Global Context of the European Union Planning Processes for Higher Education and Research Areas: Thoughts for the Georgian University System

Louis Maheu
FRSC, Emeritus Professor,
Departement of Sociology, Université de Montréal

Abstract

Three main arguments run through this text. The first one claims the European Union Higher Education (EU/HE) Area cannot be uncoupled from the EU Research Area, as both planning exercises and policies are corner stone components of the EU most recent Science, Technology and Innovation policy. This standpoint enables the emphasis be put on an often neglected dimension of the EU/HE Area: the utmost importance of graduate education and especially doctoral education. The second highlights nowadays most recent Science, Technology and Innovation policies’ specific foundational trends regarding highly qualified human resources bearing advanced research training for example of the doctoral level. Evidence-based trends do support that nation-building capacities are underlined by a direct interrelationship between countries’ research intensity and doctoral education graduates. These graduates are mainly if not exclusively trained by research intensive universities.

Finally, a last discussion looks at trends of Georgia Higher Education system in the light of current major characteristics of three modern university systems (USA, United Kingdom and Canada). It is argued the Georgian HE system, as for the country’s total population, consists of far too many institutions belonging to the college, university and comprehensive research university categories. None of the three mentioned rich developed countries does have the required high quality human and financial resources to run as many different HE institutions as Georgia currently does. Obviously, Georgia spreads thin and rare human and financial resources to too many different institutions. Relevant policies to correct this inefficient use of human and financial resources by Georgia HE system are also considered.
Introduction

For years now, Georgia is looking forward to a rapprochement with the European Union. In many fields of Georgian society this rapprochement does represent high level challenges. Georgian higher education system and more precisely its university sector is one of these fields where such a rapprochement leads into very high level challenges.

Many participants to the Georgian university system are openly aware of the ambitious goals, measures and policies characterising the deployment within the last decades of the European Union Higher Education Area. Moreover they are rightfully so conscious that to catch up with these goals and policies the Georgian Higher Education system and its specific university sector will have, in the coming years, to cope with and master important structural changes.

This paper intends first to highlight an important dimension of the European Union Higher Education Area’s deployment. This dimension obviously has an impact on how a society and its government can better cope with this Area’s objectives. Indeed, this European Union program is an essential component of the European Union most recent science, technology and innovation policy which bears other important components.

I shall then detail the European Union last decades’ planning regarding Higher Education and Research to better understand what it carries for universities. It shall then be concluded that by such planning the European Union mimics, in the areas of higher education, university training and research the global objectives and policies which characterize modern knowledge-based economies and societies’ innovation trends.

What does all that mean for the Georgian higher education system and more precisely its university sector? In the conclusion to this paper, without in any way pretending to be an expert of Georgian society and higher education, I shall however, on the basis of obvious trends underlying modern universities’ development, identify some major challenges the Georgian university system will have to cope with in the coming years and decades.
European Union (EU) Planning’s Strategic Moments regarding Higher Education and Research

In the last decade or so, 4 strategic moments can finally be identified which constitute incremental steps in the EU planning processes regarding higher education and research. I’ll rapidly review these 4 distinctive moments putting mainly the emphasis on what they meant for the universities, the HE system and for research embedded within the university sector. This discussion is underlined by data and information stemming from the L. Maheu et al (2014) paper which addresses more in depth and in an international comparative context trends and issues pertaining to university graduate education and the building of nations.

The first moment – the Bologna Process – is the most known of these 4 moments. Let’s recall what it was aiming at regarding universities and the HE system.

Issued at the end of the nineties, the Bologna Process, as we know, aims at creating an EU Higher Education Area. Agreed upon by countries then forming the EU, this Process more precisely intends to encourage:

- Curricular transformations in order to harmonize, from a participant country to another, degrees conferred, training cycles and credit systems delivered by European HE institutions and more precisely universities;
- An increase in student mobility within EU countries and internationally for students enrolled in European HE institutions;
- An improvement of quality assurance practices within HE institutions and universities: are then clearly at stake improved European common standards for the design as well as the delivery of higher and graduate education programs and degrees;
- More emphasis in HE and university training programs both on high quality academic skills normally delivered by core disciplinary specialized curricula within various fields and on professional development training activities aiming at transferable skills which are crucial for out of academe marketplaces.

