem in Iceland, though other studies on parallel developments in Scandinavia (Bauer *et al.*, 1999) suggest its presence elsewhere. It is acute not simply because it may call for a further evolution in the relationship between Government and Universities beyond the minimal which it has long upheld. It also begs the question from where it may draw its human resources and from which sector of the national labour market, already under considerable strain for highly qualified labour.

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Appendix 1: The OECD Review Team

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OECD

Appendix 2: National Co-ordinator, National Advisory Committee, and Authors of the Country Background Report

National Co-ordinator for Iceland

Stefán Stefánsson, Head of Higher Education Division, Ministry of Education, Science and Culture.

National Advisory Committee

Björn Thorsteinsson, Agricultural University of Iceland, appointed by the Ministry of Agriculture;

Börkur Hansen, University of Education, appointed by the Standing Committee of the Rectors of Higher Education Institutions;

Elín Soffía Ólafsdóttir, University of Iceland, appointed by the Association of Academics;

Gissur Pétursson, Directorate of Labour, Ministry of Social Affairs;

Gudrún Geirsdóttir, University of Iceland, appointed by the Standing Committee of the Rectors of Higher Education Institutions;

Gústaf Adolf Skúlason, Confederation of Icelandic Employers;

Leifur Eysteinnsson, Ministry of Finance;

Sólveig Gudmundsdóttir, Ministry of Health and Social Security;

Sveinn Thorgrímsson, Ministry of Industry and Commerce.

A range of other stakeholders were consulted during the preparation of the Country Background Report.

Authors of the Country Background Report

The report was prepared by the Educational Testing Institute of Iceland for the Ministry of Education, Science and Culture. The following staff were the authors of the report:

Elvar Örn Arason;

Ingunn Ólafsdóttir; and

Ásta Briem (Chapters 7.1. and 9).

Appendix 3: Programme of the Review Visit

Monday 26 September

- 09:00 - 10:30 Officials from the Ministry: Mr. Guðmundur Árnason, Permanent Secretary; Mr. Gísli Þór Magnússon, Director, Office of Financial Affairs; Ms. Hellen M. Gunnarsdóttir, Adviser, Division of Higher Education and Mr. Stefán Stefánsson, National Coordinator.
- 10:45 - 11:45 Division of Evaluation and Supervision at the Ministry of Education: Ms. Margrét Harðardóttir, Head of Division and Ms. Ásgerður Kjartansdóttir, Adviser.
- 11:45 - 12:45 Representatives from the Ministry of Agriculture: Mr. Guðmundur B. Helgason, Permanent Secretary and Mr. Hákon Sigurgrímsson, Director.
Representatives from the Farmers Association of Iceland: Mr. Sigurgeir Þorgeirsson, Secretary General.
- 12:45 - 14:00 Lunch with the Authors of the Country Background Report at The National Centre for Cultural Heritage: Ms. Ingunn Ólafsdóttir and Mr. Elvar Örn Arason.
- 14:00 - 15:00 Representatives from the Budget Department of Ministry of Finance: Mr. Ólafur Hjálmarsson, Director-General, and Mr. Leifur Eysteinnsson, Adviser.
- 15:15 - 16:30 Members of The Science and Technology committees of the Science and Technology Council (STPC):
Ms. Allyson Macdonald, Iceland University of Education,
Ms. Guðrún Nordal, University of Iceland,
Mr. Hafliði P. Gíslason, University of Iceland.

- 16:30 - 17:15 Coordination Committee of the Ministries within the STPC:
Mr. Þorsteinn Tómasson, Ministry of Agriculture,
Mr. Davíð Ólafur Egilsson, Ministry of Fisheries.
- 17:15 - 18:00 The Icelandic Centre for Research, RANNIS: Mr. Hans Kr. Guðmundsson, Director.
- 18:00 - 18:45 Relations between Higher Education and Upper Secondary Education. Officials from the Ministry:
Mr. Þórir Ólafsson, Head of Division of School and Lifelong Learning; Mr. Sigurjón Mýrdal, Head of Division of Curriculum; Ms. Oddný Hafberg, Project Leader.

Tuesday 27 September

- 09:00 - 12:30 Visit: University of Iceland.
Rector Kristín Ingólfssdóttir and Directors
Academic Staff
Students (SHÍ)
- 12:45 - 14:00 Lunch hosted by Reykjavík University: Rector, Guðfinna Bjarnadóttir; Mr. Sverrir Sverrisson, Chairman of the Board; Mr. Steinn Jóhannsson, Director of Academic Affairs and Mr. Jón Sigurðsson (Össur).
- 14:00 - 16:15 Visit: Reykjavík University.
Rector Guðfinna Bjarnadóttir and Directors
Academic Staff
Students
- 16:30 - 18:00 Meeting with a group of Researchers on Higher Education:
Ms. Allyson MacDonald, Iceland University of Education,
Ms. Guðrún Geirsdóttir, University of Iceland,
Ms. Inga Dóra Sigfúsdóttir, Reykjavík University,
Mr. Ingjaldur Hannibalsson, University of Iceland.

Wednesday 28 September

- 08:30 - 11:00 Visit: Iceland University of Education:
Rector Ólafur Proppé and Directors
Academic Staff
Students
- 11:15 - 12:45 Visit: Iceland Academy of the Arts.
Rector Hjálmar H. Ragnarsson and Directors
Academic Staff
Students
- 13:00 - 14:30 Visit: The Education Committee of the Parliament
- 15:00 - 15:45 Icelandic Student Loan Fund: Mr. Steingrímur Ari Arason, Director and Mr. Stefán Aðalsteinsson.
- 16:00 - 16:45 Federation of Icelandic Students Abroad (SÍNE):
Ms. Nathalía Halldórsdóttir; Mr. Guðmundur Thorlacius, and Mr. Hrafn Sveinbjarnarson.
- 16:45 - 17:45 Department of Science at the Ministry of Education,
Science and Culture, Operating Unit for the STPC:
Mr. Vilhjálmur Lúðvíksson, Director,
Ms. Edda Lilja Sveinsdóttir, Adviser.

