

REGULATORY FRAMEWORK OF SCIENCE AND HIGHER EDUCATION IN CROATIA

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SUMMARY:

1. The rigid framework of rules and laws regulating the fields of science and higher education in Croatia is inconsistent with the best practice of developed countries within and outside of the EU.
2. Past experience indicates that neither the academic community nor the government institutions of Croatia will be able to reform the system from within the country. The process of accession negotiations provides a unique opportunity to introduce the much-needed improvements into the governance of research and higher education in Croatia.

Most important regulatory acts

Following a proud tradition, a number of laboratories or individual scientists in Croatia are contributing very valuable work to international research. Numerous European institutions and learned societies presently recognise the dedication and the achievements within the country. This submission is however devoted to the improvement in the conduct of scientific research in Croatia, and the rest of the document considers the shortcomings of the regulatory environment that need to be corrected.

Two sector-specific acts that most influence science and higher education in Croatia are the *Science and higher education Act (2004)* and the edict *Requirements for the election to scientific ranks (2005)*. The latter document, issued by the National Scientific Council is the revised version of an earlier edict (1997). For the sake of brevity we shall not explicitly consider other rules or procedures, mostly issued by the Ministry of Science, Education and Sports, which also require attention.

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Several general remarks apply to both mentioned documents. The rules are very restrictive, spelling out in detail the conditions, regulations, time periods, formal requirements, levels of protection etc. The dean, rector or a director of an institution of research and higher education typically finds that in many important cases very little freedom remains to act in the best interest of the institution, students or the community. The complexity of the rules and the lengthy multi-stage processes lead to a significant waste of time throughout the academic community.

Both documents contain a plethora of original Croatian-invented solutions to ordinary, common problems occurring within science and higher education. The generally accepted rules and practices governing scientific research and higher education in countries with a long and illustrious tradition in science have gradually evolved over extended periods. It is highly unlikely that presently a select committee in a small country, however much devoted to lofty ideals, can quickly invent a better organisational structure, more explicit or appropriate promotion rules or an accurate numerical procedure to evaluate scientific contribution of an individual.

While the hiring and promotion of academic staff in Croatia is very tightly regulated, in other aspects the regulatory environment is overly lenient. There is little responsibility placed on the established staff or individual faculties to ensure that they perform their duties with due respect for the rights of the students or the normal expectations of the broader community.

Science and higher education act (2004)

Following several years of consultation and numerous changes to earlier versions, the current legislation regulating the science and higher education sector in Croatia was proclaimed in July 2004. The law introduced the European timetable and academic credit rules (the *Bologna declaration*). It was originally intended to strengthen the criteria of excellence and facilitate the networking with European universities. In reality, after a number of interventions during the drafting process weakened the original concepts, the law has hardly brought the country any closer to the best practice of the developed world. The level of protection for the faculty and research personnel is now increased and the internal self-governance of academic institutions is strengthened without a compensating definition of institutional responsibilities.

Employment contracts at all scientific ranks is in principle permanent, but re-election is required after five years for all staff other than professors who had been elected twice (§42). The novelty introduced in the last version is that only two five-year periods are allowed at each rank, so over twenty years *all staff must advance to full professors*. As the working life

typically lasts about 40 years, and some staff will advance faster than the minimal stipulated rate it is easy to calculate that the rules will lead to a situation where the majority of academics are in the position of full professor. The possibility of a failed re-election can be dismissed, as this never happens.

Appointment periods for graduate students are unnecessarily long. Doctoral study can last up to six years, which is much longer than the three years envisaged within the Bologna system. As students commonly continue in postdoctoral positions, the all-inclusive advanced study period can take up to ten years. If at the end of the postdoctoral contract junior scientists are not elected to faculty or research positions such long periods are unfair, as they discourage them from finding appropriate work earlier. Another important advantage of shorter appointment periods, if funding remained constant, would be more graduate student positions and the education of a larger number of students. At present, the system discourages the mobility of all graduate students other than those who are the best and usually leave the country.