At the turn of the century, was designed the EU’s second moment of its planning processes for higher education and research: the Lisbon Strategy (2000). This one strategy focuses more particularly on the building of an EU Research Area. Of course, since a number of years, the EU had been running many EU Framework Programs for Research (RD) and Technological Development. Actually the current years are witnessing its 7th such global and comprehensive Framework Program.

But starting in 2000, a new emphasis has been put on the building of the EU Research Area through policies and measures focused on the preparation, training and role of accurate and relevant human resources. Such trend now clearly recognizes that highly qualified and accurately trained men and women are key to the development of a vivid research community and area. And to make sure the EU shall benefit more and more from this specific type of human resources, the European Research Area Position Paper delivered in 2000:

- Recognizes that human resources are key asset for research and development capacity-building;
- Proposes, through a number of incentives that shall be put forward, to increase and render more mobile required human resources. A good number of the proposed measures target highly qualified women as well as young researchers;
- Designs strategies in order to extend researchers’ careers to European-wide supranational knowledge production sites and networks.

We can thus say that after 2000 and the official launching of the Lisbon Strategy, the EU Framework Programs for Research (RD) and Technological Development had gain more impact still. They were also seen, together with policies issued by political leaders more sensitive to highly qualified human resources’ crucial social contributions, as major structuring and supportive efforts and strategies to build a robust, up-to-date and innovative EU Research Area.

The following EU planning moment for Higher Education and Research is a step quite often by-passed by many observers. It regularly does not retain the attention it should. However, in their 2003 Meeting European Ministers of Education did reckon there was a missing link to the EU strategies for the building of the HE and Research Areas. They wanted this situation be somehow corrected.
Global Context of the European Union Planning Processes for Higher Education and Research Areas: Thoughts for the Georgian University System

It clearly appears the missing link concerned university graduate education, and more particularly research intensive training taking shape through mainly doctoral education. Indeed this specific training level eventually was officially recognized as a compulsory component of European HE and Research Areas official policies and strategies. Therefore, the aforementioned meeting of European Ministers of Education did openly and officially add to these strategies, with the support of the EU Commission and its official Instances, a clear reference to such a component. Its function is to offer a structuring bridge between the EU HE Area, on the one hand, and the EU Research Area, on the other.

Thus, in order to reach high quality and innovative graduate and doctoral education programs and trainings, a number of incentives targeting EU universities where identified and promoted. What more precisely was on the agenda?

- Programs and measures to improve within the EU graduate and doctoral students mobility;
- Incentives to sustain the development of cross-country cooperation in programs and trainings, particularly at the doctoral level through doctoral schools and/or colleges bringing together resources of universities from EU participating countries;
- Measures strengthening graduate education’s quality and competitiveness including the development of more interdisciplinary graduate programs and of professional development trainings which emphasize transferable skills relevant for diverse marketplaces hiring highly qualified people;
- Incentives encouraging the recognition of students’ rights while they perform and train as early-stage researchers.

The last moment of the EU planning for Higher Education and Research consists of the European Innovation Union which was eventually introduced in 2010. This Innovation Union bears seven flagship initiatives. One of them related to research sites and activities, and to the human resources producing research carries on important, structuring impacts. These extend to research work-settings as well as to highly qualified human resources’ trainings for research and practices as professional researchers. A main overall goal of this precise initiative is to strengthen every possible link in the innovation chain from the so-called ‘Blue Sky’ (curiosity driven) research to the commercialization of research results, advancements, and products.

But what does this initiative more precisely imply?
To complete the building of the EU Research Area by financially supporting clearly identified research targeted priorities and the increase of collaborative research programs between member states’ research teams and infrastructures (the EU Framework Programs for Research (RD) and Technological Development are of course concerned by such orientation);

- To strengthen doctoral education quality through an European common approach aiming at the improvement of disciplinary and transferable/professional skills students and graduates should master;

- To improve knowledge and research networks, clusters as well as partnerships within and between countries participating in the EU.

The Global Context of Science, Technology and Innovation Policies for Knowledge-Based Societies

Let’s summarize what has been detailed as the EU 4 strategic moments of planning processes for HE and research. All things been equal, this overall planning exercise and strategy bears ‘strong family resemblance’ with what are currently very active and common Science, Technology (S&T) and Innovation Policies within most OECD countries – a part of them of course being European countries. However, the most recent generation of S&T and Innovation Policy, the one we see currently being deployed in the overall EU, first took ground in North America and a limited number of countries.