Thursday 29 September

- 09:00 - 11:45 The University of Akureyri.
Rector Þorsteinn Gunnarsson and Directors
Academic Staff
Students
- 12:00 - 13:30 Lunch hosted by Akureyri Town Council: Ms. Þóra Ákadóttir, Chair of Town Council; Mr. Bjarni Jónasson, Director of Akureyri Region Growth Agreement and Mr. Dan Jens Brynjarsson, Director of Administrative Services.
- 15:15 - 17:30 The Agricultural College at Hólar.
Rector Skúli Skúlason, Directors
Academic Staff
Students

Friday 30 September

- 10:00 - 12:00 Agricultural University of Iceland.
Rector Ágúst Sigurðsson and Directors
Academic Staff
Students
- 12:40 - 14:00 Lunch hosted by Bifröst School of Business.
- 14:00 - 15:30 Bifröst School of Business.
Rector Runólfur Ágústsson and Directors
Academic Staff
Students
- 16:45 - 18:00 Visit: The Lifelong Learning Center at Akranes.
Meeting with representatives from Kvasir, the
Association of Lifelong Learning Centers: Ms. Inga
Sigurðardóttir, Director at Akranes and Ms. Guðjónína
Sævarsdóttir, Director at Keflavík.

Sunday 2 October

Review team meetings

Monday 3 October

- 09:00 - 10:00 Icelandic National Audit Office: Mr. Jón Loftur
Björnsson, Head of Audit Unit and Ms. Steinunn
Halldórsdóttir, Senior Auditor.
- 10:00 - 11:00 Confederation of Icelandic Employers, SA: Gústaf
Adolf Skúlason, Director for Policy Making and
Relations and Mr. Emil B. Karlsson, Project Leader.
- 11:00 - 12:00 The Icelandic Federation of Labour, ASÍ: Halldór
Grönvold, Deputy Director and Guðmundur
Gunnarsson.
- 12:15 - 12:45 Minister of Education, Science and Culture,
Ms. Þorgerður Katrín Gunnarsdóttir.
- 13:00 - 14:00 Oral Report by Review Team at The National Centre for
Cultural Heritage, chaired by Mr. Steingrímur
Sigurgeirsson, Political Adviser to the Minister of
Education, Science and Culture.

Appendix 4: Comparative Indicators on Tertiary Education

| | Iceland | OECD mean | Iceland's rank ¹ | Iceland as % of OECD mean ² |
|---|---------|-----------|-----------------------------|--|
| OUTCOMES | | | | |
| % of the population aged 25-64 with tertiary qualifications (2002) | | | | |
| Tertiary-type B - Total | 6 | 8 | 19/25 | 75 |
| Males | 5 | 7 | 20/25 | 71 |
| Females | 7 | 9 | 13/25 | 78 |
| Tertiary-type A and advanced research programmes - Total | 20 | 15 | 7/30 | 133 |
| Males | 20 | 16 | 8/30 | 125 |
| Females | 20 | 14 | 6/30 | 143 |
| % of the population aged 25-34 with tertiary qualifications (2002) | | | | |
| Tertiary-type B | 6 | 9 | 19/25 | 67 |
| Tertiary-type A and advanced research programmes | 23 | 19 | 11/30 | 121 |
| % of the population aged 55-64 with tertiary qualifications (2002) | | | | |
| Tertiary-type B | 4 | 5 | 16/25 | 80 |
| Tertiary-type A and advanced research programmes | 12 | 11 | 11/30 | 109 |
| % of the population aged 25-64 with tertiary qualifications – time trends | | | | |
| 1998 | 21 | 18 | 17/29 | 117 |
| 2002 | 26 | 23 | 12/30 | 113 |
| % of the population aged 25-34 with tertiary qualifications – time trends | | | | |
| 1998 | 24 | 20 | 19/29 | 120 |
| 2002 | 29 | 28 | 16/30 | 104 |
| Average years of schooling (2002) | 13.4 | 11.8 | 3/30 | 114 |
| Survival rates in tertiary education (2002) | | | | |
| Number of graduates divided by the number of new entrants in the typical year of entrance | | | | |
| Tertiary-type A education | 73 | 70 | 8/20 | 104 |
| Tertiary-type B education | 55 | 73 | 15/17 | 75 |

| | Iceland | OECD mean | Iceland's rank ¹ | Iceland as % of OECD mean ² |
|---|---------|-----------|-----------------------------|--|
| Average duration of tertiary studies (in years) (1995)ⁱ | | | | |
| All tertiary education | 2.7 | 4.2 | 18/19 | 64 |
| Tertiary-type B education | 2.0 | 2.2 | 13/15 | 91 |
| Tertiary-type A and advanced research programmes | 2.8 | 4.7 | 17/18 | 60 |
| Tertiary graduates by field of study, First and Second degree³ (2002) | | | | |
| Tertiary-type A | | | | |
| Education | 19.9 | -- | 4/26 | -- |
| Humanities and arts | 13.2 | -- | 10/26 | -- |
| Social sciences, business and law | 36.0 | -- | 12/26 | -- |
| Services | 0.3 | -- | 26/26 | -- |
| Engineering, manufacturing and construction | 5.1 | -- | 26/26 | -- |
| Agriculture | 0.8 | -- | 24/26 | -- |
| Health and welfare | 12.1 | -- | 12/26 | -- |
| Life sciences | 3.9 | -- | 4/25 | -- |
| Physical sciences | 2.3 | -- | 12/25 | -- |
| Mathematics and statistics | 0.3 | -- | 13/25 | -- |
| Computing | 6.1 | -- | 6/25 | -- |
| Not known or unspecified | a | -- | -- | -- |
| All fields | 100.0 | -- | -- | -- |
| Tertiary-type B | | | | |
| Education | 30.9 | -- | 3/19 | -- |
| Humanities and arts | 6.3 | -- | 14/22 | -- |
| Social sciences, business and law | 41.8 | -- | 3/23 | -- |
| Services | n | -- | -- | -- |
| Engineering, manufacturing and construction | n | -- | -- | -- |
| Agriculture | n | -- | -- | -- |
| Health and welfare | n | -- | -- | -- |
| Life sciences | n | -- | -- | -- |
| Physical sciences | n | -- | -- | -- |
| Mathematics and statistics | n | -- | -- | -- |
| Computing | 21.1 | -- | 1/21 | -- |
| Not known or unspecified | a | -- | -- | -- |
| All fields | 100.0 | -- | -- | -- |

