# INTERNATIONAL MOBILITY OF THE HIGHLY SKILLED

In technological and economic development, human resources play a central role. Knowledge-based societies rely on highly-qualified labour forces. The growing intensity of knowledge means that all countries have a greater need for highly-skilled specialists who are able to access, understand and use knowledge. To make sure and improve the situation of countries in worldwide competition it is essential to support academic exchange and to attract highlyskilled specialists. Additionally, most OECD countries and other developed countries face a special challenge because of a higher need for the highly skilled in societies with shrinking populations. The OECD's *The Global Competition for Talent: Mobility of the Highly Skilled* analyses the mobility of

Table 1

the highly skilled and the policies of 15 countries that encourage the mobility of human resources in science and technology (HRST) and make themselves attractive for these groups.

Skilled HRST provide knowledge and contribute to innovative activity, thereby increasing economic growth and prosperity. Attracting more HRST can hasten the accumulation of knowledge, stimulate innovation and lead to higher levels of economic activity and prosperity. The loss of skilled people leads to concerns about labour force shortages and brain drain, particularly in developing countries.

Most OECD countries perceive mobility as important in terms of retaining and attracting HRST talent and have policies to assist and encourage mobility. Some make these policies part of an explicit strategy, often accompanied by a specific website (Australia, Austria, Belgium, Czech Republic, Finland, Nether-

Mobility strategies						
	Strategy to encourage mobility of HRST	Webpage or organisation providing information to inflows of HRST	Diaspora strategy			
Australia	Initiatives in place to promote international research collabo- ration, including mobility of researchers.	Mobility portal established in conjunction with FEAST (Forum for European- Australian S&T Coopera- tion) – www.mobility.org.au				
Austria	Mobility mentioned in Pro- gramme of the Austrian Federal Government for the 23rd Legis- lative Period (2006-2008).	Yes. Primary site is the Researcher's Mobility Portal Austria (www.researchinaustria.at).	Networks for HRST in North America – ASciNA (Austrian Scientists & Scholars in North America) at www.ascina.at and OST (Office of Science and Tech- nology) scientist network at www.ostina.org/content/view/7/26			
Belgium	The relevant federated authori- ties put emphasis on their own priorities; however, mobility is a focus of policy efforts in each area.	Yes. Primary site is the Researcher's Mobility Portal Belgium (www.eracareers- belgium.be).	Networking events in the United States (Flemish government initia- tive), in the framework of the European ERA-Link project.			
Canada	Mobility is central to a national strategy to make Canada one of the world's top countries for R&D and to build an innovative and competitive economy.					
Czech Republic	The need for mobility support is detailed in many recent docu- ments <i>e.g.</i> Strategy of Economic Growth; National Reform Programme; National Innova- tion Policy for 2005-2010; Na- tional Development Plan of the Czech Republic.	Yes. Primary site is the Researcher's Mobility Portal Czech Republic (www.eracareers.cz).				
Finland	General goal of internationali- sation in S&T and higher educa- tion.	Yes. Primary site is the Researcher's Mobility Portal Finland (accessed via Academy of Finland website www.aka.fi).				

