

Research and innovation system reform

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Current state of play:

Research system is represented by:

- 19 research institutes founded by the Academy,
- 33 affiliated research institutes from different branches,
- 12 universities accredited for research,
- 2 museums,
- 3 scientific-technological parks and
- 7 innovation incubators.

This infrastructure is sustained by:

- 3222 researchers, of which
- 1429 are doctors of sciences, and
- 441 habilitate doctors.

Quota of youth under 35 years old is 30% (883 young researchers).

Results obtained by the scientific community

| SECTION | INSTITUTE/UNIVERSITY | RESEARCHERS | ACADEMY MEMBERS | YOUTH UNDER 35 YEARS | FINANCE AND COFINANCE mln. Lei | PUBLICATIONS | PUBLICATIONS WITH IF | NATIONAL PROJECTS | BILATERAL PROJECTS | INTERNATIONAL PROJECTS | ECONOMIC CONTRACTS | PATENTS | |
|----------------------------|----------------------|-------------|-----------------|----------------------|--------------------------------|--------------|----------------------|-------------------|--------------------|------------------------|--------------------|------------|------------|
| Nature and Exact | 9/3 | 1172 | 30 | 342 | 129,2 | 2303 | 218 | 101 | 32 | 32 | 278 | 82 | |
| Engineering and Technology | 4/1 | 563 | 9 | 128 | 37,8 | 517 | 44 | 33 | 15 | 9 | 45 | 25 | |
| Medical | 8/1 | 406 | 13 | 103 | 38,9 | 1069 | 33 | 80 | 3 | 2 | 0 | 32 | |
| Agriculture | 7/1 | 392 | 9 | 114 | 100,6 | 830 | 23 | 32 | 4 | 0 | 326 | 26 | |
| Social and Economic | 3/9 | 371 | 7 | 84 | 36,01 | 864 | 13 | 51 | 2 | 12 | 8 | 0 | |
| Humanities and Arts | 4/4 | 318 | 14 | 112 | 35,4 | 1645 | 2 | 24 | 4 | 3 | 0 | 0 | |
| TOTAL | 35/12 | 3222 | 83 | 883 | 340,7 | 74,5 | 7623 | 324 | 318 | 65 | 78 | 657 | 143 |

Goal of the reform:

Reorganization and harmonization of research management with European standards.

Basic objective of reform:

- 1. Create infrastructure for management and evaluation of research and innovation.**
- 2. Review the mechanism of research financing.**
- 3. Reform of the Academy of Sciences of Moldova, guaranteeing independence and autonomy.**

Recommendations of European experts

- 1. Embed Research and Innovation (R&I) policy in the overall economic policy strategy of the country**
2. Improve the governance of the national R&I system by strengthening the political responsibility for R&I with a dedicated Ministerial responsibility.
3. Create an independent, transparent and accountable R&I implementation Agency.
- 4. Redress the binary research and education system of Moldova.**
- 5. Safeguard the public R&I capacity of Moldova and guarantee autonomy and independence of the Academy of Sciences of Moldova.**
6. Take resolute action to improve the employment and funding opportunities, working conditions and career perspectives of researchers.
7. Urgently review the framework conditions for innovation by putting in place a coherent set of policy measures.

Assuming responsibility:

Government:

- Creating premises for attracting talented youth in research
- Guarantee conditions for achieving performance in research (increase salary and indemnities, increase funding of programs and projects)
- Gradually increase financing for science by 0,05% of GDP annually.
- Commit politically to fund science with 1% of GDP by 2025.

Scientific community:

- Research for education (increase the overall level of knowledge);
- Research for business (implementation of innovation);
- Research for culture (safeguarding identity and cultural heritage);
- Research for environment (conservation of biodiversity and protection against pollution).

Main actions

- 1. Create the Consultative Council for Science and Development (CCSD).**
- 2. Establish National Agency for Research and Innovation (ANCI).**
- 3. Create an Agency for evaluation of performance in research and higher education and substitute the process of accreditation with evaluation and certification of performance**
 - a) Evaluation of performance
 - b) Certification of performance
- 4. Introduce new financing mechanisms:**
 - a) Institutional financing
 - b) Competitive financing
 - c) Cofinancing
 - d) New salary mechanism
- 5. Develop legislative framework for the reform of the Academy of Sciences of Moldova**

Consultative Council for Science and Development

- **New structure**
- Elaborate, propose and monitor priorities in research and innovation (current strategic directions)
- Recommend Government state policy for research and innovation
- Consult Prime Minister in issues related to research and innovation, scientointensive development