And currently, emergent economies’ political and State leaderships are themselves very obviously turning their own attention to this more recent generation of S&T and Innovation Policy. Indeed, this is particularly the case for India, China and Brazil.

Looking more closely and in-depth at these S&T policies, you can see characteristic trends and common components they all somehow share regardless of countries’ differences in population size, research intensity, economic strength, etc. Such policies would not necessarily disregard the importance of science and technology requirements in terms of more inventive and effective fiscal incentives. But, beyond that, they bear the more precise following characteristics.

One of them is their option in favour of people, qualified people. Recent science and technology innovation policies are people-friendly by saying clearly that people do matter, as much if not more than technical and
fiscal measures to sustain the research and technology enterprise. There shall be no new knowledge production, no science and technology transfers without highly qualified women and men.

Robert Reich, former USA Work Secretary under Clinton, has very well captured the overall strategic and remarkable role played within knowledge-based societies by highly qualified men and women, mobile nationally as well as internationally. In careful and well-documented details, he describes the important roles played by a kind of ‘new class’ within advanced societies (of course the USA, but others as well). Reich labels these highly qualified people – using expressive catch-words – ‘symbolic analysts’. Without symbolic analysts’ societal contributions, there shall be no sustained economic, cultural, and well-being development for modern societies.²

Most of these policies, this is their second characteristic, also foresee that qualified people will more and more work within clusters. Some clusters, of course, are already embedded within universities, but more important, the foreseen clusters shall transgress two traditional boundaries. They first extend, and will more and more, beyond academia per se. They transgress academic organizational boundaries, bringing together people belonging to more diversified knowledge production sites, including universities.

Second, the clusters, foreseen and supported by recent science and technology policies, tend to stretch beyond national boundaries. Obviously at work for instance in the European Union landscape, regional knowledge production hubs do emerge as major expertise centres. Moreover, international knowledge clusters, this being all too visible nowadays, are currently booming. They also are and have been since a while on the radar screen of science and technology innovation policies. Advanced and emergent economies countries have learnt a lesson: to compete internationally against competing forces and strengths you must already and paradoxically rely upon and make use of other very active international partnerships.

Still, recent science and technology innovation policies go a step further. Their third characteristic specifies which level and area of competencies people working in extended and stretched clusters shall possess. More and more, or the more you move towards a knowledge-based economy the emphasis is on university training as opposed to other type of post-secondary higher education vocational and technical training. But within

university training, the emphasis is now clearly on more research advanced training, and quite obviously doctoral education and training receives now the utmost attention. Thus, these more recent S&T and Innovation Policies put a strong visible emphasis on advanced research training and program, e.g. doctoral education, including of course in many cases post-doctoral trainings. Masters’ degree trainings come next, inasmuch as they bear a link with research trainings.

As for competency areas, if disciplinary knowledge still keeps its relevancy, it is nonetheless seen as insufficient. Emphasis is clearly put on interdisciplinary skills and on various forms of soft, often called survival, transferable skills mostly encompassed within the term professional development. These would include teamwork capacities, leadership attitudes, communication abilities, project management skills, etc.

**Evidence-based Trends in Support of Recent S&T and Innovation Policies’ Relevancy**

It is worthwhile mentioning that some research results of human capital economists do support the emphasis which science and technology innovation policies tend to give to graduate education, and especially to doctoral education. Looking at the relationship between economic growth and education, Aghion and Cohen, for example distinguish, above and beyond countries having already highly qualified manpower, those being nearer than others to the technology innovation frontier. More innovative countries rely on longer and more advanced research university training to prepare scientists producing new and innovative knowledge. On the other hand, less innovative countries tend to rely more on a university less-intensively trained manpower mainly engaged in transfer activities of adaptable technologies created by others.\(^3\)

These results echo remarks from the special report on *U.S. Doctorates in the 20\(^{th}\) Century*, prepared for the U.S. National Science Foundation. Doctoral education and graduates played crucial roles in the multi-dimensional process by which the American society had become at the end of the 20\(^{th}\) century the world’s leading power. As such, this report is in tune with the recent generation of science, technology and

---

innovation policies for nation building that emphasizes people, competencies and the strategic roles they play within knowledge clusters and areas, and for those matter knowledge-based societies.4

Before going any further, a question must be raised: if science and technology innovation policies have it right, are there, apart from the USA specific and hardly surprising case, other evidence-based data to support a link between doctoral education and leading knowledge-based economies and societies? In-depth comparative analyses documenting graduate education, and especially doctoral training, impacts on the building of societies are obviously lacking. Unfortunately, regarding doctoral education per se, robust datasets are very scarce to rigorously compare how fare countries with different levels of knowledge-based economic development as well as with higher and graduate education systems showing distinctive maturity degrees.