### Database

## (Table 1 continued)

Strategy to encourage mubility of HRST   Webgage or againstance providing information to inflows of HRST   Diaspora strategy     Japan   Yes. "Strategic Promotion of the International Activity of Science and Technology - Ministry of Education, Cuture, Sports, Science and International Activity of Science and Technology international mobility of researchers in two categories: Korean active who go abroad for study and research: and the midiod alwebiste for each for study and research: and the midiod alwebiste for each for study and research: and the midiod alwebiste for each for study and research: and the midiod with domestic researchers.   Web portal has been established for knowledge cochange among Korean researches worklywide, Also distin- guibed scientists residing abroad are indived of study and research: and the midiod of activity of the stance courties and the midion (www.nwo.nl).   Web portal has been established for knowledge cochange among Korean researches worklywide, Also distin- guibed scientists residing abroad are indiverside by Netherinato Cryanisa. Not de by Netherinato Cryanisa. With de visit for scientific Researcher work and technology currently de- web research science and technology.   Yes. Researcher's Mobility (www.areacreers.m).   Not excitation (www.areacreers.m).     Norway   Ministry of Researcher, Science and Technology currently de- web researchers, doctrone mobility is a central measure.   Yes. Primary site is the Researcher's Mobility researchers, doctrone and and threst harey (www.areacreers.m).   Platforms such as the African Union - African Diaspora Ministerial (www.areacreers.m).     South Africa   Vers. International mobility of searerehers of Ministerial (www.areacreers.m).   No ex	(14010-1-001111140)			
JapanYes. "Strategic Promotion of the International Activity of Selectivity of Selectation, Culture, Sports, Selectation, Selectation, Selectation, Selectation, Selectation, Selectation, Selectation, Selectation, Selectation, Selectation, Selectation, Selectation, Selectation, Selectation, Selectation, S		Strategy to encourage mobility of HRST	Webpage or organisation providing information to inflows of HRST	Diaspora strategy
Korea   Enhancing international mobility of researches in two categories korean natives who go abroad for study and research; and websites for each individual website for each indit website for each individual website in the dial database of swis	Japan	Yes. "Strategic Promotion of the International Activity of Science and Technology" – Ministry of Education, Culture, Sports, Science and Technology (MEXT). High priority on strengthening collaboration with Asian countries and internation- alising universities.	No central website.	
Netherlands Ministry of Education, Culture and Research encourages multiply of the Netherlands (main function of scientific Research (www.nwonl). Yes. Researcher's Mobility of Netherlands (main function of Scientific Research (www.nwonl).   New Zealand Ministry of Research, Science and Technology currently developing a strategy to ensure New Zealand continues to attract, retain and develop top-performing people and teams in research, science and technology. Yes. Primary site is the government assigns high priority to international feedback (www.necacity of the science) and technology.   Norway No specific strategy to number assigns high priority to international technology. Yes. Primary site is the government assigns high priority or international free science's Mobility Portal Norway (www.eracaterers.no). Platforms such as the African Union - African Diaspora Ministerial Conferences are used. Also, the provides information in several destination of Norwe gian research, stocharis Mobility on inflax ward and outwest privates in the first to the South Africa and Technology holds "South Africa Days" in which mobility of researchers, doctarial students and HRST, mostly Platforms such as the African Union - African Diaspora Ministerial Conferences are used. Also, the search Foundation (NRF).   Switzerland No explicit strategy. Yes. Portal for science. ch). Switzerland (www.myscience.ch).   United Yes. International mobility of students and researchers is envice in the strategy for International Engagement in Research and Development", published by the Global Science and Involve provides information formity (SBIF). See www.berg.w.uk / files/files/files/files/files/4726.pdf.	Korea	Enhancing international mobility of researchers in two categories: Korean natives who go abroad for study and research; and the inflow of foreign researchers.	No central website, but individual websites for each programme.	Web portal has been established for knowledge exchange among Korean researchers worldwide. Also distin- guished scientists residing abroad are invited to visit Korea and establish networks with domestic researchers.