| | Iceland | OECD mean | Iceland's rank ¹ | Iceland as % of OECD mean ² |
|---|---------|-----------|-----------------------------|--|
| Advanced research programmes | | | | |
| Education | n | -- | -- | -- |
| Humanities and arts | 20.0 | -- | 3/26 | -- |
| Social sciences, business and law | n | -- | -- | -- |
| Services | n | -- | -- | -- |
| Engineering, manufacturing and construction | n | -- | -- | -- |
| Agriculture | n | -- | -- | -- |
| Health and welfare | 60.0 | -- | 1/26 | -- |
| Life sciences | 20.0 | -- | 4/22 | -- |
| Physical sciences | n | -- | -- | -- |
| Mathematics and statistics | n | -- | -- | -- |
| Computing | n | -- | -- | -- |
| Not known or unspecified | a | -- | -- | -- |
| All fields | 100.0 | -- | -- | -- |
| Tertiary graduates by field of study³ per 10 000 population, First and Second degree (2002) | | | | |
| Tertiary-type A | | | | |
| Education | 17.25 | -- | 1/25 | -- |
| Humanities and arts | 11.39 | -- | 8/25 | -- |
| Social sciences, business and law | 31.14 | -- | 5/25 | -- |
| Services | 0.23 | -- | 25/25 | -- |
| Engineering, manufacturing and construction | 4.45 | -- | 25/25 | -- |
| Agriculture | 0.68 | -- | 19/25 | -- |
| Health and welfare | 10.44 | -- | 10/25 | -- |
| Life sciences | 3.36 | -- | 5/24 | -- |
| Physical sciences | 2.00 | -- | 7/24 | -- |
| Mathematics and statistics | 0.23 | -- | 18/24 | -- |
| Computing | 5.31 | -- | 4/24 | -- |
| Not known or unspecified | a | -- | -- | -- |
| All fields | 86.46 | -- | 5/25 | -- |

| | Iceland | OECD mean | Iceland's rank ¹ | Iceland as % of OECD mean ² |
|---|---------|-----------|-----------------------------|--|
| Tertiary-type B | | | | |
| Education | 3.99 | -- | 5/19 | -- |
| Humanities and arts | 0.82 | -- | 10/20 | -- |
| Social sciences, business and law | 5.40 | -- | 8/22 | -- |
| Services | n | -- | -- | -- |
| Engineering, manufacturing and construction | n | -- | -- | -- |
| Agriculture | n | -- | -- | -- |
| Health and welfare | n | -- | -- | -- |
| Life sciences | n | -- | -- | -- |
| Physical sciences | n | -- | -- | -- |
| Mathematics and statistics | n | -- | -- | -- |
| Computing | 2.72 | -- | 6/20 | -- |
| Not known or unspecified | a | -- | -- | -- |
| All fields | 12.94 | -- | 14/24 | -- |
| Advanced research programmes | | | | |
| Education | n | -- | -- | -- |
| Humanities and arts | 0.05 | -- | 24/25 | -- |
| Social sciences, business and law | n | -- | -- | -- |
| Services | n | -- | -- | -- |
| Engineering, manufacturing and construction | n | -- | -- | -- |
| Agriculture | n | -- | -- | -- |
| Health and welfare | 0.14 | -- | 22/25 | -- |
| Life sciences | 0.05 | -- | 20/21 | -- |
| Physical sciences | n | -- | -- | -- |
| Mathematics and statistics | n | -- | -- | -- |
| Computing | n | -- | -- | -- |
| Not known or unspecified | a | -- | -- | -- |
| All fields | 0.23 | -- | 25/25 | -- |

| | Iceland | OECD mean | Iceland's rank ¹ | Iceland as % of OECD mean ² |
|--|---------|-----------|-----------------------------|--|
| Employment ratio and educational attainment⁴ (2002) | | | | |
| Number of 25 to 64-year-olds in employment as a percentage of the population aged 25 to 64 | | | | |
| Lower secondary education | | | | |
| Males | 92 | 73 | 2/30 | 126 |
| Females | 82 | 49 | 1/30 | 167 |
| Upper secondary education (ISCED 3A) | | | | |
| Males | 91 | 83 | 1/29 | 110 |
| Females | 84 | 66 | 1/29 | 127 |
| Post-secondary non-tertiary education | | | | |
| Males | 95 | 85 | 1/16 | 112 |
| Females | 85 | 73 | 2/16 | 116 |
| Tertiary education, type B | | | | |
| Males | 95 | 88 | 2/25 | 108 |
| Females | 92 | 76 | 1/25 | 121 |
| Tertiary education, type A and advanced research programmes | | | | |
| Males | 98 | 89 | 1/30 | 110 |
| Females | 94 | 78 | 1/30 | 121 |
| Employment ratio and educational attainment (2002) | | | | |
| Number of 30 to 34-year-olds in employment as a percentage of the population aged 30 to 34 | | | | |
| Lower secondary education | | | | |
| Males | 96 | 80 | 3/29 | 120 |
| Females | 84 | 52 | 1/29 | 162 |
| Upper secondary education (ISCED 3A) | | | | |
| Males | 94 | 89 | 4/28 | 106 |
| Females | 79 | 69 | 4/28 | 114 |
| Post-secondary non-tertiary education | | | | |
| Males | 94 | 92 | 6/18 | 102 |
| Females | 75 | 78 | 12/18 | 96 |
| Tertiary education, type B | | | | |
| Males | 88 | 93 | 23/25 | 95 |
| Females | 92 | 81 | 2/25 | 114 |
| Tertiary education, type A and advanced research programmes | | | | |
| Males | 100 | 94 | 1/29 | 106 |
| Females | 90 | 81 | 3/29 | 111 |

