

OECD Reviews of Tertiary Education

Poland

Oliver Fulton, Paulo Santiago, Charles Edquist,
Elaine El-Khawas and Elsa Hackl



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This report is based on a study visit to Poland in May 2006, 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 Poland 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 ISCED[2] 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.

Poland was one of the countries which opted to participate in the Country Reviews and hosted a review visit in May 2006. The reviewers

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).

comprised an OECD Secretariat member, and academics and policy-makers from Austria, Sweden, the United Kingdom and the United States. The team is listed in Appendix 1.

1.2 The Participation of Poland

Poland's participation in the OECD Review was co-ordinated from June 2004 to May 2006 by Robert Pawlak, Chief Specialist, Department for Educational Strategy and Structural Funds, Ministry of Education and Science, and from May 2006 on by Maria Klimkiewicz, Counsellor to the Minister, Department of International Cooperation in the newly formed Ministry of Science and Higher Education. Poland's Country Background Report (CBR) for the OECD Review was commissioned by the Ministry of Education and Science to Professor Małgorzata Dąbrowa-Szefler and Dr hab. Julita Jabłecka-Prysłopska, both from the Centre for Science Policy and Higher Education at Warsaw University, and was supported by a National Steering Committee (details provided in Appendix 2).

The review team is grateful to the authors of the CBR, and to all those who assisted them for providing an informative 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 Poland's CBR, and which are taken up in this Country Note, include:

- The pursuit of a better alignment between the tertiary system and the nation's economic and social development goals;
- Improving equity of access and outcomes among all socio-economic groups;
- Diversifying and expanding the funding to meet demand for study places and to strengthen the contribution of tertiary education institutions to the research and innovation efforts of the country;
- Moving from a largely undifferentiated and markedly academic tertiary education system to one in which there are varied institutions to respond to a range of societal and labour market needs.

The Polish 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 Poland, are best read in conjunction.

The review visit took place from 7 to 16 May, 2006. 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 several institutions of tertiary education in the country. Discussions were held with representatives of Ministries such as education, science and higher education, social policy and labour, economy, and regional development; tertiary education institutions; student organisations; the General Council for Higher Education; representatives of academic staff; employers; the business and industry community; and agencies responsible for research and quality assurance. 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 Polish society.

This Country Note draws together the review team's observations and background materials. The present report on Poland 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 Poland, and inform the international education community about developments in Poland that may hold lessons for their own systems.

The review team is very appreciative of the welcome and hospitality shown by their hosts and everyone they met at what was a very busy time of the year for them. The tertiary education community clearly attached great importance to the purpose of the visit and the fact that the review team brought an external perspective. The meetings were open and provided a wealth of information and analysis. A special word of appreciation is due to the then National Co-ordinator, Robert Pawlak, for going to great lengths to respond to the questions and needs of the review team. We were impressed by his efficiency and enjoyed his very pleasant company.

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

[4] Unless indicated otherwise, the data in this Country Note are taken from Poland's Country Background Report (Dąbrowa-Szefler and Jabłecka-Prysłopska, 2006: hereafter CBR).

well as the many discussions with a wide range of Polish 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 four main sections. Initially, Section 2 provides some background on the historical origins of Polish universities and on some key features of the social, economic and political context of Poland today. Section 3 then outlines the key contextual factors shaping present-day tertiary education in Poland: one of its aims is to assist international readers by identifying what is distinctive about tertiary education in Poland, drawing on OECD figures and other data for comparison. Section 4 then identifies the main strengths of Poland's 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. These suggestions draw on promising initiatives that the team learned about during the visit, as well as on developments elsewhere in OECD. Section 6 contains some brief concluding remarks.

The policy suggestions attempt to build on and strengthen reforms that are already under way in Poland, 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 Poland and the factors that need to be taken into account.

2. Poland: The National Context

2.1 Historical Background

The Polish state dates its origins to the end of the 10th century. It united with Lithuania in the 14th century and the combined kingdom, which became one of the earliest constitutional monarchies, was a major political and cultural force in Europe throughout the 15th and 16th centuries. The long wars of the 17th century led to a gradual decline, with Russia, Prussia and Austria increasing their power and their territories at Poland's expense, and eventually to the disappearance of Poland as an independent entity, following several partitions. Despite a number of nationalist rebellions, Poland first re-emerged as an autonomous state after the First World War, only to be invaded and occupied by Germany in 1939. Its liberation by the Soviet Union in 1945 was followed by forty years of communist government and membership of the Warsaw Pact. Internal resistance, notably the activities of the Solidarity trade union and the Catholic church, eventually led to the parliamentary elections of 1989 and the end of the communist regime.

Poland dates the origins of its universities to the 14th century, when the Krakow Academy was founded and shortly thereafter emerged as a 'full-fledged university' (CBR, p.13) with faculties of law and theology, attracting students from across Europe, developing research in subjects including astronomy, mathematics, geography and law and playing a significant role in international renaissance scholarship. Further Academies (in effect universities) were created in Lvov and Vilnius (both then part of Poland-Lithuania) by the 17th century. In the early 19th century a number of general universities, including Warsaw, and several specialist technical institutions were created in the partitioned countries, but faced difficulties – extending to closure in the case of Warsaw University – following the failure of the anti-Russian uprising of 1831. During the late 19th century the universities were seen as centres of Polish national culture and key contributors to the emergence of a Polish social and intellectual elite (see for example Warsaw University 2007). On regaining independence in 1919,

Poland found itself with five state universities in Krakow, Lvov, Poznan, Vilnius and Warsaw, a number of state technical institutions and several private tertiary institutions including the Catholic University of Lublin. By 1938 there were a total of 25 university-type institutions, with almost 48 000 students, and numerous tertiary vocational colleges. The university-level state institutions were 'autonomous and self-governing' universities, broadly on the German model (*i.e.* with a strong element of academic self-government under state control and regulation, and identifying themselves with Humboldtian traditions of teaching, research and academic freedom).

During the Second World War the universities were closed by the German occupation – but became centres of resistance through their 'underground' activities (CBR, p.14). Following the post-war Soviet occupation, the communist regime of 1945-89 saw a number of contrasting trends. On the wider political scene the period was marked by alternating episodes of political turbulence followed (in the earlier years) by renewed assertions of Soviet and Warsaw Pact policy: however, elements of Polish exceptionalism included the powerful influence of the Catholic Church[5], the growth of trade unions exemplified by the Solidarity movement and rather stronger links with the west than other members of the Soviet bloc. For the tertiary education system, similarly, official policy varied between periods of tight control of academic staff and a strong emphasis on ideological control of students and curricula, and periods of 'relative freedom' during the various political 'thaws' (CBR, p.14). However, despite the ideological constraints Polish TE evidently continued to provide high quality scientific and technical training, as evidenced by a steady brain drain of researchers to western Europe and the USA during the 1980s and early 1990s. The communist period did see a rapid expansion of the number of TEIs (from 54 in 1946 to 97 in 1989) and especially in student numbers which rose from 86 500 to 378 000 over the same period. On a general level this 'massification' of tertiary education broadly paralleled international trends. What was more unusual, however, was that student numbers reached a peak, of 468 000, in 1975 and then declined by almost 20% in the final years of the regime. This loss of numbers was not a consequence of demographic change: participation rates fell even more sharply.

In summary, Polish TEIs began their new life in the 1990s with a substantial legacy of national scientific and cultural tradition and achievement, albeit distorted by decades, if not centuries, of external political control. During our visit the review team was several times

5 The Catholic University of Lublin continued to exist (and award degrees) throughout the communist period, and still has privileged status as one of a small number of non-public TEIs (all Catholic) which receive state funding.

reminded of the scars left by recent history, and the perceived need for the strongest possible academic safeguards against the illegitimate practices of earlier eras.

2.2 Economic Context

The legacy of the communist period was inevitably mixed. New Poland inherited a comparatively well-educated population with good levels of technical skills. But the heavy-industry based economy and the labour market had been heavily distorted, and the infrastructure and, in many parts of the country, the environment were in extremely poor condition. The immediate economic and social costs of transition were very severe and the process of transition and modernisation is still far from complete[6].

The early years of the post-communist period were marked not only by new opportunities for economic development in a liberalised free-market context but also by the severe difficulties of the rapid transition from a planned economy to the new conditions. In the first two years of the transition GDP fell substantially, as a consequence of the collapse of much of the pre-existing heavy industry, though this has been followed by considerable growth in more recent years. Equally importantly, however, the proportion of GDP available for public expenditure fell sharply, and throughout the years since 1990 tertiary education has had to compete for limited funds not only with the rest of the education system but with pressing new needs, including infrastructural investment and, notably, welfare expenditure. In particular, expenditure on support for pensioners and the unemployed has been treated as a priority, for both social and political reasons, by post-communist Poland: policies to remove those most at risk of unemployment from the labour market have been in place throughout the period.

As was to be expected, unemployment rose sharply in the liberalised post-communist economy: it stood at 20% in 2003. As Tables A11-A14 in Appendix 4 show, employment and unemployment prospects are strongly qualification-dependent. To begin with the younger age groups (Tables A12, A14) it is true that Polish males aged 30 to 34, even those with tertiary education, are much more likely to be unemployed than their counterparts in other OECD countries (those with tertiary type A education rank highest in the OECD with an unemployment rate in 2003 of 11.3% vs. the OECD mean of 5.6%), and the corresponding group of Polish females' chances of

6 In 2004, Poland's per-capita GDP measured in Standard Purchasing Power (PPS) stood at 49% of the EU average (Eurydice, 2005).

unemployment are the second highest in the OECD (14.3% vs. 5.7%) (Table A14). But unemployment rates are exceptionally high across the board, with Poland ranking first or second highest in the OECD for both males and females at all levels of education. Moreover, the educational differential is much larger than the OECD average: the unemployment rate for 30-34 year old males with lower secondary education is 27.2%, with upper secondary education 14.5%, and with tertiary (type A) education 11.3%; for females the corresponding figures are 28.1%, 18.1% and 14.3%. Viewed across the whole population aged 25 to 64 (Table A13), Poland still ranks at or very near the top of all OECD countries in the unemployment rates for males and females, but the educational differential is sharper still: unemployment rates for those with secondary education of all ages are similar to those for the 30-34 age group, but the rates for those with tertiary education are only 6.6% (male) and 6.7% (female)[7]. Figures from the CBR (Table 3.7) show very big wage differentials, with graduates in 2001 earning almost 50% more than the national average salary – and this conceals a difference of over 70% for men, but just under 40% for women. In the circumstances, it is not surprising that demand for tertiary education rose sharply once the labour market had been liberalised and these differentials became public knowledge.

2.3 Social and Political Context

Like most other former Warsaw Pact countries, Poland has experienced considerable political volatility since 1989. In the absence of well-established political parties linked to enduring interest groups, politics has been dominated by contests between newly emergent parties and coalitions, both for parliamentary and presidential elections. However, Polish politics has its own multifarious legacies to deal with, including the nationalist impulses of a country whose shape and even existence have been uniquely challenged throughout the modern era; the exceptionally strong position of the Catholic church, even during the post-war communist period; the continuing strength of the agricultural/peasant economy, which outlived communist rule; the anti-Soviet struggle; the role of Solidarity as both trade union and political party; the continuing dominance of the trade unions by heavy industry, despite its decline; and the relationship of the new democratic left to the previous regime. Faced with economic turbulence, including a sharp decline in living standards, combined with rising

7 The employment ratios shown in Tables A11 and A12 reveal considerably larger advantages to those with tertiary education, compared even with upper secondary education, than the unemployment ratios discussed above.

expectations, it is no wonder that the Polish electorate has frequently expressed strong dissatisfaction with its governing parties or coalitions by sharp swings towards a new alternative.

The structure of government in relation to tertiary education has also been somewhat unstable. During the communist period tertiary education institutions had been under the control of a large number of different ministries, on the Soviet model. Although this has largely been rationalised, there are still institutions which are funded and to some extent regulated through ministries with non-education responsibilities. More significantly, the precise responsibility for tertiary education as a whole has shifted. Indeed, on the last working day before the review team's visit, it was announced that the Ministry of Education and Science was to be split into two components, creating a new Ministry of Science and Higher Education which was to take over responsibility for tertiary education and research. Responsibility for scientific research has also changed more than once, and the 2005 Law on Higher Education defines respective roles for 'the minister responsible for higher education' and 'the minister responsible for research' even though a single minister currently holds both portfolios.

Poland's accession to the European Union in May 2004 was welcomed by a very large majority of voters in the referendum of mid-2003, but it has also generated opposition, especially more recently. In practical terms it has not only opened up new markets but has given Poland access to European funds for modernisation and transformation. Polish access to a wider European labour market has facilitated the loss of skilled workers to higher-wage economies (witness the much-discussed phenomenon of 'Polish plumbers' (and other construction workers) in London and Paris) and the migration of manual and agricultural workers more generally. But it has also benefited the Polish economy by, for example, enabling Polish students to finance their studies through summer jobs in the tourist industry, notably in the English speaking countries (UK and Ireland), and in seasonal work more generally.

In 2004 Poland's population was 38.2 million: it is by a considerable margin the largest of the European Union accession states of 2004 and the sixth largest country, by number of inhabitants, in the whole of the enlarged Union. Its population grew rapidly during the earlier post-war years, but reproduction is now roughly at replacement level. Its population is notably rural (38.5% in rural areas). The population is remarkably homogeneous in language and ethnicity: it is estimated that no more than 3% of the population is from a 'national minority' (all data from Eurydice, 2005).

Poland has a directly elected President as head of state, and a bicameral legislature with the lower house (the Parliament) elected by proportional

representation and a smaller Senate, predominantly a revising chamber, elected by simple majority. At sub-national levels there are 16 regions, 379 districts and 2 478 communes, each with their own self-governing powers. Primary and lower secondary education are administered at commune level. The regions and districts, established in 1998, are responsible for functions which cross the lower-level boundaries. In addition, the districts administer upper secondary and most public tertiary education, while the regions deal with tertiary education institutions of regional significance. The regions also have a general responsibility for promoting economic and social development.

Poland is officially a secular state with constitutional guarantees of religious freedom. At the same time, the Catholic church claims very high membership levels (90% of the population having been baptised in the church: Eurydice, 2005) and there is a special concordat between church and state (1998) laying out respective rights and obligations. Inter alia, this confirmed that the Catholic church is entitled to own and manage TEIs, a right which had been maintained throughout the communist period (see note 5 above), and to receive state funding for teaching (unlike other non-public TEIs).

3. Context and Main Features of Tertiary Education in Poland

3.1 The Tertiary Education System

The Framework

The first 'framework' law of the post-communist regime, the Law on Higher Education of 1990, created the broad outline of tertiary education which still pertains today. It has been updated, and hence formally superseded, by the new Framework Law of 2005. However, not all of the provisions of the 2005 Law had yet been put into practice at the time of the review team's visit. The key provisions of the 1990 Act were:

- Academic freedom: academic freedom was guaranteed to each TEI in conducting and disseminating academic research (World Bank 2004: 5), and also in teaching and artistic creativity (CBR, p.107). According to the CBR, academic freedom was defined as an over-arching principle which may only be circumscribed by government or other authorities in circumstances specifically provided for by law. It has also been described as an individual right of academic staff (OECD 1996: 103). The Law on Higher Education of 2005 restates the principle of academic freedom but does not otherwise define it.

- Institutional autonomy: institutions were given financial autonomy (including the rights to take out loans and to carry over unspent funds to the next financial year) and a degree of freedom in self-government and self-regulation (OECD, 1996: 32; World Bank, 2004: 5).

- Internal governance: requirements for elected collegiate bodies to participate in decision-making and opportunities for decentralisation to academic subunit (faculty) level (World Bank, 2004: 5; OECD, 1996: 34).

- Provision for the creation of non-public TEIs (in addition to the surviving Catholic institutions), operating on a non-profit basis. This enabled rapid growth in the non-public sector.

- Provision for public institutions to earn income, most importantly by charging tuition fees. Full-time 'day' [hereafter regular] study was to remain free, but state-funded institutions were permitted to offer courses to 'extra-mural' and 'evening' [hereafter non-regular] students, provided the latter did not exceed 50% of the student body[8]. This too enabled rapid growth in student numbers.

- The creation of the General Council for Higher Education with a very wide remit in advising the minister (see below, Section 3.2).

Further legislation in 1990 and 1991 dealt with the research functions of tertiary education, including the setting up in 1991 of the Committee for Academic Research, one of whose main roles was to allocate baseline research funding to TEIs. This was to be done selectively. In other words, this marked a firm break with the Humboldtian principle of the unity of teaching and research, by removing the expectation that all TEIs and all academic staff should be funded for research on an equal basis.

Institutions

Poland had 427 TEIs in 2004/5 – compared with 97 in 1989, of which two had religious affiliations. Of these, 126 were public and 301 private (14 with religious affiliations). In other words, the post-communist period has seen a roughly 30% increase in the number of public TEIs and the creation of a very large number of private, not-for-profit institutions. On average, however, the private TEIs are much smaller in size: in 2003/4 the public institutions enrolled approximately 70% of all students and the private 30%. There remain a number of public institutions which are 'supervised' by ministers other than the minister for higher education[9].

Institutions are classified as 'academic', simply defined by their possession of the right to award doctoral degrees in at least one field, and

8 The Law on Higher Education of 2005 now refers to these as 'full-time' and 'part-time' students, respectively.

9 These include specialist institutions for military, civil service, art and culture, medicine/health and maritime studies. However all are subject to, for example, the national quality assurance arrangements.

'vocational' – the remainder[10]. In 2004/5 there were 181 vocational TEIs: the rest were academic. There are numerous specialist institutions in both sectors, with specialisms in the academic sector including medicine, theology, pedagogy, technical subjects and, by far the largest group, economics/business studies. The vocational sector includes a considerable number of highly specialist vocational institutions with, again, a predominance of business studies. Only a small number of private TEIs are classified as academic: in 2003 only 5 private institutions held doctoral degree awarding powers; and indeed only one quarter were licensed to award master's degrees.

Students

As described earlier, in the final 15 years of the communist regime student numbers had declined by 45% from their peak. However, the years following 1989 saw a very rapid expansion in demand. Between 1990/1 and 2004/5 total student numbers rose by almost 500%. In 1990/1 the public TEIs enrolled some 390 000 students. They experienced growth of more than 10% per year until 1997/8, and enrolled over 1 000 000 students by 1999/2000. Since then the rate of growth has declined considerably: it stood at 2.71% per year between 2002/3 and 2003/4: total enrolments in the latter year were 1 306 000. The private institutions grew dramatically (albeit from nothing) – with annual growth rates in enrolments of over 70% in each of the years 1993/4 to 1995/6 and 60% in the following two years, but falling to 3.24% between 2002/3 and 2003/4. In 1999/2000 their enrolments were almost 420 000 (29% of the total): in 2003/4 they stood at 545 956 (30%).

Participation rates are thus now very high: Polish calculations in the CBR show net enrolment rates for the 19-24 age group of 9.8% in 1990/1 and 36.8% in 2004/5[11]. OECD figures for participation of the population aged 15 and over in 2002 (Appendix 4, Table B1) put Poland in second

10 The nomenclature appears to vary somewhat, at least in the English translations available to the review team. 'Academic' institutions may also be referred to as 'universities' or 'university-type' institutions, even though not all institutions in the 'academic' sector use the title of University. 'Vocational' institutions are also referred to as 'non-universities' or 'non-university institutions'. For the purposes of this report we confine ourselves to the names 'academic' and 'vocational' for the two sectors and their institutional members, even though, as will become apparent, we have reservations about whether the implications of these terms fully reflect either the intended functions or the actual practices within the sectors.

11 This is an underestimate of participation since the average duration of studies is considerably less than 6 years.

place in the OECD for tertiary type A programmes (although enrolment in type B is very low). And the OECD calculation of net entry rates to type A at some point in a person's lifetime is 70%, markedly above the OECD mean of 52.5% and ranking Poland in fifth place (Appendix 4, Table B6).

In parallel, graduate numbers rose from 56 000 in 1990/1 to 384 000 in 2003/4, an increase of 680%. OECD figures show how Poland's relative position has changed with respect to the distribution of graduates in the population: in 2003 20% of the population aged 25-34 held tertiary qualifications, compared with 10% in 1995, and Poland's ranking rose from 22/26 in 1995 to 17/30 in 2003.

In 2002 over 40% of tertiary graduates obtained qualifications in the fields of 'social sciences, business and law', placing Poland fourth highest in rank out of 27 countries for these disciplines (OECD figures: Appendix 4, Table A9). In contrast, Poland is found in one of the lowest five positions for its relative proportion of graduates in science (3.9%), engineering, manufacturing and construction (7.5%) and humanities and arts (6.4%). The CBR describes how the relative demand for places in business and economics grew very rapidly during the 1990s, helped by the growth of private TEIs specialising in these fields, but has diminished slightly in recent years. The implications of these figures are discussed in Sections 3.8 and 4.7 below.

Women have been well represented, and are increasingly so, and men rather less well, in the total student population: female students constituted 53% of tertiary enrolments in 1992 and reached 58% in 2003 (6th highest proportion among 29 OECD countries): see also Section 4.5 below.

As part of the 1990 reforms, Poland introduced a 3-cycle (bachelor's, master's, PhD) degree structure which was intended to gradually replace the preceding European-style single master's degree followed by a doctorate. There is also a higher doctorate, the *doctor habilitatus* (*dr. habil.*): see Section 3.4 on the academic career. The bachelor's level (known as *licencjat* or *inzynier*) lasts between 3 and 4 years, depending on the field and programme, and can be followed by the master's degree (3 to 4 semesters): however, 'long' integrated master's courses still exist, lasting 5 to 6 years. Poland was thus relatively well placed to adopt the Bologna structure at an early stage (see below Section 3.9). However, not only the earlier OECD review (1996) but the World Bank report (2004) commented on the slow pace of change from integrated master's courses to the two-cycle structure in established TEIs and faculties, and it was clear from the review team's

visits that in some institutions the changeover is still not complete[12]. Course requirements for each level are prescribed by the ministry, and, as mentioned above, most vocational TEIs are only approved to offer the first, bachelor's cycle. The OECD calculation of average duration of tertiary studies (for type B courses only) gives Poland's average as 3.68 years compared with the OECD mean of 4.72 years, placing Poland as the 3rd most 'efficient' country of the 17 for which the calculation is available[13].

Students are admitted to publicly-funded 'regular' courses at public TEIs on the basis of 'merit', *i.e.* performance in secondary school examinations. These courses carry no fees. However, following the Law on Higher Education of 1990, it became possible for public TEIs to enrol students, on a fee-paying basis, on so-called 'extra-mural' or evening courses using the same curriculum and leading to the same awards as the fee-free 'regular' students. There are regulations which require such students: to receive tuition and support which is substantively identical to that offered to regular students; to be taught in entirely separate classes from regular students (in other words no class should contain a mixture of fee-paying and fee-free students); and that regular students must constitute at least 50% of the student body. Figures in the CBR show that across the whole system (public and private, academic and vocational) in 2004 daytime students and extramural students each amounted to 48% of the total, with the balance made up by evening-only students, whereas in 1992 daytime students had been 72% of the total. Separate figures are not readily available for public institutions, but for private institutions only 71% of students were regular daytime students in 2004. Thus it is clear that much of the expansion in numbers of students at the public TEIs has been carried by growth in fee-paying student enrolments.

There is no regulation prohibiting multiple enrolment across different institutions. Thus a student with very good secondary school qualifications may enrol in more than one publicly-funded course at the same time (for example in two TEIs in the same city).

12 The review team was informed by KRASP that following the passage of the 2005 Law on Higher Education it is intended to introduce new regulations which will restrict integrated programmes to 'a few' fields.

13 Appendix 4, Table A8: note that the figure includes dropouts as well as successful completions (see note 4 to the Appendix).

3.2 Governance

The System

The powers of the higher education ministry (in whatever form) and of other bodies have been defined in successive framework acts. Although details have changed, the fundamental principles have remained the same since 1990.

In addition to its broader functions of policy-making and initiating new legislation, the ministry 'steers the system at a distance' using financial, regulatory and evaluative mechanisms (see Sections 3.3 and 3.5) to guide the 'autonomous' TEIs. However, it retains general supervisory powers and has the ultimate power to close any institution in certain defined circumstances. It even has the reserve power to dismiss a TEI's Rector. More routinely, it issues regulations for study programmes, their titles and their contents – including minimum staffing requirements – and gives permission for the establishment of new TEIs and new branches of existing TEIs. It appoints the members of the State Accreditation Committee (SAC) (see Section 3.5), which reports to it and on whose advice it acts. However, it does not appoint academic staff: this is the responsibility of individual institutions, while the title of Professor is awarded by the President of Poland on the recommendation of an independent committee (see Section 3.4).

A key role is played by an elected body, the General (formerly Central) Council for Higher Education (GCHE). The GCHE represents the range of academic staff and students: it is dominated by Professors and *drs.habil.*, but also contains representatives of other PhD holders, doctoral students and first- and second-cycle students. Trade union representatives sit as non-voting observers. The GCHE is elected indirectly, through an electoral college voted on by all the members of the various constituent groups. The Council may be invited by the ministry to provide advice on a wide range of issues, and must be consulted by the ministry on matters including proposed legislation, the national budget for tertiary education, international agreements and proposals for new fields of study. However, much of the detail of accreditation and programme regulations which formerly came within its remit have now been given to the SAC. The GCHE is rather more than a consultative or advisory body: it has the right to make proposals to the ministry, and so can initiate policy discussions.

There are three other representative organisations, each of which resembles the GCHE in that it has the right both to be consulted by the ministry on its proposals, in broadly similar areas, and to make proposals in

its own right. These are the Conference of Rectors of Academic Schools in Poland (KRASP), the Conference of Rectors of Vocational Schools in Poland (KRZSP) and the National Students' Parliament[14].

The Institutions

Many public TEIs predated the 1990 Law on Higher Education, but many more, and all but a few non-public TEIs, were set up under the provisions of this act and its successors. Each act, including the 2005 Law, has specified somewhat different internal structures; although the 2005 Law applies to all TEIs, old and new, it is not clear whether the process of convergence is yet complete. In any event, even under the 2005 Law the interpretation of the autonomy of TEIs varies according to their status: for example, academic public TEIs may adopt their own statutes, once approved by their senates; vocational public and non-public TEIs also require ministerial approval for their statutes, in the former case as proposed by their senate or other 'collective body', in the latter by their founder. Moreover, an academic TEI must have a senate; non-academic and non-public TEIs need not do so (but may form other collective bodies).

The law further specifies the internal organisation of public TEIs. It defines (in outline and subject to further specification in the statutes): the powers and duties of the rector, and the method of his/her election, and also of other 'single person authorities', *i.e.* deans or their equivalent; and the governance of lower-level 'basic organisational units'. It requires student representation (at least 20%) not only on senates but on the governing councils of basic units, and in the electoral colleges for the selection of rectors and deans. It also permits, but does not require, the creation of 'councils' including external representatives, *e.g.* of regional government and employers. For non-public institutions the law is much less specific. However, both public and private HEIs are subject to the same requirements for curriculum and quality assurance, including the requirement to set up internal quality assurance mechanisms and procedures (see Section 3.5).

3.3 Resourcing the Tertiary Education System

In 2002, public expenditure on tertiary education (both on institutions and on subsidies to households) stood at 1.1% of GDP, the 18th highest percentage among the 28 OECD countries for which data are available

14 There is also a Conference of Rectors of Non-Public TEIs. However, this is not included in the statutory list of organisations in the Law on Higher Education, since its members are deemed to be represented through either KRASP or KRZSP.

(Appendix 4, Table C10). For the same year, total expenditure on tertiary education (including private sources) reached 1.5% of GDP, the 7th highest percentage among the same 28 OECD countries, a substantial increase from the 0.8% of GDP in 1995 (Appendix 4, Table C6). Public spending on tertiary education institutions grew by 66% in real terms between 1995 and 2002 (5th highest growth among the 24 countries for which data are available: Appendix 4, Table C4). However, given the substantial growth in enrolments of 97% (the highest in the OECD area), public spending on institutions per tertiary student decreased by 16% during that period (the 2nd largest decline in the OECD area: Appendix 4, Table C4). The latter stood at US$4 834 in 2002, the third lowest value among OECD countries (Appendix 4, Table C1).

In 2002, 96.4% of public spending on tertiary education was allocated as direct subsidies to institutions (the 3rd highest figure in the OECD area). Another aspect which stands out in Poland is the proportion of spending on tertiary education coming from private sources: in 2002, 30.3% of expenditure on tertiary education institutions was derived from private household expenditure (6th highest share for the 27 OECD countries for which data are available, see Appendix 4, Table C7). This is a reflection of two factors: high enrolment levels in private institutions (see above Section 3.1), and the high proportion of students paying tuition fees in public institutions (see below).

Funding Institutions

Institutions derive their revenues from three major sources: government subsidies, student tuition fees and external sources (*e.g.* external research contracts, provision of services). In 2003, government subsidies represented about two-thirds of revenues in public tertiary education institutions, while tuition fees accounted for about 20% of those revenues. Private institutions derive their income almost exclusively from tuition revenues. Thus funds from external sources generally constitute a very limited proportion of institutions' total revenues.

The government subsidy to **public** institutions has four main components:

1. Funding for teaching activities

The major component is the public subsidy for teaching activities, which includes the funds for the remuneration of institutions' staff. It is determined on the basis of a formula. The level of funding is

proportional to: (i) the number of equivalent full-time[15] students (EFTS), weighted by differential funding rates associated with five groups of fields of study; (ii) the number of academic staff with a doctoral degree weighted by their title/qualification level (PhD, *dr.habil.*, Professor: see Section 3.4): teaching staff with no doctorate are not taken into account except for those who are doctoral students at the institution (included in the number of students). In 2005, the possibility of selectivity in allocating funds for teaching was introduced for the first time, through adjustments to the formula as a result of a positive assessment by SAC. The number of EFTS which can be funded is subject to limits.