New Zealand and Technology currently de- veloging a strategy to ensure New Zealand continues to at- tract, retain and develop top-per- forming people and teams in research, science and technology.Yes. Primary site is the generacher's Mobility Portal Norway (www.eracareers.no).Platforms such as the African Union - African Diaspora Ministerial Conferences are used. Also, the Disportal Norway (www.eracareers.no).South Africa South Africa Warous mechanisms exist to encourage inward and outward mobility is a central measure.NRF website (particularly the ink to the South Afri- can Research Chairs Initia Suite retain and HRST, mostly are addet of the ink to the South Afri- can Research Chairs Initia Suite retain d HRST, mostly anaged by the National Re- search Foundation (NRF).Platforms such as the African Union - African Diaspora Ministerial Conferences are used. Also, the Department of Science and Tech- nology bolds' South Africa Days' in search Foundation (NRF).Switzerland Kingdom Kingdom Kingdom Kingdom Context strategy.Ne seplicit strategy.Yes. Portal for science, research and innovation in Switzerland (www.myscience.ch).Swisflaents database of Swiss science had altoward where there is South Africa Days' in switzerland (www.wististichcourcil.org/m with Science and Innovation Forum (CSIF). See www.berr.gov.uk //files/ <i>file34726.pdf.</i> Yes. Primary site is Net www.friishcouncil.org/m wowith inked alumin engagement and operated in partnership by the Royal Science and Innovation Forum (CSIF). See www.berr.gov.uk //files/ <i>file34726.pdf.</i> Yes. See European Commission Researchers who have been working in the United Kingdom should encourage and promote an alumni network of re	Netherlands	Ministry of Education, Culture and Research encourages mobil- ity of researchers. Policy exe- cuted by Netherlands Organisa- tion for Scientific Research (NWO).	Yes. Researcher's Mobility Portal: the Netherlands (www.eracareers.nl). Also NWO website (www.nwo.nl).	
Norway government assigns high priority to internationalisation of Norweg gian research and invests large resources in international re- search programmes, in which mobility is a central measure.Yes. Primary site is the Researcher's Mobility (www.eracareers.no).South AfricaVarious mechanisms exist to encourage inward and outward mobility of researchers, doctoral students and HRST, mostly managed by the National Re- search Foundation (NRF).NRF website (particularly the link to the South Afri- an Research Chairs Initia- an Research Chairs Initia- an Research Chairs Initia- an Research Chairs Initia- www.mrscience.ch.).Platforms such as the African Union – African Diaspora Ministerial Conferences are used. Also, the Department of Science and Tech- nolegy holds "South Africa Days" in several destinations abroad where there is South Africa Italent.SwitzerlandNo explicit strategy.Yes. Portal for science, research and innovation in Switzerland (www.mrscience.ch.).SwissTalents datasee of Swiss scientists and scientists with a strong link to Switzerland (www.swisstalents.org). Also www.myscience.ch.)United KingdomYes. International mobility of students and researchers is embedded in "A Strategy for International Engagement in Research and Development", published by the Global Science, <i>file 34726.pdf</i> .Yes. Primary site is Net- work UK - the researcher' mobility.)The GBT Strategy for International engagement in Research and De- velopment recognises that the United Kingdom should encourage and promote an alumin network of research and Development", published by the Global Science, file 34726.pdf.Yes. Primary site is the European (CSM(2001)331 (2006/2001)), Am	New Zealand	Ministry of Research, Science and Technology currently de- veloping a strategy to ensure New Zealand continues to at- tract, retain and develop top-per- forming people and teams in research, science and technology.		
South Africa necurage inward and outward mobility of researchers, doctoral students and HRST, mostly managed by the National Re- search Foundation (NRF).NRF website (particularly the link to the South Afri- can Research Chairs Initia- tive) provides information oinflows of HRST (www.nff.ac.za/sarchi/).Platforms such as the African Union - African Diaspora Ministerial Conferences are used. Also, the Department of Science and Tech- nology holds "South African Days" in several destinations abroad where there is South African talent.SwitzerlandNo explicit strategy.Yes. Portal for science, research and innovation in Switzerland (www.myscience.ch).SwissTalents database of Swiss scientists and scientists and scientists and scientists and www.myscience.ch).United KingdomYes. International mobility of students and researchers is embedded in "A Strategy for International Engagement i", published by the Global Science and Innovation Forum (GSIF). See www.berr.gov.uk /files/ file34726.pdf.Yes. Primary site is Net- work UK – the researcher's mobility).The GSIF Strategy for International Engagement in Research and De- velopment recognises that the United Kingdom. A new International Fellowships Scheme, withiked alum 1990 (2001). Sciety. British Academy, Royal Academy of Engineering and Re- search Swith Scieter, science, in the United Kingdom. A new International Fellowships Scheme, withiked alum 1990 (2001). Aim of strategy is to develop an oper internas-European labour market for researchers.Yes. Primary site is the European Researcher's Mobility Portal.°)The European Commission has pro- voing abroad, beginning with the united States (http://cordis.europa. uited States (http://cordis.euro	Norway	No specific strategy, but the government assigns high priority to internationalisation of Norwe- gian research and invests large resources in international re- search programmes, in which mobility is a central measure.	Yes. Primary site is the Researcher's Mobility Portal Norway (www.eracareers.no).	
