

Turning Croatian Science into Policy

Croatian government emphasized that science, technology, and education are the key factors in the process of integration to the European Union (EU) and transition from industrial to knowledge economy (1). However, science and research systems in Croatia are lagging behind the developed countries due to a lack of coherent scientific policy, underdeveloped quality control mechanisms, evaluation standards incompatible with international standards, and considerably lower amount of funding than in the EU member countries. Also, an overall set of values and priorities in Croatia does not favor scientific excellence as a selection criterion, which is probably a consequence of a long period of communist rule (2).

It is necessary to develop regulatory policies to ensure an appropriate conduct of scientists in Croatia. This is why we need to investigate how small scientific communities have addressed challenges in the past, what challenges they have to face today, and how newly proposed science policies can be used in the best service of society.

Wanted: venue for science policy discussion

Science policy should be based on the best available scientific knowledge, with contributions from different stakeholders – scientists, politicians, bioethicists, legal experts, and general public. For a period of time, articles on Croatian science policy were published in the *Liječnički*

vjesnik, the official publication of the Croatian Medical Association, and the editor of that journal concluded that the practice should continue. But it did not.

In 2004, the First Congress of Croatian Scientists from the Homeland and Abroad was organized in Vukovar under the auspices of the Ministry of Science, Education, and Sports (MSES) of the Republic of Croatia. This was the first serious attempt to bring Croatian scientists together and provide strategic and action plans for the development of Croatian scientific and academic policy (3). Although burdened with political discourse, this conference made a solid platform for the Second Congress, which took place in Split in May 2007. It is too early to estimate whether these gatherings have had any meaningful impact on Croatian science, but at least they generated publicity for science, stimulated networking, and provided media attention.

Also, Croatian scientists have been able to exchange opinions through occasional newspaper articles and online forums. However, these articles and discussions very often resemble yellow press and are far below the academic level.

Since its inception, the *Croatian Medical Journal (CMJ)* has consistently published articles on science policy in Croatia. Therefore, we propose that the *CMJ* introduces a special section devoted to scientific and academic policy, which will promote scientific and evidence-based decision making. This section would have

several purposes as follows: (i) to nurture scientist-citizens who can participate effectively in discussions about issues in science and society; (ii) to increase dialogue between scientists, the public, and policymakers, (iii) to promote multidisciplinary interaction among scholars in our community about complex science policy problems, and (iv) to expand public understanding of science. This section could harbor articles similar to the recent editorial by Petrovečki et al (1) or to the two recently published articles by our group (4,5). When the discussions about science policy are published in a peer-reviewed journal, they assume a higher level of importance and significance.

However, since the *CMJ* is published six times per year, not all such articles could be published in the Journal. Some could be posted on the *CMJ* Web site immediately after a fast-track peer review, or even an editorial review, while an abridged version of these online articles could be published in the *CMJ* print edition. This might satisfy both the speed and exposure requirements without sacrificing the quality of contributions.

Scientific honesty, clear methodology, and precise communication, free from political discourse, will give us usable data that can be a strong starting point for political actions. This new section would probably not increase the impact factor of the *CMJ* but would serve other equally valuable purpose. The articles published in this section would not help Croatian scientist advance in their careers. Moreover, they could be perceived as a poor substitution for "hard" science papers. However, many Croatian scientists are devoting substantial part of their time to ensure smooth running of their scientific work, which distracts them from their main research interest. Therefore, we need to understand why this is happening and what can be done to maximize scientific outputs of Croatian researchers.

In 1996 Stipan Jonjić and Pero Lučin wrote that high-quality academic research can be achieved in three ways as follows: by stimulating the return of top-quality Croatian scientists from all over the world; by enabling planned training of our scientists abroad and guaranteeing them a satisfying scientific and personal standard upon their return to the country; and by stimulating active participation of foreign scientist in taking an active part in Croatian research (6).

Let's talk

All Croatian scientists could help in developing an efficacious research system that would help accelerate economic growth and be in tune with world-class research practices. We have many role models in the Western World, but there is no easy recipe for achieving research and development goals. Therefore, we need to observe what successful countries do and try to implement it in Croatia and other small scientific communities. We need to see what we have been doing ourselves so far and which of these practices have been successful, if any. And then we need to publish it. Maximizing science effectiveness through communication should be an additional goal of scientists. This will also help us to develop culture of dialogue, which is seldom present in discussions about Croatian science.

Creative brains are a valuable, limited resource. No problem should ever have to be solved twice, so let us talk about science in small scientific community, its problems, and solutions to them. In this way, we will help bridge the gap between scientifically highly productive countries and Croatia, as well as other Eastern-European countries in transition.

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