2. Funding for financial support of students

Institutions of tertiary education administer most of the funds allocated to student support. They receive earmarked public subsidies for the financial support of students on the basis of a formula which depends on the total number of students, the proportion of students entitled to accommodation in a student dormitory and the proportion of students who receive a maintenance grant (see below).

3. Funding for Research

Nearly all research money is distributed selectively, either on a directly competitive basis or as a result of assessments of research quality through a number of different streams. More details are provided in Section 3.7.

4. Specific-purpose subsidies

Subsidies for specific purposes are provided on a one-off basis. They often relate to the improvement of the infrastructure.

Private tertiary institutions have access to some public funding. Except for one particular stream ('in-house' research fund: see Section 3.7), private institutions have access to public subsidies for research. Similarly, as of 2001, private institutions receive funds for the financial assistance of their students. However, with the exception of two catholic institutions (Catholic University of Lublin and Pontifical Academy of Theology), private institutions do not receive the ordinary public subsidy for teaching activities.

Tuition fees

Tuition fees are charged in private institutions and to many students attending public institutions. In 2003-04, about 58% of all students and 43%

15 'Regular', *i.e.* publicly-funded: see below.

of students attending public institutions paid tuition fees. Institutions, both private and public, determine the level of their own tuition fees, which range across institutions (private and public) from PLN 1 600 to PLN 8 000 per year. Although it is widely asserted across the system that public tertiary education is free, in practice nearly half of the students attending public institutions do pay tuition fees at a level similar to those charged in private institutions. In fact, while the Constitution of the Republic of Poland does indeed guarantee the free provision of education in public sector institutions, a Legal Act also permits public institutions to charge fees for 'certain educational services'. In practice, as indicated above (Section 3.1), the government allocates, to each individual public institution, a budget to cover the attendance costs of fully subsidised students (who can attend a tertiary programme as a regular (or full-time) student with free tuition). An additional number of individuals can access the same tertiary programmes with a non-regular status (evening, extramural or extension student), but these students are charged a tuition fee. By law, the proportion of non-regular students may not exceed 50% of any public institution's total number of students. As described earlier, non-regular students are enrolled in courses similar to, but in principle separate from, those offered to regular students, but their classes are subject to some restrictions (*e.g.* only offered in the evening or on weekends). For any given programme, the academic requirements and curricular content for non-regular students should be identical to those of the programmes offered to regular students. However, even though the rules officially preclude such a possibility, the review team was told that in practice regular and non-regular students are quite often mixed in the same classroom.

Student Support

Students rely on four major sources to finance their studies: assistance from their families; grants and scholarships; student loans; and earnings from employment. The student financial aid system is relatively recent in Poland. It consists of a range of publicly-funded means-tested and merit-based scholarship programmes complemented by a publicly-subsidised loan scheme.

A number of grant and scholarship programmes are publicly funded. Four of these are means-tested schemes targeted at promoting the participation of the financially neediest students: (i) maintenance grants; (ii) meals grants; (iii) accommodation grants; and (iv) emergency aid payments. There are also a number of merit-based schemes to reward the accomplishments of students in their academic work and sports career, including a programme where the minister confers the awards. A special programme also exists for disabled students. All students – irrespective of

type of attendance (regular or non-regular), type of institution attended (*e.g.* private or public), and degree level (undergraduate or graduate) – are now eligible for the whole range of grants and scholarships. The only exception is the accommodation grant which is available only to regular students. However, until 2001, the programmes above were only accessible to regular students enrolled in public institutions.

The administration of the whole range of publicly-supported grants and scholarships is the responsibility of individual tertiary education institutions. Institutions receive earmarked public subsidies for student support as described above, including an amount to cover the administrative cost of managing the programmes. Within the broad principles laid out in the Law[16], individual institutions establish the detailed rules and regulations for each programme. For instance, they define the criteria for granting and renewing student support and the amount of individual grants. Institutions generally establish a Student Grant Committee which manages the whole range of student support conferred by the institution. Student representatives are usually consulted on the student support policy of institutions. It is also typical for institutions to devote some of their own resources to financial aid for students. As with the nationally-funded schemes, institutions often grant scholarships and fee reductions or exemptions both to needy and to academically-gifted students.

Students submit their financial aid applications directly to institutions. For means-tested programmes, the institution takes account of the income generated by the student, the student's spouse, and the student's parents if he/she is not recognised as financially independent. In practice, the review team was told, it is often difficult to make an accurate assessment of a student's financial need. Maintenance, meals and accommodation grants are intended to assist with the cost of living while 'aid' payments are granted only temporarily if a difficult financial situation arises for the student. The special programme for disabled students, launched in 2002, provides support in various forms: grants to assist with the costs of study (*e.g.* tuition fees, travelling expenses, accommodation, study materials), scholarships for outstanding academic achievements, and grants for taking up study in foreign institutions. A student can receive financial aid simultaneously from different programmes. Also, a student enrolled in multiple programmes (see above Section 3.1) can be granted a scholarship for academic achievement in each of the programmes.

16 One restriction is that the total amount of grants received by a student cannot exceed 90% of the lowest wage paid to academic staff in the institution.

State subsidies for student grants and scholarships broadly doubled from 2003 to 2004. The subsidy per enrolled student amounted to PLN 76.6 in 2004 as opposed to PLN 38.5 in 2003. In 2004-05, the number of students receiving grants was 471 400, about a quarter of the total student population. This reflects an improvement in the proportion of students covered since 2001-02, when about 14% of the student population received this type of assistance. In 2004-05 about two-thirds of disabled students received some form of non-repayable financial assistance. In 2004, the average amount of the monthly maintenance grant in public tertiary education institutions was PLN 135, slightly above the average in private institutions (PLN 133).

The second main form of government assistance is the publicly-subsidised Student Loan and Credit Scheme introduced in 1998. Loans are granted by the Student Loan and Credit Fund, managed by The Bank for National Economy (*Bank Gospodarstwa Krajowego*) and by commercial banks. In the latter case, the Fund covers the difference between the commercial interest rate charged by the bank and the interest actually paid by the student. All undergraduate and graduate students of Polish nationality (or EU nationals resident in Poland) who enrol in a tertiary education institution before completing 25 years of age are eligible for a loan under this scheme. However, given that the scheme is subject to a budget constraint, if the number of eligible students exceeds the number of students the given budget can cover, then loan recipients are selected on the basis of financial need.[17]

Students entitled to a loan can be granted a maximum monthly amount (about PLN 600 in 2004-05) for a period of 10 months in a year. Interest is charged during both the study and repayment periods but at a subsidized rate – in general half of the discount rate of the National Bank of Poland. A particularly important feature is the need for the borrower to provide a guarantor for the loan. This makes it difficult for many needy students to access the loan scheme. The period for which a loan can be granted may not exceed 6 years or, in the case of graduate students, 4 years. There is a grace period of two years between graduation and the repayment starting date. The repayment may be further deferred for unemployed graduates. The typical repayment period corresponds to twice the period during which the loan was taken and the monthly repayment amount is limited to a maximum of 20% of the graduate's monthly salary. The loan can be partially forgiven for outstanding academic achievement (typically 20% of the loan is remitted for

17 In 2004, as a result of budget constraints only those students for whom the qualifying income (of the student, the student's spouse, and the student's parents if he/she is not recognised as financially independent) did not exceed PLN 1 400 per month were entitled to a loan.

the best 5% of graduates of each tertiary institution) and fully forgiven for a graduate who has permanently lost the capacity to repay the loan.

In 2004-05, 196 000 students (11% of the student population) had taken out a loan over the course of their studies. In the last four years, the average number of new loans granted each year stabilized at around 23 000. On average, over the last three years, about 75% of students who applied for one were granted a loan. About 68% of borrowers in 2004-05 were regular students while 22% of loans granted between 1998 and 2005 were taken by students in private institutions.

Given the limited development of the student financial aid system, assistance from their families and their own earnings from employment remain the main means through which students cover their study costs.

3.4 Human Resources: Academic Staff and the Academic Career

The structure of careers and higher qualifications in Poland is broadly similar to those obtaining in other northern European countries, and particularly in Germany. Beyond the bachelor's, master's and PhD qualifications ladder there is the further step of *habilitation*. A second or 'higher' research-based doctorate, the *dr.habil.* is a prerequisite for appointment to senior posts in the academic profession. It is inevitably a time-consuming further step beyond the PhD. However, this is not the final step in the qualifications process. Academic staff who aspire to be appointed to the highest posts must also submit to a further assessment of their research, and if successful will then be awarded the 'academic title' of Professor. This assessment is quite distinct from appointment to a specific professorial post, and can best be seen as a further qualification prerequisite. It does not require a further thesis, but research outputs and indicators are comprehensively reviewed, and also the candidate's supervision of doctoral students.

Another unusual feature is that responsibility for the quality and standards of the qualification structure is split between the State Accreditation Committee, which monitors bachelor's and master's degrees (see Section 3.5), and a national Commission, the Central Commission for Academic Degrees and Titles (CCADT), which takes responsibility for the PhD, the *dr.habil*, and the academic title of Professor. The SAC advises the minister on institutional proposals to award bachelor's and master's degrees in new fields or at the higher level; but the CCADT uses its own powers to award the right to confer both levels of doctoral degrees to organised fields of study at TEIs. The Commission directly assesses applications for professorial title through ad-hoc committees which it nominates for each

case[18]. Applications which it supports are forwarded to the President of the Republic of Poland, who awards the title. The CCADT, operating under legislation passed in 2003, is an elected body, elected solely by and consisting solely of Professors, who serve four-year terms. It operates mainly through disciplinary sub-panels. The number of professorial titles awarded annually is approximately 500 (approximately equal to net replacement of deaths/retirements); and of *drs.habil.* approximately 850. The latter number has risen since 2004, and the number of *drs.habil.* is increasing. PhD numbers have been increasing much more rapidly. The average age of obtaining the PhD is approximately 30, the *dr.habil*. around 45 and professorial title 60 (figures from CCADT: see also CBR Table 7.5). The proportion of women among new PhDs rose fairly steadily from 29% in 1991 to 45% in 2002; the proportion of women among new *drs.habil.* and new professors rose over the same period, from 23% to 27% and 22% to 27% respectively.

Only those with the *dr.habil*. may supervise and examine doctoral theses. The senior titles/qualifications are extremely important to institutions and their basic units/departments, since there are minimum requirements, enshrined in the 2005 Higher Education Law and in earlier legislation, for the number of titular professors/*drs.habil.* in any unit which wishes to offer degrees at various levels in a given subject; the number of such units, along with the number of highly qualified staff, in turn determines whether an institution is classified as 'academic' or 'vocational'. Moreover, senior posts carry a higher resource weighting in the basic funding formula.

Academic staff are divided into a number of grades, from Full Professor (for which the professorial title is a requirement) through Associate Professor (requiring the *dr.habil*.) to Tutor (requiring the PhD) and Assistant (requiring the Master's degree)[19]. There are also Lecturer titles (at two levels) for teaching-only staff. According to the CBR (Table 7.2), in 2003/4 approximately 22% of full-time staff in the Polish system were full professors, 36% associate professors, 20% tutors and assistants, and 21% lecturers: figures for part-time staff are not available.

Appointments are made by institutions and not by the ministry. They may be permanent (indefinite) appointments or fixed-term contracts. Salaries in public institutions are determined by the ministry in bands within

18 Until 2004 the Commission also directly assessed candidatures for the *dr.habil*., but this has now been transferred to institutions, with the commission simply appointing the external assessors.

19 The grade of Docent (Reader) was abolished in 1990 except for those existing post-holders who were not promoted to full professorships.

which institutions have some discretion. According to the CBR, in 2003 full professors were paid nearly 300% of the average salary of public employees, *drs.habil.* roughly 250% and PhDs 150%; there are also a number of entitlements (*e.g.* to sabbatical leave), special allowances for particular duties and special pension arrangements (see also Section 4.3). Multiple employment has however been a prominent feature of Polish tertiary education, and this is discussed in Section 4.3; but it should be noted here that (i) the 2005 Higher Education Law restricts full-time employees of TEIs to one other contract of employment (unless with the explicit permission of their Rector); (ii) the existence of multiple employment must qualify the reliability and/or the interpretation of some of the figures quoted above.

3.5 Quality Assurance in Tertiary Education

During the 1990s, the combined effects of rapid growth in tertiary enrolment, the introduction of hundreds of private providers, and severe constraints on state funding of tertiary education created new pressures on the Polish government to ensure that standards of quality were being met. In response, several mechanisms for monitoring tertiary education were established during this early post-communist period. The General Council for Higher Education played a significant role by advising government about possible initiatives and, as early as 1993, it prepared a framework for the evaluation of the quality of teaching. In 1997, the government established an Accreditation Committee for Vocational Higher Schools, charged with reviewing and assessing aspects of quality in a sector of tertiary education that was experiencing explosive growth. Other responses, initiated by the academic community, also appeared, including cooperation among business schools on matters of education quality and the establishment of accreditation committees and evaluation procedures by the Conference of Rectors of Academic Schools (KRASP).

In 2001, the government established the State Accreditation Committee (SAC [in Polish, PKA]), which continues today as the central body for quality assurance of tertiary education in Poland. The Committee has independent authority, initially under the 2001 amendments to the 1990 Law and recently reaffirmed under the Higher Education Law of 2005, and is charged with two major roles:

- To assess the quality of education in individual areas of study, and

- To provide advice to the minister responsible for higher education on applications to establish new tertiary education institutions, to

establish new external organizational units, or to establish new study areas.

The State Accreditation Committee is authorized to have between 60 and 80 members who are appointed for four-year terms by the minister for higher education following nominations proposed by the General Council for Higher Education, the Conference of Rectors of Academic Schools, the Conference of Rectors of non-university tertiary education institutions, the Students' Parliament, senates of tertiary education institutions or their equivalent, national academic associations and employers' organizations. The president of the students' parliament is, by law, a member of the Committee. The other members must be academic staff holding at least a doctorate degree and with a tertiary education institution as their primary employer.

The State Accreditation Committee has a presidium made up of a president, a secretary, the president of the students' parliament and the chairpersons of its sections. Most of the work of the Committee is conducted at plenary sessions or through its eleven sections, each having at least five members and representing a group of fields of study (*e.g.*, humanities, natural sciences, economics, fine arts). It is at plenary sessions of the Committee that organizational arrangements and specific procedures for the conduct of assessments are adopted (Law on Higher Education, 2005, chapter 6).

Under accreditation procedures in effect from 2002, tertiary institutions are required to submit proposals for new study areas to the State Accreditation Committee and also are required to participate in subject-area reviews organized by the Committee. Following requests by the sections, the SAC presidium determines the specific fields of study and tertiary institutions chosen for subject-area review in a given year, with the intention that all fields at the bachelor's and master's levels are reviewed over five years. Repeat assessments of the fields of study are planned on continuing five-year cycles. Between 2002 and 2004, 59 areas of study were reviewed. In the humanities, for example, fields reviewed during this period included ethnology, history, languages and literature, Polish studies, protection of cultural heritage, and theology (SAC, 2005).

For the subject-area reviews, tertiary institutions must prepare and submit a self-assessment report of up to 50 pages, based on SAC guidelines, that includes data on staff and students, descriptive information on such areas as teaching load, teaching methods, research activities, and the staff appraisal system, as well as a final section on strengths, weaknesses and future plans. Site visits are then organized and conducted by the relevant sections of SAC. Among their queries, site visitors review a sample of

master's theses and speak with groups of students. Between 2002 and 2004, 748 site visits were completed, based at 105 public institutions and 132 non-public institutions. It should be noted that newer tertiary institutions – if they had not completed an education cycle and had not yet graduated any students – were not included in these reviews (SAC, 2005).

The State Accreditation Committee has issued assessments based on its reviews that summarize its results by categories:

- Outstanding
- Positive
- Conditional
- Negative

Assessments follow the criteria adopted by the presidium of the SAC based on SAC review procedures and the law on study requirements. For the 2002-2004 reviews, 76% of assessments were positive, while 2% were outstanding, 18% were conditional and 4% were negative. The State Accreditation Committee reports the reasons for its assessments and, for conditional assessments, requires that shortcomings be removed within a specific time period, when a follow-up assessment will take place. Negative assessments (numbering 37 in the 2002-2004 period) lead to actions by the education ministry to suspend enrolment in the study field or to revoke the institution's right to offer the specific study field. These assessments also have some influence on the amount of public funds granted to tertiary institutions (CBR, pp.111-112). Among the reasons for negative assessments were: not having sufficient academic teachers with appropriate qualifications, curricula that did not meet requirements stipulated in the teaching standards (based on the April 2002 regulations), insufficient resources available, and master's theses that did not meet requirements (SAC, 2005, p. 31).

During the same period, the State Accreditation Committee carried out its role in reviewing applications for new institutions or programs and gave advice to the minister on 2 049 applications, with 48.9% receiving negative recommendations. Most of the negative recommendations concerned applications to establish areas of study at new or existing vocational schools. Concerns focused especially on weaknesses in curricula and syllabi or insufficient numbers of academic staff (SAC, 2005, p. 39).

The State Accreditation Committee's assessment results and its advice on applications are submitted to the minister responsible for higher

education and to the affected institutions. They are also made public, and have been widely reported in the media. As a result, they have been widely discussed across Poland by academics and the general public alike. Assessments remain available to the public, as they can be accessed via SAC's website. SAC has published its own report on its work during the initial period of 2002-2004, which offers numerous examples of the reasons for its opinions (SAC, 2005).

All the indications are that, despite its relatively tough approach – issuing negative assessments that are publicly available and that carry consequences for institutions – the State Accreditation Committee has gained general acceptance in Poland. Institutions have cooperated with the process and about 700 experts (generally academics) have served on its visiting teams on a voluntary basis. At the seven tertiary institutions visited by the OECD review team, all reported support for the Committee's continuation. It is seen as having gained good administrative experience and having fair assessment procedures that operate at relatively low cost. Politicians have recently given it increased operational independence. The Committee has developed good relationships with counterpart agencies in other countries; it is a member of the European Consortium for Accreditation (ECA) and the Central and Eastern European Network of Quality Assurance Agencies in Higher Education (CEEN). It aims to soon join the European Network of Quality Assurance (ENQA) and the International Network of Quality Assurance Agencies (INQAAHE).

The State Accreditation Committee's role is complemented by other evaluative and validation structures, including a national-level system for evaluation of research and the Central Committee for Academic Degrees and Titles, which has oversight of authorizations to award doctoral degrees and direct responsibility for the awarding of professorial titles (Section 3.4 above). The ministry for higher education is responsible for certain aspects of oversight too, based on its regulations on degree programme requirements for each field and level of study, teaching course load and other procedures, as well as regulations for the organization of doctoral programmes (CBR, pp.22-23). In addition, as described above, the General Council for Higher Education, the students' parliament and the rectors' conferences are authorized to offer advice to the minister on important issues facing tertiary education. Offering still further support for quality assurance and enhancement are seven, voluntarily established, accreditation committees organized by the academic rectors' conference (KRASP), which have evaluated programmes and made recommendations in broad fields of study.

3.6 Equity in Tertiary Education

Equity does not feature among the priorities for tertiary education policy in Poland. As regards access to tertiary education, the policy emphasis in Poland has relied considerably more on the expansion of overall enrolment, rather than directly addressing the question of equity of access, which relates more to the issue of differences in participation rates among groups of students – by gender, socioeconomic background, region of residence, or disability. And as we saw earlier, there has been considerable progress regarding the expansion of participation even if serious concerns persist as regards equity of access. We may note here that enrolment levels in tertiary education grew by 161% between 1995 and 2003, the greatest such growth rate among OECD countries (OECD, 2005); and the proportion of individuals of a synthetic cohort entering tertiary education at one point in their lives reached 70% in 2003 (the 5th highest proportion among OECD member countries, see Appendix 4, Table B6), compared with 48% in 1996 (OECD, 1998). Enrolment rates are well above the average for the OECD.

Such rapid expansion could potentially lead to a range of equity outcomes. On the one hand, it has opened up more places in tertiary education institutions, and these should increase opportunities for disadvantaged students to attend. On the other hand, the expansion of tertiary education in Poland has been accomplished mostly by: (i) expanding places in new, lower status institutions; (ii) introducing a discriminatory fee policy in public institutions; and (iii) expanding the fee-paying private sector. This means that disadvantaged students may well have gained access predominantly to lower-status institutions, including those in smaller towns which are primarily private fee-paying institutions.

The strategy of achieving equity through the expansion of access relies on two main approaches:

- Financial assistance for low-income students through a range of grant schemes and other programmes such as the ones described in Section 3.4. Some schemes are targeted at specific groups such as disabled students. Resources devoted to grants have significantly expanded in recent years. A national Student Loan and Credit Scheme was also established in 1998, and most institutions grant financial aid targeted at needy students.

- Expansion of the supply of tertiary programmes, with the creation of institutions (and especially private vocational institutions) in smaller cities and towns in provinces with low coverage rates. This has improved the geographical accessibility of tertiary education.

3.7 The Role of Tertiary Education in Research and Innovation

Expenditure on Research and Development (R&D) in Poland is very low and has been continuously decreasing since 1991. In 2003, gross domestic expenditure on R&D as a percentage of GDP stood at 0.56%, the lowest figure among the 19 OECD countries for which data are available. This compares to 0.76% in 1991 (see Appendix 4, Table G1). Similarly, tertiary education expenditure on R&D as a percentage of GDP is still among the lowest in OECD countries (0.18% in 2003, the 2nd lowest figure among the 19 countries for which data are available: (Appendix 4, Table G2) despite a slight increase from the 0.16% of 1992.

In 2003, gross domestic expenditure on R&D was distributed as follows in terms of sector of performance (see Appendix 4, Table G3): 31.7% in the tertiary education sector (the 2nd highest such proportion among the 18 OECD countries for which data are available), well above the 20.9% of 1992; 40.7% in government-funded research institutes (the highest such share in the OECD area); 27.4% in the business sector (the lowest such proportion in the OECD area, well below the OECD country mean of 67.3%); and 0.2% in the private non-profit sector (third lowest such proportion in the OECD area). Noteworthy features are therefore the modest contribution of businesses to expenditure on R&D and the significance of government-funded research institutions, which are detached from institutions of tertiary education. The latter are constituted by the research institutes of the Polish Academy of Sciences (PAS institutes) and the research institutes supervised by sector ministries.

In 2003, there were 80 research institutes of the Polish Academy of Sciences (employing 4.494 full-time equivalent (FTE) researchers), 234 research institutes supervised by sector ministries (employing 11 387 FTE researchers), 128 institutions of tertiary education recognised as undertaking research (employing 38 455 FTE researchers), and 446 companies documented as conducting research (employing 6.168 FTE researchers). The research activities of PAS institutes and tertiary education institutions are mostly funded by the state budget for research (in 2002, 87% and 83.5% of their funding, respectively) while the institutes supervised by sector ministries (52.8% of funding coming from the state budget for research) and companies (8.1%) have more diversified sources of funding. Another significant trend is the decreasing importance of industry in funding research in tertiary education institutions, from 11.4% of research expenditure in tertiary institutions in 1994 to 6.0% in 2003 (see Appendix 4, Table G4).

Most of the research funds in PAS institutes and tertiary education institutions are spent on basic research (in 2002, 85.7% and 60.2%, respectively) while institutes supervised by sector ministries and companies

concentrate their expenditure on applied and developmental research (in 2002, 16.6% and 2.8% of funds were spent on basic research, respectively).

The research policy framework and the rules for research funding have changed considerably in the last couple of years. The 2004 Act on the Rules for Funding Research established new bodies to assist with research policy and the allocation of research funds, and strengthened the role of the minister with responsibility for Science (from mid-2006 the Minister of Science and Higher Education). The minister makes final decisions regarding research policy and the allocation of research funds. Some of these powers were previously in the hands of the now extinguished State Committee for Scientific Research. The Council of Science was created by the 2004 Act to provide advice to the minister in the areas of research policy, priorities and funding. The Council of Science consists of:

- *The Committee for Scientific and Technology Policy* (CSTP). Its membership reflects the types of research institutions in the country. It provides advice to the minister in a range of areas such as research and innovation policy and funding arrangements.

- *The Commission on Research for Scientific Development* (CRSD). Its membership reflects different areas of science (stipulated by the minister). It provides advice to the minister in a range of areas such as the assessment of research units, the assessment of research proposals, and the evaluation of research projects. Its focus is on basic research.

- *The Commission on Research for Economic Development* (CRED). Its membership includes social partners and businesses, and representatives of a number of ministries. Its tasks are similar to those of CRSD but with an emphasis on applied research.

- The Team of Appeal (TA).

The 2004 Act on the Rules for Funding Research also aimed to improve the alignment between the research undertaken in Poland and the overall economic and social objectives of the nation. It states that one of the criteria in the allocation of research funds is the overall relevance of the research.

The funding of research has a number of distinct features: (i) there are a number of different funding streams (see below); (ii) research units and individual researchers, irrespective of sector (*i.e.*, including the private sector), are eligible to apply for research funding (except for one particular funding stream exclusive to tertiary education institutions, see below); (iii)

nearly all funds are allocated either on a competitive basis or on the basis of an assessment of research performance; and (iv) the ultimate decision on the allocation of research funding is taken by the minister responsible for science (currently also responsible for tertiary education).

There are a number of funding streams. On the one hand, there is a group of funding streams for which the allocation is based on an assessment of the quality of basic research units. These include a 'subsidy for statutory research' (baseline research funding for TEI and PAS units), a 'subsidy for in-house research' (including staff development, for tertiary education institutions only), and a 'subsidy for research support activities'. These funds are allocated to institutions as block grants, and the TEIs then use internal procedures to distribute them across their different units. On the other hand, there is a second group of funding streams allocated on the basis of competition between research proposals. These include 'grants for research projects', 'grants for international scientific co-operation' and 'grants for goal-oriented projects'. This last stream can be used for the development of tertiary education-industry links and regional/community engagement.

The criteria for the assessment of unit research quality (*i.e.* for the first group of funding streams described above) are currently being reviewed. In 2005, the subsidy for in-house research was based partly on an historical component and partly on the number of doctoral degrees and academic titles awarded over a three-year period. In that same year, the subsidy for statutory research was based on an assessment of research quality whose criteria included publications, academic degrees and titles obtained by staff, patents, internal quality systems, laboratory accreditation, and practical application of results.

Within the tertiary education sector, the main source of research funding is the subsidy for statutory research (33.2% of research funding in 2003), followed by grants for research projects (21.3%), and the subsidy for in-house research (14.2%). Grants for international scientific co-operation (6.5%), grants for goal-oriented projects (5.1%) and the subsidy for research support activities (0.5%) are relatively less important. There is, however, an important new source of research funds, now that Polish researchers are eligible to participate as full members of EU-funded research projects.

The Higher Education Law of 2005 provides a legal basis for the establishment of academic business incubators and technology transfer centres. Technology transfer centres (TTCs) may be set up by institutions of tertiary education in order to ensure better use of their technological and intellectual potential and to transfer the results of their research to the economy. Of the total number of 29 TTCs established in Poland in 2004, 13

were based in tertiary education institutions. Academic business incubators may be created to support the economic activities of academic staff or students who want to establish themselves as entrepreneurs. Very recently, priority has also been given to the establishment of science and technology parks and about a dozen have been established, three of which involve tertiary education institutions. However, most of these parks are still at an initial stage of development and have not yet had any substantial outcomes.

3.8 Tertiary Education and the Labour Market

Characteristics of the Polish labour market

A comparison of the present-day Polish labour market with that of other OECD countries reveals five major characteristics (OECD, 2006a):

- A very low labour force participation rate (in 2004, 51.9% of individuals aged between 15 and 64 were in employment, the second lowest figure among OECD countries).

- A high proportion of self-employed people as a percentage of total civilian employment (26.7% in 2004, 5th highest share among the 24 OECD countries for which data are available).

- Long working hours (in 2004, the average person in employment worked 1983 hours in a year, the 3rd highest figure among the 26 OECD countries for which data are available).

- Very high unemployment rates (18.8% in 2004, the highest figure in the OECD area, well above the OECD country mean of 6.9%).

- A high proportion of long-term unemployment (in 2004, 47.9% of all unemployed people remained out of work for 12 months or more, the 7th highest proportion in the OECD area).

Another major feature of the Polish labour market is the significance of employment in agriculture (17% in 2004), which is very high compared with other OECD countries (OECD, 2006b). A further 23% are employed in the industry sector. The Polish labour market has relatively few large employers. The dominant feature of the pattern of enterprise structure is the large number of small and medium-sized businesses. This in turn shapes both the nature of the labour market for graduates and the ways in which much research and development takes place and is funded.

Tertiary education and the labour market

As far as graduate labour is concerned, it is noteworthy that although the massification of the system has sharply increased the number of new graduates each year, their employment prospects are still relatively favourable. Unemployment rates are lowest for individuals with tertiary qualifications (6.7% in 2003 for the 25-64 age range), about twice and four times lower, respectively, than for those with upper secondary and lower secondary education (Appendix 4, Table A13). In addition, gender differences in unemployment rates are lowest among tertiary education graduates. During the period of economic transformation, the largest growth in the number of those in employment was among those with a tertiary degree. The relative financial benefits of tertiary graduates are also significant in Poland. In 2001, the gross earnings of individuals with a tertiary degree exceeded those of individuals with an upper secondary education by 55%. In the same year, the salary level of tertiary graduates was on average 48% higher than the national average salary. The three areas of study with the best salary prospects are law, information technology, and engineering.

Poland has a relatively small proportion of graduates in the areas of science (3.9% in 2002, 2nd lowest figure among the 27 OECD countries for which data are available, see Appendix 4, Table A10), humanities and arts (6.4%, 4th lowest figure in the OECD area), and engineering, manufacturing and construction (7.5%, 5th lowest figure in the OECD area). By contrast, 41.4% of graduates in 2002 were in the social sciences, business and law, the fourth highest share in the OECD area. This is the result of the massive development of institutions, in both the academic and vocational sectors, which specialise in economics/business studies. In the academic sector alone the number of such institutions grew from 5 in 1990-91 to 93 in 2004-05. During this period, the number of students in 'Economic TEIs' increased by a factor of 15. However, since 2000 there has been a decrease in the proportion of students in these areas. Fields of study which have markedly increased in popularity in recent years include information technology, international relations, management and production engineering, sociology, tourism and leisure and medical sciences.