SwitzerlandNo explicit strategy.Yes. Portal for science, research and innovation in Switzerland (www.myscience.ch).SwissTalents database of Swiss scientists and scientists with a strong link to Switzerland (www.myscience.ch).United KingdomYes. International mobility of students and researchers is embedded in "A Strategy for International Engagement in Research and Development", published by the Global Science and Innovation Forum (GSIF). See www.berr.gov.uk/files/ file34726.pdf.Yes. Primary site is Net- work UK – the researcher's mobility).The GSIF Strategy for International Engagement in Research and Development", published by the Global Science and Innovation Forum (GSIF). See www.berr.gov.uk/files/ file34726.pdf.Yes. Primary site is the United Kingdom should encourage and promote an alumni network of researchers who have been working in the United Kingdom. A new International Fellowships Scheme, 	South Africa	Various mechanisms exist to encourage inward and outward mobility of researchers, doctoral students and HRST, mostly managed by the National Re- search Foundation (NRF).	NRF website (particularly the link to the South Afri- can Research Chairs Initia- tive) provides information on inflows of HRST (www.nrf.ac.za/sarchi/).	Platforms such as the African Union – African Diaspora Ministerial Conferences are used. Also, the Department of Science and Tech- nology holds "South Africa Days" in several destinations abroad where there is South African talent.
United KingdomYes. International mobility of students and researchers is embedded in "A Strategy for International Engagement in Research and Development", published by the Global Science and Innovation Forum (GSIF). See www.berr.gov.uk /files/ file34726.pdf.Yes. Primary site is Net- work UK – the researcher's mobility portal (www.britishcouncil.org/eu mobility).The GSIF Strategy for International Engagement in Research and De- velopment recognises that the United Kingdom should encourage and promote an alumni network of researchers who have been working in the United Kingdom. A new International Fellowships Scheme, with linked alumni engagement and operated in partnership by the Royal Society, British Academy, Royal Academy of Engineering and Re- search Councils UK, will be launched in 2008/09.European Commission CommissionYes. See European Commission COM(2001)331 (20/6/2001). Aim of strategy is to develop an open, trans-European labour market for researchers.Yes. Primary site is the European Researcher's Mobility Portal.")The European Commission has pro- posed to network all EU researchers working abroad, beginning with the United States (http://codis.europa. eu/eralink/), followed by other coun- tries, such as Japan.	Switzerland	No explicit strategy.	Yes. Portal for science, research and innovation in Switzerland (www.myscience.ch).	SwissTalents database of Swiss scientists and scientists with a strong link to Switzerland (www.swisstalents.org). Also www.myscience.ch.
European Commission Yes. See European Commission COM(2001)331 (20/6/2001). Aim of strategy is to develop an open, trans-European labour market for researchers. Yes. Primary site is the European Researcher's Mobility Portal. <sup>a)</sup> The European Commission has pro- posed to network all EU researchers working abroad, beginning with the United States (http://cordis.europa. eu/eralink/), followed by other coun- tries, such as Japan.   a) From June 2008, the principal website is the EURAXESS portal (http://ec.europa.eu/eracareers/index_en.cfm).	United Kingdom	Yes. International mobility of students and researchers is embedded in "A Strategy for International Engagement in Research and Development", published by the Global Science and Innovation Forum (GSIF). See www.berr.gov.uk /files/ file34726.pdf.	Yes. Primary site is Net- work UK – the researcher's mobility portal (www.britishcouncil.org/eu mobility).	The GSIF Strategy for International Engagement in Research and De- velopment recognises that the United Kingdom should encourage and promote an alumni network of researchers who have been working in the United Kingdom. A new International Fellowships Scheme, with linked alumni engagement and operated in partnership by the Royal Society, British Academy, Royal Academy of Engineering and Re- search Councils UK, will be launched in 2008/09.
<sup>a)</sup> From June 2008, the principal website is the EURAXESS portal (http://ec.europa.eu/eracareers/index_en.cfm).	European Commission	Yes. See European Commission COM(2001)331 (20/6/2001). Aim of strategy is to develop an open, trans-European labour market for researchers.	Yes. Primary site is the European Researcher's Mobility Portal. <sup>a)</sup>	The European Commission has pro- posed to network all EU researchers working abroad, beginning with the United States (http://cordis.europa. eu/eralink/), followed by other coun- tries, such as Japan.
	<sup>a)</sup> From June 200	08, the principal website is the EUR	AXESS portal (http://ec.europ	ba.eu/eracareers/index_en.cfm).