As the law forbids fixed-term appointments (with the exception of external projects of limited duration) and postdoctoral positions are routinely continued for reasons explained above, a *de facto* tenure is established from a very early stage. The normal practice at the universities and institutes should see younger staff in fixed-term positions creating ideas and innovations, as they try to make a significant advance and secure the privilege of a tenured position.

The law gives a timetable for the integration of presently *legally independent* faculties into fully functional universities. This is strongly opposed by most faculties, and the process has hardly begun. If work on the integration does not start at once, final compliance is likely to be reduced to only a formality. A similar outcome has already occurred with the change to the Bologna system, hastily organised earlier this year. Due to the lack of serious preparation and the natural resistance of the faculties to change, the exercise ended as a predominantly administrative reshuffle. The majority of faculties are offering studies that are formally compliant but remain substantially unchanged.

Requirements for the election to scientific ranks (2005)

This edict defines numerical criteria, in terms of publication numbers in internationally recognised journals (as defined by the listing in *Current Contents*) for each of the rungs on the scientific career ladder. But such oversimplified judgment can never be fair. Some advances are important while others may just be routine publications that nobody reads.

Publications usually have more than one author, and contributions by different authors are not necessarily equally valuable.

Simple counting of publications has seriously distorted the nature of scientific research in Croatia. It has become more favourable to aim for a large number of mediocre publications than to make a significant advance in a chosen field. As the number of publications but not the number of authors enters as a criterion, mutual support groups have often formed and members freely exchange the favour of coauthorship.

Progress in the application of scientific advances to new technologies does not count in the promotion criteria. As a result, expensive and poorly managed state efforts aimed at making better technological use of the scientific knowledge within the country had met with little success.

During the writing of the current version of the rules the authors had been aware of the shortcomings of the numerical system. In some fields small improvements were introduced. For example, in mathematics, physics, chemistry or biology, professorial rank now requires that at least one third of international publications appear in journals with an above-average impact factor. Nevertheless, minor improvements such as this cannot correct the fundamental inadequacy of publication counting. In the specific example of the impact factor, the measure relates to the average quality of publications in a given journal and does not guarantee anything about an individual article.

Path for the future

The task of reforming a large state-run system that has not substantially changed over the last fifty years is formidable. Many institutions have been allowed to become isolated from the community while being maintained by a modest but regular income. Having accepted the need for reform, successive science and higher education ministers tried to modernise the sector without much success. The well-known inertia and the natural hostility of any established hierarchy towards a change in the old order, expressed in this case by the academic community, had made the ministers' task insurmountable. The last opportunity was lost during 2001-2004, when the current legislation was in the preparation stage.

On its own, the relatively small academic community within the country cannot find the strength to modernise. All people of influence know each other well, and thus they cannot make harder decisions that necessarily shift established privileges. The governance of the science and higher education sector can only be improved if the country is prepared to accept

expert international help. The expert help cannot come from the World Bank or similar institutions whose expertise lies in the field of finance, but from successful academic institutions of developed countries.

The plan of the present Minister for Science, Education and Sport to engage experts from the Max Planck Society and the Weizmann Institute in the process of evaluation of institutions within the Croatian system is a natural first step and should be highly commended. But this of course is only the easy part, and following through with the recommendations is the difficult task.

International help is needed in both revising the present legislative environment and in the continued running of the science and higher education system. Major improvements are not possible without a thorough regulatory revision, as the current legal restrictions would prevent the implementation of a typical list of recommendations produced by an International Advisory Board of experts.

Continuous overseeing of the work within science and higher education sector is presently the responsibility of two national bodies, the National Council for Science and the National Council for Higher Education. *The membership of these bodies should in the future be restricted to internationally renowned scientists and/or educators – both domestic and international.*

The accession negotiations therefore need to address two separate issues:

- (i) Revising the legislative environment to align it with the known best practices of the developed world; and
- (ii) Establishing the follow-up mechanism and annual reporting by the National Council for Science and the National Council for Higher Education (or equivalent bodies if they are changed in the revised legislation).

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