There are three main ways in which attempts have been made to improve the articulation between the tertiary education system and the labour market. First, efforts have been made to diversify the supply of tertiary programmes, in particular through the expansion of the vocational sector and the creation of tertiary education institutions in non-urban areas. Second, some partnerships are in place between institutions and employers, especially in vocational TEIs. These include enabling professionals from industry to contribute to the delivery of programmes in vocational

institutions, the creation of offices in some institutions to promote and administer liaison with employers and, in the few institutions which have taken the opportunity granted by the 2005 legislation, the establishment of an advisory council which includes external stakeholders such as local authorities and business representatives. Finally, there is a National Network of Careers Offices, encompassing the careers offices which have been established in most institutions. These provide guidance and counselling to students and graduates upon entry into the labour market. They provide information to students on career options, links to potential employers, and often also some training in skills.

3.9 Internationalisation of Tertiary Education

Although Polish tertiary education has become considerably more open since the early 1990s, it cannot yet be said to have reached a high level of internationalisation. At present the main channels for international relationships in Poland relate to student mobility and to Poland's participation in the construction of the European Higher Education Area, especially through the Bologna process. The most significant work of internationalisation takes place not at a ministerial level, but rather as a result of the activities of tertiary education institutions. The latter may become involved by participating in EU programmes, establishing bilateral and multilateral institutional agreements, marketing their programmes internationally, developing their infrastructure to receive foreign students and academics, and promoting an international outlook among their own students.

In 2003 foreign students constituted 0.4% of all tertiary enrolments in Poland (in full degree programmes only). This compares unfavourably with other OECD countries: it was the second lowest proportion among the 27 countries for which data were available, well below the OECD country mean of 6.4% (Appendix 4, Table B10). In addition, it represents a 16% decline from the 1998 level (the second highest such decline in the OECD area) (Appendix 4, Table B11). Recruitment from other countries is widely dispersed: the countries with the highest numbers of citizens studying in Poland are Norway (5.4% of foreign students in Poland: OECD, 2005), the United States (4.7%), Russia (4.5%) and the Czech Republic (3.2%). The social sciences, business and law enrol about 37% of the foreign students in Poland while humanities and the arts (25%) and health and welfare (18%) also attract substantial proportions of foreign students (OECD, 2005). The significant number of foreign students in the areas of health and welfare is the result of a number of medical schools offering programmes taught in English.

A rather larger proportion of Polish students study abroad. In 2003, 1.3% of the total tertiary enrolment of Polish nationals were studying in foreign countries which reported data to the OECD[20]. However, this represents the 5th lowest proportion among the 29 OECD countries for which data are available, considerably below the 4% OECD country mean[21]. The most popular destination country was Germany (enrolling over 50% of Polish nationals studying abroad) followed by France, the United States and Austria (OECD, 2005).

However, in addition to full degree programmes Polish students and academics are increasingly involved in student exchange in the framework of EU programmes. Starting with the TEMPUS programme, new relationships were established between Polish and Western European tertiary education institutions. This programme was followed by SOCRATES/ERASMUS. Under the ERASMUS programme, in the academic year 2004-05 the number of Polish students going abroad (8 390) was about 4 times greater than the number of foreign students coming to Poland (2 332). The first of these figures is striking, since it is the 5th highest total in the EU, behind Germany, France, Spain and Italy but about twice as high as those for the Netherlands, Austria, Finland and the Czech Republic. By contrast, the second figure shows that the Polish tertiary system is not yet attracting foreign students to a similar extent: despite the size of its system, Poland ranks 14th in the EU as a receiving country. Countries which attract more ERASMUS students include Austria, Belgium, Denmark, Finland, Ireland, Portugal and Sweden. There is a somewhat less pronounced but broadly similar trend for teacher mobility under the ERASMUS programme: Poland ranks 4th as a sending country (behind Germany, Spain and France) and 7th as a receiving country.

An obvious reason for the disparity is language. So far, there are a relatively limited number of study courses provided in foreign languages although there have been some positive developments in this area recently in Polish tertiary institutions. According to KRASP, in 2005-06 68 Polish tertiary education institutions offered 1 400 courses and 150 full degree programmes in English, even if not all were actually delivered. A good example is the creation by Krakow's Jagiellonian University of a new medical school teaching entirely in the English language. However, most

20 In this case data were provided both by OECD countries and by some partner countries.

21 However, the mean is inflated by high numbers from a few countries. Poland's 1.3% may also be compared with 1.8% for Germany and France and 0.5% for the UK.

TEIs have no strategy for attracting foreign students: they offer few or no study programmes taught in foreign languages, and typically they have not developed a proactive policy for international marketing.

Finally, as we indicated in Section 3.1, Poland's early acceptance into law of the two-cycle bachelor's-master's degree structure should have made it possible for tertiary institutions to engage with the Bologna process, without some of the difficulties which confronted many other European countries with a long-established and deeply embedded indigenous degree structure. In practice, however, the transition has not been entirely straightforward: see Sections 4.1 and 4.8.

4. Strengths and Challenges in Polish Tertiary Education

4.1 Governance

The national level

A good test of the governance of tertiary education at national level is its capacity to deliver the implementation of national policy aims. Viewed in that light, the single greatest testament to the strength of the Polish system since 1989 is its success in achieving massive growth in student numbers. It is true that there had been rapid growth in student numbers under the communist regime in the years up to 1975 (see Section 3.1), but this had been followed by decline. However, in the 14 years from 1990/1 to 2004/5 total student numbers grew by almost 500%. It is difficult to imagine that growth on this scale would ever have been achieved within a centrally-planned system.

The growth was made possible by four key decisions. First, of course, was the change from a tightly planned structure, directed in detail from the central ministry and subject to the vagaries of national forecasting and budgeting, to a relatively open system of institutional autonomy. As we have seen, after 1990 Poland quickly handed over to the TEIs not only financial autonomy but with it, the responsibility for planning their broad mission, their strategic future and their programme offerings (both level and subject distribution). A second, closely linked, decision was to allow state TEIs to offer 'non-regular' courses, for which they would charge fees, to up to 50% of their total student numbers, thus enabling them to double their enrolments and providing a strong financial incentive to do so. The third element in achieving massive growth was the government's support for institutional diversity. As we have seen, this had two main components: the encouragement of vocational institutions and the encouragement of a quantitatively flourishing private sector. The legislative framework provided the space for small TEIs to start up, offering a limited range of courses targeted directly at areas of popular demand, notably in the business field whose attractions seemed huge when entrepreneurialism was expected to

flourish; and it made it possible for individuals and groups to create private, non-profit TEIs without going through the political processes inherent in creating new public institutions, and without many of the internal governance requirements to which all state institutions were tied. Finally, the new framework and associated policies have much improved the provision of regional opportunities, filling many of the geographical gaps and enabling many more young people to access the courses they want without leaving home.

Another recent achievement has been the willingness, at governmental level, to begin to engage with the Bologna process (see Section 3.9 above). Legislative arrangements have been put in place under the 2005 Higher Education Law to enable the adoption of Bologna degree structures but these are merely optional and in practice few institutions have yet taken advantage of the opportunity (see below and Section 4.8). However, the Bologna degree structures will become mandatory from the 2007-08 academic year.

A more unambiguously positive feature is the strength of the consultative processes which are used to promote communication between government and institutional stakeholders. Those organisations recognised by the government on a statutory basis include the General Council for Higher Education (GCHE), which is supported by government funds; the two Conferences of Rectors, whose powers to initiate policy and rights to consultation are defined in law; and the national Students' Parliament, whose constitution and powers are also defined in law, including not only the right to consultation on new legislation but full membership of the GCHE and SAC. All of these organisations are identified in the new Law of 2005, and their right to be consulted is clearly spelled out in it. Moreover, the GCHE has now been given the right to initiate proposals for changes to the degree programme regulations which are the responsibility of the ministry.

The Polish tertiary education system is however subject to a number of complex and rather intractable challenges. Foremost among these is the remarkable extent to which the system, and not only the 'academic' institutions, can be said to be academically driven, and hence insufficiently responsive to the diverse needs of the present-day economy and society. It is not overstating the case to characterise the system as a whole as inward-looking and backward-looking: the processes by which it is governed, and the values and culture from which these processes are derived, are primarily internal and (in the broader sense) institutional rather than those of societal needs. Although we have just described the system as diverse in the formal sense (in that it contains vocational and private TEIs in addition to

universities and other academic institutions), there is a lack of true diversity of mission and values.

The academic orientation, and the lack of diversity which it entails, can be identified in a number of key processes. In the legal frameworks for regulation, funding and governance the system is structured into two sectors, as described in Section 3.2: within these is a classification of institutions into titles which appear to carry different implications: vocational or professional schools, vocational or professional colleges, academies, universities. However, there does not appear to be any fundamental distinction in mission between the categories or even between the two sectors. On the contrary, the various categories of institution are essentially distinguished only by their academic capacity – that is, the extent to which they are deemed capable of delivering programmes at various postgraduate levels, which in turn is dependent on the number and qualifications of senior academic staff. We interpret this to mean that Poland has not accepted the possibility that the standards appropriate for selective university education cannot, and more importantly should not, be regarded as appropriate for the whole of a system of mass higher education with high enrolments and limited resources. In this, of course, Poland is far from alone: the transition to mass higher education has been painful in many other European countries. But there appears so far to be limited recognition of the difficulties entailed – and of the costs of a failure to recognise them.

Perhaps the most obvious cost is the pervasiveness of 'academic drift'. The term refers to the widespread, persistent and inappropriate aspiration of newer, generally less selective and/or more vocationally oriented institutions to emulate the mission and practices of established and generally 'elite' universities (see for example Raffe *et al.*, 2001). The causes of academic drift are complex, but usually include the social and cultural status attributed to older universities and their members (staff and students); the more generous resourcing available to elite and research-oriented universities; and the 'trickle-down' effect of academic staff recruitment: most staff in all but the most prestigious institutions are likely to have obtained their qualifications from an institution higher in the academic hierarchy than their present place of work. As this description implies, higher education systems are more likely to suffer from academic drift if they are formally or informally structured into a single (*de jure* or *de facto*) hierarchy, and less likely if the system is demarcated into separate sectors which have clearly differentiated missions, diversified regulatory and funding regimes appropriate to each sector and (optimally) barriers which inhibit or even prohibit 'promotion' from one sector to another.

These conditions do not obtain in Poland. On the contrary, there does not appear to exist, either in legislation or in policy statements at the

national level, a clear vision of vocational education. Instead, the term seems to be interpreted in 'common sense' ways, leaving each 'vocational' institution to define its own mission. Given both the symbolic and the practical and financial advantages that accrue to academic institutions, it is not surprising that academic drift is widespread. Several of the 'vocational' institutions that the review team visited made it clear that they aspired to become academic institutions as soon as they could meet the criteria, and that they saw many advantages and few, if any, disadvantages in doing so.

We noted that a number of processes which might have been used to constrain, or even prevent, academic drift do not in fact operate with this in mind. In particular, as we have indicated, the SAC's approval for new programmes simply requires an institution and the relevant basic organisational unit to showing that they fulfil a set of academic criteria – essentially indicators which are taken to demonstrate the capacity to deliver the programme to the appropriate (or more accurately, the highest possible) quality standard. Evidently no attention is paid to non-academic criteria, of which the most obvious would be the provision of evidence of demand – preferably from the labour market (and in practice not even from students). If institutions and their basic units were required to show that they had consulted employers and professional associations, and had evidence not only that there was genuine labour market demand but that they had reviewed the proposed courses and their contents with future employers of graduates, this might go some way towards reasserting the vocational value and relevance of tertiary education. The central regulations on programme titles and content are of course a further difficulty for such a process. In other words, there is little or no encouragement for institutions to take a vocational mission seriously.

More generally, we noted earlier that institutions – and their basic units – have been permitted by the 2005 legislation to set up councils or advisory boards including external stakeholders – even if the opportunity has not yet been widely taken up. We were surprised, however, that there does not seem to be a similar openness at national level. Apart from the SAC which may have employers' representatives, the key advisory and consultative bodies for tertiary education are entirely composed of academic interest groups. There is of course a range of possible stakeholders, of which employers are only one: others could include, for example, representatives of local government, (non-academic) trade unions and community groups.

The consequence is that, as we argue in Section 4.7, from a labour market perspective the balance of supply of qualified people appears to be driven by academic producers rather than by student or employer consumers.

Another challenge for Poland is to improve the central authorities' capacity to promote the development of tertiary education. On the one hand, the goal of meeting student demand has been articulated and widely taken on board since 1990, and the policy levers (primarily financial and legal-enabling) which have been put in place have worked well to increase enrolments – at a spectacularly rapid rate. But the same cannot be said of other potential policy aims. Even in the review team's discussions with senior officials we found it difficult to determine the national policy view on other major issues: for example, on institutional differentiation and academic drift; on labour market relationships; and on internationalisation. And these impressions were reinforced by our visits to institutions: the senior post-holders whom we met confirmed that from their perspective, too, national policy views on these issues were rather opaque. There are in fact two linked challenges: first, the task of determining and articulating a national view on critical policy issues, and second, the task of communicating the vision clearly and effectively.

But before that can happen, policies need to be discussed and worked through at the national level. There are at least two preconditions for this. First, ministries and agencies need to have a clear division of labour and clear and effective lines of communication. The timing of our visit was unfortunate, in the immediate aftermath of the decision to restructure the former Ministry of Education and Science into two separate ministries, and it would not have been reasonable to expect clear answers to all of our questions at this point. However, we formed the impression that there is a lack of suitable fora in which the inevitable variety of ministries and agencies with an interest in different aspects of the inputs and outputs of tertiary education could meet, share information and ideas and come to sensible joint decisions. Second, it was generally agreed that there is still not only a shortage of the kind of comprehensive statistical (and other) information on which central policy decisions should be made – and which is also increasingly demanded by the public – but that there is not as yet a comprehensive information strategy to define what information is needed and how it is to be collected. We understand that this is a major challenge in a fast-growing and dynamic system, and it is clear that great improvements have been made in recent years. Nevertheless, there are some obvious gaps in the available information (for example, student characteristics differentiated by discipline/field, gender, region, etc; completion rates; post-graduation destinations; staff characteristics, notably the balance of effort between teaching and research, hours worked and multiple employment), and it would be highly desirable to determine how these gaps might be filled. There is, moreover, a great public interest in inter-institutional comparisons, as witnessed by the publication of 'league tables' in the national press. It is in everyone's interest that these should be based on

authoritative information which is not only accurate but also as full as possible.

A specific example is the case of non-public tertiary education. At present information is extremely limited on many aspects of the work of the non-public TEIs. A case can be made that the obligation to provide information, for publication, should not apply to the same extent to institutions which are not publicly funded. However, one simple answer to this is that public funds do now flow to the non-public TEIs via their students (and in a number of other small revenue streams: see Section 4.2): thus public accountability is needed here too. Another answer is that, as suggested above, the public increasingly demands comparable information on institutions of all kinds, and it is legitimate and appropriate for government to collect and publicise it. But perhaps the crucial argument is that it would be in the interests of the non-public TEIs themselves. There is still considerable suspicion of the private sector, including questions about private institutions' finances and non-profit status, their real (rather than nominal) use of staff at different levels and with different qualifications, and the quality of their teaching. The 2005 Law, which puts them on an equal footing with the public TEIs in many new respects, is to be welcomed, and in particular the SAC's even-handed operations (and its willingness to use its powers to declare programmes unsatisfactory) have helped to provide reassurance on teaching quality (see Sections 3.5 and 4.4). But at present much of the non-public TEIs' activities are still largely invisible from outside, and this opacity can only reinforce suspicion, however wrongly based.

A further challenge for central government is of course how to implement national strategic goals, once these have been identified. As we suggest in Section 4.2, the use of financial levers for policy purposes is quite undeveloped. We formed the impression that policy communication and implementation depend quite heavily on networking processes such as those exemplified in the statutorily close relations between KRASP, KRZSP and the ministry. While there are considerable advantages to close contact and consultation of this kind, it should not be seen as an adequate substitute for formal mechanisms of policy implementation.

There are a number of other issues for the Polish TE system as a whole, which we believe can only be addressed by initiatives from central government and/or other system-level actors. First, student mobility (between institutions in Poland) appears to be exceptionally low[22]. As we discuss in Section 4.3, there is a strong tradition of 'in-breeding', in other

22 This information is partial and/or anecdotal: there are no national figures.

words that graduates who move on to further study and indeed to academic employment tend to do so, wherever possible, within the same institution in which they were undergraduates. As we argue later, this is a complex and to some extent a cultural issue, and it is evidently a long-standing Polish tradition. It is not possible, given the principles of institutional and basic-unit autonomy, and it would certainly be undesirable, for central government to try to interfere directly with postgraduate student admissions, or indeed staff appointments. But we believe that student mobility is made more difficult by the lack of an effective national qualifications framework, and perhaps also by the lack of awareness of the European Diploma Supplement among students and staff (see below, Section 5.1). There is a strong case for arguing that excessively low levels of student mobility lead to inefficiencies and inequities, and it would be appropriate for government to take whatever action it can to make potential transfer students' experience and qualifications more readable and hence, hopefully, more acceptable.

Secondly, it appears that despite the government's commitment in principle to the Bologna process, there is currently a lack of general acceptance of the Bologna degree structure by any broad group of stakeholders outside government and perhaps the senior post-holders in TEIs: we heard that most employers, academic staff and students still regard 'Bologna' with a mixture of ignorance and suspicion. As we suggest below, if Poland is seriously committed to the process, there must be a role for government in promoting knowledge and understanding as well as in facilitating and encouraging implementation.

And finally, we were struck by the weakness, bordering on invisibility, of tertiary-level continuing education. The dash for growth in undergraduate numbers seems to have squeezed out the possibility, for most institutions, of giving serious emphasis to continuing education of all kinds (both vocational-professional and more general), whether as a social and economic obligation or as a financial opportunity. Here too, the system has neither given clear positive signals to the institutions, nor has it helped the latter to respond to signals from their environment.

Institutional governance

In some respects Polish TEIs should be relatively well placed, both by the national framework and by their local governance arrangements, to respond promptly and effectively to demands from their environment. They enjoy a high degree of financial autonomy, including for example the capacity to take out loans, and considerable freedom to manage their own human resources; and although their academic autonomy is to some extent constrained by ministerial regulation and the SAC regime, there is still

considerable leeway within which they can innovate. Moreover, this compares favourably with many other European countries where governments have only very recently stepped back from detailed control. There should therefore be a good stock of institutional experience in operating as modern self-directing institutions, responsive to financial incentives and subject to external evaluation. We have mentioned the new opportunity to set up councils with external members, and if and when these are put in place, they should complement the signals from government and from the student applications market in helping TEIs to alert themselves and then to supply needs for new services in their locality and beyond.

There are however a number of challenges to be met before Polish TEIs can be seen as fully responsive autonomous institutions. We referred earlier to the common criticism that Polish TE in general, and nearly all of its institutions, is still 'supply-driven' and 'producer-dominated'. There are clearly several reasons for this, not least the history of the Polish universities which understandably pride themselves on having resisted both German occupation and communist ideology by a firm commitment to academic and scholarly values. But there is sometimes a surprisingly narrow gap between resistance to unacceptable or inappropriate pressures and a less defensible reluctance to change. There are a number of warning signs, including the lack of local or regional engagement, the rare use of external councils and the preference for fee-based undergraduate teaching over new initiatives in the areas of continuing education and consultancy. During our visits we were also given examples of structural inertia, such as difficulties in launching new programmes (especially interdisciplinary and inter-faculty initiatives) and the rarity with which outdated programmes are closed down.

It is tempting, perhaps, to blame cultural factors and move on. However, we believe that internal structures and patterns of governance must be at least partly responsible for these difficulties, and that addressing them could help to free up resources and harness the creativity which undoubtedly exists. Drawing on our discussions not only with institutional leaders and managers but also with heads of basic units and more junior staff, we formed the view that the public institutions, at least, only possess a rather weak central steering capacity. Faculties and basic units have their own decentralised authority, enshrined in the institution's statutes and indeed in national legislation; moreover, in many institutions government subsidies and other resources flow direct to sub-units rather than to the centre. This of course means that central management can only top-slice resources for institution-wide or pump-priming initiatives by consent from all parties, and cannot without consent transfer resources from well-funded units to support weaker units in need of help.

The tradition of electing Rectors, Deans and other post-holders is a long one, and it too is prescribed by the national legislation. Not only is election a long-established and evidently valued tradition in its own right, but there are of course considerable advantages, including not only the democratic legitimacy which it confers but also the ability to insist on a wide electorate including more junior staff and students at all levels. However, there are also obvious costs, especially when terms of office are fairly short. Elected officials' authority is time-limited and contingent: it can be curtailed or withdrawn at the next election, whereas the seniority and high status of (other) senior professors are unbounded once their title has been awarded. There are plenty of other successful university systems in which senior post-holders are appointed (indefinitely or for a substantial fixed term) against a job- and person-description with the active involvement of the other post-holders who will be working with them, and who set out to construct a balanced team with strong cohesion and commitment to institutional goals. Naturally there are disadvantages to both approaches, but given the apparent weakness at the centre of many Polish TEIs it is reasonable to ask whether the balance is right at present.

One area which certainly deserves investigation is the functioning of the various collective bodies within TEIs. There appears to be some confusion about the purpose of representative bodies (senates, faculty meetings etc.), and in particular about their roles as executive bodies on one hand and deliberative or legislative bodies on the other: it is neither effective nor efficient to hand executive powers to large representative bodies. It also appeared to the review team that even in large institutions the potential contribution of the present senior management team (generally comprising Rector, Vice-Rectors, Deans, senior administrative officers and service heads) was not always exploited to the extent that would be common elsewhere, either in industrial enterprises or in universities in other European countries. This is perhaps a further symptom of some of the difficulties discussed above.

Beyond the day-to-day problems of management, the main challenge for leaders and managers in institutions with the degree of autonomy which obtains in Poland is to develop a distinctive vision of their institution's future and translate this into coherent and implementable strategic plans. In our discussions with senior post-holders we gained the impression that strategic planning is not always undertaken systematically and regularly. This is not simply a procedural issue: strategic planning should flow from an institutional vision and mission. And these, too, seem to be less than prominent. Of course institutions care about their position in the newly emerging league tables; but it is quite hard to see how they plan to distinguish themselves from each other in other respects. In a fully

developed mass higher education system it is not only possible but highly desirable that institutions should specialise not only in particular fields but in their approaches to their different roles. Some obvious examples might be specialisms in teaching methods and approaches, recruitment of particular categories of students, service to industry and the community, vocational emphases, interdisciplinary work and so on. This is important because an excessively uniform system is in danger not only of failing to serve specialist needs but also of stifling, or at least failing to encourage, creativity and innovation.

The challenges of institutional governance are also related to the staffing issues which we discuss in Section 4.3 (below). The long and high career ladder, and the special status awarded to (full) Professors in the Polish system, can easily mean that senior professors become commanding figures who can outweigh or ignore the wishes of senior post-holders. And as in universities everywhere, there are tensions between the tasks of teaching, research and leadership or management. Success in any one of these does not necessarily guarantee competence in the others. In Poland research is by far the primary criterion for promotion and status, even though research plays a remarkably small part in the activity of most TEIs (see Section 4.6) and teaching is by far the largest contributor to institutional income.

4.2 Resourcing the Tertiary Education System

The funding of tertiary education in Poland presents a number of positive developments. To begin with, the allocation of public funds to individual institutions is on the whole transparent – the criteria and procedures for how funds are distributed are generally clear to those involved. Core public funds for teaching activities are distributed to public institutions on the basis of a formula, and most of the research funding is allocated through competitive processes. Other things being equal, this makes the allocation of public resources more equitable across institutions. A related positive development is that private institutions are given access to some public funding: money for research and funds for student financial aid. However, what is less clear is the rationale for providing public subsidies for teaching activities to two specific private institutions, while excluding the remaining private institutions from accessing such funds.

Another significant development has been the introduction of a qualitative component in the formula used to allocate public funds to institutions for teaching activities. As of 2005, the formula can be adjusted as a result of a positive assessment by the SAC. This is likely to support quality improvements in teaching and learning. However, the extent to which this mechanism is used is still limited.

Another positive feature of institutional funding is that the subsidy for teaching activities is delivered directly to public institutions as a block grant, and the institutions decide on their internal allocation of resources. This gives institutions more flexibility and autonomy than line-item arrangements, enabling them to determine their preferred distribution of funds in accordance with their particular mission. Public institutions own their buildings, land and overall infrastructure. They are also allowed to develop capital projects as long as these are financed with their own resources (*i.e.* funds other than public subsidies).

In the largest public institutions, the autonomous management of funds, including public subsidies, is often the responsibility of their organisational units (faculties). These can raise their own funds and use them for their own development. However, this decentralisation of financial management within institutions has both positive and negative implications, since it often leads to disputes between the central administration and faculties and is likely to hinder the strategic development of institutions (*e.g.* creation/closure of organisational units, cross-faculty collaboration).

There has also been progress in the student finance system. Funds for non-repayable types of student support have expanded. The proportion of the student population receiving some form of publicly-subsidised grant reached 25% in 2004-05 (and 60% of students with disabilities attending tertiary institutions) compared with 14% just three years before. Another development to be applauded has been the decision to make all students in the tertiary system eligible for public student support. Before 2004 only regular students attending public institutions could access the non-repayable forms of the student support system. Currently, students who attend private institutions benefit, under the same conditions, from the same basic financial support to cover living costs and tuition fees. This clearly facilitates students' freedom of choice and enables the development of institutions with distinct approaches and purposes. Particularly important is the existence of means-tested programmes to promote access to tertiary education by more vulnerable groups, in particular those with greater financial need.

Another important feature of the student support system is the existence of a publicly-subsidised loan scheme. It constitutes a major element to further facilitate access to tertiary education by reducing liquidity constraints faced by students. It rightly makes all students eligible to borrow. However, given that in practice budget constraints allow for only a limited number of loans, it is appropriate that the selection is made on the basis of financial need. It is also right to limit the number of years a student can benefit from a (subsidised) loan as well as to defer or forgive repayments if the graduate faces difficult circumstances after leaving the tertiary system. Another commendable aspect is the widespread tradition

whereby institutions use their own funds to confer scholarships to their students, especially in those cases where aid is granted on the basis of financial need.

Despite these strengths, Poland's approach to funding tertiary education currently faces serious challenges. To begin with, Polish tertiary education faces major financial constraints. As described earlier, enrolment growth in tertiary education has been spectacular[23]. Accommodating the growing demand has led to a number of developments, as we saw in Section 3: (i) the expansion of the private tertiary sector where tuition fees are charged – the proportion of students enrolled in private institutions reached 30% in 2003-04; (ii) the decline of per-student public spending on tertiary institutions (a reduction of 16% between 1995 and 2002, the 2nd largest decline in the OECD area), which is certainly likely to have impacted on the quality of educational services; and (iii) the creation of fee-paying forms of study in public institutions – in 2003-04, about 43% of students attending public institutions paid tuition fees.

Pressures on the tertiary education budget are likely to continue. Other priorities such as increasing spending on pensions, medical care, or combating social exclusion are imposing growing pressure on the education budget. In addition, within the education system, tertiary education has to compete for resources with school education and two other sectors likely to require more public resources in the years to come: early childhood care/education, which has rightly been designated as a priority for increased public funding; and the continuing education and training of the current workforce. Moreover, demand for tertiary education may well stabilise or even decline slightly in the coming years, for two reasons. First, the proportion of individuals in a given age-cohort who enter tertiary education is greater than the OECD average[24]. In addition, the population aged 20-29 is forecast to shrink by 6% between 2002 and 2012 (Appendix 4, Table B13).

23 For example, student numbers doubled in the period 1995 to 2002, the highest growth in the number of tertiary students in any OECD country.

24 As we pointed out in Section 3.1, in Poland, in 2003, about 70% of an age-cohort could expect to enter type A tertiary education, against a proportion of 52% across the OECD area. Even if we include type B tertiary education, which scarcely exists in Poland, the comparable figures are 71% (Poland) vs. 68% (OECD mean) (Appendix 4, Table B6).

Challenges for institutional funding

One concern is that current mechanisms to allocate public funds to institutions do little to steer institutions towards a better alignment with national economic and social goals. First, there is a lack of strategic components among the resource streams used to fund institutions. More specifically, no funds are allocated on a targeted basis to achieve explicit objectives such as the improvement of the quality of educational programmes, the introduction of innovative curricula, the improvement of management practices, or the development of partnerships with the region where the institution is located. Second, the basic public subsidy received by institutions bears little or no relation to indicators of the quality of the services provided. As a result, the basic subsidy, which constitutes the largest share of the public funding received by institutions, provides little incentive for strengthening quality. Finally, linking the funding with the qualifications and titles of the academic staff introduces some perverse effects when the main rationale for keeping it, ensuring the quality of the academic body, has been largely achieved in Poland. During the review visits, we were often told that some academic staff remained attached to an institution well beyond retirement age in order that the institution could benefit financially from their high qualifications even though they played little or no active part in instructional activities. Similarly, other institutions formally sign up staff with advanced academic titles on a second-employment contract with the purpose of increasing the public subsidy they receive and/or to gain authorisation to offer new programmes. We formed the impression that sometimes these academic staff are simply 'teachers for the books' and may have very limited involvement with their second (or even third …) employers. The main effect of these perverse incentives is to make it more difficult to create new posts and promote younger academic staff.

