NATIONAL BACKGROUND REPORT ON HEALTH

FOR R. of MACEDONIA

As publication by a project co-funded by the European Commission, the editors and project partners take note that the official name of the country is "The Former Yugoslav Republic of Macedonia"

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INTRODUCTION

Macedonia is a country situated in the center of the Western Balkans and has a pivotal position in the region. It's a small country, with surface area of 25.333 km^2 and a total amount of population of just over 2,3 million. Its capital city of Skopje is the centre of all major economic, governmental and cultural events.

Since its independence in 1991, Macedonia walked the road of all other countries in transition, with lots of difficulties and obstacles. This had its reflection on every aspect of the society, such as economy, legislature, social care and health system, the environment and the quality of everyday life. In 2001 Macedonia signed the Stabilization and Association agreement with the EU, and started the Stabilization and Association process first in the region. In December 2005 at the European Council meeting Macedonia was awarded a candidate status. With its main goal of EU integration, the country manages all its efforts and resources in realizing this goal and the objectives of entering the membership negotiation process. As a candidate state, Macedonia is committed to honoring the EU goals and implementing measures to achieving these goals and has set faster country growth and greater employment as its top priorities.

The health system in Macedonia is based on constant health protection of the population, which is provided via a network of health organizations structured in three different levels: primary, secondary and tertiary with emphasis on preventive and specialist health prevention. In order to achieve the full health potential the country manages all of the necessary funds through the Health Insurance Fund of Macedonia. The Ministry of Health regulates the conduct of legislative measures in this area of society and invests efforts to develop a contemporary health policy. Another aspect, that is also important, is the development of research in health and science and technology. This is an inter-institutional issue and lots of ministries' departments and individual state institutions take part in this matter.

But what is important to know for Macedonia is that the struggle and aspiration for development and higher standards in every area of life doesn't stop. In order to achieve this goal we need constant development of the country's intellectual

capacity and resources, up-to date research and healthy and well educated and prepared human resources.

1. PURPOSE OF THE NATIONAL BACKGROUND REPORT

As always, the investigation process and accumulation of materials needed for country background reports is a long and sometimes unending process. In order to complete this task we conducted an analysis of S&T statistical data[1], consultation with representatives of the relevant government bodies[2] and institutions. Also, an extensive search of the Macedonian Internet database was done prior to addressing the relevant institutions. We did a cross-check analysis of available statistical data in the field of health, education and R&D in our country and gathered project and research information from the relevant state institutions. Availability of complete data of S&T development and research in our country is still an ongoing issue and one of the purposes of this report is to make a contribution through addressing all of the aspects of this field, especially in the health system.

The feasibility of organizing an expert panel on the relevant R&D priorities was obstructed by the time consumption needed to rally the various target groups needed for compiling a complete and multifaceted report on each R&D health priority. When preparing for this segment we had in mind the broad participation needed to have a full insight on the public and private sector opinion on this matter. This indicates that one of the problematic areas of assessing expert opinion is the mobility of the human capacities.

In rendering this report we used the filled out questionnaire as a guideline for assessing the collected data and the sent template for background reports. We find that we have summarized the basic requirements needed for the report and we also have to note that not all of the suggested data analysis could be done due to lack of relevant information. Aside the obstacles in the methodology of data collection we hope that the report we have compiled gives a complete overview of the S&T field in the health sector of our country.

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[1] State Statistical Office of R. of Macedonia

