

Action Plan “Science and Society”

SCIENCE AND SOCIETY

Main goal:

- A systematic approach to science as a social value, to communication, promotion and affirmation of science in that context, to state and institutional policies of the affirmation of science in the society.

Situation analysis:

- There is no system of tracking and analysis of the relationship between science and society other than partial research.

ACTIVITY	ACTIVITY HOLDER	DEADLINE	TARGET GROUPS	POSSIBLE SOURCE OF FUNDING
Adopting a national strategy of education, science and technology	The Ministry of Science, Education and Sports, the Croatian Academy of Sciences and Arts, and system stakeholders	2013	The government of the Republic of Croatia, line ministries, state agencies, scientific institutions and institutions of higher education	State budget
Establishment of a system of tracking and analysis of the relationship between science and society	The Ministry of Science, Education and Sports, institutions of the system	2015	All stakeholders of the system of science	Project activity

Expected result:

- A strategy of education, science and technology as an umbrella document which ought to ensure activities on the below mentioned topics related to the role of education and science in the society.

- A structured system of tracking and analysis of the relationship between science and society as a prerequisite of making decisions on the topics given below on the basis of scientifically based information.

SOCIALLY RESPONSIBLE SCIENCE

Socially responsible science through:

- Ethics in scientific work and profession.
- Encouraging and achieving sex/gender equality in science.
- Encouraging the exchange of knowledge among the academic, social and economic sector as well as intersectoral personnel mobility.
- The wholeness of scientific bibliography and the availability of research information (with delay).

Main goals:

- Harmonization of the organization of the scientific system and scientific practice with a greater social responsibility of science and with international, especially European regulations and documents.
- Intensification of the cooperation with other stakeholders of scientific and technological policy in the Republic of Croatia.

Situation analysis:

- Although there is no systematic research, numerous affairs covered by the media have undermined the image of ethics of the Croatian scientific community in the public. There are at least four problems connected to the system of ensuring ethics: 1) some institutions have not yet started making codes of ethics or the existing codes of ethics are not implemented: 2) some university components have a code of ethics which is not harmonized with the code of ethics of the university they belong to; 3) the codes of ethics of some institutions are not harmonized with the Code of Ethics of the Ethics Committee in Science and Higher Education (ECSHE); 4) there is no protection of complainants of criminal charges for scientific dishonesty and other unacceptable forms of behavior.

Action Plan “Science and Society”

- Numerous domestic studies point to a sexually uneven system of some scientific fields and organizations, professional inferiority of female researchers in scientific progress, acknowledgements and awards, under-representation of women in performing leading organizational as well as political functions, and lower availability of material resources to women.
- The existing indicators point to a weak cooperation between the scientific and economic sectors in Croatia, to a negligible influence of science on economic growth and the development of the society, as well as to the non-existing intersectoral personnel mobility.

ACTIVITY	ACTIVITY HOLDER	DEADLINE	TARGET GROUPS	POSSIBLE SOURCE OF FUNDING
Revision of the existing Code of Ethics of the Ethics Committee in Science and Higher Education and conciliation of codes of ethics of institutes and universities, and university components with the Code of Ethics of the ECSHE.	The Ethics Committee in Science and Higher Education, institutions in the system	2014	Institutions of the system	-
Obtaining the obligation of institutions of higher education and scientific institutes to comply with the Code of Ethics of the ECSHE.	The Ethics Committee in Science and Higher Education, and the Ministry of Science, Education and Sports	2014	Scientific organizations and institutions of higher education	-
Education programs of scientists and the promotion of ethics in science and higher education	The Ministry of Science, Education and Sports, the Ethics Committee in Science and Higher Education	Continuously	Scientists and researchers	State budget
Equalization of	The Ministry of	Continuously	Scientific	-

Action Plan “Science and Society”

sex/gender ratio of researchers in the system, especially in management structures (minimum 1/3 of women in national councils, regional councils, main committees, scientific and political bodies, etc.)	Science, Education and Sports, the Committee for Gender Equality		institutions and institutions of higher education	
Programs of stimulation of female scientists with the goal of increasing gender equality	The Ministry of Science, Education and Sports	Continuously	Scientific institutions and institutions of higher education	State budget
Establishment of a complete and accurate base of scientific bibliography	The Ministry of Science, Education and Sports, the National and University Library, the Ruđer Bošković Institute	2015	Institutions and scientists	European funds
Establishment of a base with research information and unpublished results (public availability of 5 years after the end of the research)	The Ministry of Science, Education and Sports, institutions of the system	2015	Scientific institutions and institutions of higher education	European funds
Adopting a national innovation strategy	The Ministry of Science, Education and Sports, the Organization for Economic Co-operation and Development, the Ministry of Economy	2014	The government of the Republic of Croatia, line ministries, state agencies, scientific institutions and institutions of higher education	State budget

Expected result:

- Increased ethics of individuals and institutions in science and higher education, better awareness and education of the scientific community in order to achieve ethics in scientific research, to act within an institution and in relationships with external stakeholders
- The development of mutual trust and cooperation of the Ministry of Science, Education and Sports, institutions and other stakeholders of the system.
- A greater sex/gender equalization of scientists and researchers.
- A better cooperation of the scientific and economic sectors.

SCIENTIFIC CULTURE AND EDUCATION

Main goals:

- Scientific and technological knowledge as a part of the basic knowledge and skills of the citizens.
- Promotion of a scientific view of the world and critical thinking.
- Education and recruitment of future scientists.

Situation analysis:

- The existing indicators point to an inadequate approach to scientific literacy and the popularity of a scientific way of thinking in judgment and problem solving of an individual and the society.
- A low level of involvement of pupils and students in research activities.
- Insufficient support for gifted pupils and students.
- Insufficient support to socially and in other ways threatened groups and individuals.
- Insufficient communication of the scientific culture as a complex of knowledge and social values that promote science.