Another concern is that institutions do not seem very dynamic in seeking external sources of funding. There is a growing but still incipient tradition of providing services such as industrial training or service as consultants to businesses or public authorities. However, resources raised externally by institutions (other than student fees) typically represent less than ten percent of their budgets. In other words, most institutions interpret the advice to become more entrepreneurial as an invitation to sell their core educational service to as many students as the law permits, and do not see the need to look for new sources of revenue.

On the other hand, the share of funds in the tertiary budget going into infrastructure is very limited. At the tertiary level, only 5.1% of public spending on tertiary education institutions goes to capital expenditure, compared with an OECD average of 11.6% (Appendix 4, Table C13).

Another difficulty faced by institutions is that funding decisions are made annually. This leads to a lack of predictability, which causes difficulties for long term planning. It is, however, an advantage that institutions may carry over unspent balances from one financial year to the next.

Challenges for student funding

The current heavy reliance on public money for funding public tertiary education also raises questions about whether the State still bears a disproportionate share of the costs of an individual's tertiary education. In light of the firm evidence of the private benefits of a tertiary degree, graduates ought to bear some of the cost of the services offered by tertiary institutions. As we saw in Section 3.8, the relative financial private benefits from tertiary education are significant in Poland. In 2001, the gross earnings of individuals with a tertiary degree exceeded those of individuals with an upper secondary education by 55%. Similarly, individuals with a tertiary degree have an employment advantage relative to individuals with upper secondary education: in 2003, the unemployment rates among 25 to 64-year-olds were approximately 6.6% and 14%, respectively. There is therefore a strong case for all graduates from tertiary education to bear a share of the cost. It is true, and commendable, that the principle of cost-sharing between government and students has been introduced in Poland. However, the basis on which it operates raises serious concerns principally because: (i) individual students undertaking comparable studies are subsidised at dissimilar levels during the course of their studies, as a result of the co-existence of fee-paying and non-fee-paying places in public institutions; and (ii) the extent to which more affluent students in public institutions contribute to the costs of tertiary education seems to be fairly limited.

As described earlier, while some students in public institutions are not charged tuition fees, other students taking virtually identical programmes pay fees at the level of the cost of provision. Access to the regular non-fee-paying places is based solely on academic 'merit': entry criteria (namely secondary school leaving examinations) establish a ranking of candidates applying to each institution, and the best ranked students access the available non-fee-paying places, while the places available on a fee-paying basis are given to those students who may be only marginally lower in the same ranking. In other words, students in public institutions are being subsidised on a 'merit' basis. While it is legitimate to make access to *places* in the public system dependent on academic merit, it is much more debatable whether public *subsidies* should be distributed to individual students on the basis of 'merit'. On the one hand, the societal benefits generated by graduates of the same programme are likely to be comparable (which would, in itself, justify similar public subsidies). On the other hand,

it is known that academic 'merit' at the point of entry into tertiary education reflects prior educational opportunities, which are closely associated with the socioeconomic background of the student. There is evidence from Poland that students who access non-fee-paying places in public institutions come disproportionately from more affluent and educated families (Swierzbowska-Kowalik and Gulczynska, 2000). Moreover, in Poland individuals whose fathers have achieved tertiary education have a nine-fold advantage in accessing tertiary education over individuals whose fathers completed only primary education (Bialecki, 2003).

Clearly, some benefit more from the system than others. Some graduates are receiving a higher private financial benefit from their tertiary degree, namely those who access non-fee-paying places. What is more, some individuals will be deterred from undertaking, or even aspiring to, tertiary studies as a result of a disadvantaged background (*e.g.* financial poverty, lack of information about the benefits of tertiary education, poor school education) since they may not be able to access non-fee-paying places and the student support system may not eliminate their financial constraints (see below).

Another main area for concern, despite significant recent efforts, is the narrow scale of the student support system. As revealed earlier, in 2004-05, one in four students received (not necessarily need-based) grants and 11% took out a loan. The grants currently offered are not sufficient to cover realistic costs of living, and loans are not offered on favourable terms. This suggests that there is only a limited capacity in the system to facilitate the participation of academically qualified students who do not have the financial means to access tertiary education. When non-fee-paying places are awarded on the basis of 'merit', disadvantaged students who face paying their living expenses and giving up a salary are bound to be deterred from attending tertiary education.

This situation is exacerbated by the fact that a large proportion of public grants are awarded on the basis of merit only. There are a number of merit-based schemes which reward the academic work and/or the sports careers of tertiary students. Such a use of public funds is questionable, since no social purpose seems to be achieved: on the face of it, it is quite unlikely that any academically gifted students who are not in financial need would decide not to attend tertiary education without a merit-based grant. Thus these public funds would achieve better social results if they were only used to facilitate the access to tertiary education of academically talented *and* financially needy students. We also note that such grants as are conferred on a needs basis seem to be unnecessarily complex, being dispersed into many different components: maintenance grants, meals grants, accommodation grants, and aid payments.

Another unusual arrangement in Polish tertiary education is that institutions not only administer the system of public grants but they also define most of the terms and conditions of its operation (*e.g.* criteria for conferral, levels of grants). This raises the fundamental concern that the institution might allocate public funds for grants in the pursuit of its own interests, which are not necessarily aligned with social goals. Specifically, there is a strong incentive for the institution to confer grants on the basis of merit, so as to attract the academically most qualified students, whereas as we have argued, social goals would favour the distribution of grants on the basis of financial need.

Some of the features of the loan scheme also raise concerns. It is still undersized and not sufficiently publicised. In practice, given budget constraints, access to loans is not universal, but available only to those who prove to be neediest. The rationale for imposing an age limit of 25 is not clear. Similarly, the extent to which it protects students against risk is limited: the system is income-*related* (the maximum repayment amount is set at 20% of monthly salary) but not fully income-*contingent* (the repayment should be proportional to monthly salary with the additional possibility of forgiveness if the loan is not repaid after a number of years). Finally, the need for the borrower to provide a guarantor makes access to the loan scheme difficult for some financially disadvantaged students.

4.3 Human Resources: Academic Staff and the Academic Career

There are a number of commendable features in the Polish TE system with respect to academic staff. Perhaps the most significant for the longer term is the degree of institutional autonomy which now prevails as far as human resource management is concerned. Institutional managers have the freedom to appoint and promote staff, subject only to the national restrictions on the qualifications for occupying specific grades. They also have some freedom to set salaries, albeit within centrally-fixed salary bands. There are national regulations and agreements covering maximum hours of work but, within these, institutions and their basic units have the ability to allocate teaching and research loads on a flexible basis. In other words, although their freedom is constrained in a number of ways (and more than anything else, of course, by the very limited resources which they can call on), there are at least the basic elements in place which would enable them to engage in a range of internal performance management processes.

We turn below to the vexed question of multiple employment. But it is certainly helpful that a legislative requirement is now in place (in the 2005 Law) which is designed to limit it, and we noted in our visits that some institutions are putting internal policies in place not only to limit external

contracts but to reward those who do not undertake them. The problem appears at least to be widely recognised in the Polish system, even though it is also seen as quite intractable for the reasons which we discuss below.

As far as the higher qualification system is concerned, many of our interviewees understandably described the long apprenticeship in research, and the rigour and independence of the CCADT, as sources of great pride and satisfaction. The repeated research assessments, even of very senior academics, are seen not only as ensuring continuous improvement and updating in research methods, but as important safeguards against nepotism or the kind of illegitimate (political party- or ideology-based) promotion processes which damaged academic freedom during the communist period. The CCADT points to significant failure rates of candidatures (5% for professorial titles, 8% for *dr.habil.*) as evidence that the process is by no means a formality. There is evidently also a concern that the standard of the PhD has been degraded in recent years, and there are those who argue that this makes the habilitation process, at least, even more essential than in the past (see CBR, pp.87-88 and citations therein).

There are however two sides to these arguments. It is a matter of debate whether the apprenticeship period can truly be seen as lasting right up to the award of professorial title. But even if true apprenticeship ends with the production of a second doctoral thesis for the habilitation, the age at which this occurs is very late indeed (an average age of approximately 45, with around 60 for the professorial title). There are many academic systems which see it as essential to finish research training with a PhD, which should be completed at the earliest possible moment, so that young academics (perhaps not even in their 30s) can build an independent research career at a stage when their energy and creativity may well both be at their height. Research in Germany, where a similarly long apprenticeship and double doctorate has been the norm, but has become a matter of heated public debate in recent years, shows some of the dysfunctions of the German system, especially from the point of view of younger researchers (Enders, 2001).

The risks of the long system are numerous. Perhaps the most serious is the prolonged dependency on senior staff – first as supervisors and then as informal, if not formal, sponsors – which is inherent in it. Academics in their 30s and 40s should be free to range widely and 'think the unthinkable': their achievements and publications must of course be subject to peer review, but this should include a wide selection of peers and not be restricted to the members of a single department, however distinguished. Inevitably, 'junior' academics will lack the status to determine the future of their department or research group, and the dangers of even the most benign gerontocracy are well known. Not the least of these dangers is its size: the proportion of

senior staff is quite low, and this is likely to mean that there is a shortage of people who can take on any management tasks, particularly in research management, which are reserved for the highest grades. Other systems (*e.g.* the UK) have steadily reduced the average age of promotion to the highest rank of full professor, in the belief that this will not only increase the attractiveness of the profession but will bring great advantages to departments and institutions which enlarge their leadership and refresh it at a younger age[25].

There is a further danger in relying on late qualification. The CCADT naturally works through disciplinary subgroups, and it is bound to find interdisciplinary work, at least when it crosses relatively distant boundaries, somewhat problematic to assess. There is therefore a risk of artificially confining new research within disciplinary 'silos', and further discouraging experimentation outside the paradigms approved by a discipline's father and mother figures.

And lastly, because the qualifications process relies on a thesis and a further assessment of scholarly achievement, the long apprenticeship is exclusively an apprenticeship in research. There is no parallel system of training for, and assessment in, teaching excellence, and academic staff with a particular interest and expertise in teaching would be well advised to suppress it if they hope to reach the highest ranks of the profession. In our visits, the review team was informed of a number of initiatives to obtain and respond to feedback on teaching from students. But we did not form the impression that there are well developed programmes of staff development to improve teaching skills, even outside the formal qualifications structure.

There are a number of other important challenges in this area. One which appears to be quite deeply embedded in the culture of Polish tertiary education is the practice of 'in-breeding'. We were informed that it is common for academically-minded students to undertake all of their studies and qualifications in the same academic unit, and very common indeed for them to remain in the same institution for the whole of their progress from first degree to habilitation and beyond. How far this is a matter of student choice – no doubt partly connected, at least outside the big cities, to the need to reduce their cost of living by staying at home – and how far it is a matter of preference by selectors and recruiters among the academic staff, was

25 According to the authors' calculations in the CBR (p.90) the average age of achieving the PhD has been sharply reduced in recent years, apparently as a matter of policy, with the proportion of new PhDs aged 30 and under rising from 11.5% in 1992 to 21% in 1999 and 38.5% in 2003. This may be connected, however unjustly, to the suspicions of falling standards for the PhD referred to above.

impossible for us to determine. But in reality the two sides are probably mutually reinforcing, creating a set of long-standing expectations which it would be hard for outsiders to break. The risks are obvious enough: reduction of competition, lack of refreshment from outside and a potential for patronage (or the reverse) which can only increase students' and junior staff's dependency. We heard that the problem is now beginning to be recognised, and that some institutions may be taking steps to encourage inter-institutional migration. It seems to us that this would certainly lead to a healthier and more attractive system.

Multiple employment has, as previously indicated, been a burning issue in Polish tertiary education since the end of the communist regime, if not earlier. It became endemic through a powerful combination of 'push' and 'pull' factors. On the 'push' side, the economic difficulties of the early 1990s led, as we have described, to severe pressure on public expenditure, including on state subsidies for tertiary education. Given that salaries constitute such a high proportion of institutional costs, it was inevitable that they would be considerably depressed. In these circumstances, taking a second (or more) part-time job became not only attractive but, for many staff (especially junior and lower-paid academics), almost a necessity if they were to achieve a reasonable standard of living.

On the 'pull' side, the expansion of tertiary education was in considerable part achieved, as we have seen, through a major expansion of smaller, mainly non-public institutions. The temptation to recruit trained and experienced academics from the public sector, who were keen to increase their income, was irresistible; and anecdotal evidence suggests that many new institutions survived largely on the backs of 'moonlighting' staff from neighbouring public TEIs. They came largely free of the training and support costs which the new institutions would have incurred if they had recruited on the open market, and they doubtless brought with them teaching materials which they had developed at their primary employer's expense. As part-time employees, they incurred much lower fixed costs for their secondary employer than would have been the case if the latter mainly hired its own full-time staff. But in any event, at a time of rapid expansion it would have been difficult in many fields to have found suitable candidates on the open market[26].

There is also the concern that more senior staff are being hired on a part-time basis by smaller (mainly private) TEIs in order to meet the legal minimum requirements of highly qualified staff for offering courses in new

[26] See also Chmielecka (2004) (quoted in CBR, p.84), reporting on a survey of Polish rectors.

fields or at postgraduate levels. Again, there are anecdotal claims of distinguished staff (professors or *drs.habil.*) appearing 'on the books' of vocational institutions, but rarely if ever fulfilling any duties in person. Even if this is within the law, it can easily lead to great resentment among junior staff and students.

The implications of multiple employment are severe. If the analysis above is correct, there is a considerable problem of public finance, since the marginal employment by the private sector of public employees with these attributes constitutes a very substantial hidden subsidy, which should be properly recognised. And the subsidy comes at very real cost to the primary employing institution. Staff who hold multiple teaching obligations will find it harder to discharge their duties to their students at their first employer. And they will certainly have less time available to pursue the research for which they are also being paid and which is needed, not least, to keep themselves up to date as effective teachers. There is also the likelihood of internal imbalances: staff in high-demand disciplines and fields are much more exposed to the attractions and the risks of multiple employment than those in fields which are less popular with students.

There is also, we suspect, a more hidden form of 'multiple' employment within the primary institution. The growth in numbers of 'non-regular' (*i.e.* fee-paying) students, mostly taught outside the normal daytime hours of instruction, has provided a rich source of extra income to public TEIs. It has also enabled them to pay staff who teach on these courses 'overtime' payments, which are specifically permitted by the 2005 Law. Although this practice is entirely above board, in the sense that a single employer is fully aware of the staff member's commitments, and although it is a valuable way of increasing staff income, it runs the same risks of distracting staff from their core duties, especially in research.

We turn now to working conditions. To begin with staff-student ratios, it is certainly the case that at a national level staff-student ratios have declined considerably in the years since 1990. This is obvious when one compares the very rapid rate of growth in student numbers with whatever evidence is available on staff numbers (CBR, p.84). The OECD calculation (Appendix 4, Table E1) suggests that Poland lies somewhere between 4th and 6th place (out of 15-23 countries reporting in different categories) from the highest number of students per staff member. However, as the CBR points out, the only staffing figures which are available apply to full-time employees at their primary place of employment. If multiple part-time employment is as commonplace as is generally believed, these figures must be more or less meaningless. There appear to be no reliable figures which would enable internal comparisons, *e.g.* between types of institutions, disciplines or grades of staff.

Academic salaries present a further challenge. We referred above and in Section 3.4 to the perceived problems of poor and – until recently – declining pay in Polish tertiary education. These have been recognised by the Polish government and it is now a policy aim that academic pay as a whole should be increased over time, relative to other public sector salaries. But it should also be noted that there is a sharp gradient between the salaries paid at different grades. Poland is not unique in this. But there is evidently quite a strong perception of injustice among junior staff, whose salaries are depressed to the extent that many seek further part-time employment, whereas senior staff not only earn much higher salaries but have teaching loads which are almost always far lower. There is of course the further underlying paradox, common to all tertiary education systems to a greater or lesser extent, that whereas promotions, high status and higher financial rewards are dependent on excellence in research, it is the teaching effort and not the research that provides the bulk of the resources (and especially so in Poland) with which institutions pay their staff. Junior staff can easily see themselves in an exploitative relationship whereby they generate the income which then rewards others who do far less to earn it.

There is one further difficulty with academic staff remuneration. One of the apparent benefits of the profession is that although salaries are low, the obligation to contribute to pensions is capped at half the normal rate. This helps to maintain academic income in the short term. But when former staff come to draw their pensions, these are themselves contribution-related: in other words they are paid out at half the normal rate – and public sector pensions are in any case low. The result is that income in retirement is alarmingly depressed, and this has the perverse effect of discouraging full retirement. The gerontocracy to which we referred earlier is augmented by staff well past retirement age, who remain on the books on a part-time basis, both to assist themselves with the cost of living in retirement and also in order to contribute to the basic unit's and the institution's minimum requirements for highly qualified staff.

As well as their objective consequences, these various challenges add up to a picture of poor morale, especially among junior staff. They contribute to encouraging the 'brain drain', which has in any case been facilitated by Poland's accession to the EU – and the brain drain by its very nature tends to disproportionately affect the best staff and those in the highest demand. They also make the academic profession less attractive to high-quality graduates and newly qualified PhDs. While this may be good news for other parts of the economy, it poses a threat to quality, especially in subjects which can command high salaries in the rest of the labour market.

4.4 Quality Assurance

The structures for quality assurance that Poland has put in place are sound and well-chosen. The State Accreditation Committee follows a quality assurance model that incorporates elements of good practice that are widely recognized internationally. It is to be commended for having a review process that is mandatory, begins with a self-report prepared by each programme being reviewed and includes a site visit by experts, a publicly available report of the results of the reviews and an established process for a cycle of repeated visits and assessments.

The decision to focus evaluations on study programmes is good. It allows for meaningful reviews and gives confidence to the programmes being reviewed that appropriate quality criteria are being utilized and that relevant experts have been chosen to serve on visiting teams. It provides a strong basis for effective monitoring in the future as tertiary institutions continue to develop new specializations or otherwise revise their areas of study to meet new needs. A recent decision to include students on all visiting teams will further strengthen SAC's procedures. However, it would also be worth strengthening practitioners' perspectives; this might include making better use of representatives of employers relevant to the field of study or practitioners in the field who could offer insights into ways that their academic preparation matched the demands of the workplace. Site-visit teams might also include members drawn from other countries, increasingly an international good practice among quality assurance agencies.

The State Accreditation Committee

Having successfully established an initial record of accomplishment, the State Accreditation Committee is currently engaged in planning and dialogue, consulting with various groups, in order to modify and improve its procedures. The experience with quality assurance of other countries around the world will offer an important additional resource available to SAC through its now established international affiliations.

As it continues to plan, it is important that the Commission avoid being seen as mainly an inspection agency. It needs to fully embrace the broader role of quality assurance by balancing its current emphasis on inspection and verification with a new emphasis on promoting the improvement of education quality. Such a balance will help to maintain the support of academics for SAC's work by focusing on issues of effective teaching and learning that are important to tertiary institutions themselves. Beyond this practical consideration, a balanced approach will help promote the overarching objective of a quality assurance or accreditation system: to have

Polish tertiary education be seen internationally as offering programmes of high quality, and graduates who can fully meet academic or employer expectations anywhere around the world.

The State Accreditation Committee has been diligent and resourceful in its reviews of programmes and has succeeded in using site visits well, gathering information from various sources. It is commendable, for example, that visiting teams have reviewed master's theses and commented on their weaknesses. However, it is important that the Committee move beyond its current dependence on such information as is currently available. It is already moving in this direction with its present efforts to develop more detailed guidelines for self-reports and site visits.

The Committee should also lend its authority and expertise to the development of broader, national-level efforts to develop a more systematic information base for understanding the performance of tertiary education in Poland. Tertiary institutions and government ministries are both hampered by the lack of baseline information on 'outcomes,' including such information as the destinations and employment rates of graduates in specific fields of study. Similarly, databases are needed that can help programmes, institutions and ministries track student progress – including information on completion rates and time needed for degree completion in each field and level of study. Information is also needed on the number and rate of dropouts from tertiary study, especially after the first year. Currently, very limited data are available on such critical elements of information.

Internal Quality Assurance

Tertiary institutions have recently been given the responsibility for developing internal systems of quality evaluation. There is some awareness of what is needed (see, *e.g.*, CBR, p.110), but there are few mechanisms in Poland to support the development of such systems. The experience of tertiary institutions that have recently participated in voluntary accreditation procedures (for example, as organized by the rectors' conference) provides one limited resource, but much more is needed.

Internal evaluation systems need to be shaped in such a way that academics in each study area can gather systematic feedback from students, assess their programme's effectiveness and then identify and carry out improvements in areas where weaknesses are identified. To do so, they need methods for obtaining fair and valid assessments of teaching and learning processes; and resources to help shape needed improvements. They also need the time and resources to develop well-articulated and relevant statements of objectives for each programme and level of study. A process for exchanging ideas and information on effective models of internal

evaluation is also needed. In short, the needs cannot be easily met by individual groups of academics. What is called for is a broader inter-institutional initiative that marshals information on ways to assess learning and ways to improve programmes.

Improving Information Dissemination

Other supports for quality assurance involve transparency and information disclosure. The State Accreditation Committee has already established a good precedent by disclosing key results of its reviews. It should also consider other forms of disclosure or other information that can offer guidance to tertiary institutions, to students and to the public on what is to be expected by way of quality at the tertiary level. To assist students who, inevitably, have an incomplete understanding of how tertiary institutions function, a student charter or statement of student rights should be developed and introduced at each TEI. While many student rights are safeguarded by language in the 2005 Law, students need to be fully aware of their rights, including the rights to appeal against decisions, to retake exams and to receive other reasonable 'consumer' protections.

4.5 Equity

There has been an improvement in the geographical accessibility of tertiary education. The expansion of tertiary education in Poland has been closely linked with the establishment of tertiary education institutions in remote areas of the country. The number of tertiary students coming from rural areas doubled between 2002 and 2005, from 10% to 20% of the total population of tertiary students. This is to a great extent related to the creation of new tertiary institutions, in particular private vocational institutions, in smaller cities and towns across Poland, whose foundation mostly took place in the 1990s. Today tertiary institutions are established in over 100 cities and towns, in all provinces of the country. This follows an active expansion strategy developed by the Ministry of Education and Science in collaboration with local authorities, which was given a special impetus by the adoption in 1997 of the Act on Institutions of Higher Vocational Education. Overall, therefore, geographical inequities in access to tertiary education seem to have been reduced. However, institutions located in smaller and non-urban areas do have limitations in the range of programmes which they offer. In some cases, they provide only non-regular (evening or extramural) programmes, and they largely rely for their teaching on academic staff whose primary employment is at an institution located in an urban area.

Female participation has steadily increased in recent years. In 2003, females represented about 58% of tertiary enrolments (the 6th highest proportion among the 29 OECD countries for which data are available), compared to about 53% in 1992. However, women are underrepresented in some areas such as technology and engineering (with 33% of graduates in 2003). Similarly, the gender gap in postgraduate programs persists: in 2003, the percentage of females in these programs was 46.7, the 11th highest figure for the 28 OECD countries for which data are available. However, given the favourable trend in women's participation in undergraduate tertiary education, it can be hoped that female representation, both in postgraduate programmes and in due course in leadership positions in academia and in society at large will also improve satisfactorily over time.

There have also been positive developments regarding the participation of disabled students. In 2004, disabled students accounted for 0.48% of the tertiary student population, compared to 0.26% just two years before. This is the result of efforts at national level (notably the provision of grants specifically for disabled students) and by institutions themselves (*e.g.* the adaptation of buildings to disabled students and the introduction of special examination procedures).

Another important development has been the introduction of a uniform new secondary school-leaving examination across the country which, as of 2005-06, now provides the basis for admission to most institutions of tertiary education (in some cases, the institution may be authorised to organise supplementary entrance examinations). This should provide the basis for making access to tertiary education more uniform across the system and providing clear expectations about the standards required for entry.

Despite these positive developments, a number of concerns remain about the equitable provision of tertiary education. Several research studies have indicated that access to tertiary education is strongly related to the socio-economic background of students and their families, namely income levels and the educational level of parents. For instance, as noted earlier, students whose fathers have completed tertiary education are nine times more likely to enrol in tertiary education than students whose fathers have not completed primary education (Bialecki, 2003). Overall, however, there is little knowledge of the extent of the problem, as a result of the lack of critical data such as the socio-economic background even of students in tertiary education as a whole, let alone the backgrounds of those accessing non-fee-paying places or of those who benefit from student support programmes. The review team formed the impression that, despite the lack of firm evidence, there is general agreement within the system that tertiary education in Poland is inequitable, in that access to the non-fee-paying

places in the best institutions of the country is disproportionately granted to students from families with the highest educational attainments.

It can also be said that there is an overall lack of commitment to improving equity in Polish tertiary education. Equity is not among the priorities of tertiary education policy, few initiatives are targeted at improving equity, little information is collected to assess the extent of the problem, and a relatively small share of public funds is set aside for needs-based grants. Similarly, institutional commitment to improving equity also appear to be low by international standards. Institutions provide relatively little in the form of student support on the basis of need. Policies for improving equity do not seem to be on the radar screen of most institutional officials. In discussions with institutional post-holders during the review visits, the issue of improving equity was rarely raised spontaneously. Related to this is the fact that a significant proportion of funds for student support, both at system and institutional levels, are conferred on the basis of merit only. As discussed in Section 4.2, we believe that these resources would be better used if distributed on the basis of need.

It was also clear to the review team that the opportunities offered to adults to undertake tertiary studies are underdeveloped. Strategies for promoting lifelong learning are embryonic and there are no provisions to allow attendance on the basis of a person's assessed competencies instead of formal qualifications. This is also evident in the fact that entering students who are 25 and over (who form a small minority) do not have access to the national loan scheme.

As noted in detail in Section 4.2, despite the progress of recent years the student financial support system is still underdeveloped and does not adequately assist those students with financial needs. The grants currently offered are not sufficient to cover the realistic costs of living and the supply of loans is still limited. As we argued earlier, the granting of student support on the basis only of merit should be questioned, since no social objective seems to be achieved. There is also a limited supply of non-fee-paying (or fully publicly-subsidised) places. At present, access to those places seems to work against underrepresented groups of students, who tend to be admitted to tertiary education at much lower rates than students from families of more substantial means.

Equity policies in Poland, as in other countries, have traditionally emphasised equity of access. At present, there is little focus on equity of outcomes. The review team formed the impression that little emphasis is placed on student progression throughout their tertiary study, with little by way of special support and follow-up measures to assist those students who experience the greatest difficulty, whether this is primarily academic or

socio-economically-based. In the institutions we visited, we saw little evidence that students' progress is closely monitored by their teachers or that students whose disadvantaged background has been identified receive any particular attention.

4.6 The Role of Tertiary Education in Research and Innovation

The levels of R&D funding are very low, and have been decreasing in recent years, in Poland (see Section 3.7). They are also far from EU targets, for both the public and private components.[27] This is detrimental in several respects:

- The potential for development and innovation is reduced.
- The low level of public R&D conveys the wrong signals to academic staff in tertiary education institutions about the priority that R&D should receive.
- It threatens the Humboldtian concept of a close relationship between teaching and research.
- It undermines collaboration between tertiary education institutions and industry.

The rapid expansion of the Polish system of tertiary education has absorbed most of the available resources and most of the attention of policy-makers. Hence the fundamental 'relational issues' with regard to research – which are both complex and important – have received much less attention and a number of key issues have yet to be addressed, let alone resolved. These include relations between: teaching and research; the different research organisations (academic TEIs, PAS institutes, research institutes supervised by sector ministries, research units in firms); different scientific disciplines (interdisciplinarity); research in Poland and abroad (internationalisation); and research and the rest of society (commercialisation of research results and innovations based upon academic knowledge creation).

Despite the current funding deficiencies, Poland possesses highly qualified research groups covering a wide spectrum of scientific disciplines. This means that the Polish research community has strong 'background

27 The EU Barcelona target is that R&D expenditures reach 3% of GDP, 1% of which should emanate from the public sector.

competencies', which enable the country to keep up with international developments in practically all major fields of science. Thus it is fair to say that Polish research is well prepared to follow, and in the right circumstances to contribute to, scientific developments globally.

Given the low level of public spending on R&D, it is particularly important that a system of evaluation of research should exist in order to secure efficient use of the limited funds. Such a system is in place in Poland. For example, the block 'statutory' grants to institutions are based on evaluations which take place every four years. However, one deficiency is that the system of evaluation of R&D is completely Polish: it appears that foreign researchers are not invited to act as reviewers, either in the assessment of research units or in the assessment of research project proposals.

A further strength is that the allocation of public R&D funds is not too short-term. The baseline research funding streams to tertiary institutions – the subsidies for 'statutory research' and 'in-house research' – between them constitute about 50% of public research funding to institutions. Although these funds are allocated one year at a time by decision of the Minister, the basis for the allocation is an evaluation process which is undertaken every fourth year, thus providing a degree of continuity and predictability for a rather longer term. However there is no explicit framework for enlightened policy discussion on the long-term strategy for allocating public R&D funding across different fields of research. Developing such a strategy would require policy-makers first of all to articulate national R&D objectives clearly and explicitly, and then to 'translate' these into an R&D strategy. In every country this is a challenging and complex task. It is necessary to involve a full range of stakeholders and experts in the discussion, and at the same time to ensure, through transparent and explicit processes, that future priorities are dictated not by established vested interests or by governance structures within institutions, but by the real future needs of the country.

The first steps of a prioritisation exercise were taken in 2005 with the launching of the National Framework Programme (NFP), which seeks to identify research areas of key importance to the country's social and economic development. A wide consultation was launched to identify research priority areas: over 1 600 proposals were received from ministries, regional and local authorities, business organisations, and research units including tertiary education institutions. The exercise was jointly co-ordinated by the Ministry of Education and Science and the Council for Science (through its Committee for Scientific and Technology Policy). The following nine strategic areas have thus far been identified: health; environment; food and agriculture; state and society; security; nanomaterials

and nanotechnologies; information technologies; energy and its resources; and transport infrastructure. The next step involves the creation of funding streams to support projects in these priority areas. It has been agreed that interdisciplinarity and multidisciplinarity will be emphasised in the development of projects in these areas, with the aim of better integrating the dispersed research community in Poland.