| | Iceland | OECD mean | Iceland's rank ¹ | Iceland as % of OECD mean ² |
|---|---------|-----------|-----------------------------|--|
| Unemployment ratio and educational attainment⁵ (2002) | | | | |
| Number of 25 to 64-year-olds who are unemployed as a percentage of the population aged 25 to 64 | | | | |
| Lower secondary education | | | | |
| Males | 3.0 | 6.9 | 25/30 | 43 |
| Females | 2.7 | 5.1 | 23/30 | 53 |
| Upper secondary education (ISCED 3A) | | | | |
| Males | 2.7 | 4.1 | 22/29 | 66 |
| Females | 2.5 | 4.1 | 20/29 | 61 |
| Post-secondary non-tertiary education | | | | |
| Males | 1.8 | 4.0 | 11/16 | 45 |
| Females | 1.5 | 4.6 | 14/15 | 33 |
| Tertiary education, type B | | | | |
| Males | 2.8 | 3.5 | 17/25 | 80 |
| Females | 1.0 | 3.0 | 21/24 | 33 |
| Tertiary education, type A and advanced research programmes | | | | |
| Males | 1.2 | 2.9 | 27/30 | 41 |
| Females | 1.7 | 3.3 | 24/30 | 52 |
| Unemployment ratio and educational attainment (2002) - Number of 30 to 34-year-olds who are unemployed as a percentage of the population aged 30 to 34 | | | | |
| Lower secondary education | | | | |
| Males | 3.0 | 9.7 | 25/29 | 31 |
| Females | 3.6 | 8.3 | 23/29 | 43 |
| Upper secondary education (ISCED 3A) | | | | |
| Males | 1.8 | 4.7 | 24/28 | 38 |
| Females | 2.5 | 5.1 | 23/28 | 49 |
| Post-secondary non-tertiary education | | | | |
| Males | 3.1 | 4.8 | 9/18 | 65 |
| Females | 0.0 | 4.4 | 15/18 | 0 |
| Tertiary education, type B | | | | |
| Males | 4.0 | 3.4 | 9/25 | 118 |
| Females | 0.0 | 3.1 | =21/25 | 0 |
| Tertiary education, type A and advanced research programmes | | | | |
| Males | 0.0 | 3.1 | 29/29 | 0 |
| Females | 3.2 | 3.5 | 12/29 | 91 |

| | Iceland | OECD mean | Iceland's rank ¹ | Iceland as % of OECD mean ² |
|--|---------|-----------|-----------------------------|--|
| Ratio of the population not in the labour force and educational attainment (2002) | | | | |
| Number of 25 to 64-year-olds not in the labour force as a % of the population aged 25 to 64 | | | | |
| Lower secondary education | | | | |
| Males | 5 | 20 | 29/30 | 25 |
| Females | 16 | 46 | 30/30 | 35 |
| Upper secondary education (ISCED 3A) | | | | |
| Males | 6 | 13 | 28/29 | 46 |
| Females | 14 | 30 | 29/29 | 47 |
| Post-secondary non-tertiary education | | | | |
| Males | 3 | 11 | 16/16 | 27 |
| Females | 13 | 22 | 15/16 | 59 |
| Tertiary education, type B | | | | |
| Males | 2 | 9 | 24/25 | 22 |
| Females | 7 | 21 | 25/25 | 33 |
| Tertiary education, type A and advanced research programmes | | | | |
| Males | 1 | 8 | 30/30 | 13 |
| Females | 4 | 19 | 30/30 | 21 |
| Ratio of the population not in the labour force and educational attainment (2002) | | | | |
| Number of 30 to 34-year-olds not in the labour force as a percentage of the population aged 30 to 34 | | | | |
| Lower secondary education | | | | |
| Males | 1 | 10 | 28/29 | 10 |
| Females | 12 | 39 | 28/29 | 31 |
| Upper secondary education (ISCED 3A) | | | | |
| Males | 4 | 7 | 17/28 | 57 |
| Females | 19 | 26 | 23/28 | 73 |
| Post-secondary non-tertiary education | | | | |
| Males | 3 | 3 | 10/18 | 100 |
| Females | 25 | 18 | 4/18 | 139 |
| Tertiary education, type B | | | | |
| Males | 8 | 3 | 3/25 | 267 |
| Females | 8 | 16 | 23/25 | 50 |
| Tertiary education, type A and advanced research programmes | | | | |
| Males | 0 | 3 | 28/29 | 0 |
| Females | 6 | 15 | 27/29 | 40 |

| | Iceland | OECD mean | Iceland's rank ¹ | Iceland as % of OECD mean ² |
|---|---------|-----------|-----------------------------|--|
| Earnings of tertiary graduates aged 25-64 relative to upper secondary graduates aged 25-64 (2002) (upper secondary = 100) | | | | |
| Tertiary-type B | -- | -- | -- | -- |
| Tertiary-type A | -- | -- | -- | -- |
| Earnings of tertiary graduates aged 30-44 relative to upper secondary graduates aged 30-44 (2002) (upper secondary = 100) | | | | |
| Tertiary-type B | -- | -- | -- | -- |
| Tertiary-type A | -- | -- | -- | -- |
| Trends in relative earnings of tertiary graduates aged 25-64 (upper secondary and post-secondary non-tertiary education = 100) | | | | |
| 1997 | -- | 148 | -- | -- |
| 2002 | -- | 148 | -- | -- |

PATTERNS OF PARTICIPATION

| | | | | |
|--|------|------|-------|-----|
| Participation rates of all persons aged 15 and over by programme (2001) | | | | |
| Per cent of all persons aged 15 and over in tertiary type-5B programmes | 0.36 | 0.66 | 11/23 | 55 |
| Per cent of all persons aged 15 and over in tertiary type-5A programmes | 4.88 | 3.99 | 7/24 | 122 |
| Per cent of all persons aged 15 and over in tertiary type-6 programmes | 0.02 | 0.16 | 20/21 | 13 |
| Per cent of all persons aged 15 and over in all tertiary programmes | 5.26 | 4.58 | 9/25 | 115 |
| Index of change in total tertiary enrolment (2002) (1995 = 100) | | | | |
| Total | | | | |
| Attributable to change in population ⁶ | 105 | 95 | 3/19 | 111 |
| Attributable to change in enrolment rates ⁷ | 151 | 137 | 5/19 | 110 |