ACTIVITY	ACTIVITY HOLDER	DEADLINE	TARGET GROUPS	POSSIBLE SOURCE OF FUNDING
Vocational training of stakeholders of the educational	The Ministry of Science, Education and	Continuously	All stakeholders of the educational	State budget

Action Plan “Science and Society”

hierarchy, in order for scientific culture to permeate the whole educational system, including the education of adults	Sports, the Education and Teacher Training Agency, scientific and higher education institutions		hierarchy	
Making an action plan of institutional support for gifted pupils and students	The Ministry of Science, Education and Sports, the Education and Teacher Training Agency	2013	Gifted pupils	State budget
Making an action plan of supporting social inclusiveness in higher education and science	The Ministry of Science, Education and Sports, the National Foundations for the Support of Pupils’ and Students’ Standard	2015	Socially disadvantaged groups and individuals	State budget
Highlighting research and project learning in the making of subject curricula	The Ministry of Science, Education and Sports, the Education and Teacher Training Agency, scientific and higher education institutions	2013	All pupils	-
The festival of science, open door days, themed nights of scientific institutions, workshops and other forms of science popularization based on the participation of the public	Institutions in the system, the media, non-governmental organizations	Continuously	Interested public	State budget

Expected result:

- Acquisition of basic knowledge necessary for the role of responsible citizens on all levels of education.
- Stronger institutional support for gifted pupils and students.
- Increased social inclusion.
- Spreading scientific culture and education.

SCIENTIFIC POLITY AND CITIZENS

Main goals:

- Scientific literacy and encouraging citizens to participate.
- Strengthening the trust in scientific community.
- Creating the mechanisms of the public’s participation in the process of making decisions about scientific and technological development and accompanying risks.

Situation analysis:

- Insufficient support of the public and the society for scientific research and to investment in science.
- Insufficient scientific competence of the public, insufficient understanding of the benefits and the risks connected to scientific research as well as the nature of scientific research.
- Absence of the mechanisms of the public’s participation in the process of making decisions about scientific and technological development.

ACTIVITY	ACTIVITY HOLDER	DEADLINE	TARGET GROUPS	POSSIBLE SOURCE OF FUNDING
Education of the scientists and the employees in the media about ethical and social implications of	The Ministry of Science, Education and Sports, scientific institutions, media companies	Continuously	Scientists and researchers, employees in the media who cover science	Through a project

Action Plan “Science and Society”

scientific research (to ensure the public’s and the society’s trust and support)				
Education of the citizens about ethical and social implications of scientific research and about the mechanisms of the public’s participation	The Ministry of Science, Education and Sports, scientific institutions	Continuously	The citizens	Through a project
Systematic informing of the citizens and the media about the activities and accomplishments of the scientists and their connection to social and economic development	The Ministry of Science, Education and Sports, scientific institutions, professional associations	Continuously	The citizens and the media	EU funds
Including interested representatives of the civil society in the process of making decisions about scientific and technological development	The Ministry of Science, Education and Sports, local and regional government, non-governmental sector	Continuously	The civil society	-

Expected result:

- Greater support of the public for scientific research and the understanding of the benefits and the risks connected to the implementation of scientific research and the application of the results of scientific achievements.
- Including the public in the process of making decisions about scientific and technological development and the participation of the citizens in the evaluation and management of the risks of scientific and technological development.

SCIENCE AND THE MEDIA

Main goals:

- The development of a strategy of improving the relationship among the media, the science and the public, with emphasis on the education of scientists and the media for communication of scientific content.
- Promoting an active role of scientific organizations and scientists in the communication with the public.
- Systematic informing of the media and the public about research activities of scientists and scientific organizations.

Situation analysis:

- The existing indicators point to insufficient representation of science in the Croatian media space, to low-grade communication between scientists and the public, and scientists and the media, as well as to the lack of a domestic service with scientific information.

ACTIVITY	ACTIVITY HOLDER	DEADLINE	TARGET GROUPS	POSSIBLE SOURCE OF FUNDING
Education of the media for the communication of scientific content, and the production of accompanying educational material	Scientific journalists, scientific community, scientific institutions	Continuously	Scientific journalists, scientific institutions	Through a project
Education of scientists for the communication with the public and the media, and the production of accompanying material	The Ministry of Science, Education and Sports, scientific journalists, scientific community	Continuously	Scientists and researchers	Through a project
Establishment of a central service/portal with scientific information for the	The Ministry of Science, Education and Sports, the National and	2016	Scientific journalists, scientific institutions	European funds

domestic and foreign public	University Library, the Ruđer Bošković Institute			
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Expected result:

- Greater and better representation of science in the media.
- Better communication between scientists, scientific organizations, the media and the public.
- Faster and more accurate informing of the domestic and foreign media and public about research activities of domestic scientists and scientific organizations.
- Spreading scientific culture.

CONCLUSION OF THE ACTION PLAN "SCIENCE AND SOCIETY":

The proposal of the Action plan "Science and Society" is based on four interconnected, but still somewhat different thematic circles:

- Socially responsible science,
- Scientific culture and education,
- Scientific policy and the citizens, and
- Science and the media

which are coherent with the main goals of the European action plan:

1. promoting scientific culture as a complex of knowledge and social values that promotes science,
2. bringing scientific policies closer to the citizens, and
3. founding public policies on socially responsible science.

Made by the working group of the Ministry of Science, Education and Sports, consisting of media employees, employees in the system of science, and employees of the Ministry of Science, Education and Sports