Given the low level of general public spending on R&D, it is important that funding should not be too thinly distributed. This issue has been addressed in Poland, and there is a good level of concentration of public R&D resources across institutions. In the tertiary education sector in 2003, 100% of public resources for research were allocated to institutions in the academic sector: within this, 99.6% of the funding went to public institutions and the remaining 0.4% to non-public institutions[28]. In the same year, the number of tertiary education institutions documented as conducting research activities stood at 128 (out a total of about 400 institutions of tertiary education and well over 200 academic institutions). Furthermore, the competitive mechanisms for research funding meant that in practice significant sums of research funding were concentrated in some 30 to 40 institutions. On the positive side, this means that the distribution process does lead to quite strongly selective results: a relatively small number of institutions are enabled to achieve critical mass, to ensure that both scientific activities and graduate student training are carried out at a high level. It also means, however, that a large number of 'academic' institutions, all of which are authorised to award doctoral degrees in at least one area, are carrying out practically no funded research – and in practice, given the other constraints we have described, this must mean that they are carrying out little or no research at all. This appears to be in direct contradiction with the 2005 Law on Higher Education which stipulates that all research and teaching staff based in the academic sector are required to conduct research. It also raises awkward questions about the adequacy of doctoral training in these institutions, and the appropriateness of permitting it to be offered there.

However, to return to the funding system, it can be concluded that a stable, mostly competitively-based and fairly transparent system of research funding has been established, which seems to function smoothly. In general, the portfolio of instruments for research funding can be said to be in reasonable balance, while the portfolio has also been diversified in recent years. The relative proportions of baseline and project-specific funding seem appropriate.

28 There were only 5 non-public academic institutions at the time: see Section 3.1 above.

On a wider scale, Polish researchers and research groups have become very active with respect to EU-related funding opportunities (*e.g.* the EU's 5th and 6th Framework Programmes), where they have proved successful and internationally competitive in several areas. A number of Polish research centres have also obtained the status of 'Centre of Excellence' through EU programmes. However, given the general shortage of research funding there is a risk that European Union structural resources, the intention of which is to complement national R&D investment, may be being used to substitute for the latter.

We now turn to the question of research outputs. There are a large number of PhD students in the Polish tertiary institutions (approximately 33 000 in 2004-05); while the latest figures in the CBR show 5 460 new PhDs awarded in 2003. Thus there is a large stock of PhD students; given the time-lag and the continuing growth in PhD student enrolments, it is not clear how well the flow of PhD graduates is keeping pace. But on the positive side, as indicated above (section 4.3) the average age of achieving the PhD has been considerably reduced in recent years: as recently as 1999 21% of new PhDs were aged 30 or under, but by 2003 the figure was 38%.

There is very limited patenting activity in the Polish national system of innovation – and in particular very few patents are submitted to patent offices outside Poland. Poland's estimated share of the total patents filed by OECD countries to the European Patent Office, the US Patent and Trademark Office and the Japanese Patent Office was 0.01% in 2001, ranking Poland 25th out of 30 OECD countries, against a share of 0.03% in 1991 (22nd out of 30) (Appendix 4, Table G7). The number of patent applications derived from tertiary-based R&D is negligible.

In the Polish system, policy-makers and some institutions have recently initiated the concept of commercialisation of R&D results created in tertiary institutions, and have begun attempts to reinforce the relations between tertiary institutions and industry. The Law on Higher Education of 2005 provides a new legal basis for the establishment of academic business incubators and technology transfer centres. It seems that some institutions have set up such units or are taking steps to do so, but have not yet really developed a strategy for their activities. In other words, any efforts towards the dissemination and commercialisation of economically useful research results still remain quite limited.

In conclusion, there is still a wide gap between activities in tertiary institutions and in business, and this remains a major problem in Poland. There are only very few direct links, compared with those in most other OECD countries. An initiative to be applauded, however, is the creation since 2004 of 26 Advanced Technology Centres, 13 of which are co-

ordinated by tertiary education institutions. These centres, funded under the Programme 'Enhancing the Competitiveness of Enterprises 2004-2006' are designed to bring together research institutions and firms in fostering innovation in the area of new technologies.

4.7 The Tertiary Education System and the Labour Market

There have been a number of positive developments regarding the links between the tertiary education system and the labour market. First, as was discussed in Section 4.1, the Polish tertiary system has become increasingly accessible to a more diverse set of learners. Very considerable expansion has taken place, which has enabled the rapidly growing overall demand for tertiary education to be accommodated. The expanded private sector and the possibility of attending a public institution on a fee-paying basis have both been instrumental in matching supply to demand. Moreover, a degree of institutional diversity has been introduced not only through the expanded private sector but also with the establishment of a new subsystem, that of the non-academic institutions which were intended to be more vocationally-oriented (created in 1997 through the Act on Institutions of Higher Vocational Education). The size of the latter is still limited, with about 9% of total enrolments in the 2003-04 academic year (calculations based on figures from Table 2.5 in CBR). Thus, in principle, the population now has a choice of more varied education and training opportunities at the tertiary level. However, as also indicated in Section 4.1, the extent of 'academic drift' in the vocational sector is considerable and, as is the case in many other countries, vocationally-oriented tertiary studies still suffer from a lack of parity of esteem relative to academic programmes. It should also be noted that the number and proportion of students enrolled in shorter programmes (Tertiary-type 5B programmes) is negligible, the net entry rates into such programmes being the lowest in the OECD area (Appendix 4, Table B6, see also Table A10). In addition, there is a substantial further obstacle to the equitable and efficient development of the nation's skills in the inability of the student support system to alleviate the problems of credit constraint and debt aversion which young people may face when deciding whether to enrol as students.

A second positive element is that the national policy framework developed by the Ministry over the past fifteen years contains some elements that steer tertiary education institutions towards greater engagement with employability and labour market outcomes.

- The Polish Ministry has signalled its concerns in the National Reform Programme for 2005-2008 of December 2005. It states

under Priority 6 (*Improving adaptability of staff and enterprises by investing into human capital*) 'The education level of society does not meet the needs of the knowledge-based economy. There are too few people who have completed secondary and higher education (…) What is more, the qualification structure does not match the needs of the labour market.'

- The 1997 Act on Institutions of Higher Vocational Education contains provisions to reinforce the links between vocational institutions and the labour market. These include curricular requirements specific to the vocational sector which aim to adjust programme supply to labour market needs, the requirement for programmes to include practical training for students and the opportunity for institutions to establish advisory councils with representatives external to the institution.

- The Ministry takes account of relevance criteria when granting authorisation for a vocational institution to operate. These include local social and economic needs, demography and the unemployment rate in the region concerned.

Third, there are some good examples of partnerships between institutions and industry. These may take the form of consulting services, joint research projects, the full- or part-time secondment of industry-based professionals to institutions, offices in institutions to promote liaison with the productive sector, employers as external members of advisory councils or internships for students in industry. However, the review team formed the impression that these exist in relatively isolated cases, and that strong, systematic co-operative arrangements with industry are simply not a generalised practice. Such arrangements are in some ways more developed in the vocational sector, where ties between specific faculties and communities of professional practice are stronger. A general problem across the system seems to be the limited opportunities for practical training experience through internships in the productive sector. It appears that there is a general lack of interest within companies in taking students for short periods and acting as their mentors[29]. This limits the opportunities for students to develop skills closely attuned to the demands of the labour market, and to acquire a clear understanding of the employment and career prospects in their intended field of employment.

29 This is no doubt exacerbated by the typical enterprise structure in Poland: small and medium-sized companies the world over tend to be less interested (for understandable reasons) in such forms of liaison.

Fourth, career placement and advisory services appear to be available for students in most Polish tertiary institutions. In 2004, about 200 institution-based careers offices were affiliated to the National Network of Careers Offices, which was created in 1998. These institutional offices typically provide careers advice, information about prospects in the different professions, links to potential employers and often some training on job seeking, interpersonal skills and entrepreneurship.

Despite these strengths, there are still considerable challenges in linking the tertiary education system to the labour market. First, it is not clear how far the current offerings do in fact respond to actual labour market needs. But there is little evidence that the institutions that make up the Polish tertiary system are yet fully suited to the challenge of providing their students with an education and training which is suited to working life. As analysed in Section 4.1, the whole tertiary education system, and not only the academic sector, is academically driven. The effect is a set of institutions that are typically – though not always – strongly inward-looking in focus, rather than facing outward toward the wider society, including working life. The review team formed the impression that most areas of study have weaker engagement with employers – *e.g.* in the development of study programmes – than is commonly found in other tertiary education systems. Even the 'vocational' sector, characterised by the prevalence of academic drift and reflecting the lack of a clear vision of vocational education, is not in a position to respond fully to the diverse needs of society and of the various sectors of the labour market. This mismatch may well account for the recent worsening of the employment situation of graduates (unemployment rates have risen since 2000, albeit less than for any other educational level), especially in those disciplines where tertiary enrolments have been concentrated. In 2001 economists were the largest group of unemployed graduates registered with the National Labour Office, followed by marketing and trade specialists, teachers, political scientists and lawyers. A concern expressed in our interviews was that the recent growth in tertiary enrolments has been concentrated in the social sciences (in areas such as business and economics) and too few students are enrolled in engineering and natural sciences programmes.

Second, the input from industry and employers more generally to tertiary education policy appears to be very limited. There seems to be no forum at national level at which representatives of business and industry might contribute to the development of tertiary education policy. It is symptomatic that the General Council for Higher Education, the advisory body which can initiate policy discussions at national level, does not provide for the participation of employers, the business community and (general) trade unions. We also formed the view that there is little or no tradition of

active involvement by industry in the daily activities of institutions, especially in the academic sector. Such dialogues seem to be somewhat more developed in the non-public sector, whereas there is both a symbolic and practical barrier in the public institutions, whose governing bodies do not provide for the participation of any members external to the institutions. In addition, we have already noted that the opportunity to set up advisory councils, including external stakeholders, which was created by the 2005 Law on Higher Education has not been taken up by most academic institutions. They are now in place in many vocational institutions, but reservations about their effectiveness were expressed during the review visit. At the same time, the review team formed the view that in general, Polish employers and the Polish business community do not seem prepared to contribute, or not to the extent that the institutions might expect if they were to take such external views seriously.

Third, tertiary education institutions do not seem to have a good sense of the labour market destinations of their graduates. Institutions typically do not conduct surveys of graduates which could provide useful information about career paths and also on graduates' views of how well they had been prepared for working life. Such surveys can certainly help to inform the design of institutions' programmes and make them more aware of labour market needs. It is also the case that little attention has been devoted to the analysis of graduates' labour market outcomes at the system level. For example, no systematic analyses have been conducted of the private or public returns to tertiary qualifications.

Fourth, there appears to be a lack of standardised and easily readable information to which employers (and other TEIs) can have easy access on what graduates have learned during their studies (including not only the formal disciplinary/professional curriculum but more general work-related and interpersonal skills). In Section 5.1 we comment on the need to ensure fuller awareness and understanding of the Diploma Supplement, which became a national requirement in 2005, in line with the Bologna process; and on the desirability of creating a national qualifications framework. Both of these would increase transparency and so improve the articulation with the labour market – and would also aid student mobility within and beyond Poland.

Fifth, it was clear to the review team that the lifelong education offerings of tertiary institutions are underdeveloped, and the needs of adult learners do not seem to be a focus for tertiary institutions' course provision. According to data from the 2004 EU Labour Force Survey, only 5% of the Polish population aged 25-64 participated in some type of training in the previous four weeks, considerably below the 9.9% EU average. Strategies for promoting lifelong learning in tertiary education are, at best, at a very

early stage; and this is reflected, for instance, in the limited supply of training for company employees. Cooperation between TEIs and companies for developing tailor-made programmes has scarcely begun. The low educational attainment of the adult population and the low participation rates in adult education seem to have had no impact on national policy for tertiary education thus far (OECD, 2005b). In fact the current National Strategy for Continuing Education (in place since 2003 and valid through 2010) does not specify the role to be played by tertiary education institutions. However, it is interesting to note that tertiary institutions do offer a wide range of non-degree postgraduate programmes. These typically last 2 to 4 semesters and are designed for tertiary graduates (mainly new graduates) who wish to expand their knowledge or enrich their professional qualifications. They seem to offer a flexible form of education which can respond more rapidly to a given need dictated by the labour market.

Sixth, there are no systematic data on the extent of 'brain drain' from Poland. However, such evidence as does exist suggests that there is a real threat of losing significant numbers of highly qualified workers to higher-wage economies. Some studies indicate that increasing numbers of physicians, dentists, IT professionals, and engineers are taking up employment abroad; and indeed that the educational attainment of Polish citizens living abroad is higher than that of individuals living in Poland (Golimowska, 2004). There are also indications that Polish citizens abroad are often overqualified for the types of jobs they take. Few EU member states have yet fully opened their labour markets to Polish workers; so there is the risk that the loss of highly skilled workers will deteriorate further once the whole EU labour market is opened to Polish citizens.

Another issue for concern is the mobility of students within the system. In particular, the (still incomplete) transition to the Bologna BA/MA degree structure has so far fallen short of the expectation that it would improve the mobility of students across institutions within Poland, especially between the bachelor's and master's levels. Each institution which offers master's programmes maintains its own admission criteria, which makes it more difficult for bachelor's graduates from other institutions to access them. On the other hand, the 2005 Law on Higher Education provides useful new instruments to regulate inter-institutional co-operation. Public and non-public institutions can now engage in agreements, including in the area of mutual recognition of degrees or degree components, and they can establish joint degrees or jointly-delivered units. There are now some sound examples of co-operation between tertiary education institutions such as within-Poland student mobility programmes which have been established by groups of institutions within KRASP and KRZSP, and which offer students, within

both the academic and vocational sectors, the possibility of a period of study (typically one or two semesters) in another institution in the same sector.[30]

4.8 Internationalisation of Tertiary Education

Polish TEIs have increased their international linkages considerably since the early 1990s. Leading research groups are generally well linked internationally. A more recent positive development has been the expansion of international student and teacher mobility. For example, between 1998-99 and 2004-05 the number of outgoing ERASMUS exchange students increased almost six-fold, while the number of incoming ERASMUS students multiplied by ten. In this period the number of TEIs involved in ERASMUS student exchanges grew from 38 to 150.

Another positive development has been the formal acknowledgment, for the first time, of internationalisation as an area of interest in tertiary education, through a dedicated section in the 2005 Law on Higher Education. This includes provisions to foster internationalisation such as the regulation of joint degrees with foreign institutions. This is an important step in recognising internationalisation as a matter of strategic importance for tertiary education.

Despite these positive developments, international student mobility remains low. For Polish students, the main barriers to studying abroad appear to be: (i) a lack of resources; (ii) low levels of student interest in mobility (particularly in the vocational sector); (iii) issues of credit recognition; and (iv) language difficulties. In particular, the living costs for students in most other countries are higher than in Poland; and there also seems to be a lack of encouragement on the part of institutions for their students to go abroad. On the incoming side, the barriers discouraging foreign students from studying in Poland are believed to be: (i) language difficulties; (ii) the absence of incentives to undertake an academic career in Poland; (iii) the perception of poor prospects in the wider Polish labour market; and (iv) the inward-looking nature of tertiary education in Poland.

The major challenge for the internationalisation of the Polish tertiary system, however, is the lack of a general strategy. There is no national policy to stimulate activities directed towards internationalisation. Actions at the Ministry level are confined to participation in EU programmes and engagement in the Bologna process. There is no clarity about any legal

30 Examples are the MOST Programme established by the Conference of Rectors of Polish Universities (KRUP) and the MOSTECH Programme established by the Conference of Rectors of Polish Technical Universities (KRPUT).

instruments which might need to be put in place to foster the internationalisation of the system. However, the provisions included in the 2005 Law on Higher Education, described above, are a positive sign and a useful first step.

At the same time, internationalisation is very limited in scope. Forms of internationalisation such as 'internationalisation at home', for example in the development of joint degrees with foreign partners and the development of a European dimension in curricula, are underdeveloped. More generally, and as we have pointed out in other contexts, the openness of the Polish tertiary education system is still very limited and this is a barrier to many different possibilities. For example, the lack of involvement of international experts in evaluation and accreditation activities, in both research and teaching, undoubtedly limits the ability of tertiary education institutions and disciplines to benchmark their experiences against those of foreign peers.

As described in the previous section, there is some evidence of the brain drain of highly skilled and highly qualified individuals, including a significant number of Polish academics who are based abroad. It seems that most of these do remain in some form of contact with the Polish research community. However, there is no active policy in place to repatriate Polish academics working abroad.

Also as discussed earlier, despite some positive developments, there is still a lack of general acceptance of the Bologna degree structure among the different stakeholders, and this has hampered its universal implementation. First-cycle programmes are often perceived as just the initial stage on the road to completing the traditional long-cycle programmes. This creates obvious difficulties for mobility and for comparability of degree programmes with those in other countries.

Finally, there is a lack of incentives for people from outside Poland to enter the Polish labour market or to start an academic career in Poland. As we have indicated in Section 4.3, Polish salary scales and total remuneration packages are uncompetitive relative to other European and non-European countries. These factors inevitably inhibit the entry of foreign doctoral students, post-doctoral faculty and more senior faculty, and so retard Poland's capacity to compete for globally mobile intellectual labour.

5. Priorities for Future Policy Development

5.1 Governing, Planning and Regulating the System

The system

In our view the first priority for the Polish government should be to develop a comprehensive and coherent vision for the future of tertiary education, to guide future policy development. The years since 1990 have been occupied first of all with responding, with great quantitative success, to the exceptionally rapid growth in demand, and then with putting in place a comprehensive framework of governance and quality assurance, culminating in the new Law on Higher Education of 2005. Now that the speed of growth has slowed and the groundwork for the system has been tested and revised, with particular progress in the area of quality assurance, this would be an excellent time to set out a clear statement of the strategic aims which should underlie future policy, over at least the medium term.

We believe that we have listed most of the areas which such a statement should cover in the course of the present report. However, our opinions and recommendations are the views of outsiders, and even where we are most confident of their correctness there is a need for further internal reflection and debate. It is important that broad policy goals are generally understood and widely shared. In order to build an informed consensus on the way that Polish tertiary education should develop, we recommend that the government should organise a systematic national strategic review of tertiary education[31].

31 We are aware that an Education Development Strategy for 2007-13, linked to the National Development Plan for the same years, was published in 2005: it contained sections concerned with tertiary education and was linked to the 2005 Law on Higher Education. However, the CBR suggests that it was neither comprehensive (it identified a limited number of specific areas for new government action) nor widely debated.

Participation in the review should not be confined to the tertiary education community. For those within this community, many of the consultative mechanisms are now in place, and it will be relatively straightforward to involve all of the interested parties who are internal to the tertiary system. But it will be essential for the development of the vision to involve the full range of external stakeholders, including all of the potential beneficiaries, and not only those who make use of tertiary education as it now exists. Private and public enterprises need the opportunity to reflect on and articulate their needs, not just for newly qualified graduates but for continuing education and training, lifelong learning in the widest sense and the full range of other services – again, not just research but development and consultancy – which contemporary TEIs can be expected to provide. So too do all other kinds of communities and associations. And it will be particularly important to ensure that the emerging vision is discussed and shared by the full range of national and regional/local government ministries and agencies with an interest in any aspects of tertiary education: as we commented in Section 4.1, at present not only liaison but even communication appears to be quite limited, even between central ministries and agencies. Although it will be for the Ministry of Science and Higher Education to coordinate the development of a strategy, it should make every effort to bring other ministries and their relevant subdivisions into the dialogue.

Such a process needs several other features if it is to be successful and productive. The first is that wherever possible it must be evidence-based. We discuss below the need for an information strategy for Polish TE. A thorough-going review of the kind we are recommending will certainly highlight numerous areas – some of which we have identified in this report – in which the required information is not fully available. It can thus feed into the planning and development of a more comprehensive information base. Another requirement is that the review should not be too inward-looking. It is all too easy, in reviewing a single system, to be over-impressed by the internal 'logic' of the country concerned and to see too many characteristics of the system as over-determined by national history and tradition and by apparently irreversible current trends. National practices should be contrasted with those of other comparator countries, much more systematically than our own brief report has permitted, and using both desk research and external advisers. The latter could include not only international experts but expatriate Polish academics who are now working abroad, as we have also suggested in Section 5.5 for the development of research policy. And lastly, such a strategic review should not be a 'one-off' event. It should be seen as the beginning of an iterative process of self-scrutiny in which strategic aims and broad policy outlines are established, on a rolling cycle, for the medium term.

If we were to single out one key issue on which a clear policy is urgently needed, but simply does not exist at present, it would be the role of vocational education at the tertiary level. As we pointed out in Section 4.1, Polish tertiary education is suffering from academic drift which is not simply uncontrolled, but positively encouraged by a whole range of perverse incentives and processes. The adverse consequences are numerous, but foremost among them are a double negative: there is no clear and positive vision for vocational TE, and the main aspiration of the existing 'vocational' TEIs is to leave the sector and join the over-crowded ranks of the 'academic' institutions, where few if any of them can ever hope to emulate the established leaders.

Building a vocational sector of tertiary education is not easy, and there are plenty of other countries which have struggled with the difficulties. But there are useful positive examples, notably the fairly recent and very successful establishment of the AMK sector in Finland, broadly on the lines of the (former) British polytechnics and the German *Fachhochschulen*. The aim should be to create and promote a distinct vocational sector, dedicated to providing the highest quality of professional and vocational education and training: a sector which is strongly employer-oriented and closely integrated with the specific labour market needs of each locality and region. The institutions in this sector need to develop, and take collective ownership of, their own distinctive mission, in which they can take pride – and at which they can compete with each other to excel. The rewards for their excellence have to be substantial enough so that vocational TEIs are not constantly looking enviously at a better-funded or higher-status 'academic' sector. This will not be easy, given their present starting-point, and the transition will have to be carefully managed and adequately funded.

In order to discourage academic drift, there needs to be a clear understanding, backed up by appropriate legislation, that institutional membership of the vocational sector is permanent: it must cease to be seen merely as a staging post on the way to 'full' academic status. In these institutions the primary criterion for accreditation to award degrees (in new fields, or at master's level) should be a demonstration of labour market demand. Indeed the whole SAC process for vocational TEIs – both accreditation and quality assessment – needs to be specifically designed to be fit for vocational purposes: of course academic quality and rigour are essential, but it is not appropriate for vocational courses to be assessed against purely academic standards.

This strengthening of vocational institutions and programmes is now badly needed, not least because half of all students in upper secondary education are enrolled in vocational institutions. It would be far better for most of them to progress to vocational tertiary education, where

programmes should have been fully articulated with vocational secondary qualifications, than to struggle to cope with academic courses which will in any case need to be adapted for them. In some systems – perhaps including Poland – there are accusations that 'condemning' a proportion of secondary school leavers to vocational programmes is inequitable, since it cuts them off from the highest-status and most rewarding opportunities. But this is only the case if, as at present, vocational programmes and qualifications are seen as second-best: a strong sector can generate its own high status. And in addition, opportunities can and should be created for students to move across the vocational-academic divide (in both directions) with appropriate support, at the end of the bachelor's and master's cycles.

Lastly, the teaching staff of vocational TEIs must not be 'moonlighting' employees of academic institutions, but dedicated members of a separate vocational/professional teaching force, appropriately trained for its distinctive role. There is a place for part-time teaching staff, but these should be practitioners on secondment from (or to) local enterprises or public services. Basic research would not be expected, or funded, for staff in these institutions; but applied research, development, consultancy, training and other externally-funded services should be encouraged (see also Section 5.5).

If a truly vocational sector is developed on these lines, it will be a powerful means of further increasing participation rates and ensuring an appropriately trained labour force for the new Polish economy.

Another important priority will be to enhance the central authorities' capacity for policy implementation. As we commented in Sections 4.1 and 4.2, although the necessary foundations of institutional autonomy and formula funding are in place, other mechanisms such as earmarked funding streams are still little used. Central government ministries (not only the Ministry of Science and Higher Education) could provide 'pump-priming' resources for a range of new activities. Relatively small amounts of resources can be extremely effective in encouraging institutions to develop new activities, for example by funding start-up costs in advance of income (*e.g.* seconding staff to develop new courses) or paying for development officers to explore and market (both externally and internally) new activities (*e.g.* offices for regional enterprise liaison or co-ordination of continuing education). These are investments which institutions may find very difficult to justify when budgets are very tight, even when the longer-term advantages may be attractive, and there is a clear case for external funding to help. Earmarked funding of this kind is generally allocated in one of two ways: as a formula-based entitlement to every institution, or as the outcome of a bidding process in which institutions apply for funds on the basis of specific plans. There are advantages and disadvantages to both processes –

and considerable international experience to help with the choice (see also below, Section 5.2 on programme-based funding).

Earlier in this report (Section 4.1) we commended the well-established processes of consultation and in particular the way in which the 2005 Law on Higher Education has made these mandatory. However, as we also commented, they relate only to representative bodies and interest groups within tertiary education. An important priority now is to widen the radius of statutory consultation to include external stakeholders – employers in private enterprises and public services, regional and local government and community groups and associations. As we argued above when discussing the need for a strategic review, all of these groups are stakeholders in tertiary education: they not only have a right to be consulted on its future direction, but can offer important perspectives which will help to shape it for the better.

The CBR has highlighted, and several different sections of this report have also pointed out, the absence of systematic information on many aspects of the inputs, processes and outputs of tertiary education. Moreover, even when information is collected it may be very difficult to access. Of course the collection, processing and analysis of statistics and other systematic data can be costly, and the opportunity costs for people working within the system who are expected to collate and supply information can also be substantial. But there is also a high cost to the lack of information. Policy development and policy implementation can only work if there is a good basis of information, regularly collected and updated. It is needed for assessing the performance of the system, costing and planning new developments and monitoring outcomes; and in a system which has rightly become increasingly responsive to stakeholders, published information is also a necessity. League tables, for example, are only as good as the data which go into them, and there are obvious deficiencies in those which have been published so far. It should now be a high priority for the ministries concerned, working together and in consultation with the institutions and other stakeholders, to develop a comprehensive information strategy. Such a strategy needs to lay out not only what is to be collected, how often, and the methods for collection (ranging from regular monitoring returns through participant surveys to specially commissioned research) but also what is to be published and to whom, and how, it is to be disseminated.

As we suggest in Section 4.7, both graduate placement and student mobility between institutions inside and outside Poland are hampered by the lack of adequate information on what graduates have learned during their studies. There has been some discussion in Poland of the need for a national qualifications framework, like those which have been agreed and published in many European countries. They indicate in generic terms what is

expected of a student who successfully completes a course at different levels – sometimes even on a year-by-year basis throughout tertiary study – and thereby form a standardised basis on which specific areas of study can model their own course and programme aims and assess the outcomes in student examinations. They support student mobility by ensuring the broad comparability of courses at the same level, and they help graduate recruitment and selection by identifying the skills and competencies which are expected of graduates in each area of study. We believe that the creation of such a framework should now be a priority. The SAC would be the appropriate body to carry out the preliminary work, which is normally the task of national quality assessment bodies in each country, and to insist that consistency with the framework must be monitored as an aspect of the regular quality assurance process.

As we have indicated, Poland is relatively well placed, in principle, in relation to the Bologna process. In particular, the three-cycle qualifications structure (bachelor's, master's, doctorate) was adopted quite early and is gradually becoming the standard for new programmes. However, we also learned that the changeover is progressing quite slowly in many institutions and fields, and that there are still both ignorance and resistance, especially among students and even more among employers. This can easily become a vicious circle which requires government action to break it. We believe it should now be a priority for government (in its own right, and also working through TEIs and subject associations) to organise a campaign to promote understanding and acceptance of the first two cycles to both students and employers. There is no doubt that there are great benefits to be gained and it should not be hard to mount the case.

Lastly, the Diploma Supplement is an aspect of the Bologna process to which Poland has committed itself. Since 2005, students have been entitled to receive a supplement indicating the courses they have taken in standardised form: institutions are required by law to provide the supplement in Polish and students may also ask for a translation. However, the review team formed the impression that the fulfilment of this commitment may still be somewhat patchy: certainly, current students seemed unaware of their entitlement, let alone of how the supplement might help them. Like the national qualifications framework, the Diploma Supplement offers obvious advantages in improving student mobility and improving articulation with the labour market. We believe it should be a priority for government, perhaps working with and through the SAC, to insist not only on the rapid implementation of this entitlement but also on greater publicity for its potential uses.

The TEIs

It should be clear from our comments in Section 4.1 that we have concerns about the governance and management capacity of Polish TEIs. Some of the weaknesses are structural and would be difficult to change without primary legislation which would undoubtedly be contested: we refer, for example, to the practice of electing institutional post-holders, and to the exceptionally long apprenticeship period before staff attain the highest rank of professor (for the latter, see Section 5.3 below). However, if Polish tertiary institutions are to achieve their full potential, this debate will need to be undertaken sooner or later. There are examples elsewhere of radical changes in governance structures being imposed by national legislation despite long traditions which might have daunted reformers (the Netherlands is probably the most striking recent example). But in the meantime, and also as a way of opening up the debate, we strongly recommend that the ministry open a dialogue with the institutions (and not only with KRASP and KRZSP) on best practice in internal governance and management under current conditions, with a view to finding ways of strengthening it and avoiding some of the deficiencies which we have identified. Our impression from our necessarily small sample of institutions is that there are quite wide variations in approach – for example in the uses made of senior management teams and in the ways in which deliberative bodies (senates and faculty meetings) operate. Exchanging ideas and practices could have an immediately positive effect.