[2] Ministry of Health, Ministry of Education and Science and Parliament

2. THE HEALTH S&T SYSTEM IN MACEDONIA

2.1. Macedonia and its health policy framework

The overall health policy framework of Macedonia

Macedonia has a wide legal system which defines and administers all of the public sectors, including health protection and social security. The basis of the health policy framework can be traced here or more precisely in the legislative bodies of the country, such as the Parliament, which prepare and adopt legislative acts. The Parliament has many operating bodies or Committees that regulate the legal framework on many different areas, and the ones responsible for the health policy framework and S&T in the health sector are: Committee for Health and Committee for Education and Science. The Committee for Health deals on legislative matters on health care protection and health care insurance of the population; contingency of the air, water, earth and life consuming product; organization and development of the health; health care conditions of the population; protection of the population from contagious diseases, the influence of the gases, radial rays, noise, pollution of the air, water and the earth; consuming products and products for public use; hygienically and epidemiological condition; medicines, additional medications, medical supporting assets, medical equipment, sanitary offices and materials; poisons and drugs; surveillance and other activities defined with the Law. The Committee for Education and Science defines and approves national R&D policy, instigates policies and deals in preparation and implementation of research policies, programs and policies for R&D in the health sector (and other public sectors) and adapts budgetary regulations relevant to the distribution of innovation and research financing.

Other relevant bodies responsible for definition of the health policy framework are the Ministry of Health and the Ministry of Education and Science. The Ministry of Health is responsible for implementation and realization of the competencies assigned by law (listed above at the Committee for health). This is done through discretionary assignments in the specific sectors in the Ministry

(Sector for primary health care, Sector for modernization, healthcare management and IT, Sector for organization and functioning of the health care in time of crisis, managing the crisis conditions, donations and strategic planning, Sector for development, investments and international-technical cooperation, etc.). The Ministry of Education and Science has the following matters in jurisdiction: education and teaching of all types and levels; organization, financing, development, and improvement of teaching, education and science; teaching and education of the children of Macedonian workers temporally living and working abroad; verification of the occupations and profiles in education; pupils' and students' standard; technological development, information science and technical culture; information technology system; international scientific and technical cooperation; supervision in the domain of its competence, and other affairs defined by law. There are few divisions included in the administrative structure of the Ministry of which the Bureau for Development of Education has the capacity of legal entity and the Department of Science and Technology which work is relevant to R&D in the country.

The Government of the country except that instigates policy framework trough the relevant Ministries, develops national strategies and programs on health trough collaboration with the Ministries and the national bodies and defines the fiscal and budgetary framework of the health sector. One of the main financial state institutions responsible for the health budget is the Health Insurance Fund of Macedonia (HIFM). HIFM acts under the Health Insurance Act and has rights, obligations and responsibilities to plan and collect funds from the contribution for statutory health insurance, using general acts to define more closely the manner of exercising the rights and responsibilities of the insured persons, to pay for health care services and financial reimbursements, to take measures to ensure efficient, effective and economic use of resources, as well as other rights and responsibilities arising from the statutory health insurance.

Another state body that defines and acts within the health policy framework is the Institute of Public Health. The institute represents a multidisciplinary scientific and educational facility and its main goal is to ensure healthy drinking water, unpolluted air and healthy food (pesticides free) for the general population. The Institute has a Sector/Department of Social Medicine which main affairs are: organization, planning and development of healthcare; health education and health promotion and medical publications for health education

and promotion; healthcare economic, analysis, planning and R&D in the healthcare system; control and prevention of healthcare violence and harm, protection and advancement of the patient rights and implementation and development of healthcare and medical standards.

Elements of health research policy making

When deciding upon research policies and instigating research in specific area, there are several authorities that preside upon the definition and implementation of the research policies. The first and most important is the Ministry of Education and Science that has the following interest areas of R&D: financing of R&D, human resources in R&D, R&D infrastructure, collecting scientific information, international scientific collaboration, science in entrepreneurship (public and non-governmental) and scientific institutional networks. Then the Ministry of Health that provides R&D policies through the Department of policy development and international technical collaboration in the Sector for development, investments and international-technical cooperation and the Sector for modernization, healthcare management and IT. They both provide financial and legislative framework for research policy making in the healthcare.