| | Iceland | OECD mean | Iceland's rank ¹ | Iceland as % of OECD mean ² |
|--|---------|-----------|-----------------------------|--|
| Enrolment rates (2002) | | | | |
| Full-time and part-time students in public and private institutions, by age | | | | |
| Students aged 15-19 as a percentage of the population aged 15-19 | 81.1 | 79.4 | 16/27 | 102 |
| Students aged 20-29 as a percentage of the population aged 20-29 | 32.0 | 22.7 | 4/27 | 141 |
| Students aged 30-39 as a percentage of the population aged 30-39 | 8.0 | 5.4 | 7/27 | 148 |
| Students aged 40 and over as a percentage of the population aged 40 and over | 2.3 | 1.5 | 6/23 | 153 |
| Age distribution of enrolments (2002) | | | | |
| Persons aged 35 and over as a per cent of all enrolments in tertiary type-5B programmes | | | | |
| Persons aged 35 and over as a per cent of all enrolments in tertiary type-5A programmes | 34.2 | 16.2 | 3/18 | 211 |
| Persons aged 35 and over as a per cent of all enrolments in tertiary type-5A +5B programmes | 19.0 | 9.7 | 4/24 | 196 |
| Persons aged 35 and over as a per cent of all enrolments in tertiary type-5A +5B programmes | 20.1 | 10.2 | 5/24 | 197 |
| Persons aged 35 and over as a per cent of all enrolments in tertiary type-6 programmes | 52.6 | 32.5 | 2/21 | 162 |
| Persons aged less than 25 as a per cent of all enrolments in tertiary type-5B programmes | | | | |
| Persons aged less than 25 as a per cent of all enrolments in tertiary type-5A programmes | 22.2 | 60.8 | 25/25 | 37 |
| Persons aged less than 25 as a per cent of all enrolments in tertiary type-5A +5B programmes | 46.6 | 64.7 | 23/26 | 72 |
| Persons aged less than 25 as a per cent of all enrolments in tertiary type-5A +5B programmes | 44.9 | 63.8 | 23/26 | 70 |
| Persons aged less than 25 as a per cent of all enrolments in tertiary type-6 programmes | 2.6 | 10.0 | 16/21 | 26 |
| Persons aged less than 20 as a per cent of all enrolments in tertiary type-5B programmes | | | | |
| Persons aged less than 20 as a per cent of all enrolments in tertiary type-5A programmes | 0.4 | 19.2 | 25/25 | 2 |
| Persons aged less than 20 as a per cent of all enrolments in tertiary type-5A +5B programmes | 0.4 | 15.2 | 26/26 | 3 |
| Persons aged less than 20 as a per cent of all enrolments in tertiary type-5A +5B programmes | 0.4 | 15.6 | 26/26 | 3 |
| Persons aged less than 20 as a per cent of all enrolments in tertiary type-6 programmes | n | 0.3 | -- | -- |

| | Iceland | OECD mean | Iceland's rank ¹ | Iceland as % of OECD mean ² |
|---|---------|-----------|-----------------------------|--|
| Gender distribution of enrolments (2002) | | | | |
| Females as a per cent of enrolments in tertiary type-5B programmes | 50.8 | 55.1 | 17/28 | 92 |
| Females as a per cent of enrolments in tertiary type-5A programmes | 64.1 | 52.9 | 1/28 | 121 |
| Females as a per cent of enrolments in tertiary type-5A+B programmes | 63.2 | 53.3 | 1/28 | 119 |
| Females as a per cent of enrolments in tertiary type-6 programmes | 55.3 | 43.3 | 1/27 | 128 |
| Females as a per cent of total tertiary enrolments | 63.2 | 53.0 | 1/28 | 119 |
| Net entry rates into tertiary education⁸ (2002) | | | | |
| Tertiary-type B | | | | |
| Total | 11 | 16 | 12/20 | 69 |
| Males | 10 | 14 | 11/19 | 71 |
| Females | 11 | 18 | 12/20 | 61 |
| Tertiary-type A | | | | |
| Total | 72 | 51 | 3/24 | 141 |
| Males | 53 | 45 | 8/23 | 118 |
| Females | 91 | 55 | 2/23 | 165 |
| Distribution of students in tertiary education by type of institution⁹ (2002) | | | | |
| Tertiary-type B education, public | 46.6 | 68.6 | 23/28 | 68 |
| Tertiary-type B education, government-dependent private | 53.4 | 19.1 | 3/17 | 280 |
| Tertiary-type B education, independent private | n | 13.7 | -- | |
| Tertiary-type A and advanced research programmes, public | 90.2 | 79.0 | 15/28 | 114 |
| Tertiary-type A and advanced research programmes, government-dependent private | 9.8 | 10.3 | 7/14 | 95 |
| Tertiary-type A and advanced research programmes, independent private | n | 11.4 | -- | -- |
| Distribution of students in tertiary education by mode of study (2002) | | | | |
| Tertiary-type B education | | | | |
| Full-time | 54.2 | 78.9 | 23/29 | 69 |
| Part-time | 45.8 | 21.8 | 7/18 | 210 |
| Tertiary-type A and advanced research programmes | | | | |
| Full-time | 76.3 | 83.9 | 19/29 | 91 |
| Part-time | 23.7 | 16.7 | 11/19 | 142 |

| | Iceland | OECD mean | Iceland's rank ¹ | Iceland as % of OECD mean ² |
|--|---------|-----------|-----------------------------|--|
| Age distribution of net entrants into tertiary education, tertiary-type A (2002) | | | | |
| Age at 20 th percentile (20% of new entrants are below this age) | 20.9 | -- | 2/22 | -- |
| Age at 50 th percentile (50% of new entrants are below this age) | 23.0 | -- | 2/22 | -- |
| Age at 80 th percentile (80% of new entrants are below this age) | 30.4 | -- | 3/22 | -- |
| Foreign students as a percentage of all students (2002) (foreign and domestic students)¹⁰ | | | | |
| | 4.1 | 5.7 | 13/27 | 72 |
| National students enrolled abroad in other reporting countries relative to total tertiary enrolment¹¹ (2002) | | | | |
| | 25.4 | 4.1 | 2/29 | 620 |
| Index of change in foreign students as a percentage of all students (2002) (foreign and domestic students) (1998 = 100) | | | | |
| | 170 | -- | 3/22 | -- |
| Expected changes of the 20-29 age group by 2012 relative to 2002 (2002 = 100)¹² | | | | |
| | 103 | 96 | 12/30 | 107 |
| Upper secondary attainment rates | | | | |
| % of persons aged 25-34 with at least upper secondary education | 64 | 75 | 23/30 | 85 |
| % of persons aged 20-24 with at least upper secondary education | -- | -- | -- | -- |
| Expected years of tertiary education under current conditions (2002) | | | | |
| Full-time and part-time ¹³ | 2.7 | 2.7 | 15/27 | 100 |
| Admission to tertiary education¹⁴ | | | | |
| Source: Eurydice (2003) | | | | |
| Limitation of the number of places available in most branches of public and grant-aided private tertiary education (2000/01) | | | | |
| Limitation at national level with direct control of selection | | 1/35 | -- | -- |
| Selection by institutions (In accordance with their capacity or national criteria) | | 23/35 | -- | -- |
| Free access to most branches | √ | 11/35 | -- | -- |