However, rough proxy measures can be used. On the one hand, defined as a country’s research intensity, the Gross Domestic Expenditure for R&D (GERD) can illustrate the level of scientific and technological development of different countries. Indeed, the Organization for Economic Cooperation and Development (OECD) calculations of R&D total expenditures as a percentage of gross domestic products give access to countries’ rank order in terms of R&D intensity.

Such indicator does not exactly portray the real and detailed innovation capacities of nations. However, it reveals how strategic are, for different countries, the factors that would normally help them cope with the requirements, challenges and constraints of knowledge-based economies and societies. In an era of globalized information, communication and knowledge assets, R&D levels of investment make large differences among countries.

On the other hand, countries’ research intensity rank order can afterwards be cross-analyzed with countries’ higher education attainments. In keeping with our focus on doctoral education, we can make use of OECD comparative data regarding countries’ doctoral graduation rates, e.g. the number of persons receiving doctoral degrees as a percentage of the population at the typical graduation age (OECD, Education at a Glance: OECD Indicators, 2007-2010). Such figures illustrate the importance given by national education systems to doctoral education in preparing highly educated knowledge workers.

The figure below shows the R&D research intensity rank order of OECD countries. In order to reduce annual variations, a weighted mean of countries’ R&D total expenditures was calculated as a percentage of Gross Domestic Product for a period of four years (2005 to 2008; with the exception of a few countries for which data were available for a lower number of years). The second column shows the rank order of national doctoral graduation rates at the typical graduation age. Here again, a weighted mean of all doctorate graduate rates was calculated for a period of four years (2005 to 2008; with the exception of a limited number of countries for which data were available for fewer years). These latter data refer to disciplinary comprehensive science and engineering degrees, as they include with natural and medical sciences all social sciences and humanities disciplines. Hence, the emphasis is on the overall number of new doctoral graduates within the national population at the typical graduation age.

Of course, such indicators work as proxies for more complex and comprehensive factors impacting on science and technology innovation. They also concern a specific sample of countries, the OECD countries.

---

Global Context of the European Union Planning Processes for Higher Education and Research Areas: Thoughts for the Georgian University System

However, OECD countries’ R&D intensity ranks are reasonably related to the countries’ results with respect to national doctoral graduation rates at the typical graduation age. Of course, there are noticeable exceptions, most obviously regarding some Asian countries. Japan and Korea, for instance, do much better on R&D intensity than on doctoral graduation rankings. These latter countries are already known for past scientific and technological development heavily dependent on applied sciences and qualified personnel whose technical skills are usually not linked to doctoral education. This strategy may be changing as some experts see new trends in both countries regarding an improved role for fundamental science and advanced research training within their respective current science and innovation policies.

Source: OECD Factbook 2010


---

A Spearman rank order correlation coefficient was calculated; not extraordinarily robust, at 0.513, it nonetheless shows a rather reasonable correlation between OECD countries’ scale of current R&D investment intensity and their respective national doctoral graduation rates at the typical graduation age. With a smaller sample size of OECD countries (putting aside the countries with the most extreme results on both rank orders, i.e. Japan and Korea for R&D research intensity figures, and Portugal and the Slovak Republic for doctoral graduation rate outcomes), we obtained an exceptionally robust Spearman rank order correlation coefficient of 0.907.
In the early 21st century, two other countries show a certain gap between their research intensity and level of doctoral graduation rate. Canada as well as Denmark fare better for their respective GERD figures than for their population reaching doctoral graduation at the typical graduation age.

On the other hand, some countries fare much better on doctoral education rates than on research intensity outcomes. This is especially the case for Portugal and the Slovak Republic. Actually, for the OECD area, it has been documented that, between 1998 and 2006, Portugal and the Slovak Republic went through the steadiest average annual growth of all countries for doctoral degrees.7

**Where do doctoral holders come from?**

It is crystal clear: highly qualified men and women, and especially doctoral graduates do matter. Evidence-based trends do support the relevancy of the more recent generation of S&T and Innovation Policy deployed within advanced and emergent countries. As for doctorate holders, it is worthwhile to highlight where they come from.