lands, Norway, South Africa, Switzerland, United Kingdom, European Commission); others have no overall strategy. The members of the European Union appear to gain valuable leverage from EU initiatives, i.e., each country has a mobility portal that is linked to the wider European Researcher's Mobility Portal, which provides a wealth of information.

Some countries have specific strategies to maintain contact with their diaspora. They focus more on initial retention and re-attraction. Thus, in 2001 the Office of Science and Technology at the Austrian Embassy in Washington, D.C., set out to establish a network for Austrian expatriate researchers, the OST Scientist Network. The network serves as a foundation for a broader understanding of the needs of Austrian researchers in North America and provides a basis for recognising those needs in the Austrian scientific landscape. It advises on government-related matters and keeps members informed about science and technology policy issues. Additionally, it supplies news on new developments in Austrian and European research (see Table 1).

To support the inflow of the highly skilled, seven of the 15 analysed countries offer mobility opportunities via their general high-skill migration policies. These are Australia, Canada, Czech Republic, Netherlands, New Zealand, Norway and Switzerland. In addition, almost all have targeted policies to assist HRST inflows, ranging from special visas to facilitated procedures that reduce delays or waive certain requirements. The Scientific Visa procedure adopted by European Commission Directive 2005/71 has been transposed into domestic legislation by Austria, Belgium, Czech Republic and the Netherlands (see Table 2).

Additionally, most of the countries provide economic incentives for inflows of HRST. The approaches vary widely, from a large number of policies across a number of policy categories to just a few programmes in selected categories. A special case is the Czech Republic, where no policies explicitly offer economic incentives to inflows of HRST. Australia's policy is focused on fellowships, while Finland and Switzerland have concentrated their efforts on only a few programmes that offer economic incentives. For Switzerland this is likely due to the attractive salaries and other conditions that are already successful in attracting researchers and other HRST to the country. Korea and New Zealand offer the broadest range of programmes: fellowships, grants,

Table 2

	Facilitated procedures for HRST	Special visas for HRST	General highly- skilled migration policy	Fel- low- ships	Grants and project fund- ing	Scholar- ships and allow- ances	Tax bene- fits and subsi- dies	Other
				Number of programme			rammes	
Australia		Yes – Business Long-Stay Visa, Educational Visa, Visiting Academic Visa	Yes	9				
Austria	Yes	Yes – Scientific Visa (under EC Directive 2005/71)		1	3			
Belgium		Yes – Scientific Visa (under EC Directive 2005/71)		3	3	2		1
Canada	Yes – Canada Chairs applicants exempt from Labour Market Opinion require- ment	Yes – Off-campus Work Permit	Yes	1	4			1
Czech Republic	Yes	Yes – Scientific Visa (under EC Directive 2005/71)	Yes					

Immigration policy to facilitate inflows of HRST and economic incentives for inflows of HRST

### Database

#### (Table 2 continued)

Finland	Facilitated procedures for HRST Informal ar- rangement based on co-operation between director- ate for immigra- tion and higher	Special visas for HRST	General highly- skilled migration policy	Fel- low- ships	Grants and project fund- ing Numbe	Scholar- ships and allow- ances er of progr	Tax bene- fits and subsi- dies ammes	Other
Japan	education institu- tions. Yes	Multiple-entry visa		4	1	3		1
Korea		Yes – Science Card, IT Card, Gold Card		1	3	2	1	2
Netherlands		Yes – Scientific Visa (under EC Directive 2005/71)	Yes – a fast procedure for highly skilled with no work permit required. Facilitated procedures for family members.		4			
New Zealand	Yes – for occupa- tions on shortage lists		Yes	2	1	1	1	3
Norway	Facilitated proce- dures for accom- panying family members	Yes – work permit for researchers, scholarship holders and lecturers	Yes – skilled worker/specialist work permit quota scheme		3	3		
South Af- rica		2002 Immigration Act provides for work permits for foreign experts		1	2	1		2
Switzerland			Yes (for non EU-EFTA countries)		1			2
United Kingdom	Yes – no work permit require- ments for certain students	Sponsored Re- searcher work permit category for non-EEA nationals	Yes	4	3	5		6
European Commission		Scientific Visa (EC Directive 2005/71)			2			

Source: OECD (2008).

scholarships, tax benefits and other policies (see Table 2).

N.H.

#### Reference

OECD (2008), The Global Competition for Talent: Mobility of the Highly Skilled, Paris, pp. 122–144.