One easy way to encourage TEIs to engage in more deliberate and focused self-management would be for the ministry to require all institutions in receipt of public funding to prepare, and regularly update, meaningful strategic plans. These would be supplied to the ministry, as a basis both for general accountability and for bids for special funding of the kind we advocated above; and would be published and disseminated both internally and to external stakeholders. As well as their intrinsic value in sharpening institutional missions, setting future directions and highlighting choices that need to be made, the process of preparing strategic plans could be a helpful catalyst in increasing staff and student commitment to their institution and its future – and strengthening their own place in it – and in highlighting issues in governance and management which need to be addressed.

Earlier in this report we welcomed the provision in the 2005 Law on Higher Education for institutions to set up advisory councils with external membership, but noted that many institutions have not yet done so. Now that there is some experience of how these councils can work, we see no reason why the government should not require every institution, or at least all public institutions, to have an advisory council of this kind. At the same time, the government should consider, and consult on this with the

institutions, the possibility of giving the councils specific powers. The biggest risk for bodies with external membership is that lay members, especially those busy and productive people who will be most useful, will see little point in being involved if the council concerned is no more than a 'talking shop'. When councils have real powers (as do boards of trustees in the USA or University Councils in the UK), external members tend to take them very seriously and it is possible to recruit both wise and influential people to help TEIs to shape their future. There is a range of powers that might be considered which would not impinge on the academic freedom of students, staff and teaching and research units, for which appropriate safeguards can also be put in place. The most common powers in other systems include financial oversight; agreeing and revising the mission and setting the broader strategic plans of the institution, as advised by and in consultation with the academic staff; and oversight of senior post-holders.

5.2 Resourcing the Tertiary Education System

Funding

We believe that three main principles should underlie the funding of tertiary education in Poland: (non-discriminatory) cost-sharing; funding to be allocated on the basis of relevance; and the provision of a comprehensive needs-based student support system. Given the current state of play, securing these principles would entail the following priorities for policy development: (i) achieve a fairer approach to cost-sharing which ensures the financial sustainability of tertiary education and better reflects the relative importance of private and societal benefits of tertiary education; (ii) make the allocation of funds to institutions more strategic, so as to steer institutions towards a better alignment with national economic and social goals; and (iii) significantly expand the needs-based student support system.

As our earlier analysis showed, both current trends and the existence of strongly competing political priorities raise concerns about the sustainability of the present heavy reliance on public money for funding tertiary education. This reliance has resulted in the expansion of the private sector, a decline in per-student public spending on institutions and the emergence of a large subset of students who are required to pay tuition fees although they are enrolled in public institutions. We have noted with approval that the principle of cost-sharing between the State and the student has been introduced in Poland. This appropriately reflects the existence of both public and private benefits to tertiary education. However, the current approach to cost-sharing is discriminatory, because different categories of students who

are attending similar programmes bear different proportions of the costs of tertiary education (*i.e.* they receive different levels of public subsidy). This is open to challenge since the societal benefits generated by the completion of similar programmes are likely to be closely comparable across individuals. In addition, differentiating the level of public subsidy on the basis of academic 'merit' prior to entering tertiary education is only likely to aggravate educational inequities.

In light of the growing budget pressures on the possibility of maintaining funding for public tertiary institutions at constant levels, and the current discriminatory approach to cost-sharing, it might prove valuable to consider the following approaches: (i) broaden the tuition fee policy so that *all* students in public institutions pay fees, but at a level *lower* than what is presently paid by non-regular students; and (ii) use the public savings gained from the greater private contributions of the more affluent students to strengthen a strictly needs-based student support system. This would result in a non-discriminatory cost-sharing approach, through which the neediest students would get enhanced financial assistance and the more affluent students would contribute to the costs of their education in a fairer proportion to their capacity to pay.

As regards the allocation of funds to institutions, the use of formulas to determine the basic subsidy to institutions and the selective distribution of research money on the basis of competition are both to be supported. But a number of other aspects need to be improved. Specifically, it is desirable to improve the allocation system in order to promote the relevance of teaching, to strengthen the funding process on the basis of quality/performance adapted to specific institutional missions and to introduce programme-based targeted funding. The guiding principle should be the design of a funding approach which is aligned with the policy goals which are sought, namely: equity; quality and relevance; and institutional and system capacity.

A good rule to follow is to allocate public funds on the basis of the relevance of programmes, that is to use public money to subsidise those programmes which bring more benefits to society at large. In practice it is difficult to make an accurate assessment of public and private benefits from tertiary courses. But some principles can be followed. For instance, the approval of new programmes should be preceded by an assessment of relevance – *e.g.* whether they respond to labour market needs, foster innovation or serve communities' aspirations. The approach to ensuring relevance should also be closely interconnected with quality assurance mechanisms, since low-quality programmes are, for example, unlikely to be relevant to the labour market. Thus for an approach based on relevance to be successful, a robust system of quality assurance needs to be in place. Another circumstance in which programmes should receive supplementary

public funds is when there are shortages in areas deemed strategically important for the country (*e.g.* teaching, nursing).

Another priority is to strengthen the funding to institutions directly on the basis of the quality of outputs. This would support excellence in institutional activities. The experience with performance-based allocation mechanisms in various countries (*e.g.* Denmark, the Netherlands, Norway, Sweden) suggests that tying funding to results can bring improvements to institutions' efficiency (*e.g.* through improved degree completion rates and/or lower costs of provision).

The indicators which are used in performance-based funding systems should relate to those aspects which are intended to be enhanced in institutions, such as internal efficiency (*e.g.* costs, completion rates) and external efficiency (*e.g.* the quality of graduates). Performance indicators should reflect public policy objectives rather than institutional needs, and they should trigger incentives for institutional improvement. A wide range of indicators are used in countries which have implemented performance-based allocation mechanisms. Indicators which are associated with study completion include student graduation/completion rates, the number of credits accumulated by students, average study duration, the ratio of graduates to entering student numbers and the number of degrees awarded. Other indicators focus on the labour market outcomes of students: employment rates of graduates, the extent to which employment is in a field related to the area of studies and student performance on professional licensing examinations. Some countries also use surveys of stakeholders' views (*e.g.* employers, students, government, social partners) of programmes' effectiveness, including external assessments of the quality of graduates and of the extent to which a range of needs are being met, and graduates' own degree of satisfaction.

However, performance-based funding mechanisms should be carefully implemented because they can have undesired effects. For instance, if institutions are funded on the basis of degrees awarded or credits accumulated by students, some institutions may be tempted to lower their standards in order to improve their funding. This possibility requires adequate quality assurance mechanisms to be in place in good time. Another possible effect is to induce risk-avoiding behaviour among academics and administrators, leading to an emphasis on outputs that are easily attainable and measurable (*e.g.* effort shifted away from hard-to-measure activities such as the development of creativity and problem-solving attitudes). There are other instances in which the pursuit of a goal (*e.g.* improving completion rates by offering remedial courses) may have adverse consequences for another important objective (*e.g.* research activities or public service activities by academics).

One way to address these concerns is to develop a balanced funding mechanism based on a mix of input and output indicators. A typical input indicator used is the level of student enrolments, typically weighted by funding rates which are differentiated by field of study and programme level. It is important to note that enrolment-based funding may also provide incentives for improving the quality of programmes, since it should encourage institutions to respond to the needs of students who 'vote with their feet' in favour of higher quality – so long as certain conditions are met (Jongbloed and Vossensteyn, 2001). These conditions are: (i) in broad terms, there should be no restrictions on (publicly-funded) enrolment numbers in institutions; (ii) students must have access to reliable information on programmes; (iii) a credit recognition and transfer system should be in place to facilitate student mobility between institutions; (iv) tuition fees need to be high enough to induce students to make a wise choice of programme; and (v) student support systems must take account of the student's choice of institution. The more these conditions are met, the greater weight should input indicators have in the funding formula. Even so, the evidence suggests that a small share of performance-related funding is sufficient to influence institutional behaviour, as long as the conditions above are largely met. At present in Poland, however, it is the case that some of these conditions are not met: the system is not demand-driven (there is a limited number of places in institutions), credit recognition is under-developed and no tuition fees are charged to a significant proportion of the student population. Moreover, input funding is strongly related to the number and qualifications of the academic staff rather than solely to student enrolments. This strongly suggests that output indicators will be needed in the funding formula, in order to ensure the desired institutional behaviour. It should be added that using student enrolments as the main input indicator has advantages over the present weighting for the number and qualifications/titles of academic staff, because the 'vote with their feet' effect is a better way of rewarding high quality. However, it might also lead to distortions as it could also encourage institutions to favour quantity of enrolments rather than the quality of courses. Nevertheless, high quality is not necessarily strongly correlated with an academic body's possession of large numbers of highly qualified staff. There is little good reason to keep the academic title-based formula, given the perverse effects it causes and the fact that the quality of academic bodies in Polish institutions has reached a satisfactory level.

Some prerequisites need to be in place for the successful introduction of performance-based funding. First, because gathering information is costly, it is important to use simple measures which are more readily available. Second, it is important that indicators are valid measures of performance and can be easily interpreted. If outcomes are poorly measured or measures are

not valid, the goals of output-based funding may not be realised. Third, it needs to be ensured that there is administrative capacity in place to manage and interpret a great deal of information. Fourth, it is imperative to ensure that the measures being used are transparent to all stakeholders involved. This highlights the need to achieve political agreement among a broad range of stakeholders regarding the terms for introducing an output-based component for institutional funding.

Next, measures to define levels of funding should take account of the particular role and mission of the institution. For instance, if the mission of the institution stresses links to the community, a performance-based approach should consider including indicators such as the number of graduates in study fields which are critical to the region or the number of academic staff involved in community-related projects.

As briefly suggested in the preceding section, another promising approach which can be highly effective in aligning the mission of institutions with the overall strategy for tertiary education is the introduction of programme-based targeted funding as a new component of funding for institutions (for activities other than research). This would consist of allocating funds to institutions through programmes with precise objectives such as the introduction of innovative curricula, the development of tutoring schemes for students, the improvement of management practices, the expansion and upgrading of the infrastructure, the development of national and international collaboration of academic staff or the strengthening of postgraduate education. These programmes could also encourage the strategic planning of institutions and provide an opportunity to reflect on their specific mission in light of local, regional and national needs. They could be organised on the basis of competitions or the individual assessment of proposals.

There is also a need for institutions to diversify and enlarge their income from sources other than public funds which are consistent with their mission. Clear guidelines need to be drawn up by education authorities and the bodies representing the institutions in relation to how this is to be supported and encouraged. More stability needs to be provided in public funding, so that institutions can engage in a strategic approach to their long-term development, consistent with their strengths and capabilities. An allocation mechanism that guarantees funding over several years is preferable to year-to-year allocations. This will allow institutions to plan their investments and introduce reforms over the medium term in accordance with their strategic plans.

The remaining key element of the funding framework, the student support system, needs to be expanded, diversified and to place extra

emphasis on the financial needs of students. We suggest that it should be based on a system of means-tested grants complemented with a universal income-contingent loan scheme, with the overall administration being undertaken by a central agency. This would represent an essential component in a system based on the principle of cost-sharing: without it, academically qualified students who are financially needy would be liable to be squeezed out of participation by the introduction of private contributions (tuition fees) for all.

A student support system to offset this would require more resources than at present, in order to cover a greater number of students at an economic disadvantage. The extra resources for financially needy students could come from: (i) the private contributions of more affluent students in a system where tuition fees are charged in all public institutions; and (ii) a drastic reduction in the funds going to grants which are awarded on the sole basis of merit. We believe that conferring grants solely on the basis of academic merit is not the best use of public resources. Not only does it have little influence on the access to tertiary education of the present grant recipients (since all the high-scoring students who are not financially needy would attend tertiary education with or without a grant); but there can be serious equity issues if, as is likely, those who do not qualify for merit-based grants have not had the same opportunities to achieve such 'merit'. This is the basis for our view that public money for student grants should be distributed on the sole basis of financial need. The current system could also be further simplified by combining the many existing components (for housing, subsistence, etc.). A revised and simplified system should be the main mechanism by which the state supports and promotes the access of the more vulnerable groups: by emphasising financial need it can be sure of being effective and equitable.

To achieve a full and comprehensive student support system, we recommend that the grants system we have outlined should be complemented by a universal income-contingent loan scheme, administered at national level. The current loan system provides a good foundation, but resources need to be substantially expanded. A far-reaching loan scheme, open to all students, would help to reduce the short-term liquidity constraints which a wide range of individuals (not only the most needy) may face at the time of study, and which can act as a deterrent to participation. Strengthening its income-contingent nature would provide better insurance against the risk and uncertainty which individuals face in the job market, and it would improve the progressiveness of the overall system. In such a scheme, low earners would make low or no repayments and graduates with low lifetime earnings would end up not repaying their loans in full. Thus income-contingent loans protect borrowers from excessive risk, because

they provide protection from the possibility of inability to repay. They make the system more progressive because those individuals who derive greater private benefits from their tertiary degree have the level of their public subsidy reduced vis-à-vis those students whose private benefits are smaller but where the social benefits can still be considerable (as for example in poorly-paid public sector jobs).

A number of other features could make the loan scheme more effective. If there are not yet sufficient funds available to satisfy the entire demand for loans, for the time being they should be awarded on the basis of need; as more resources become available, the loan scheme should become universal (*i.e.* not means-tested). Similarly, as the loan scheme becomes better resourced, the existing age limit on borrowing should be removed. If it is decided that subsidised interest rates are to be provided, these too should be given selectively on the basis of financial need. Where a subsidy is provided, there should be a maximum number of years during which interest rates are subsidised, a means-tested and limited entitlement for students to borrow with a subsidy, and a larger loan entitlement either at market interest rates or at the government's cost of borrowing. Finally, in order to eliminate what is now a major obstacle for needy students to access loans, the requirement of a guarantor should be removed and the state should take on that role.

Students who receive grants should be permitted also to take up student loans, with the loan entitlement being reduced by the amount of the grant. Overall, once the student support system reaches maturity, aid amounts – grants and loan entitlements – should be large enough to effectively remove liquidity constraints faced by students. This implies including tuition fees in the total cost package to which students are liable, for the purpose of calculating the total sum to be made available. Students who attend private institutions should be entitled to benefit, under the same conditions, from the same basic financial support to cover both tuition fees and costs of living. This would clearly facilitate students' freedom of choice and enable the development of institutions with distinct approaches and purposes.

Finally, another priority should be the creation of an agency, within or outside the Ministry of Science and Higher Education, to be responsible for the administration and delivery of student loans and grants. Such an agency would define the terms and conditions for the operation of the overall student support system, including the criteria for the award of student aid of all kinds, the amounts to be awarded and the collection of loan repayments. For the reasons explained earlier, we do not think that the policies and administration of the grants system should be a responsibility of the institutions.

5.3 Human Resources

Our fundamental recommendation is very simple. In order to achieve excellence in the Polish TE system, academic staff must enjoy terms and conditions of service broadly comparable to those in other European countries. This means that it should be a firm policy goal that staff will be properly remunerated within their institution of primary employment; and linked to this, secondary employment as a teacher should become a thing of the past, other than in very exceptional circumstances. This will enable staff to devote proper amounts of time to their teaching and provide them with adequate time and space for the research and/or scholarship which are an essential component of education at tertiary level, as well as for self-development through training activities, student support and all the other activities which can be expected of a well-rounded system.

This will hardly be accomplished quickly. There are serious resource implications both for the government and for the institutions, not least those (largely in the private sector) which have come to rely on secondary employment to staff their courses, and will need to rethink their approach to human resources from the bottom up. But without it, Polish TE as a whole is bound to under-perform, with serious consequences for its economy as well as for the formation of its next generations of citizens. As European borders open further, the brain drain will only worsen until salaries and working conditions improve.

The prevalence of secondary employment, as we have seen, is 'pushed' by low salaries and 'pulled' by the need of smaller institutions for low-cost, part-time staff. It will need to be tackled on both fronts. We note that the 2005 Law on Higher Education has limited academic staff to two employers, which is a useful start; but of course this needs to be enforced, and that may well be difficult. It is our impression that many institutions are likely to turn a blind eye to the issue for the time being. Others, however, are evidently taking steps to control secondary employment, and the example of Warsaw University is interesting in this regard. This institution takes staff management seriously, including active monitoring of, and support for, individual staff members' research achievements; and it has instituted a scheme for positively rewarding staff who commit themselves not to take on secondary teaching jobs. As the CBR suggests, institutional 'carrots' may be much more effective than legal 'sticks'.

One should not rule out all forms of multiple employment. It can be appropriate and productive for academic staff to hold dual appointments, either to encourage inter-institutional collaboration in teaching (necessarily with the knowledge and approval of both institutions) or with a general teaching-and-research appointment in an academic institution plus an

attachment to a research centre (*e.g.* a centre affiliated with the Polish Academy of Sciences). In the case of vocational institutions, as we suggested in Section 5.1, joint appointments or secondments from a TEI to industry, or vice versa, could also be appropriate. Any regulations need to be drawn up with care, and the essential principle should be that the primary employer is in full knowledge and control.

It should not be thought that insisting on a single employer is necessarily a complete panacea. The present division of programmes and students into regular and non-regular attendance has meant that staff may take on excessive teaching hours within their own institution, teaching evening or extra-mural students as well as daytime students in exchange for a salary supplement. Whether or not our recommendation is accepted that the internal division of students should end, institutions should review the whole process of teaching hours allocation, and ensure that all staff have sufficient time for the whole range of activities for which they are contracted.

The private and vocational sectors would certainly be helped if the criteria for programme approval and accreditation could be changed. The same arguments apply, *ceteris paribus*, as those which we have just advanced (see Section 5.2) for the funding formula: using the employment of a certain number of senior staff as a criterion for approval is a rather poor proxy for quality, and it can only be justified if no better measures are available. It is open to obvious abuse if highly qualified staff can be put on a programme's nominal payroll while leaving the teaching to be done in practice by younger, less experienced and less qualified people. In any event, now that Poland has a rapidly maturing quality assurance system, the appropriate criteria should be devised by the SAC and should focus directly on content and output, rather than input. This would certainly reduce one of the incentives for multiple employment from the 'pull' side.

Although moving to a properly remunerated, single-employment, academic profession should be given the highest priority consistent with available resources, in the short term there are a number of other measures for improving the quality of the teaching staff which are relatively low-cost and should be considered as soon as possible. It is our view that another factor which almost certainly works against high quality and is objectively very hard to justify is the predilection for 'in-breeding' (from student to staff member and throughout the staff career) which seems to be still deeply embedded in Polish TEIs. There are some quite simple steps which could be taken to open up the appointment process at different stages of the career ladder, and to encourage mobility.

The first priority would be to increase the transparency of the staff appointment, promotion and performance appraisal processes. There is little

or no justification, other than in the most exceptional circumstances, for these to take place behind closed doors. Job specifications and person-selection criteria should be collectively developed and agreed, with the participation of staff at all levels (even for the most senior posts) and of students. Posts should be advertised, and the selection process should include public presentations followed by feedback to the appointing committee, again from junior staff and students, even for senior jobs. In the case of senior posts (*i.e.* at full-professor level), selection panels should include external assessors, drawn (a) from within the institution but outside the discipline, (b) from the discipline outside the institution, and (c), in the case of key appointments, even from outside Poland. The cost of these extra activities is truly trivial compared with the cost of making an inappropriate appointment, and it would send a powerful message about the importance of transparent, merit-based competition. However, if in-breeding is considered a serious enough issue it would even be possible to consider making experience at another institution (and in some cases experience outside Poland) one of the criteria to be given positive consideration.

Finally, we were made very strongly aware of the importance attached in Poland to the long career ladder, including not only the second doctorate (*dr.habil.*) but also and most exceptionally (by international standards) the qualificatory award of titular professorship prior to appointment to a specific professorial post. This importance is symbolised, and the procedures are underpinned, by the existence of a dedicated commission, the CCADT, independent of the ministry of higher education. As we argued in Section 4.3, it appears to outsiders like ourselves that any benefits of this system are now outweighed by the very considerable costs, most obviously in delaying the maturity of able young scholars and researchers, but also, for example, in demanding a prolonged training in research at the expense of preparation for teaching. We suggest that now would be a good time to open up a debate – incorporating those who are still to qualify as well as senior professors – on the continuing merit of these procedures in the present context in Poland. It would be useful to draw on experience in other countries (notably Germany) where similar debates have been taking place.

5.4 Assuring and Improving the Quality of Tertiary Education

The State Accreditation Committee

The State Accreditation Committee is well positioned to take a leadership role in constructing a quality assurance model that balances inspection with improvement. It has good relationships with international

networks that offer experience and examples of good procedure and, within Poland, it has achieved a solid level of legitimacy and recognition for its current work.

To the extent possible, the State Accreditation Committee should reduce and focus its current level of activity devoted to inspection. Without undermining its current strengths, it might identify ways to simplify the 'compliance' part of its assessment process before the next complete cycle of assessments begins. Over time, once there is evidence of stronger adherence to baseline standards, the Committee can reduce its attention to the 'input' or resources described by each programme. The review team recognises that this change in direction can only be achieved over a period of several years.

Reducing the compliance side will free up time and resources that can be devoted to improvement. The SAC, and the institutions, need to direct more attention to effectiveness, starting with better information at the programme and study field levels on the 'outcomes' of teaching and learning efforts. The Committee needs to work with the ministry and with institutions and the rectors' conferences to identify programme-level outcome indicators that can become routinely available, and thus easily supplied when a SAC review gets underway. SAC's subject-specific sections should sponsor forums to identify appropriate indicators for each field of study.

SAC could draw on resources from other countries to assemble an inventory of ways to develop evidence of effectiveness at the programme level. Attention might be given to a 'fitness for purpose' model, which would fit SAC's current model based on programmes. Under such a model, which has been in use for an extended period in Denmark (Kristoffersen, 2003), programmes define their specific objectives and desired outcomes, and then measure the learning results of their students against those objectives.

It is beyond the role of the State Accreditation Committee to build a better national information system on tertiary-level students and their later employment experience. Yet the Committee could and should promote the development of such a system, which would greatly facilitate its own assessment responsibilities and enhance the overall functioning of the entire tertiary education system. The Committee can be active in identifying the types of information that are most critical, probably including information on the employment rates and destinations of graduates by specific fields and levels of study. Also important is information that tracks student progress. What are the patterns in who actually enrols for tertiary study and at what types of institutions and in what study fields? How do students fare once

enrolled – how many drop out during the first year and what are the rates at which students complete their studies in a timely manner?

To make progress in building such a system, the State Accreditation Committee would need to develop specific proposals by consulting various groups and stakeholders in tertiary education. It would require consultation with several ministries, and sustained inter-ministerial cooperation on some matters. The Committee could also participate in efforts to establish a Polish Qualifications Framework, which would offer a basis for identifying the skills and competencies expected of graduates in each area of study.

Internal Quality Assurance

A systematic gathering of resources is needed to assist tertiary institutions in responding to the ministry's recent call for developing internal systems of evaluation. While full regard must be given to institutional autonomy and to the virtues of institutional initiative in this area, the State Accreditation Committee, the rectors' conferences and the General Council for Higher Education could, together, help marshal needed resources and shape the direction of dialogue and exchange. These national bodies might jointly develop proposals on internal quality assurance that best fit Polish circumstances and present their proposals to the minister responsible for higher education and to the institutions themselves.

Incentives or rewards for effective models of internal evaluation might be proposed as well. The State Accreditation Committee, relying on the expertise already developed by each of its study area sections, may be uniquely well placed to organize and disseminate a variety of technical assistance materials that could inform and facilitate programme-level discussions within tertiary institutions. The Committee, together with other national bodies, might jointly sponsor workshops, forums or other meetings designed to exchange ideas and present models.

Toward a Long-term Vision for Quality Assurance

Quality assurance in Poland is likely to continue to evolve, following a pattern observable in most other countries. Thus, some attention should be given to developing a long-term vision of what approach to quality assurance might be most suitable in the future. An 'audit' model offers substantial promise, for example. The recent World Bank report on tertiary education in Poland (World Bank, 2004) noted that the Hungarian Accreditation Committee has shown some interest in such a model, which shifts the external role to one that is supportive of strong internal systems. Experience in other countries, especially Hong Kong (Massy, 2003),

suggests that a major strength of the audit model is that it concentrates most of the ongoing work of quality assessment and improvement at the institutional or programme level. This allows the external agency to narrow its work to that of checking or validating the evidence and processes reported by institutions.

The audit model, which is currently receiving favourable attention in many countries, is worth considering as a future model for Poland. Realistically, however, it can only be implemented when other supports exist and when all tertiary education institutions routinely meet baseline quality standards. The recommendations above for the development of strong internal cultures of evidence and assessment and for the development of information tracking and indicators would lay the foundation for such a long-term approach.

5.5 Achieving Equity in and through Tertiary Education

Clearly, issues of equity in tertiary education in Poland need to become more prominent in national debates and policy making. A more coherent and systematic approach to equity would in the first instance use both targeted research and routine data gathering to assess where equity problems arise: how far they are related to income constraints faced by families, combined with insufficient student support; how far they are related to inequity of opportunities at the school level; whether they are linked to admissions issues; and whether they are related to other barriers such as the lack of knowledge about the benefits of tertiary education. This would require the systematic collection of data such as the socioeconomic background of the tertiary student population and completion rates by family educational and financial backgrounds. The knowledge gained would allow the development of appropriate mechanisms to reduce inequalities in tertiary education.

The policy response, in order to reduce inequities in the access to and completion of tertiary education, should include initiatives in four areas: (i) schooling policies; (ii) financial assistance to needy students; (iii) incentives for tertiary education institutions to widen participation and provide extra support for students from disadvantaged backgrounds; and (iv) opportunities for adult learners.

Students whose parents have lower levels of education are more likely to underestimate the net benefits of tertiary education. To offset this information gap, career guidance and counselling services in Polish schools should strengthen their role in making poorly informed school children aware of the benefits of tertiary education, and in raising their aspirations to attend it. To achieve this it will be important to put in place a network of

career guidance services that are adequately staffed, and provided by individuals with the appropriate training. We suggest that career guidance should place more emphasis than at present on the transition from upper secondary to tertiary education for students from disadvantaged backgrounds. The models suggested by a recent OECD review of career guidance may be useful in this respect (OECD, 2004c). This could be complemented with a means-tested financial aid scheme to encourage disadvantaged students to complete upper secondary education. In addition, an expansion of the tracks from vocational upper secondary education to tertiary education is also likely to enlarge the participation rates of currently under-represented groups. As regards the provision of school education, it is important to note that the 2003 PISA (Programme for International Student Assessment) data, based on tests administered to 15-year-olds, indicate that in Poland there has been a marked reduction in between-school differences since PISA 2000, possibly linked to the development of a more integrated school system (OECD, 2004d). Efforts to reduce differences of quality across schools, and so create more equitable conditions for all students, should be sustained.

Another crucial element for ensuring the equitable provision of tertiary education is the financial assistance provided to needy students. As described in detail in Section 5.2, the student support system should be expanded and diversified. We suggested there that it should be based on a system of means-tested grants complemented with a universal income-contingent loan scheme. Our proposal for responding to the equity issues raised by the financing of the system was that the resources going to grants on the basis of merit only should be diverted to grant schemes allocated on the basis of need. In addition, if, as we recommend, tuition fees are introduced for all students at public institutions, the government should also require the institutions to waive all, or a large proportion, of the fees for the neediest students. To help ensure that sufficient discounts are provided, the government should set aside funds to repay the institutions for the amount of fees waived for the designated students.

Tertiary education institutions also need to be provided with incentives to widen participation by under-represented groups and to assist those groups with extra support. A possibility worth considering is the creation of a special financial incentive for institutions to attract under-represented groups. This could be achieved, for instance, by assigning a greater weight in the student-related component of the funding formula to particular groups of students such as disabled students. Institutions could also be encouraged, or required, to engage in 'affirmative action' by taking student applicants' educational backgrounds into account in the selection process. This would be designed to compensate for the more limited educational opportunities

which some disadvantaged groups of students are offered in the course of their primary and secondary education. This in turn might well require further initiatives by the institutions, not only to widen access at the entry point but also to support students from disadvantaged backgrounds as they progress through their studies. As we noted earlier, Polish institutions need in any case to expand the supply of tutoring services to their students.

Finally, tertiary education institutions need to be encouraged to engage further in providing lifelong learning opportunities and to be more responsive to the needs of adult learners. By reaching out to new audiences they would make an important contribution to widening their societal role. Several further steps would be required to make adult learning a reality for significant numbers of older people. First, policies will need to be developed to allow attendance on the basis of acquired competencies rather than insisting on the same academic qualifications for all entrants. And second, as the student support system reaches maturity, access to it should be expanded to include individuals of all ages. It will also be important to provide more support and more flexibility for people of all ages (including young people) who wish, or need, to work and study simultaneously. In general, we can summarise by saying that as participation increases and the entering population becomes more diverse, there will need to be increasing flexibility in selection criteria, the content and delivery mode of study programmes, student funding and student support and a whole range of other practical arrangements.

5.6 The Role of Tertiary Education in Research and Innovation

The challenge which Poland faces is how to fully integrate the research capacities of tertiary education institutions into a knowledge-based society and economy, and into a research environment that is increasingly internationalised. There needs to be an increasing understanding that the current low cost-oriented Polish economy cannot be sustained in the long term, and that there is therefore an acute need to create a more knowledge-based and innovation-oriented economy. Hence research, development and innovation need to become more prominent among Poland's national priorities: to be blunt, Poland must find ways to devote more resources to these areas. This is inescapable in the context of Poland's further integration into the EU – with its stress on the Lisbon Agenda (emphasising knowledge intensity) and the Barcelona target (R&D spending of 3% of GDP, with 1% from public resources). Fortunately, the need to find more resources for research has already been acknowledged with the adoption, in March 2004 by the Council of Ministers, of 'the strategy for increasing R&D expenditure to achieve the Lisbon Strategy objectives'. Bringing this programme to

fruition will considerably improve R&D funding across the board and including the tertiary education sector, and improve the alignment between research policy and national development objectives. To make this politically feasible, it might prove useful to launch initiatives to inform the general public about the crucial role of research and innovation in Poland's future development. It is critical to revive public awareness of the importance of science and innovation for the development of the economy and society.