This is an important question, which should normally engender a clear straightforward and non-problematic answer. However, quite paradoxically, the answer to this question is somehow more complex and nuanced.

Of course PhD trained graduates do come from universities and some of them do come back to universities as professors and members of faculty. However, it should be noticed that in advanced modern societies, around 60% of them find jobs outside of academe. Nevertheless to renew and improve faculty ranks within universities we do imperatively need high quality doctoral graduates.

But the most important point here is that doctoral graduates do not come from whichever university. Actually they tend to come from very specific universities which missions are to be research intensive universities.

But what is a research intensive university? Within a national HE system, research universities do bear foundational characteristics that distinguish them from other universities or HE institutions. According to

---

the Carnegie Foundation classification, which provided years ago a now well-known and largely accepted definition, such universities bear 4 major characteristics.

They regroup a large number of undergraduate programs, delivering bachelor degrees, in many disciplinary fields. This university program offer does speak to the breadth of scientific and professional disciplines they do cover and for which they have crucial critical masses of high quality faculty members and students. Secondly, they make of graduate programs, at the masters’ and doctoral levels, an institutional priority. In line with their graduate studies priorities, they are the home to Graduate Schools.

These Graduate Schools, which mainly belong to research universities, act as institution-wide ‘umbrella faculties’ covering all disciplines and graduate programs offered. In coordination with existing faculties and departments, Graduate Schools exercise a function of quality control and high standard requirements for each and all arts and sciences and a good number of professional graduate studies deployed on campus. As well, they perform a function of services and of active support provided to faculty members and students participating in graduate advanced research studies.

Thirdly, to be recognized as a research university, a specific institution must meet a yearly minimal threshold – nowadays normally at least, in the USA, 50 – of PhDs conferred. The more a university departs from this threshold with a larger yearly PhD output, the more intensive a research university it is.

Finally, a research university must also meet a yearly minimal threshold – nowadays at least, in the USA, 20M$ – for fundamental research public grants its faculty members receive. These research grants are all peer-reviewed and speak to the quality of a research university’s faculty. The higher this figure reaches beyond the threshold the more intensive in research is the university where these resources are available for in particular training in and by advanced research activities.

As Clark Kerr, a former University of California President argues these research universities do assume multiple university missions through a large number of disciplinary fields and numerous research activities.

---

8 For more detailed information on Graduate Schools and their crucial contributions for modern research universities, see L. Maheu, (2008). « Doctoral Education and the Workings of Canadian Graduate Schools: A Differentiated Tier within Canadian Universities Facing the Challenges of Tension-Driven Functions », Higher Education in Europe, Vol. 33, No. 1, April.
He coined the term ‘multi-versity’ to better describe the overall characteristics of modern research universities embedded now within a large number of advanced as well as emergent countries.⁹

In last fall, a meeting of Research University leaders organized and hosted by a group of Chinese research universities officially issued a statement. Indeed, the Hefei Statement identifies the 10 main characteristics of nowadays research universities and underlies the commitment of its academic leaders to promote their missions as well as to advocate for the conditions and resources they need to perform their strategic roles. Other leaders of research universities in the world are invited to sign this Statement while accepting to behave according to its goals and objectives.¹⁰

**National Higher Education Systems and Various Types of Universities: Thoughts for the Georgian HE and University Systems**

In the USA, there are around 4K HE institutions; these institutional assets serve a global population of nearly 315M people. However, according to experts there are roughly 2,4K institutions which offer long duration (normally around four years) university trainings that correspond at least to a baccalaureate degree.¹¹ These last institutions are generally classified as Universities distinguishing themselves from Community Colleges, the later offering normally short duration, less than 4 years, post-secondary higher education programs.

Universities normally deliver what the International Standard Classification of Education (ISCED), developed by UNESCO, call Tertiary A programs (ISCED 5 A). These programs cover university education that consists of long duration trainings amounting to at least a bachelor’s degree and that can be extended to master’s and doctoral education. It is in this category that we find undergraduate long professional programs preparing access to liberal professions in law, medicine and engineering. Other HE institutions corresponding to colleges (ISCED 5 B) generally deliver Tertiary B programs. These correspond to vocational and professional education of shorter duration that generally does not require a bachelor’s degree.