| | Iceland | OECD mean | Iceland's rank ¹ | Iceland as % of OECD mean ² |
|---|---------|-----------|-----------------------------|--|
| EXPENDITURE | | | | |
| Annual expenditure on tertiary education institutions per student, public and private institutions | | | | |
| In equivalent US dollars converted using PPPs, based on full-time equivalents | | | | |
| All tertiary education (including R&D activities) | 7674 | 10 052 | 17/26 | 76 |
| Tertiary-type B education (including R&D activities) | 8067 | -- | 5/16 | |
| Tertiary-type A and advanced research programmes (including R&D activities) | 7671 | -- | 11/17 | -- |
| All tertiary education excluding R&D activities | -- | 7 203 | -- | |
| Annual expenditure on tertiary education institutions per student relative to GDP per capita, public and private institutions (2001) | | | | |
| Based on full-time equivalents | | | | |
| All tertiary education (including R&D activities) | 26 | 42 | 25/26 | 62 |
| Tertiary-type B education (including R&D activities) | 28 | 28 | 7/15 | 100 |
| Tertiary-type A and advanced research programmes (including R&D activities) | 26 | 43 | 16/16 | 60 |
| All tertiary education excluding R&D activities | -- | 34 | -- | -- |
| Cumulative expenditure on educational institutions per student over the average duration of tertiary studies^{15,i} (2001) | | | | |
| In equivalent US dollars converted using PPPs | | | | |
| All tertiary education | 20566 | 42 906 | 18/19 | 48 |
| Tertiary-type B education | 15811 | -- | 5/12 | -- |
| Tertiary-type A and advanced research programmes | 21786 | -- | 13/14 | -- |

| | Iceland | OECD mean | Iceland's rank ¹ | Iceland as % of OECD mean ² |
|--|---------|-------------------|-----------------------------|--|
| Change in tertiary education expenditure per student relative to different factors | | | | |
| Index of change between 1995 and 2001 (1995 = 100, 2001 constant prices) | | | | |
| Change in expenditure | -- | -- | -- | -- |
| Change in the number of students | -- | -- | -- | -- |
| Change in expenditure per student | -- | -- | -- | -- |
| Change in tertiary education expenditure per student¹ | | | | |
| In equivalent US dollars converted using PPPs (2001 constant prices and 2001 constant PPPs) | | | | |
| 1995 | -- | -- | -- | -- |
| 2001 | 7674 | -- | 17/26 | -- |
| Expenditure on tertiary education institutions as a percentage of GDP, from public and private sources | | | | |
| Tertiary-type B education, 2001 | n | 0.2 | -- | -- |
| Tertiary-type A education, 2001 | 0.9 | 1.1 | 16/19 | 82 |
| All tertiary education, 2001 | 0.9 | 1.3 | 28/29 | 69 |
| All tertiary education, 1995 | -- | 1.3 ¹⁶ | -- | -- |
| Relative proportions of public and private expenditure on educational institutions, for tertiary education | | | | |
| Distribution of public and private sources of funds for educational institutions after transfers from public sources | | | | |
| Public sources, 2001 | 95.0 | 78.2 | 6/26 | 121 |
| Private sources, household expenditure, 2001 | 5.0 | 17.1 | 16/21 | 29 |
| Private sources, expenditure of other private entities, 2001 | -- | 9.7 | -- | -- |
| Private sources, all private sources, 2001 | 5.0 | 21.8 | 21/26 | 23 |
| Private sources, private, of which subsidised, 2001 | n | 1.4 | -- | -- |
| Public sources, 1995 | -- | -- | -- | -- |
| Private sources, household expenditure, 1995 | -- | -- | -- | -- |
| Private sources, expenditure of other private entities, 1995 | -- | -- | -- | -- |
| Private sources, all private sources, 1995 | -- | -- | -- | -- |
| Private sources, private, of which subsidised, 1995 | -- | -- | -- | -- |

| | Iceland | OECD mean | Iceland's rank ¹ | Iceland as % of OECD mean ² |
|--|---------|-----------|-----------------------------|--|
| Distribution of total public expenditure on tertiary education (2001) | | | | |
| Public expenditure on tertiary education transferred to educational institutions and public transfers to the private sector, as a percentage of total public expenditure on tertiary education | | | | |
| Direct public expenditure on public institutions | 67.9 | 69.8 | 18/25 | 97 |
| Direct public expenditure on private institutions | 8.4 | 11.6 | 6/21 | 72 |
| Indirect public transfers and payments to the private sector | 23.7 | 18.2 | 7/27 | 130 |
| Expenditure on tertiary education institutions as a proportion of total expenditure on all educational institutions (2001) Public and private institutions | | | | |
| | -- | 24 | -- | -- |
| Total public expenditure on tertiary education (2001) | | | | |
| Direct public expenditure on tertiary institutions plus public subsidies to households (which include subsidies for living costs, and other private entities) | | | | |
| As a percentage of total public expenditure | 2.5 | 2.8 | 13/22 | 89 |
| As a percentage of GDP | 1.1 | 1.3 | 17/29 | 85 |
| Subsidies for financial aid to students as a percentage of total public expenditure on tertiary education (2001) | | | | |
| Scholarships / other grants to households | n | 9.7 | -- | -- |
| Student loans | 23.7 | 7.8 | 3/16 | 304 |
| Scholarships / other grants to households attributable for educational institutions | n | 1.3 | -- | -- |
| Annual expenditure per student on instruction, ancillary services and R&D (2001) | | | | |
| Expenditure on tertiary education institutions in US dollars converted using PPPs from public and private sources, by type of service | | | | |
| Educational core services | -- | 6 822 | -- | -- |
| Ancillary services (transport, meals, housing provided by institutions) | -- | 454 | -- | -- |
| Research and development | -- | 2 716 | -- | -- |