Research and innovation policies need very long-term perspectives if they are to be planned and implemented effectively, and this long-term commitment has so far been missing in Poland. For a number of years there has been a lack of defined priorities or even a clear 'strategic thrust' when it comes to the implementation of R&D policy. This remains an issue, but the review team hopes that the launching of a prioritisation exercise through the National Framework Programme may prove a turning point in this respect. This exercise has the potential to build the overall consensus and commitment which are now needed in Poland.

If Poland is to achieve the ambition of creating a knowledge-based economy, the aim of developing a much stronger knowledge base through increased investment and research prioritisation needs to go hand in hand with the aim of structural change in the sectoral composition of Polish industry, leading to a much larger presence in the knowledge-intensive and high-technology sectors. Thus it is equally important to find ways of improving the role of firms and other private sector actors in applied R&D and product development. Consequently, government policies must include schemes to stimulate private investment in R&D. One important incentive in this line might be the creation of government-industry matching funds for collaborative research between tertiary institutions and industry. Another initiative that has produced good results in some countries is government incentives for firms to hire advanced qualified personnel. At the moment, demand from businesses for doctoral degree holders is quite low. Tax reduction policies for R&D in firms could also be used. These policy measures have the potential double effect of increasing private investment in R&D and integrating businesses into the innovation system.

There is too little collaboration among researchers across institutions in Poland. Such collaboration can be inter-institutional or inter-disciplinary – or both. More incentives should be created in the funding system to achieve this – including incentives to co-publish. Collaborative settings might include models such as co-operation agreements between research institutes in different research sectors (see below), new joint centres bringing together research groups based outside as well as inside tertiary education, and structured opportunities for mobility between firms, PAS institutes, TEIs

and the research institutes supervised by functional ministries. Much of this collaboration could also involve foreign researchers.

In a country with so few public resources allocated to R&D, the parallel existence of three separate mainly publicly-funded research sectors – tertiary education, PAS research institutes, research institutes supervised by functional ministries – is difficult to defend. While research institutes supervised by sector ministries are distinct in that they undertake mostly applied and developmental research relevant to a specific area of economic or social activity, tertiary education institutions and PAS research institutes both focus on basic research. Such a dual public system of basic research is likely to involve duplication and inefficiencies. There may now be a strong case to consider the integration of some of the research performed in the Academy of Sciences with the research and teaching in TEIs. The simplest way to achieve this would be to integrate some of the research units of the Academy into departments in academic tertiary institutions. This has the potential to enhance the integration between R&D and tertiary education, improve the research-teaching nexus, reduce duplication, increase efficiency and eliminate units with low quality research. Estonia's successful experience of integrating its Academy of Sciences into the universities may offer Poland a valuable model and useful lessons if it is decided to embark on such a reform (Huisman *et al.*, 2007)[32].

It would be highly desirable to open up the current system of research evaluation to the scrutiny of foreign peers. This could increase the quality of the R&D both in the short and the long run, and might also help to reduce the in-breeding in the system. The first steps in the internationalisation of R&D evaluation might be to:

- Place foreigners on committees and boards – rather than having them evaluate every single institution, proposal, or individual.

- Concentrate initially on the natural sciences and avoid the more 'culturally-embedded' areas of research.

- Use Polish academics working abroad for such evaluation processes alongside foreign academics: but Polish expatriates should not be the dominant group among the foreign-based peers.

32 In Estonia, following a reformation of the Academy of Sciences in 1997, most of the pre-independence academy institutes were merged with tertiary education institutions. The last independent institutes became university units as recently as 2005.

The long-term objective should be that the whole academic research effort in Poland is subject to evaluation by foreign peers. This should include the assessment of research groups every 5-6 years and also the assessment of major applications for research resources. An illustrative example is the recent evaluation in Sweden, by 300 foreign experts, of 106 large, long-term (10 years) Linné Grant applications from Swedish universities across all fields of research. The resulting fairly detailed evaluations (against criteria determined by the Swedish Research Council) were made publicly available. In this process the Swedish Research Council formed five committees consisting solely of foreign researchers. One of these committees, which allocated grants to 20 research groups, was given the actual decision-making power by the Research Council. In the very inward-oriented public R&D system in Poland, the benefits of using similar procedures would be immense – not only in avoiding in-breeding, favouritism and 'lock-in trajectories', but also in benefiting from the ideas and experience of foreign peers. Such a process would also expand contacts at the frontiers of international research and could well lead to new research collaboration.

The criteria used for research assessments should be made more specific and detailed than at present. They should include publications, the extent of collaboration, societal relevance and, not least, citations. In the current system of research evaluation in Poland, citations are not normally used. This means that researchers and institutions get as much credit for publications that are never cited as for work that is widely cited and thereby influences the international research frontier. The 'Web of Science' and/or 'Google Scholar' citation data bases could be used in the processes of evaluation. Evaluation criteria that reward co-operation between researchers and firms should also be reinforced. We also recommend that the assessments of research quality are made publicly available – perhaps even published on the internet – both as an aid to transparency of decision-making and to enable Polish researchers to learn from the peer reviews.

Funding for PhD studies is very limited in Poland and should be expanded. The present funding system also seems to be somewhat opaque: it should be made more transparent. An option well worth considering would be to integrate the funding of PhD studies into the overall framework for research funding. In any event, if the human resource base in the Polish research system is to be secured and enhanced, both policy making and policy implementation need to pay more attention to the funding of younger researchers, both pre- and post-PhD. In addition to specific support grants for PhD students, consideration should be given to creating special funding streams to support the research projects of younger researchers.

As we showed in Section 4.7, few patent applications are submitted on the basis of R&D carried out at institutions of tertiary education. According to the current complex patent law in Poland, it is the tertiary institution which owns the patent; and in practice the division of financial benefits between the institution and the individual academic is often on a 90/10% basis, and only sometimes on the 50/50% basis which is common elsewhere. In addition, an academic staff member is not normally entitled to any career-related reward if s/he applies for a patent. Given the small number of patent applications, it seems clear that the incentives for employees to apply for patents need to be strengthened. One approach would be to give explicit weight to patent holding in appointments and promotions to academic posts, while another would be to provide direct financial benefits for the patent-holder by way of a salary increase or salary supplement. Whether it is more efficient for the economy and society as a whole that academic patents should be owned by the individual academic or by the institution is an unresolved issue: practice differs considerably across countries, covering the whole spectrum of possibilities. However, it is perfectly possible to combine patent ownership by the institution with attractive incentives for the individual.

Irrespective of whether academic patents are formally owned by institutions or by individuals, the character of the rest of the system which supports the commercialisation of academic knowledge is absolutely crucial: we refer here to technology transfer offices (TTOs), science parks, incubators, etc. It is of critical importance for the Polish economy, and also for the legitimacy of further public investment in R&D, that the commercialisation activities of institutions should be developed and improved. Such activities can have national, regional and local impact, and may be of particular significance at regional level, where they can have a major effect on the labour market through the creation of new jobs, thanks to the dissemination of knowledge created by regionally-based tertiary institutions.

The TTOs should, among other things, ensure that relevant knowledge which has been produced in tertiary education institutions is patented and/or leads to the creation of spin-off firms. In those cases where tertiary institutions are not commercialising the knowledge themselves, the TTOs should assist their employees in patenting, and help them overcome other barriers to engage in entrepreneurial activities. This implies that their basic task is to promote and enhance collaboration, both between tertiary education institutions and firms and between individual academic researchers and firms. Collaboration must be a two-way process which involves mutual support and reciprocal learning between the two worlds. It is not just a matter of 'diffusing' knowledge from academia, but also of

increasing the societal relevance of academic activities by bringing influences from the rest of society to bear on the tertiary institutions.

Incubators and science parks are still at a very early stage of development in Poland. They need to become a much more important part of the commercialisation infrastructure, which should be directly embedded in the various regions of the country. We recommend that regional governments as well as national and institution-based agencies should pay careful attention to practices in other countries, and should cultivate an openness to influences from abroad: foreign experience, and the views of foreign researchers and investors, could serve both as important stimuli to develop science parks and incubators and as sources of inspiration.

The vocational tertiary institutions need to be better integrated into overall strategic thinking. In principle, vocationally and professionally oriented institutions have the potential to form a vital link between tertiary education institutions and industry, but it is not clear how the Polish authorities see those TEIs which are not directly involved in research as fitting into the overall R&D and innovation strategies, either now or in the future. We would suggest that *the promotion of entrepreneurship and innovation* provides a helpful general guide to how non-research institutions can contribute to research development and knowledge transfer. Examples of initiatives which would be appropriate are: providing new teaching programmes to develop the entrepreneurial skills and competencies of the Polish workforce, developing the entrepreneurial activities of teaching staff and matching teaching programmes to industry requirements.

It seems to be the case in every country that private sources are unwilling, or unable, to provide adequate seed corn capital funding for the very early stages of commercialisation of the results of publicly funded R&D. This means that commercialisation will be severely constrained unless public funds are available to support academic entrepreneurship. At present in Poland there are no such public funds. It would be important to set up such a scheme as part of the Polish national system of innovation.

Finally, it may well be necessary to review the whole concept of innovation activities and innovation policy in Poland. At present, the latter is fragmentary. Innovation policy officially falls within the remit of the Ministry of the Economy, and it appeared to the review team that this ministry's collaboration with the Ministry of Science and Higher Education is quite limited. Again, this is a common problem in other countries: collaboration between ministries in areas where there is a strong interest on both sides can easily prove difficult. One possible approach, which we would recommend, is the creation of an Agency for Innovation based outside the Ministry of the Economy, but funded and administered through

it. Its mission would be to develop a holistic innovation policy for economic growth and employment creation – and then to implement it. In order to achieve this, the agency would need to collaborate with a range of ministries, including of course the Ministry of Science and Higher Education. The responsibilities of the agency could include the allocation of subsidies linked to specific initiatives to foster innovation.

5.7 The Tertiary Education System and the Labour Market

In our view, initiatives to strengthen the connections between tertiary institutions and the labour market can be grouped into a number of categories. A first generic way of ensuring that the provision of educational programmes matches labour market requirements is to create a policy framework that makes institutions responsive to labour market needs and student demand. As we described earlier, the Polish system is academically driven and not sufficiently responsive to the diverse needs of the economy and society. There is a clear need to operationalise the nominal diversity of the system, by clarifying the roles and missions of institutions in the system and by putting in place mechanisms which will ensure that institutions stick to their profile. A principal means to achieve this would be by associating the funding of institutions to their mission – *i.e.* by funding only those programmes and courses which are in accordance with the particular mission of the institution. Similarly, incentives can, and should, also be provided by the quality assurance system. As indicated earlier, SAC's approval of new programmes is currently mainly determined by a number of academic criteria. These need to be complemented with an assessment of the relevance of the proposed programmes: whether there is an identified demand in the labour market, and whether employers and professional associations have been consulted about their value. In sum, there need to be incentives for institutions to take their links to society and the economy seriously. A clear vision for the vocational-oriented sector is an essential precondition for this to be achieved.

A second generic way in which the national policy framework can assist in the alignment of tertiary education practice and labour markets is through steering and governance systems. The ministry should involve labour market actors (businesses, professions, labour unions) in the formulation of national tertiary education policies through their inclusion in bodies that provide advice and analysis to the government (*e.g.* as formal members of GCHE). If this dialogue is to be effective, it needs to be ensured that businesses and employers develop an active interest in participating in the dialogue, and that the views of the latter are valued and properly taken into account in the formulation of policies. The ministry should also include in deliberative and

advisory bodies those within government who bear responsibility for employment and skills policies, since they bring different perspectives and competencies to the choices that need to be made in tertiary education policy. Additionally, the public authorities should seek to widen the participation of labour market actors (*e.g.* representatives of firms, not-for-profit organisations, professions, or public sector entities such as directors of schools or hospitals) in the bodies responsible for the strategic governance of tertiary education institutions, and not merely in bodies confined to an advisory role. In this regard, we recommended in Section 5.1 that the present option of creating an advisory council including external stakeholders (as provided in the 2005 Law on Higher Education) should be made compulsory for every public institution of tertiary education, regardless of sector; and that consideration should be given to changing the role of these councils, to give them some decision-making powers. We firmly believe that the direct involvement of the business community in the business of tertiary education institutions has the potential to improve the responsiveness of institutions to labour market needs. A complementary initiative would be to encourage tertiary institutions to engage employers, both public and private, in the design of programmes and even the assessment of students through, for instance, their involvement in councils or committees for curriculum development within institutions. This would be particularly important in the vocational sector.

Along the same lines, the quality assurance system should be revised to incorporate labour market institutions/agencies and to provide information about the performance of institutions with respect to labour market outcomes. Membership of the State Accreditation Committee should be revised to include experts who do not hold academic appointments. These new members should include people who will bring questions of working life and employability to bear in its deliberations, such as key members of professional associations, chief technology officers of research-intensive firms operating in Poland, and those who play significant roles in the recruitment and hiring of tertiary education graduates. The criteria used by an expanded SAC should also be adjusted to incorporate labour market considerations in addition to academic criteria. These same observations hold with particular force with respect to the approval of programmes provided by vocational institutions.

A third generic way is to create a policy framework that permits student enrolment choices to respond to labour market signals. The most straightforward means by which educational offerings can be aligned to labour markets is through the decisions of students themselves about what to study and where. Study choices are sensitive to labour market prospects. A demand-driven system would require system policies (*e.g.* the funding of

student places) and institutional policies (internal resource allocation) that enable the number and type of tertiary study opportunities to respond efficiently to students' preferences. This would entail the state financing public institutions on the basis of actual enrolments or graduations, extending public subsidies to all students in properly accredited courses (as proposed in Section 5.2) and allowing the total number of students receiving public support to be driven by demand rather than rationed.

For a demand-driven system to work, information about available programmes, labour market outcomes and employment requirements must be made available to students, institutions and employers. Students need to be informed about the labour market, the kinds of jobs available, and the types of educational preparation needed for those jobs. This helps students to make well-informed decisions about their fields of tertiary study. It would reverse the present situation in which students, as they conveyed to the review team, base their choice of institution, at least in part, on the often ill-informed institutional rankings published by newspapers. Thus, as we argued earlier, the government must develop data systems that permit prospective and current students to understand the labour market outcomes of different study choices. For a given field of study, indicators could include graduate numbers by gender, the proportion of graduates in employment, the proportion in employment within the area covered by the programme, average salary at different stages of career, grade or promotion level distributions, status of employment (*e.g.* full-time, part-time or unemployed, whether in self-employment) and employment growth rates. The adoption of a unified student-level data system would even make it possible, in principle, for public authorities to link student records to information about employment and wages, whether through unemployment insurance or tax records, and provide the foundation for a full technical analysis of labour market outcomes. Such a system could also be complemented by the requirement that institutions conduct graduate surveys. Evidence obtained from a systematic analysis of labour market outcomes could also provide a crucial input to key decisions about the approval of new programmes, and to quality assurance reviews. In this respect it is also important to ensure that careers guidance in secondary schools and career placement services in tertiary institutions make good use of such detailed data on labour market outcomes.

It is also important to make transfers among fields of study, and among institutions, more flexible. This would allow students who realise they are in the wrong field of study to change, not only reducing these kinds of mismatches for the sake of the individual concerned but also allowing greater and quicker responsiveness to changing labour market patterns.

Fourth, the tertiary system needs to expand opportunities for flexible, work-oriented study. Tertiary institutions have long experience and often great competence at transmitting discipline-based knowledge and training young people in the development of scientific capabilities. However, they are much less familiar with – or adapted to – the use of work-based learning to develop professional skills. National policymakers should support the diversification of study opportunities, so that both bachelor's degree programmes oriented toward working life and short-cycle practice-oriented programmes are sufficiently available; and they should strengthen the capacities of institutions charged with their provision (especially the vocational sector) so that the quality of qualifications which have been gained at or through the workplace is widely recognised by students and employers alike. The appropriate implementation of the Bologna process is important in this respect. As we commented earlier, many employers and students alike evidently still attribute little value to first-cycle studies (the bachelor's degree) and perceive them primarily as a staging post to a master's level degree. Initiatives need to be developed to promote the value of the bachelor's degree as relevant both within Poland and across the whole European labour market. The success of these reforms will also greatly depend on policies to prevent the 'academic drift' of vocational institutions.

Fifth, it is also important to strengthen partnerships between institutions and the business sector. As we have already recommended, the practices to be reinforced should include internships for students and teachers in industry, offices in institutions to liaise with the business sector, and the participation of employers in the daily activities of institutions (including governance and curriculum development). There is a need to make these partnerships more sustained and systematic across the entire tertiary education system.

Sixth, the educational authorities should widen opportunities for lifelong learning by ensuring that institutions increase the flexibility of provision (*e.g.* part-time and distance provision), by providing financial support to address the difficulties facing low-income workers, and by reviewing the suitability of education and training alternatives. In this context institutions could draw on their already considerable experience with non-degree postgraduate programmes. Furthermore, the educational authorities should ensure that the assessment and recognition of prior learning is widely accessible and attractive to use, on the part of both students and institutions, and that a national qualifications framework is created which will provide clear signals to students, institutions, and employers.

Finally, a better assessment needs to be made of the potential for brain drain, especially in the areas of science and technology. Policy on this front needs to be based on firmer evidence. Students' interest in science and

technology needs to be stimulated from an early age, making school-level policies more relevant in this area. The development of incentives to attract high achieving international students could also be envisaged (*e.g.* the provision of fellowships and scholarships and liberal immigration policies).

5.8 Internationalisation of Tertiary Education

It is recommended that the Ministry of Science and Higher Education take steps to encourage tertiary education institutions to take on a more proactive internationalisation role. This could be achieved in various ways, but experience in other OECD countries shows that an effective procedure would be to require institutions to develop their own internationalisation strategy, as part of funding arrangements which could include a dedicated funding stream. The latter could be used to strengthen institutions' administrative and organisational structures for the various elements of internationalisation. A useful example can be found in the Czech Republic, where internationalisation has been identified in the 2006-2010 Long-Term Plan as one of the three main priorities in the development of tertiary education. International activities in the annual plans of higher education institutions that are in accordance with the priorities stipulated by the Czech Ministry will be eligible for additional state funding (File *et al.*, 2006).

However, internationalisation should not be over-regulated by the Ministry. Much international engagement can only be pursued at the institutional level, or indeed within institutions at the basic-unit level, particularly in the leading research institutions. Within the context of the national framework and institutions' overall strategies, the promotion of internationalisation can best be undertaken at the level of departments and faculties. The key role for national policy is to ensure that there is a framework conducive to internationalisation: this should include appropriate quality assurance systems, the presence of international panel members in programme accreditation and in research assessments, funding arrangements which allow institutions to raise revenues from internationalisation, salaries that strengthen the ability of institutions to compete for foreign researchers and national programmes of doctoral scholarships for promising foreign students. This framework should be complemented with strategic subsidies and other interventions that are designed to stimulate particular initiatives on the part of institutions. The 2005 Law on Higher Education has already introduced some important provisions. It authorises the establishment of inter-institutional units, the provision of joint programmes, and the award of joint diplomas together with foreign institutions. It also facilitates the recognition of study credits obtained abroad.

There is room to expand student and teacher mobility. A number of initiatives could prove useful in this respect. These include more flexible curricula and internationally recognised credits to facilitate two-way student mobility; the encouragement of bilateral and multilateral inter-institutional agreements; an increase in the number of courses offered in English, especially at postgraduate level; professional/administrative capacities to manage broader exchange programmes; and better infrastructure for foreign students who study in Poland, including the creation of supporting offices and opportunities to learn Polish. Attracting foreign students and teachers can have important benefits: it can help bring new talents into the institutions and the country, in the form of both staff and students; it can broaden experience among staff; it can facilitate cooperation with research environments abroad; and it can raise considerable revenue if tuition fees are charged.

Internationalisation should go beyond student and teacher mobility, however. A broader internationalisation strategy could include: 'internationalisation at home' (international curricula, extra-curricular activities, foreign visiting academics, a requirement that Polish students take a minimum number of courses in a language other than Polish); the development of joint degrees with foreign partners; the authorisation for foreign institutions to operate campuses in Poland; a framework to recognise study credits obtained by Polish students in foreign institutions through e-learning and distance education; a greater commitment to using international materials within courses and programmes; the development of a European dimension in curricula; and the development of international research co-operation.

Greater efforts are also needed to promote Polish tertiary education abroad. The ministry, the GCHE, and the rectors' conferences may wish to give further detailed consideration to the branding image of Polish tertiary education for an international market. Some marketing could be nationally collaborative, via the above agencies, and some could be undertaken on a regional or sub-regional basis via partnerships between institutions, local and regional governments and employers' associations. International student marketing should be particularly targeted at those critical areas of the economy where skilled graduate employees are in short supply.

In addition, the ministry and the tertiary institutions should endeavour to make the academic career in Poland more attractive to young foreign researchers and to Polish academics based abroad. Poland could consider the development of repatriation programmes, and other ways to facilitate the incorporation of Polish academics working abroad into research being carried out by Polish tertiary education institutions. Possible examples of provisions in a repatriation programme might include research scholarships,

researcher's and dependents' travel costs, and a salary complement in the year following repatriation.

6. Concluding Remarks

Polish tertiary education has changed dramatically in the short period since the fall of communism. In many important respects Poland has joined the ranks of countries with a modern, responsive and creative system of tertiary education. Some difficult issues have been decided and some new policies have been followed through effectively and with confidence. However, in other important respects the process of modernisation is incomplete, and some of the most challenging requirements of such a system are not yet in place. In some policy areas desirable new procedures and practices have been enabled but not widely implemented. In other areas they have not yet been accepted, even at the legislative/governmental level.

On the positive side, genuine institutional autonomy is firmly embedded, with guarantees of academic freedom and with self-government which includes a voice for junior staff and students; the principles of selective and – to a certain extent – earmarked funding are accepted; quality assurance systems have been developed and implemented in line with international good practice; there are provisions in the legislation for external stakeholder involvement and for a bachelor's-master's framework in line with the Bologna process. The expansion of 'non-academic' and non-public institutions has enhanced access to tertiary education, not only quantitatively but geographically, and the introduction of fee-paying 'non-regular' programmes of study in public TEIs has also expanded access (at a price).

On the other hand, the national research effort is disappointingly – and disablingly – small; there is relatively little involvement in 'third mission' activities (external service, training and consultancy) and in continuing education and training; the academic profession is unmodernised – the career and qualification structures are antiquated, senior status is withheld for far too long, there is excessive in-breeding and the general acceptance of multiple employment is not only distracting but, arguably, corrupting; institutional management and governance are weak; central government lacks sufficient tools to steer the system and institutions; the provision for the bachelor's-master's framework has not yet been fully implemented, and the provisions for external involvement are little used so far; teaching (both

programme offerings and curricula) is supply-dominated and links with the labour market are weak; there is a wealth of nominally 'vocational' TEIs but no clear vision of vocational tertiary education, leading to chronic academic drift. The tuition fee and student support framework are not consistent with basic equity requirements. And the lack of a comprehensive and reliable information strategy is a serious brake on system monitoring and policy development.

Much, of course, depends on funding. As we emphasised in the first section of this report, despite positive progress in recent years the Polish economy has by no means recovered from the distortions of the communist regime and the economic collapse which followed its fall; and there are many other urgent calls on all of the public spending that is now seen as politically or economically affordable. We have made our view clear that both teaching and research have been squeezed to the point of serious damage to the aspiration that Polish tertiary education and science should play a full part in the European higher education and research areas.

But the challenges run deeper. The longer history of tertiary education in Poland has probably been uniquely painful: few, if any, countries have seen their universities and colleges so often closed down or repressed. In such circumstances, the past easily becomes a burden, and there is the understandable danger that all the participants may find themselves 'fighting the battles of the previous war', instead of adapting to the quite different challenges of the present and the future. Many of those we spoke to (policy-makers, institutional leaders, staff and students) referred to the over-riding importance of 'merit': after the years of ideological bias, political patronage and nepotism, not only is academic freedom sacrosanct, but a reliance on pure academic merit is seen as the only proper criterion for student selection and financial support, and for staff selection and promotion. Unfortunately, merit is never pure: in every schooling system the opportunity to acquire the highest grades is not equally distributed. A society which wishes to make the most of its talents needs to balance the demand for merit with the imperative of equity, especially in deciding which students to admit to its most sought-after courses and which students to subsidise. In the case of academic staff, the perceived risk is slightly different, but the outcome is equally damaging: there are better ways to protect merit than to insist on further qualification hurdles until the age of 60.

The biggest challenge for Polish tertiary education today is to develop a coherent vision for its future, to move on from the previous focus on quantity. The system as a whole is not only (and gladly) post-communist; it is also post-Humboldtian. What should now be the relationship between teaching and research, in different kinds of institutions? What might a truly vocational sector look like? In an increasingly competitive environment

(nationally and internationally), how can institutions create their own distinctive identity – and how far should they be permitted to do so? How can government best determine, and then maintain and promote, the broader social and economic objectives of the tertiary education system, including quality, equity and responsiveness to the diverse needs of the external environment, while giving free rein to creativity and enterprise? And underlying this question there is still the puzzle of how to handle history and tradition. Does Poland simply wish its tertiary institutions to converge towards a European (or OECD) mean, to become generic Euro-universities and colleges, or is there a Polish distinctiveness which it wishes to retain – and if the latter, what does this consist of?

The private sector is perhaps a case in point. Private tertiary education takes very different forms in different countries. There are distinguished examples around the world of high-quality private universities and colleges, making the most of their freedom to innovate and to excel. At the other extreme there are also in some countries 'cheap and cheerful' institutions which act as a safety valve to absorb excess demand at the lower end of the market, but with little regard for quality and small benefit to the students who attend them. Some of the founders of Polish non-public institutions clearly have high aspirations, but it is not at all clear as yet how they will fare if and when the demographic downturn begins to affect demand, or the public sector puts up stronger competition. Their limited range of programmes and their heavy reliance on the secondary employment of staff certainly make them vulnerable. We have commended the Polish quality regime for its comprehensiveness and determination, and this is now sending at least one powerful signal: that no TEI, private or public, will be allowed to offer shoddy programmes. But beyond this, it is not at all clear whether Poland has a coherent vision for how the private sector can and should develop, and what kinds of help it will need if it is to do so.

These are all matters for serious and difficult debate. But we have also suggested a number of substantial improvements which need not wait for a grand vision to emerge. The key to many of these will be improving management capacities. These include: the capacity of the Ministry to develop policy (in coordination with other government ministries and agencies and a widened range of external stakeholders); its capacity to steer the system and the institutions, not least by using funding in a more focused way than at present to create new incentives for change; the collection and dissemination of more and better information, for system monitoring, policy development and information to stakeholders; and the capacity of the tertiary education institutions to govern and manage themselves efficiently and effectively, and to develop their own ability, and willingness, to change.

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Appendix 2. National Co-ordinator, National Steering Committee, and Authors of The Country Background Report

National Co-ordinator for Poland

From June 2004 to May 2006:
Robert Pawlak, Chief Specialist, Department for Educational Strategy and Structural Funds, Ministry of Education and Science;

From May 2006:
Maria Klimkiewicz, Counsellor to the Minister, Department of International Cooperation in the Ministry of Science and Higher Education.

National Steering Committee

Prof. Tadeusz Szulc, Undersecretary of State in the Ministry of National Education and Sport;
Mr. Jerzy Wiśniewski, Director of the Department for Education Strategy and Structural Funds in the Ministry of National Education and Sport (Chair of the Steering Committee);
Prof. Jerzy Błażejowski, Chair of the General Council for Higher Education;
Prof. Andrzej Jamiołkowski, Chair of the Polish Accreditation Committee;
Prof. Andrzej Kraśniewski, Secretary General of the Conference of Rectors of Academic Schools in Poland (KRASP);
Ms. Ewa Sieczek, Director of the Department for Higher Education in the Ministry of National Education and Sport;
Ms. Olga Piekarska, Department for Higher Education, Ministry of National Education and Sport;
Mr. Dariusz Drewniak, Director of the Department, Ministry of Science and Information Society Technologies;
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The report was commissioned by the Ministry of Science and Higher Education to Professor Małgorzata Dąbrowa-Szefler and Dr hab. Julita Jabłecka-Prysłopska both from the Centre for Science Policy and Higher Education at Warsaw University.

Appendix 3. Programme of the Review Visit

Monday 8 May, Warsaw

08:15 - 10:00 ***Ministry of Education, Ministry for Science and Higher Education and Ministry of Social Policy and Labour***
Prof. Stefan Jurga, Deputy-Minister for Science and Higher Education;
Representatives from:
Department for Strategy of Education, Ministry of Education
Department for General and Special Education, Ministry of Education
Department for Vocational Education and Training, Ministry of Education
Department for Teacher Training, Ministry of Education
Department for Analysis, Ministry of Social Policy and Labour
Department for Research, Ministry for Science and Higher Education
Department for International Co-operation, Ministry for Science and Higher Education.

10:00 - 11:15 ***Ministry for Science and Higher Education***
Representatives from:
Department for Higher Education
Department for Strategy for Science
Department for Research for Economy
Department for Science Research Financing.

11:15 - 12:45 ***General Council for Higher Education***
Chairman, Prof. Jerzy Blazejowski, and other representatives.

12:45 - 13:30 ***Lunch with representatives from the General Council for Higher Education***

13:30 - 15:00 ***Conference of Rectors of Academic Schools in Poland (KRASP)***
General Secretary, Prof. Andrzej Krasniewski

15:00 - 16:30 ***Conference of Rectors of Vocational Higher Schools in Poland*** (KRZSP)
Chair, Prof. Jerzy Malec, and other representatives

16:30 - 18:30 ***State Accreditation Committee (PKA)***
Deputy-Chairman, Prof. Andrzej Mania

Tuesday 9 May, Warsaw

08:15 - 10:15 Meeting on Research and Innovation policy
Representatives from:
Council for Science
Department for Strategy for Science, Ministry of Science and Higher Education
Department for Research for Economy, Ministry of Science and Higher Education
Department for Science Research Financing, Ministry of Science and Higher Education.