Benefits:

Ensure communication and cooperation between main stakeholders in the field: government, scientific, entrepreneurial associative and culture community, based on the formula: core members 51% / 49% guests

European model:

Advisory Council for Science, Technology and Innovation (AWTI - Netherlands, independent structure consulting Government and Parliament); Research Councils of the UK (RCUK - UK, consisting of seven autonomous disciplinary councils); The Swedish Research Council (SRC - Sweden)

National Agency for Research and Innovation

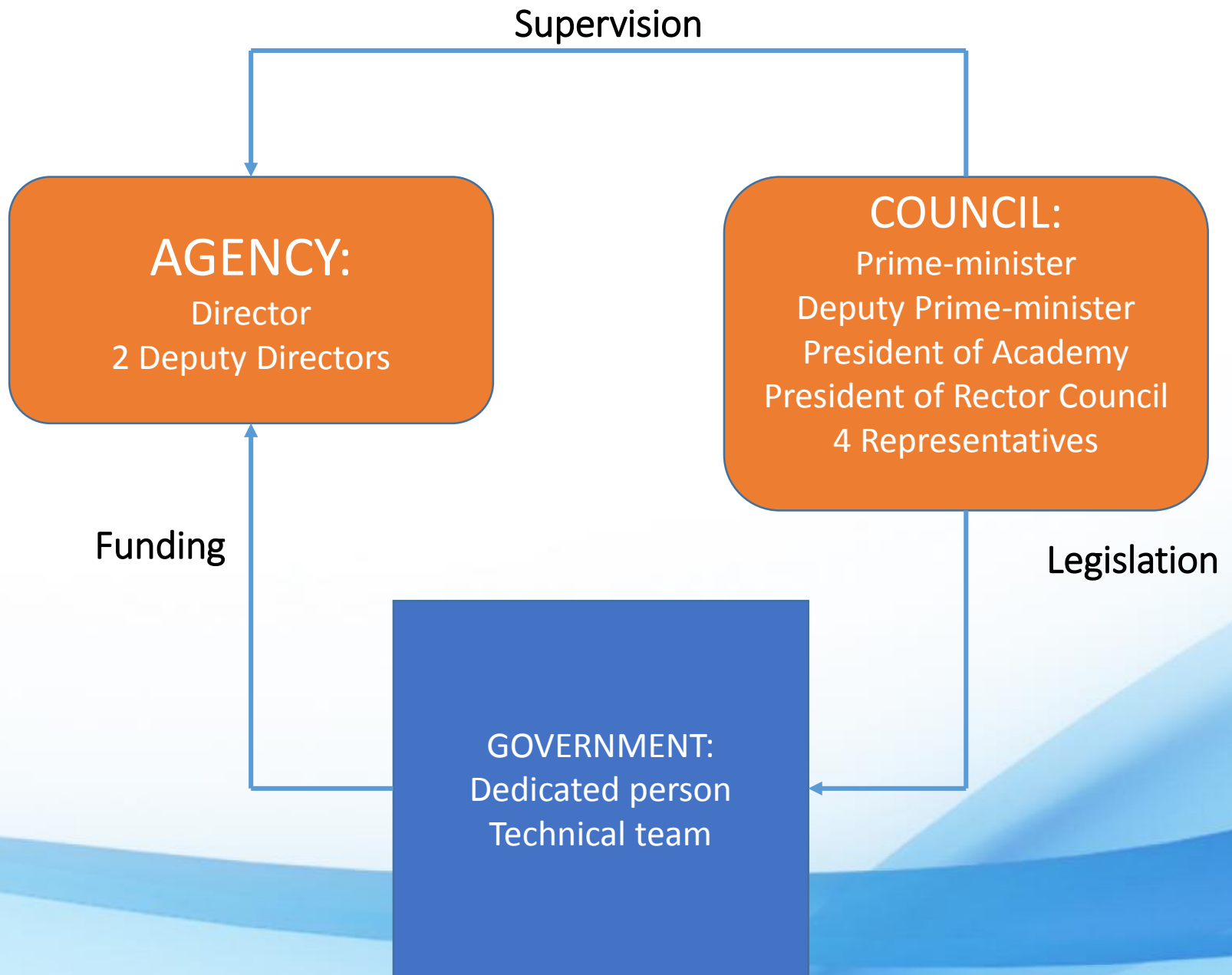
- **New structure**
- Ensure realization of state policy in the field of research and innovation
- Realizes the competition for financing of programs and projects for research and innovation