| | Iceland | OECD mean | Iceland's rank ¹ | Iceland as % of OECD mean ² |
|---|---------|-----------|-----------------------------|--|
| Expenditure on tertiary education institutions by resource category (2001) | | | | |
| Distribution of total and current expenditure on tertiary education institutions from public and private sources | | | | |
| Percentage of total expenditure | | | | |
| Current | 96.2 | 88.5 | 4/27 | 109 |
| Capital | 3.8 | 11.5 | 24/27 | 33 |
| Percentage of current expenditure | | | | |
| Compensation of teachers | -- | 42.4 | -- | -- |
| Compensation of other staff | -- | 22.7 | -- | -- |
| Compensation of all staff | 81.9 | 67.1 | 1/28 | 122 |
| Other current | 18.1 | 32.9 | 28/28 | 55 |
| Registration and tuition fees (2000/01)¹⁷ | | | | |
| Source: Eurydice (2003) | | | | |
| Registration and tuition fees and other payments made by students of full-time undergraduate courses, public sector | | | | |
| Neither fees nor compulsory contributions | | 7/35 | -- | -- |
| Membership fees to student organisations | | 5/35 | -- | -- |
| Registration and/or tuition fee | | 19/35 | -- | -- |
| Registration and/or tuition fees and contributions | √ | 4/35 | -- | -- |
| LITERACY LEVELS | | | | |
| IALS achievement levels of graduates aged 25-34 (1994-1995) Source: IALS | | | | |
| Graduates aged 25-34 at IALS levels 1 and 2 as a per cent of total graduates aged 25-34 | -- | 19 | -- | -- |
| Graduates aged 25-34 at IALS levels 4 and 5 as a per cent of total graduates aged 25-34 | -- | 40 | -- | -- |

| | Iceland | OECD mean | Iceland's rank ¹ | Iceland as % of OECD mean ² |
|---|---------|-----------|-----------------------------|--|
| PATTERNS of PROVISION | | | | |
| Ratio of students to teaching staff in tertiary education^{18,i} (2002) | | | | |
| Based on full-time equivalents, Public and private institutions. | | | | |
| Type B | 2.0 | 14.4 | 14/14 | 14 |
| Type A and advanced research programmes | 9.1 | 16.4 | 16/16 | 55 |
| Tertiary education all | 8.7 | 15.4 | 23/23 | 56 |
| EXPECTATIONS OF 15-YEAR-OLD STUDENTS | | | | |
| Students' expected educational levels (2003) | | | | |
| Source: PISA 2003 (OECD, 2004) | | | | |
| Per cent of 15-year-old students who expect to complete secondary education, general programmes (ISCED 3A) | 76.6 | 48.9 | 4/28 | 157 |
| Per cent of 15-year-old students who expect to complete secondary education, vocational programmes (ISCED 3B or C) | 36 | 29.9 | 7/26 | 120 |
| Per cent of 15-year-old students who expect to complete post-secondary non-tertiary education (ISCED 4) | 22.7 | 16.4 | 4/21 | 138 |
| Per cent of 15-year-old students who expect to complete tertiary-type B education (ISCED 5B) | 21.9 | 20.5 | 13/26 | 107 |
| Per cent of 15-year-old students who expect to complete tertiary-type A education or an advanced research qualification (ISCED 5A or 6) | 36 | 44.0 | 20/29 | 82 |

| | Iceland | OECD mean | Iceland's rank ¹ | Iceland as % of OECD mean ² |
|--|---------|-----------|-----------------------------|--|
| RESEARCH AND DEVELOPMENT | | | | |
| Gross domestic expenditure on Research and Development (R&D) as a percentage of GDP | | | | |
| Source: OECD (2005) | | | | |
| 2002 | 3.09 | 2.26 | 3/20 | 137 |
| 1991 | 1.17 | 2.21 | 18/24 | 53 |
| Higher education¹⁹ expenditure on R&D as a percentage of GDP | | | | |
| Source: OECD (2005) | | | | |
| 2002 | 0.50 | 0.41 | 5/21 | 122 |
| 1991 | 0.34 | 0.36 | 13/22 | 94 |
| Percentage of gross domestic expenditure on R&D by sector of performance (2002) | | | | |
| Source: OECD (2005) | | | | |
| higher education ¹⁹ | 16.1 | 18.2 | 14/19 | 88 |
| (higher education in 1991) | 29.4 | 16.3 | 5/22 | 180 |
| business enterprise | 57.2 | 67.9 | 13/19 | 84 |
| government | 24.5 | 11.0 | 4/19 | 223 |
| private non-profit sector | 2.2 | 2.9 | 3/15 | 76 |
| Percentage of higher education¹⁹ expenditure on R&D financed by industry | | | | |
| Source: OECD (2005) | | | | |
| 2001 | 10.9 | 6.1 | 5/25 | 179 |
| 1991 | 5.0 | 5.5 | 13/21 | 91 |
| Total researchers per thousand total employment | | | | |
| Source: OECD (2005) | | | | |
| 2001 | -- | -- | -- | -- |
| 1991 | -- | 5.6 | -- | -- |
| Researchers as a percentage of national total (full time equivalent) (2001) | | | | |
| Source: OECD (2005) | | | | |
| higher education ¹⁹ | 27.7 | -- | 19/22 | -- |
| (higher education in 1991) | 31.3 | 23.8 | 15/19 | 132 |
| business enterprise | 45.9 | -- | 12/22 | -- |
| government | 22.8 | -- | 4/22 | -- |

| | Iceland | OECD mean | Iceland's rank ¹ | Iceland as % of OECD mean ² |
|--|---------|-----------|-----------------------------|--|
| Share in OECD total "triadic" patent families²⁰ (%) | | | | |
| Source: OECD (2005) | | | | |
| 2001 | 0.01 | -- | =25/30 | -- |
| 1995 | 0.02 | -- | 24/30 | -- |
| Foreign PhD students as a per cent of total PhD enrolments (2002) | 5.3 | 13.2 | 14/18 | 40 |

Notes for the Tables

Sources:

All data are from OECD (2004c), *Education at a Glance: OECD Indicators 2004*, Paris, unless indicated otherwise in the table.

Other sources:

Eurydice (2003), *Key data on education in Europe - 2002 edition*, Brussels, http://www.eurydice.org/Doc_intermediaires/indicators/en/frameset_key_data.html

IALS, *International adult literacy survey database*.