10:15 - 11:15 Central Commission for Academic Degrees and Titles
Chairman, Prof. Osman-Achmatowicz
Deputy-Chairman, Prof. Kaczorek
Deputy-Chairman, Prof. Smak

11:15 - 12.15 Students' Parliament of Republic of Poland
Chairman, Mr Arkadiusz Doczyk and other representatives

12:30 - 16:30 Visit: Warsaw University (Public University)
Rector Prof. Katarzyna Chałasińska-Macukow and members of University's Management
Academic Staff Representatives
Students Representatives

Wednesday 10 May, Krakow

10:00 - 13:00 Visit: Jagiellonian University (Public University)
Rector Prof. Karol Musiol and members of University's Management
Academic Staff Representatives
Students Representatives

13:00 - 14:00 Lunch with Management of Jagiellonian University

14:00 - 17:00 Visit: Andrzej Frycz Modrzewski Cracow College, Krakow
(Private Vocational Higher School)
Rector Prof. Jerzy Malec and members of University's Management
Academic Staff Representatives
Students Representatives

Thursday 11 May, Tarnow and Nowy Sacz

10:30 - 13:30 ***Visit: Tarnow State Vocational Higher School, in Tarnow***
(Panstwowa Wyzsza Szkola Zawodowa w Tarnowie)
Rector Prof. Adam Juszkiewicz and members of University's Management
Academic Staff Representatives
Students Representatives

13:30 - 14:30 ***Lunch with representatives of Tarnow City Council and representatives of local industry and businesses***

16:00 - 19:00 ***Visit: Wyzsza Szkola Biznesu, National-Louis University, in Nowy Sacz*** (Private Business Higher School)
Rector Dr Krzysztof Pawlowski and members of University's Management
Academic Staff Representatives
Students Representatives

Friday 12 May, Warsaw

08:30 - 09:30 ***Meeting on links with secondary school with Mr Stanislaw Slawinski, Deputy-Minister for Education***
and representatives from:
Central Examination Commission
Department for General and Special Education, Ministry of Education
Department for Teacher Training
Department for Strategy for Education
Department for Vocational Education and Training, Ministry of Education

10:00 - 13:00 ***Warsaw University of Technology*** (Public University)
Vice-Rector Prof. Tadeusz Kulik and Director Dr. Roman Babut and members of University's Management
Academic Staff Representatives
Student and Alumni Representatives

16:30 - 19:15 ***Adam Mickiewicz University of Poznan*** (Public University)
Vice-Rector Prof. Marek Kreglewski and members of University's Management
Academic Staff Representatives
Student Representatives

Sunday 14 May, Warsaw

Review team meetings

Monday 15 May, Warsaw

08:30 - 09:30 Ministry of Labour and Social Policy, Department for Economic Analysis and Projections

10:00 - 11:00 Ministry of Economy
Representatives from:
Department for Trade Policy
Department for Economic Regulation
Department for Innovation and Entrepreneurship
Department for Analysis and Forecasts
Department for Support Instruments
Unit for Training Instruments
Ministry of Regional Development
Department for the Management of European Social Funds
Polish Agency of Enterprise Development

11:30 - 12:30 Polish Academy of Sciences
President, Prof. Andrzej Legocki and members of Management Group

14:00 - 15:00 World Bank Office in Poland
Ms Mary Canning and Ms Dorota Holzer-Zelazewska

15:30 - 17:30 Meeting with a group of Researchers/Experts on Higher Education
Prof. Renata Siemienska-Zochowska, Warsaw University
Dr Elżbieta Drogosz-Zabłocka, Warsaw University
Dr. Krzysztof Pawlowski, Wyzsza Szkola Biznesu, National-Louis University
Prof. Małgorzata Dąbrowa-Szefler, Warsaw University
Dr hab. Julita Jabłecka-Prysłopska, Warsaw University
Prof. Andrzej Kozminski, Leon Kozminski School of Entrepremeurship and Management
Prof. Ireneusz Bialecki, Warsaw University

17:30 - 18:15 Supreme Chamber of Control (National Audit Bureau) (NIK)

Tuesday 16 May, Warsaw

08:30 - 09:30 Meeting with Deputy-Minister for Science and Higher Education, Prof. Stefan Jurga

09:30 - 10:45 Meeting with employers: Mr Jaroslaw Gowin from Józef Tischner Higher Education School in Warsaw

10:45 - 11:45 Unions of Academics
Representatives of:
ZNP, teachers trade union
NSZZ, "Solidarnosc", Unit for Higher Education

12:15 - 14:15 Oral Report by Review Team to Ministries' officials and other stakeholders.

Appendix 4. Comparative Indicators on Tertiary Education

	Poland	OECD mean	Poland's rank[1]	% to OECD mean[2]
A. OUTCOMES				
1. % of the population aged 25-64 with tertiary qualifications[i] (2003)				
Tertiary-type B – Total	-	8	-	-
Males	-	7	-	-
Females	-	8	-	-
Tertiary-type A– Total	14	15	16/30	93
Males	13	16	22/30	81
Females	16	15	12/30	107
Advanced research programmes – Total	-	1	-	-
Males	-	1	-	-
Females	-	1	-	-
2. % of the population aged 25-34 with tertiary qualifications (2003)				
Tertiary-type B[ii]	-	9	-	-
Tertiary-type A and advanced research programmes	20	20	17/30	100
3. % of the population aged 55-64 with tertiary qualifications (2003)				
Tertiary-type B[ii]	-	5	-	-
Tertiary-type A and advanced research programmes	11	12	15/30	92
4. % of the population aged 25-64 with tertiary qualifications – time trends				
1995	10	18	22/26	69
2003	14	24	25/30	58
5. % of the population aged 25-34 with tertiary qualifications – time trends				
1995	10	20	22/26	50
2003	20	29	17/30	69
6. Average years in formal education (2003)[3]	11.6	12.0	22/30	97

	Poland	OECD mean	Poland's rank[1]	% to OECD mean[2]
7. Survival rates in tertiary education (2003)				
Number of graduates divided by the number of new entrants in the typical year of entrance				
Tertiary-type A education	-	70	-	-
Tertiary-type B education	84	73	5/16	115
Advanced research programmes	-	58	-	-
8. Average duration of tertiary studies (in years) (year varies)[4]				
All tertiary education	-	4.21	-	-
Tertiary-type B education	-	2.18	-	-
Tertiary-type A and advanced research programmes	3.68	4.72	15/17	78
9. Tertiary graduates by field of study[5] (2002)				
Tertiary-type A				
Education	11.9	-	16/27	
Humanities and arts	6.4	-	24/27	
Social sciences, business and law	41.4	-	4/27	
Science	3.9	-	26/27	
Engineering, manufacturing and construction	7.5	-	23/27	
Agriculture	1.5	-	15/27	
Health and welfare	1.7	-	27/27	
Services	4.2	-	7/27	
Not known or unspecified	21.6	-	-	
All fields		-	-	
Tertiary-type B				
Education	100	-	1/20	
Humanities and arts	-	-	-	
Social sciences, business and law	-	-	-	
Science	-	-	-	
Engineering, manufacturing and construction	-	-	-	
Agriculture	-	-	-	
Health and welfare	-	-	-	
Services	-	-	-	
Not known or unspecified	-	-	-	
All fields	-	-	-	
Advanced research programmes				
Education	-	-	-	
Humanities and arts	23.9	-	3/27	
Social sciences, business and law	11.1	-	2/26	
Science	16.6	-	22/27	
Engineering, manufacturing and construction	17.0	-	10/26	
Agriculture	10.3	-	3/26	
Health and welfare	19.0	-	9/27	

	Poland	OECD mean	Poland's rank[1]	% to OECD mean[2]
Services	2.1	-	7/22	
Not known or unspecified	-	-	-	
All fields	-	-	-	
10. Tertiary graduates by field of study[5] per 10 000 population (2003)				
Tertiary-type A				
Education	14.49	-	2/27	
Humanities and arts	7.82	-	12/27	
Social sciences, business and law	50.63	-	1/27	
Science	4.75	-	11/27	
Engineering, manufacturing and construction	9.21	-	5/27	
Agriculture	1.80	-	3/27	
Health and welfare	2.02	-	25/27	
Services	5.09	-	2/27	
Not known or unspecified	-	-	-	
All fields	122.23	-	1/27	
Tertiary-type B				
Education	1.36	-	9/20	
Humanities and arts	-	-	-	
Social sciences, business and law	-	-	-	
Science	-	-	-	
Engineering, manufacturing and construction	-	-	-	
Agriculture	-	-	-	
Health and welfare	-	-	-	
Services	-	-	-	
Not known or unspecified	-	-	-	
All fields	1.36	-	24/26	
Advanced research programmes				
Education	-	-	-	
Humanities and arts	0.34	-	5/27	
Social sciences, business and law	0.16	-	20/26	
Science	0.24	-	20/27	
Engineering, manufacturing and construction	0.24	-	16/26	
Agriculture	0.15	-	4/26	
Health and welfare	0.27	-	13/27	
Services	0.03	-	8/21	
Not known or unspecified		-	-	
All fields	1.43	-	18/27	

	Poland	OECD mean	Poland's rank[1]	% to OECD mean[2]
11. Employment ratio and educational attainment[6] (2003)				
Number of 25 to 64-year-olds in employment as a percentage of the population aged 25 to 64				
Lower secondary education				
Males	46	73	29/30	63
Females	32	49	28/30	65
Upper secondary education (ISCED 3A)				
Males	73	81	28/29	90
Females	59	62	25/29	95
Post-secondary non-tertiary education				
Males	73	84	17/18	87
Females	65	72	15/18	90
Tertiary education, type B				
Males	-	88	-	-
Females	-	77	-	-
Tertiary education, type A and advanced research programmes				
Males	85	89	27/30	96
Females	81	79	14/30	103
12. Employment ratio and educational attainment (2003)				
Number of 30 to 34-year-olds in employment as a percentage of the population aged 30 to 34				
Lower secondary education				
Males	57.1	75.8	25/26	75
Females	32.3	47.6	24/26	68
Upper secondary education (ISCED 3A)				
Males	78.3	84.2	24/26	93
Females	58.6	58.3	13/26	101
Post-secondary non-tertiary education				
Males	78.7	85.2	24/26	92
Females	60.4	59.9	14/26	101
Tertiary education, type B				
Males	78.7	86.5	26/26	91
Females	60.4	62.8	17/26	96
Tertiary education, type A and advanced research programmes				
Males	83.0	88.4	26/26	94
Females	68.1	67.3	17/26	101

	Poland	OECD mean	Poland's rank[1]	% to OECD mean[2]
13. Unemployment ratio and educational attainment[7] (2003)				
Number of 25 to 64-year-olds who are unemployed as a percentage of the population aged 25 to 64				
Lower secondary education				
Males	26.1	9.8	2/28	226
Females	25.6	11.0	2/27	233
Upper secondary education (ISCED 3A)				
Males	12.3	7.1	1/23	173
Females	16.6	10.6	1/25	157
Post-secondary non-tertiary education				
Males	13.5	5.9	1/10	229
Females	14.1	6.9	2/11	204
Tertiary education, type B				
Males	-	3.9	-	-
Females	-	4.4	-	-
Tertiary education, type A and advanced research programmes				
Males	6.6	3.6	2/27	183
Females	6.7	4.1	6/27	163
14. Unemployment ratio and educational attainment (2003)				
Number of 30 to 34-year-olds who are unemployed as a percentage of the population aged 30 to 34				
Lower secondary education				
Males	27.2	11.0	2/26	247
Females	28.1	9.6	2/26	293
Upper secondary education (ISCED 3A)				
Males	14.5	7.3	2/26	199
Females	18.1	6.8	1/26	266
Post-secondary non-tertiary education				
Males	14.3	6.8	1/26	210
Females	17.8	6.6	1/26	270
Tertiary education, type B				
Males	14.3	6.3	1/26	227
Females	17.8	6.3	1/26	283
Tertiary education, type A and advanced research programmes				
Males	11.3	5.6	1/26	202
Females	14.3	5.7	2/26	251

	Poland	OECD mean	Poland's rank[1]	% to OECD mean
15. 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 percentage of the population aged 25 to 64				
Lower secondary education				
Males	37	20	3/30	185
Females	57	46	3/30	124
Upper secondary education (ISCED 3A)				
Males	15	13	6/29	115
Females	27	30	15/29	90
Post-secondary non-tertiary education				
Males	10	11	9/16	91
Females	21	22	10/16	95
Tertiary education, type B[ii]				
Males	-	9	-	-
Females	-	21	-	-
Tertiary education, type A and advanced research programmes				
Males	8	8	/30	100
Females	12	19	/30	63
16. 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	15	10	8/29	150
Females	12	39	28/29	31
Upper secondary education (ISCED 3A)				
Males	3	7	22/28	43
Females	19	26	23/28	73
Post-secondary non-tertiary education				
Males	1	3	15/18	33
Females	25	18	4/18	139
Tertiary education, type B				
Males	-	3	-	
Females	8	16	23/25	50
Tertiary education, type A and advanced research programmes				
Males	1	3	24/29	33
Females	6	15	27/29	40

	Poland	OECD mean	Poland's rank1	% to OECD mean2
17. Earnings of tertiary graduates aged 25-64 relative to upper secondary graduates aged 25-64 (2003) (upper secondary = 100)				
Tertiary-type B	-	123	-	-
Tertiary-type A	-	162	-	-
18. Earnings of tertiary graduates aged 30-44 relative to upper secondary graduates aged 30-44 (2003) (upper secondary = 100)				
Tertiary-type B	-	123	-	-
Tertiary-type A	-	159	-	-
19. Trends in relative earnings of tertiary graduates aged 25-64 (upper secondary and post-secondary non-tertiary education = 100)				
1997		148	-	-
2003	-	155	-	-
B. PATTERNS OF PARTICIPATION				
1. Participation rates of all persons aged 15 and over by programme (2002)				
Per cent of all persons aged 15 and over in tertiary type-5A programmes	5.67	3.97	2/26	143
Per cent of all persons aged 15 and over in tertiary type-5B programmes	0.07	0.75	22/26	9
Per cent of all persons aged 15 and over in tertiary type-6 programmes	-	0.16	-	-
Per cent of all persons aged 15 and over in all tertiary programmes	5.74	4.86	9/26	118
2. Index of change in total tertiary enrolment (2003) (1995 = 100)				
Total				
Attributable to change in population[8]	-	96	-	-
Attributable to change in enrolment rates[9]	-	143	-	-
3. Enrolment rates (2003)				
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	88.2	79.1	4/28	112
Students aged 20-29 as a percentage of the population aged 20-29	29.0	23.6	7/28	123

	Poland	OECD mean	Poland's rank[1]	% to OECD mean[2]
Students aged 30-39 as a percentage of the population aged 30-39	4.4	5.4	12/28	81
Students aged 40 and over as a percentage of the population aged 40 and over[iii]	-	1.6	-	-
4. Age distribution of enrolments (2003)				
Persons aged 35 and over as a per cent of all enrolments in tertiary type-5A programmes	-	10.3	-	-
Persons aged 35 and over as a per cent of all enrolments in tertiary type-5B programmes	-	16.2	-	-
Persons aged 35 and over as a per cent of all enrolments in tertiary type-6 programmes	-	30.2	-	-
Persons aged 35 and over as a per cent of all enrolments in total tertiary programmes	-	11.7	-	-
Persons aged less than 25 as a per cent of all enrolments in tertiary type-5A programmes	70.0	63.9	9/26	110
Persons aged less than 25 as a per cent of all enrolments in tertiary type-5B programmes	81.2	58.9	7/26	138
Persons aged less than 25 as a per cent of all enrolments in tertiary type-6 programmes	-	10.2	-	-
Persons aged less than 25 as a per cent of all enrolments in total tertiary programmes	69.0	61.5	10/27	112
Persons aged less than 20 as a per cent of all enrolments in tertiary type-5A programmes	11.2	13.9	17/27	81
Persons aged less than 20 as a per cent of all enrolments in tertiary type-5B programmes	19.3	17.2	11/27	112
Persons aged less than 20 as a per cent of all enrolments in tertiary type-6 programmes	-	0.4	-	-
Persons aged less than 20 as a per cent of all enrolments in total tertiary programmes	11.1	15.0	18/27	74
5. Gender distribution of enrolments (2003)[iv]				
Females as a per cent of enrolments in tertiary type-5A programmes	57.8	53.2	6/29	109
Females as a per cent of enrolments in tertiary type-5B programmes	80.3	54.8	2/29	147
Females as a per cent of enrolments in tertiary type-6 programmes	46.7	44.0	11/28	106
Females as a per cent of total tertiary enrolments	57.8	53.2	6/29	109

	Poland	OECD mean	Poland's rank[1]	% to OECD mean[2]
6. Net entry rates into tertiary education[10] (2003)				
Tertiary-type B				
Total	0.5	15.6	23/23	3
Males	-	14.2	-	-
Females	0.9	17.0	23/23	5
Tertiary-type A				
Total	70	52.5	5/26	133
Males	-	46.6	-	-
Females	-	57.1	-	-
7. Distribution of students in tertiary education by type of institution[11] (2003)				
Tertiary-type B education, public	82.4	67.5	12/27	122
Tertiary-type B education, government-dependent private	0.4	19.5	18/19	2
Tertiary-type B education, independent private	17.2	13.1	7/14	131
Tertiary-type A and advanced research programmes, public	71.6	77.6	23/27	92
Tertiary-type A and advanced research programmes, government-dependent private	-	11.5	-	-
Tertiary-type A and advanced research programmes, independent private	28.4	10.9	4/17	261
8. Distribution of students in tertiary education by mode of study (2003)				
Tertiary-type B education				
Full-time	100	78.3	1/29	128
Part-time	-	22.5	-	-
Tertiary-type A and advanced research programmes				
Full-time	57.7	83.4	25/29	69
Part-time	42.3	16.6	5/18	255
9. Age distribution of net entrants into tertiary education, tertiary-type A (2003)				
Age at 20th percentile (20% of new entrants are below this age)	-	19.2	-	-
Age at 50th percentile (50% of new entrants are below this age)	-	20.8	-	-
Age at 80th percentile (80% of new entrants are below this age)	-	24.9	-	-
10. Foreign students as a percentage of all students (2003) (foreign and domestic students) [12, v]	0.4	6.4	26/27	6
11. Index of change in foreign students as a percentage of all students (2003) (foreign and domestic students) (1998 = 100)[v]	84	-	21/22	-

	Poland	OECD mean	Poland's rank[1]	% to OECD mean[2]
12. National students enrolled abroad in other reporting countries relative to total tertiary enrolment[13] (2003)[v]	1.3	4.0	25/29	33
13. Expected changes of the 20-29 age group by 2012 relative to 2002 (2002 = 100)[14]	94	96	19/30	98
14. Upper secondary attainment rates (2003) % of persons aged 25-34 with at least upper secondary education	57	75	27/30	76
15. Expected years of tertiary education under current conditions (2002) Full-time and part-time[15]	3.2	2.8	9/28	114
16. Admission to tertiary education[16] Source: Eurydice (2005)				
Limitation of the number of places available in most branches of public and grant-aided private tertiary education (2002/03)				
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	-	-
C. EXPENDITURE				
1. Annual expenditure on tertiary education institutions per student, public and private institutions (2002) In equivalent US dollars converted using PPPs, based on full-time equivalents				
All tertiary education (including R&D activities)	4834	10655	24/26	45
Tertiary-type B education (including R&D activities)	-	7091	-	-
Tertiary-type A and advanced research programmes (including R&D activities)	-	10466	-	-
All tertiary education excluding R&D activities	4204	7299	21/24	58
2. Annual expenditure on tertiary education institutions per student relative to GDP per capita, public and private institutions (2002) Based on full-time equivalents				
All tertiary education (including R&D activities)	43	43	9/26	100
Tertiary-type B education (including R&D activities)	-	29	-	-

	Poland	OECD mean	Poland's rank[1]	% to OECD mean[2]
Tertiary-type A and advanced research programmes (including R&D activities)	-	42	-	-
All tertiary education excluding R&D activities	38	34	6/21	112
3. Cumulative expenditure on educational institutions per student over the average duration of tertiary studies[17] (2002)				
In equivalent US dollars converted using PPPs				
All tertiary education	-	45812	-	-
Tertiary-type B education	-	17612	-	-
Tertiary-type A and advanced research programmes	-	54457	-	-
4. Change in tertiary education expenditure per student relative to different factors				
Index of change between 1995 and 2002 (1995 = 100, 2002 constant prices)				
Change in expenditure	166	-	5/24	-
Change in the number of students	197	-	1/25	-
Change in expenditure per student	84	-	21/23	-
5. Change in tertiary education expenditure per student[vi]				
In equivalent US dollars converted using PPPs (2001 constant prices and 2001 constant PPPs)				
1995	4024	9284	21/22	43
2001	3579	10052	26/26	36
6. Expenditure on tertiary education institutions as a percentage of GDP, from public and private sources				
All tertiary education, 2002	1.5	1.4	7/28	107
Tertiary-type B education, 2002	-	0.1	-	-
Tertiary-type A education, 2002	-	1.1	-	-
All tertiary education, 1995	0.8	-	21/25	-
7. 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, 2002	69.7	78.1	21/27	89
Private sources, household expenditure, 2002	30.3	18.5	6/24	164
Private sources, expenditure of other private entities, 2002	-	7.6	-	-
Private sources, all private sources, 2002	30.3	21.9	6/27	138

	Poland	OECD mean	Poland's rank[1]	% to OECD mean[2]
Private sources, private, of which subsidised, 2002	-	1.3	-	-
Public sources, 1995	-	80.8	-	-
Private sources, household expenditure, 1995	-	14.4	-	-
Private sources, expenditure of other private entities, 1995	-	11.0	-	-
Private sources, all private sources, 1995	-	19.2	-	-
Private sources, private, of which subsidised, 1995	-	5.4	-	-
8. Distribution of total public expenditure on tertiary education (2002) 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	-	71.1	-	-
Direct public expenditure on private institutions	-	11.5	-	-
Indirect public transfers and payments to the private sector	-	17.4	-	-
9. Expenditure on tertiary education institutions as a proportion of total expenditure on all educational institutions (2002) Public and private institutions	-	24	-	-
10. Total public expenditure on tertiary education (2002) 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[18]	-	3.0	-	-
As a percentage of GDP	1.1	1.3	18/28	85
11. Subsidies for financial aid to students as a percentage of total public expenditure on tertiary education (2002)				
Scholarships / other grants to households	0.4	9.2	26/26	4
Student loans	-	7.6	-	-
Scholarships / other grants to households attributable for educational institutions	-	1.1	-	-
12. Annual expenditure per student on instruction, ancillary services and R&D (2002) Expenditure on tertiary education institutions in US dollars converted using PPPs from public and private sources, by type of service				
Educational core services	4204	7173	21/22	59
Ancillary services (transport, meals, housing provided by institutions)	-	342	-	-
Research and development	630	2795	18/22	23

	Poland	OECD mean	Poland's rank[1]	% to OECD mean
13. Expenditure on tertiary education institutions by resource category (2002)				
Distribution of total and current expenditure on tertiary education institutions from public and private sources				
Percentage of total expenditure				
Current	94.9	88.4	6/26	107
Capital	5.1	11.6	2/26	44
Percentage of current expenditure				
Compensation of teachers	-	42.3	-	-
Compensation of other staff	-	22.2	-	-
Compensation of all staff	57.5	66.1	22/27	87
Other current	42.5	33.9	6/27	125
14. Registration and tuition fees (2002/03)[19]				
Source: Eurydice (2005)				
Registration and tuition fees and other payments made by students of full-time undergraduate courses, public sector				
Neither fees nor compulsory contributions	√	9/35	-	
Solely contributions to student organisations		3/35	-	
Registration and/or tuition fees (and possible contributions to student organisations)		23/35	-	
D. LITERACY LEVELS				
1. 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	47	19	1/21	247
Graduates aged 25-34 at IALS levels 4 and 5 as a per cent of total graduates aged 25-34	23	40	19/21	58
E. PATTERNS of PROVISION				
1. Ratio of students to teaching staff in tertiary education[20] (2003)				
Based on full-time equivalents, Public and private institutions.				
Type B	14.0	14.4	6/15	97
Type A and advanced research programmes	18.4	15.7	5/18	117
Tertiary education all	18.3	14.9	4/23	123

	Poland	OECD mean	Poland's rank[1]	% to OECD mean[2]
F. EXPECTATIONS OF 15-YEAR-OLD STUDENTS				
1. 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)	12.7	48.9	27/28	26
Per cent of 15-year-old students who expect to complete secondary education, vocational programmes (ISCED 3B or C)	27.9	29.9	9/26	93
Per cent of 15-year-old students who expect to complete post-secondary non-tertiary education (ISCED 4)	21.3	16.4	6/21	130
Per cent of 15-year-old students who expect to complete tertiary-type B education (ISCED 5B)	15.8	20.5	17/26	77
Per cent of 15-year-old students who expect to complete tertiary-type A education or an advanced research qualification (ISCED 5A or 6)	30	44.0	24/29	68
G. RESEARCH AND DEVELOPMENT				
1. Gross domestic expenditure on Research and Development (R&D) as a percentage of GDP Source: OECD (2005)				
2003	0.56	2.24	19/19	25
1991	0.76	2.21	23/26	34
2. Higher education[21] expenditure on R&D as a percentage of GDP Source: OECD (2005)				
2003	0.18	0.42	18/19	43
1992	0.16	0.37	20/22	43
3. Percentage of gross domestic expenditure on R&D by sector of performance (2003) Source: OECD (2005)				
higher education	31.7	18.7	2/18	170
(higher education in 1992)	20.9	16.9	15/23	124
business enterprise	27.4	67.3	18/18	41
government	40.7	10.9	1/18	373
private non-profit sector	0.2	3.1	12/14	6

	Poland	OECD mean	Poland's rank[1]	% to OECD mean[2]
4. Percentage of higher education expenditure on R&D financed by industry Source: OECD (2005)				
2003	6.0	5.6	6/15	107
1994	11.4	5.6	3/20	204
5. Total researchers per thousand total employment Source: OECD (2005)				
2002	3.8	6.2	15/18	61
1994	3.0	5.9	12/16	51
6. Researchers as a percentage of national total (full time equivalent) (2002) Source: OECD (2005)				
higher education	65.7	39.0	2/19	168
(higher education in 1994)	54.9	42.6	5/18	129
business enterprise	8.3	46.0	19/19	18
government	25.9	14.2	3/19	182
7. Share in OECD total "triadic" patent families[22] (%) Source: OECD (2005)				
2001	0.01	-	25/30	-
1991	0.03	-	22/30	-
8. Foreign PhD students as a per cent of total PhD enrolments (2003)	-	13.7	-	-

Notes for the Tables

Sources:

All data are from Education at a Glance, OECD Indicators 2004 and 2005, unless indicated otherwise in the table.

Other sources:

Eurydice (2005), *Key data on education in Europe 2005*, Eurydice, Brussels
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 2005/2*, OECD, Paris

Missing data:

a: Data not applicable because the category does not apply.
c: There are too few estimates to provide reliable estimates.
m: Data not available.
n: Magnitude is either negligible or zero.

General notes:

1. "Poland's rank" indicates the position of Poland 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 *"x/x"* indicates that Poland recorded the xxst highest value of the xx OECD countries that reported relevant data. The symbol "=" means that at least one other country has the same rank.
2. "% to OECD mean" indicates Poland'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 *"xx"* indicates that Poland's value is equivalent to xx% of the OECD mean.
3. The calculation of the average years in formal education is based upon the weighted theoretical duration of schooling to achieve a given level of education, according to the current duration of educational programmes as reported in the UOE data collection.
4. Two alternative methods were employed to calculate the average duration of tertiary studies: the approximation formula and the chain method. For both methods, it should be noted that the result does not give the average duration needed for a student to graduate since all students participating in tertiary education are taken into account, including drop-outs. Hence, the figure can be interpreted as the average length of time for which students stay in tertiary education until they either graduate or drop out.
5. This indicators show the ratio of graduates as a proportion to all fields of studies. The fields of education used follow the revised ISCED classification by field of education.
6. 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.
7. The unemployed are defined as individuals who are without work, actively seeking employment and currently available to start work.
8. The impact of demographic change on total enrolment is calculated by applying the enrolment rates measured in 1995 to the population data for 2003: population change was taken into account while enrolment rates by single year of age were kept constant at the 1995 level.
9. The impact of changing enrolment rates is calculated by applying the enrolment rates measured in 2003 to the population data for 1995: the enrolment rates by single year of age for 2003 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.
10. 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.
11. 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.

12. 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.
13. 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.
14. This indicator covers residents in the country, regardless of citizenship and of educational or labour market status.
15. 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.
16. In this indicator, the column "OECD mean" indicates the number of Eurydice member countries/areas, in which limitation on admission to tertiary education is adopted, out of 35 countries/areas whose data is available. For example, in the column "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 county.
17. 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.
18. Total public expenditure on all services, excluding education, includes expenditure on debt servicing (*e.g.* interest payments) that are not included in public expenditure on education.
19. "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. In 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 whose data is available. For example, in the column "Membership fees to student organisations", 5/35 indicates that membership fees are adopted in 5 countries/areas.
20. "Teaching staff" refers to professional personnel directly involved in teaching students.
21. "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.*

22. "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. Because a few countries share large proportion of triadic patents, other countries have small share.

Country specific notes:

[i] "Tertiary-type B is included in "Tertiary-type A".

[ii] "Tertiary-type B" is included in "Tertiary-type A and advanced research programmes".

[iii] Included in "students aged 30-39 as a percentage of the population aged 30-39".

[iv] Entry rate for tertiary type A and B programmes calculated as gross entry rate.

[v] Excluding tertiary –type B programmes.

[vi] Public institutions only.

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OECD Reviews of Tertiary Education

Poland

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

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

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