Benefits:

- Removes the conflict of interest concerning the separation of responsibilities of developing and implementing state policy in the field of research and innovation
- The agency is independent, transparent and accountable for the implementation of research and innovation policies

European model:

French National Agency for Research (ANR - France), Netherlands Organization for Scientific Research (NWO - Netherlands), Executive Agency for Financing Higher Education, Research and Development and Innovation (UEFISCDI-Romania), Irish Research Council (IRC-Ireland) National Center for Science and the National Centre for Research and Development (NCN and NCBiR - Poland)



Create one Agency for evaluation of performance in research and higher education and substitute the process of accreditation with evaluation and certification of performance

- **New structure**
- **New mechanisms for evaluation of research performance**
- Accreditation will be excluded and will allow involvement in programs and research projects of private and associative partners
- Performance evaluation and certification will allow assessment of systemic capacity and excellence of organizations in the field and its certification by the competent authority

Benefits:

- The assessment can be carried out by national or international experts
- Evaluation culture will be strengthened by adopting a new methodology for assessing research

European models:

Evaluation and certification of performance is widely used in the European Research Area

Introduce new financing mechanisms

- **New financing mechanisms**
- **Institutional funding is the responsibility of the Government to create research capacity** and will provide basic funding for necessities of Academy and branch research institutes, research centers of universities - overheads, salary for a limited number of researchers, support staff and administration.
- **Competitive funding** will contribute with additional resources based on the performance achieved by organizations through competition
- **Cofunding** will allow attracting business sector in projects

Benefits:

- A well-defined mechanism to support research that ensure the basic costs of research organizations and the opportunity to win additional funding based on performance and contacts with business
- Financing mechanisms are in line with Moldova fiscal-budget policy (funding programs)

European models:

Institutional funding is implemented in most member states of the European Union and is the common basic research funding mechanism. Competitive funding is present in all European countries, including European Programmes (FP7 and H2020) and is a way of promotion of excellence and performance in science.

Ensuring the independence and autonomy of the Academy of Sciences

- **Academy of Sciences of Moldova will strengthen its autonomy and independence**
- Academy will transmit competences of developing and implementing state policy in the field and will contribute alongside other actors in developing and implementing this policy
- Academy will consolidate the effectiveness of its work and subordinate institutions
- Academy will be financed by a distinct compartment of the state budget, which will ensure its autonomy and independence