---


¹⁰ See Website: Hefei Statement 2013: The 10 Characteristics of Contemporary Research Universities, signed by the American Association of University, AAU/USA; C9/China; G8/Australia; League of European Research Universities, LERU/EU.

Thus in the USA, we see at work as mentioned around 4K HE institutions for a population of 315M people, that is a ratio of 1 HE institution for roughly 78,5K people. However, recall that universities per se within this national HE system amount to 2,4K institutions. The ratio to the overall USA population of universities is therefore of 1 for 131,2K people.

It must be emphasized that these 2,4 K universities, which are mainly public and funded in large part by regional states but comprising also an important sector of private institutions, are strongly differentiated. Some of these universities, for example Liberal Arts Colleges, do offer mainly baccalaureate degree programs. There is a league of such Liberal Arts Colleges with star institutions very highly ranked. And there are also universities which add to undergraduate programs a number of Masters’ degree programs which distinguish them as institutions providing advanced Masters’ programs, including in some professional disciplines, without important offerings at the doctoral (PhD) level.

There are finally research universities, the foundational degree of which is the doctorate (PhD). According to the Carnegie Foundation, only 300 of these 2,4K universities can be classified as research universities.\(^\text{12}\) Thus, research universities are roughly 12,5% of the overall USA university population; of course, research universities are even a smaller proportion of the overall USA HE institutions. The ratio to the overall USA population of research universities is of 1 for 1,050M people.

R.L. Geiger has showed that, in the beginning of the century, around only 100 of these USA research universities contributed no less than 75% of all USA research, according to research grants received from federal basic research granting agencies and to scientific production paper outputs. The same institutions delivered 28% of all American baccalaureate degrees, 34% of all first professional degrees, and finally 68% of all doctoral (PhD) degrees.\(^\text{13}\) Research universities clearly are multi-versities assuming apart from research and advanced research training missions linked to the doctorate other important roles at the undergraduate

\(^{12}\) The Carnegie Classification for American universities, which started in 1973, has evolved through the years. In the mid-2000, for American doctorate-granting institutions, the Carnegie Classification makes use of three sub-categories: RU/VH, Research Universities with very high research activity (108 institutions); RU/H: Research Universities with high research activity (99 institutions); DRU: Doctoral/Research Universities (90 institutions); see the Carnegie Classification Website http://classifications.carnegiefoundation.org/resources/faqs.php.

and professional training levels. And within this research universities population, academic strength is concentrated in a tiny number of institutions.

Let’s now turn to the Canadian situation. There are currently in Canada more or less 100 all public HE institutions, roughly 2/3 of which are universities. For a total population of 33,6M people, these figures represent a ratio of 1 HE institution for 336K people, and of 1 university for roughly 510K people. The university sector of these HE institutions is strongly differentiated; some institutions deliver mainly undergraduate programs, resembling the USA Liberal Arts Colleges. Others extend their program offerings to Masters’ degree programs without any worthwhile investments at the doctoral education level. Actually, more than 50% of Canadian universities do not run any doctoral program worthy of the name.

Since the beginning of the nineties, the Canadian university enterprise comprises an official group of research universities. Institutions member of this group have to meet some yearly performance thresholds in peer-reviewed research grants and doctoral (PhD) degrees conferred, as well as retaining graduate studies as one of their foundational priorities. Nowadays, there are in Canada around 15 research universities, which compose this U15 Group of Canadian Research Universities. Thus in Canada there is a ratio of 1 research university for 2,2M people.

These fifteen research universities do cumulate 74% of fundamental research grants conferred through peer-review by the Canadian research granting agencies. The same universities deliver around 41% of all Canadian baccalaureate degrees, 51% of all Masters’ degrees and 76, 2% of all doctoral (PhD) degrees. And six only of these research universities already receive around 50% of all peer-reviewed research grants, a quarter of all undergraduate students, a third of those at the Masters’ level and around 42% of those at the doctoral (PhD) level.

Looking now at an European country HE system, United Kingdom, the overall figures and trends regarding these institutions relative importance with regards to the total population are comparable to those pertaining to Canada. The United Kingdom reports around 165 HE, generally all public, institutions for a total population of 61,6M people. Roughly 2/3 of these institutions are universities; which means a ratio of 1 HE institution for 373K people and of 1 university for 535K people.
There is in the United Kingdom a group of research intensive universities called the Russell Group. It currently regroups 24 different universities belonging mostly to England, although Scotland with some institutions, then followed by Wales and North Ireland, both bearing a few institutions, do participate in this group. Assuming these institutions are research universities, this means that United Kingdom has a ratio of 1 research university for 2.5M people.