OECD (2004), *Learning for Tomorrow's World, First Results from PISA 2003*, OECD, Paris.

OECD (2005), *Main Science and Technology Indicators, volume 2004/2*, OECD, Paris.

Missing data:

a: Data not applicable because the category does not apply.

x: Data included in another category or column.

n: Magnitude is either negligible or zero.

General notes:

1. "Iceland's rank" indicates the position of Iceland when countries are ranked in descending order from the highest to lowest value on the indicator concerned. For example, on the first indicator "*% of the population aged 25-64 with tertiary qualifications, Tertiary-type B - Total*", the rank "19/25" indicates that Iceland recorded the 19th highest value of the 25 OECD countries that reported relevant data. The symbol "=" means that at least one other country has the same rank.
2. "% to OECD mean" indicates Iceland's value as a per cent of the OECD value. For example, on the first indicator "*% of the population aged 25-64 with tertiary*

qualifications, Tertiary-type B - Total”, the percentage “75” indicates that Iceland’s value is equivalent to 75% of the OECD mean.

3. These indicators show the ratio of graduates as a proportion to all fields of studies. The fields of education used follow the ISCED classification by field of education.
4. The employed are defined as those who during the survey reference week: *i*) work for pay (employees) or profit (self-employed and unpaid family workers) for at least one hour, or *ii*) have a job but are temporarily not at work (through injury, illness, holiday, strike or lockout, educational or training leave, maternity or parental leave, etc.) and have a formal attachment to their job.
5. The unemployed are defined as individuals who are without work, actively seeking employment and currently available to start work.
6. The impact of demographic change on total enrolment is calculated by applying the enrolment rates measured in 1995 to the population data for 2002: population change was taken into account while enrolment rates by single year of age were kept constant at the 1995 level.
7. The impact of changing enrolment rates is calculated by applying the enrolment rates measured in 2002 to the population data for 1995: the enrolment rates by single year of age for 2002 are multiplied by the population by single year of age for 1995 to obtain the total number of students that could be expected if the population had been constant since 1995.
8. The net entry rates represent the proportion of persons of a synthetic age cohort who enter a certain level of tertiary education at one point during their lives.
9. Educational institutions are classified as either *public* or *private* according to whether a public agency or a private entity has the ultimate power to make decisions concerning the institution’s affairs. An institution is classified as *private* if it is controlled and managed by a non-governmental organisation (*e.g.*, a Church, a Trade Union or a business enterprise), or if its Governing Board consists mostly of members not selected by a public agency. The terms “*government-dependent*” and “*independent*” refer only to the degree of a private institution’s dependence on funding from government sources. A *government-dependent private institution* is one that receives more than 50% of its core funding from government agencies. An *independent private institution* is one that receives less than 50% of its core funding from government agencies.
10. Students are classified as foreign students if they are not citizens of the country for which the data are collected. Countries unable to provide data or estimates for non-nationals on the basis of their passports were requested to substitute data according to a related alternative criterion, *e.g.*, the country of residence, the non-national mother tongue or non-national parentage.
11. The number of students studying abroad is obtained from the report of the countries of destination. Students studying in countries which did not report to the OECD are not included in this indicator.
12. This indicator covers residents in the country, regardless of citizenship and of educational or labour market status.
13. School expectancy (in years) under current conditions excludes all education for children younger than five years. It includes adult persons of all ages who are enrolled in formal education. School expectancy is calculated by adding the net enrolment rates for each single year of age.

14. For this indicator, the column “OECD mean” indicates the number of Eurydice member countries/areas, in which limitations on admission to tertiary education are adopted, out of 35 countries/areas for which data are available. For example, in the row “Limitation at national level with direct control of selection”, 1/35 indicates that limitation at national level with direct control of selection is adopted in 1 country.
15. The estimates of cumulative expenditure on education over the average duration of tertiary studies were obtained by multiplying annual expenditure per student by an estimate of the average duration of tertiary studies.
16. Country mean for countries with 1995 and 2001 data.
17. “Registration fees” refers to payments related to registration itself or the certified assessment of each student. By “tuition fees” is meant contributions to the cost of education supported by individual tertiary education institutions. These fees also include any certification fees. Payments for entrance examinations are excluded. For this indicator, the column “OECD mean” indicates the number of Eurydice member countries/areas, in which registration and tuition fees are adopted, out of 35 countries/areas for which data are available. For example, in the row “Membership fees to student organisations”, 5/35 indicates that membership fees are adopted in 5 countries/areas.
18. “Teaching staff” refers to professional personnel directly involved in teaching students.
19. “Higher Education” includes all universities, colleges of technology and other institutions of post-secondary education, whatever their source of finance or legal status. It also includes all research institutes, experimental stations and clinics operating under the direct control of or administered by or associated with higher education institutions. For detail, see OECD (2002), *Frascati Manual 2002: Proposed Standard Practice for Surveys on Research and Experimental Development*.
20. “Triadic patent” means patents filed all together to the European Patent Office (EPO), the US Patent and Trademark Office (USPTO) and the Japanese Patent Office (JPO). This indicator shows each country’s share in total triadic patents filed by OECD countries. Reference year is when the priority patent is filed. Data is estimated by the OECD Secretariat and provisional.

Country specific note:

- ⁱ Public institutions only.

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In many OECD countries, tertiary education systems have experienced rapid growth over the last decade. With tertiary education increasingly seen as a fundamental pillar for economic growth, these systems must now address the pressures of a globalising economy and labour market. Within governance frameworks that encourage institutions, individually and collectively, to fulfil multiple missions, tertiary education systems must aim for the broad objectives of growth, full employment and social cohesion.

In this context, the OECD launched a major review of tertiary education with the participation of 24 nations. The principal objective of the review is to assist countries in understanding how the organisation, management and delivery of tertiary education can help them achieve their economic and social goals. Iceland is one of 14 countries which opted to host a Country Review, in which a team of external reviewers carried out an in-depth analysis of tertiary education policies. This report includes:

- an overview of Iceland's tertiary education system;
- an account of trends and developments in tertiary education in Iceland;
- an analysis of the strengths and challenges in tertiary education in Iceland; and
- recommendations for future policy development.

This Review of Tertiary Education in Iceland forms part of the *OECD Thematic Review of Tertiary Education*, a project conducted between 2004 and 2008 (www.oecd.org/edu/tertiary/review).