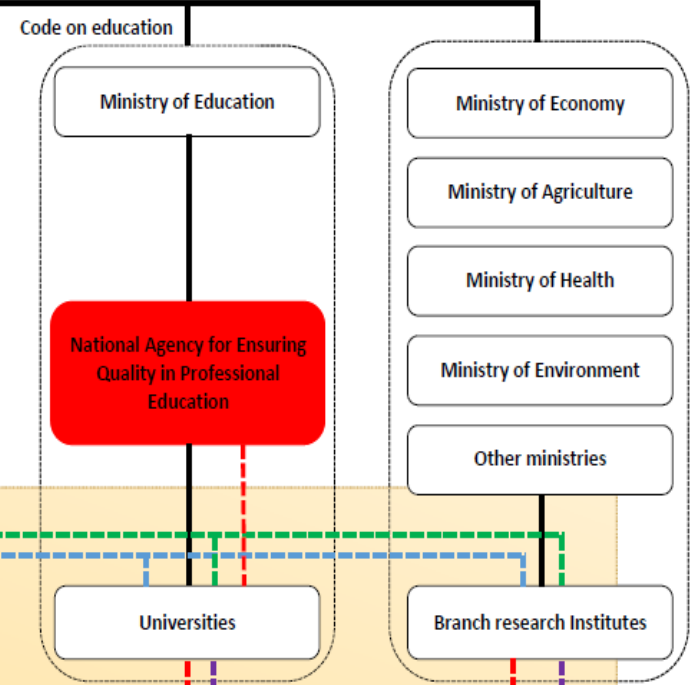
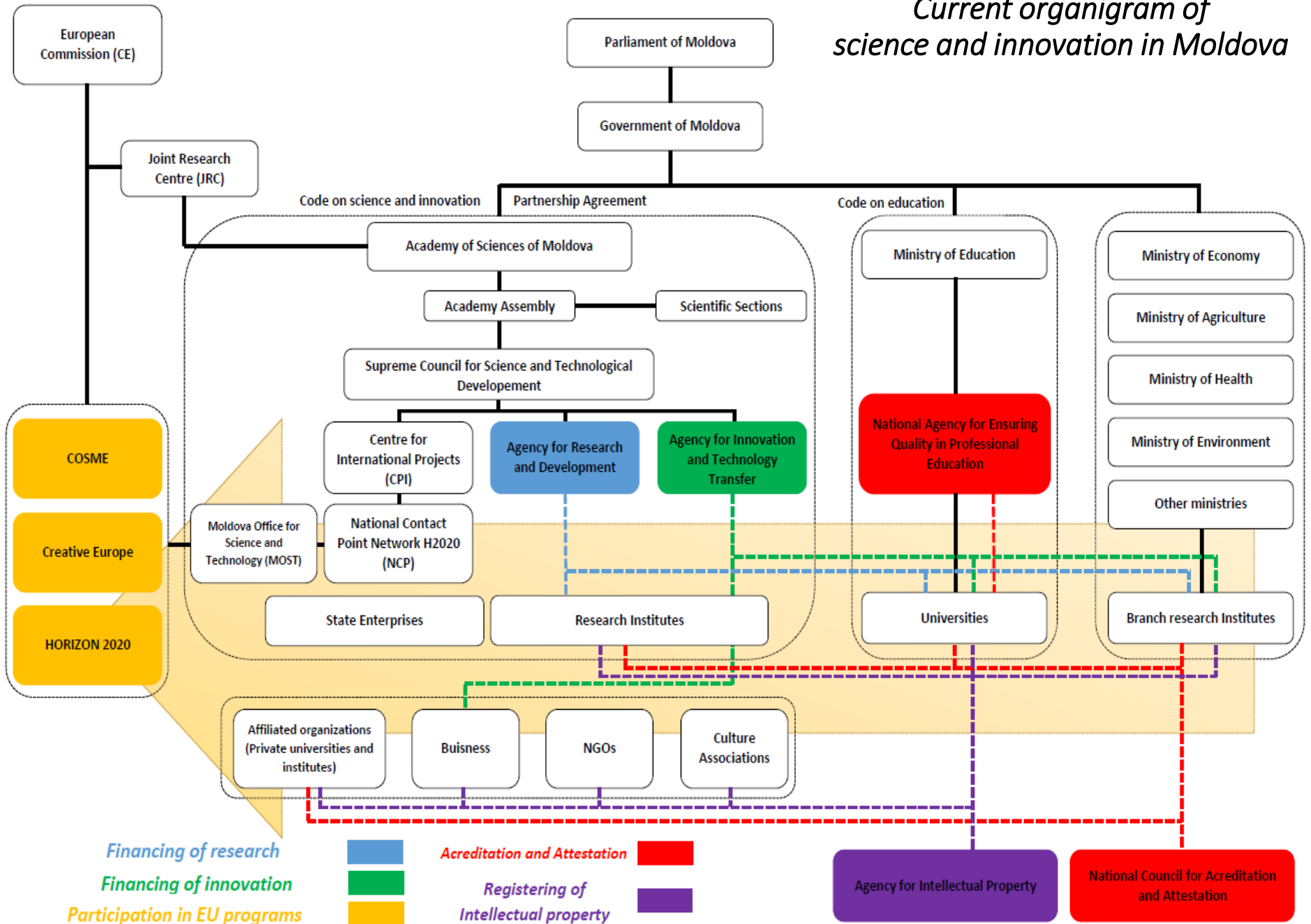
Benefits:

- Academy of Sciences of Moldova will redefine its role as the main performer of scientific research in the country and promote scientific excellence

European models:

Polish Academy of Sciences (PAS) - autonomous and independent; Austrian Academy of Sciences (OeAW) - autonomous and independent; Romanian Academy (AR) - autonomous and independent