In 2009–2010, the universities then belonging to the Russell Group (at the time 20 of the UK universities) were cumulating nearly two-thirds of the external research funds disbursed by governmental granting agencies and foreign organizations, three-quarters of the funds from Charities (private UK foundations), and 60% of those from business, while conferring the bulk of doctoral degrees. Within this group, the flagship institutions are the so-called “golden triangle” South-East England universities, consisting of Oxford, Cambridge, the Imperial College of London, University College of London and the London School of Economics and Political Science. These universities alone generally receive nearly one-third of the public merit-based external research funds available and produce a good chunk of the ensuing volume of publications, while strongly contributing to the training of “higher degree research” programmes’ students including of course doctoral (PhD) students.14

According to the Website of the Ministry of Higher Education and Science of Georgia there are 70 HE institutions within Georgia. They are subdivided in 3 sub-groups: 28 Universities all of which are involved in «all three cycles of higher education and scientific research»; 30 Teaching Universities «implementing higher education programmes, except for Doctoral programmes», including Master’s educational programmes; and finally, 12 Colleges «implementing only the first academic cycle higher education programmes».

Although these sub-groups of HE institutions’ official descriptions do carry some ambiguity with respect to these universities and colleges’ precise concrete educational missions and roles, what we learn from this Web-site presentation raises important problematic issues. First of all, for a total population of 4.3M Georgians, 70 HE institutions mean an astonishing ratio of 1 HE or university for 61,4 K people. Or if we substract from these 70 HE institutions the 12 Colleges (although they seem to deliver

internationally correspond to university undergraduate studies), we still are with a ratio of 1 university for 74,1K people (58 universities serving a total population of 4,3M people).

This up-front is obviously a problem: there is no modern society that can afford having the required resources in human capital talents as well as financial revenues to deploy HE and university institutions in such proportion relative to its total polulation. Not even the USA. And this last country is a world leading knowledge-based economy and society with a tremendous amount of human capital and financial resources that contribute to its hegemonic position and track record which by far surpass almost all other advanced knowledge-based societies.

When you slice so thin your national rare talented human resources and financial assets supporting university education to so many different institutions, the end-result is that almost all institutions are condemned to be weak and mediocre, with a few perhaps of average quality. In this domain, there is no better rule for failure than policies and rules that actually prevent specific universities from regrouping critical masses of good faculty members, high quality students and required financial resources to perform well according to their distinctive missions.

If we stick for a moment to the definition of Universities advocated by the Ministry of Higher Education and Science of Georgia, this means that 28 Georgian universities delivering programs and degrees in each and all three academic cycles, including then the doctoral (PhD) level, and performing as well some scientific research could thus pretend to be research universities. In the context of international comparative figures, this particular trend is even more astonishing. It would mean that the Georgian society and economy do have the human capital talents and the financial resources to be the host to 1 research university per 153,5K people! This also means that pending on the institutions denominator you pick no less than 33% and as much as 40% of its universities are research universities.

Higher education and university policies in Georgia should as rapidly as possible clarify this situation and come up with a policy that clearly reviews and assesses the roles and missions of each and all of these 70 HE institutions and universities. This list must be streamlined on the basis of careful academic assessments of resources, human and economic; outputs in terms of the quality of the programs and degrees conferred; quality of the faculty members participating in these programs; and quality of the students enrolled at each education level.
The clear objective of this policy shall be to decrease the number of HE institutions and universities active in the country in order to reach a more efficient distribution of resources supporting university education. Some of them should be closed altogether and others should merge in order to create with the best of these institutions larger and stronger universities which would strengthen the Georgian HE and university systems. Indeed, incentives shall be put forward to encourage mergers between promising institutions.

The Ministry of Higher Education and Science of Georgia could request, for example, that leaders of merging institutions sign with the Ministry a contract – covering a certain number of years, say 4 or 5, renewable afterwards upon assessment results – based on planning exercises by which merging institutions commit themselves to reach in a reasonable timeframe goals and targets concretely improving the specific university education programmes and outputs they can better serve through their merger. Such contracts conditional to the approval of participating institutions’ planning exercises would generate ear-marked extra funding (say a percentage of participating institutions’ yearly operational budget) provided by the Ministry. Upon assessment of a contract’s goals and targets, extra funding for a second-term contract could be accessible.