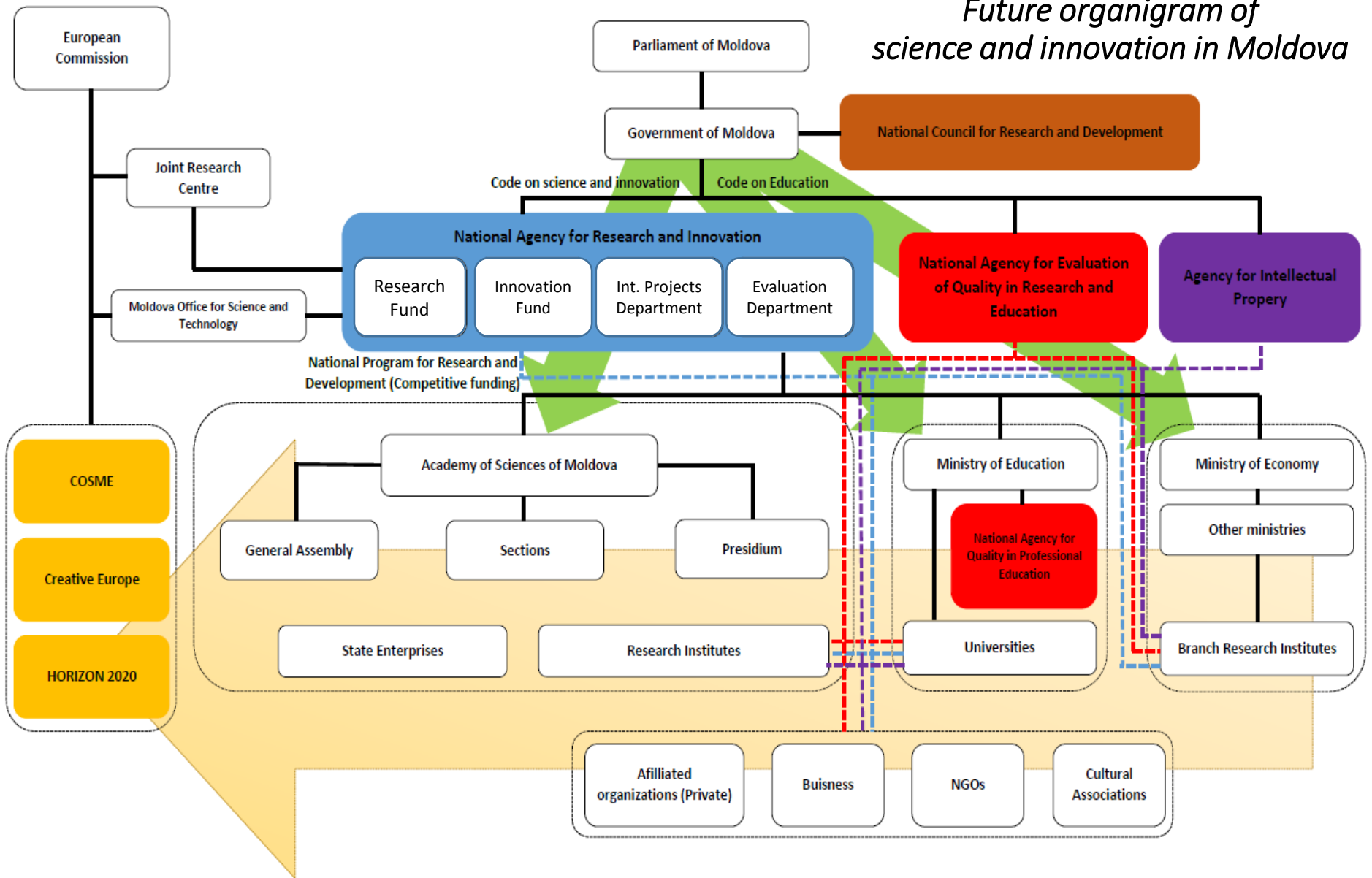
Current organigram of science and innovation in Moldova



Financing of research
Financing of innovation
Participation in EU programs

Accreditation and Attestation
Registering of Intellectual property

Future organigram of science and innovation in Moldova



Competitive financing of research and innovation



Institutional financing of research and innovation



Participation in european programmes



Evaluation and certification



Registry of intellectual property



Technical aspects of reform:

58 of 164 articles of the Code of Science and Innovation will be amended and supplemented.

Following recommendations will be used:

- experts delegated by the European Commission (H2020 Policy Support Facility)
- Foresight exercise FOR-Moldova
- Peer-review exercise „Moldova Policy Mix Peer Review”
- Performance and salary audit of the Court of Accounts
- Recommendations of Expert-Group (local NGO)
- Proposals from researchers and business

Expectations and finality:

- Elevate the role of science in the country
- Increase science funding
- Resolve major science problems
- Make national research more efficient
- New financing mechanisms of science
- New mechanisms for evaluation and certification of scientific performance
- Increase salaries and improve working conditions for researchers
- Strengthen independence and autonomy of the Academy of Sciences
- Strengthen university autonomy