Such move would permit to the Georgian HE and university systems to attain a size more compatible with Georgian society’s human capital talents and financial resources available for good quality university education. This policy should also design different resource allocation mechanisms to universities based on a single institution’s distinctive and specific mission within the Georgian HE and university systems. Not all institutions should be funded the same level our way: money and resources should vary according to differentiated educational missions which require more or less of the publicly provided resources for universities.

Some institutions delivering Tertiary B programs – recall these are vocational and technical post-secondary trainings that are of short duration – should have the resources and official state recognition to assume this mission and role. And universities delivering Tertiary A programs of good academic quality should also receive different resource volumes and official state recognition according to the different level of university education they do provide with their programs and degrees. There shall be different expectations, roles and financial resources for universities specialized mainly in undergraduate studies of the baccalaureate level, on the one hand, and on the other, for universities that can also add to these some good quality Masters’ programs and degrees.
And the Georgian economy and society should also harbour real research universities corresponding to the definition promoted by the Carnegie Foundation. The international comparative figures do illustrate that a specific country normally has the talents and resources to host 1 real research university per more or less 1 to 3M people of its total population. This would suggest Georgia could expect to better support in the coming years a few real research universities, strictly speaking 2 or 3 at the most of such research universities according to international benchmarking.15

As illustrated by the development of modern HE and university systems on a worldwide basis, the Georgian society must confront and cope with the two iron laws of university development: differentiation and concentration of HE institutions.

Institutions which objectively correspond to universities aren’t the same at all: actually they are missionwise different and distinct institutions. An efficient and relevant national HE and university policy must recognize that iron law and provide measures, resources, rules that officially pushes further and supports the differentiation between universities on the basis of their strengths. Some have the mission of delivering high quality undergraduate studies; others of providing baccalaureates as well as Masters’ programs; while a few institutions do assume the mission of a real research university.

At the same time a successfully efficient and relevant national HE and university policy must recognize that specific university missions are to be concentrated in a limited number of institutions. And the more you move from a specialized undergraduate education university to a real research university, the more this 2nd iron law about concentration of resources, talents and strengths takes its toll. Recall that each real research university in the USA, Canada and the United Kingdom serves more or less 1 to 3M people of these respective countries’ total populations. This ratio signals that research universities de facto – that you like it or not, this is what iron law trends worldwide give rise to – constitute only a very thiny fraction of overall national HE institutions and universities. Within the research universities world, the concentration iron law suggests moreover that very few of these institutions tend to assume leading academic and scientific positions which set them apart from comparable institutions they compete with.

---

Why such a sharp concentration of research universities? Let’s mention again that talents and resources within countries and nations are rare. Not any one university professor is and can be an active and productive researcher, not all university students have the passion and skills for advanced research. And study in the relevant literature show graduate study and training cost at the minimum 6 times what undergraduate studies cost, mostly because research itself cost a lot.\textsuperscript{16}

It should also be mentioned that countries differ in the way they have organized their fundamental research capacities; a difference that plays a structuring role in the performances of research universities. Some countries have assigned their fundamental publicly funded research activities to institutes (scientific academies or institutes) parallel to universities. Others have rather entrusted their national universities with this fundamental research mission. These last countries are obviously those that tend to fare quite better in developing international high quality research universities.\textsuperscript{17} Of course, without a strong research mission and infrastructure no research universities can flourish and perform well their foundational multi-versity functions and roles.

\textsuperscript{16} On this precise point, see B. R. Clark (1995). \textit{Places of Inquiry; Research and Advanced Education in Modern Universities}. Berkeley: University of California Press

\textsuperscript{17} On these trends, see B.R, Clark, \textit{op. cit.} and R. Lacroix and L. Maheu, \textit{op. cit.}. 
Bibliography:


Carnegie Classification Website: http://classifications.carnegiefoundation.org/resources/faqs.php.


Hefei Statement 2013: The 10 Characteristics of Contemporary Research Universities, American Association of University, AAU/USA; C9/China; G8/Australia; League of European Research Universities, LERU/EU, see Website: Hefei Statement.