Intermediate and advisory state institution is Macedonian Academy of Sciences and Arts (MASA). The institution takes part on inter-institutional scientific and scholarly collaboration which have been made encompass co-operation on the level of joint research projects, participation in scientific and scholarly conferences and symposia and artistic events and presentations, study visits, and an exchange of scholarly and scientific experience, publications and other information. It participates in the establishment of Macedonian research policy, acts as an advisor to the Government on scientific issues, promotes and performs research. The Academy assists in the planning of a national policy regarding the sciences and arts, stimulates, co-ordinates, organizes and conducts scientific and scholarly research, especially in areas where research is particularly relevant to the Republic of Macedonia.

Another advisory and health policy maker is the Faculty of Medicine located at the University St. Cyril and Methodius and the other Institutes[3] relevant for the

[3] There are 18 Institutes working in the organizational structure of the Faculty of Medicine in Skopje, 24 State Clinics and 2 Health Centers.

health policy making. It makes contribution to the overall health policy making process with the ongoing R&D in the healthcare sector, research projects on various health subjects and the constant production of healthcare personnel and researchers.

The legislative foundation for building health research capacities is almost adopted. In 2006, the government adopted the Programme for Scientific Research, Technology and Technological Development which along with the newly developed draft Laws on Higher Education and on Scientific and Research Activity, regulate research activities and set priorities in this area. The RTD activities in the Macedonia are regulated by several laws: The Law on the Macedonian Academy of Sciences and Arts, the Law on the Scientific and Research Activities, the Law on Higher Education, the Law on Encouraging and Supporting the Technology Development, the Law for Technical Culture and the Law on Industrial and Intellectual Property Protection.

The Private Sector takes little place in the development of health research policies. This can be seen because research in Macedonia is insufficiently funded, especially by the Private Sector. Total R&D expenditures are constantly decreasing and became almost the lowest in Europe, reaching only 0.22% of GDP, of which Private Sector funding accounts for only 1.4% in the year 2003. However, the role and position of the Private Sector as a performer of R&D is still underdeveloped and has even significantly decreased. Only a small number of Private Sector enterprises are directly involved in R&D activities in Macedonia (R&D Units in Healthcare Industry and Enterprises).

The NGO Sector (Non-Governmental Organizations) comprises of several entities that give input on the creation of health policies. The main and leading NGO for policy making is the Center for Research and Policy Making (CRPM) which regularly organizes forums, roundtables, and debates offering to policy makers “just-in-time” policy recommendations that are product of comprehensive policy research, well argued and focused on Government actions on policy issues subject to the CRPM’s research interest. Other NGO that take part in modeling the health policy making process via nationally and internationally funded projects are HOPS (Healthy Options Project Skopje) and HERA (Health Education and Research Association).

Currently there are four main national strategies in the health sector, one of which is being prepared:

1) Strategy for Advancement of Emergency Medical Services (EMS) – prepared and suggested by the Ministry of Health. The strategy has the following primary goals:
    - advancement of the level of healthcare services (aid) and improvement of the patient outcome,
    - provision of equal accessibility to EMS on a national level,
    - reallocation of total expenditures to benefit the users,
    - providing information of EMS and ways of utilization for the general population.

2) National Strategy for Student's Health – developed and implemented by the Institute of Public Health. The main goals of this strategy are:
    - enforcement of the monitoring capacities of IHP and its regional bodies for audit of priority risk behavior in students,
    - demographic and geographical maps of students with public healthcare problems,
    - development of adequate healthcare interventions.

3) National AIDS Strategy for 2007-2011 – endorsed by the Government of Macedonia and the Ministry of Health. The main goal of the five year Strategy is to maintain low HIV prevalence in the country. This goal will be achieved by carrying out programmatic and policy actions in five strategic action areas:
    - HIV prevention among most-at-risk populations,
    - Other prevention strategies/activities,
    - Prevention of treatment, care and support to people living with HIV/AIDS,
    - Collection and use of strategic information,
    - Coordination and capacity building.

4) National Drugs Strategy for 2006-2012 – also endorsed by the Government of Macedonia and the Ministry of Health.

2.2. Overview of health research activities

Health research projects (2007-2012)

LARGE HEALTH PROJECTS*			
Project name	**Description**	**Author**	**Start/End Year**
INTEGRATED HEALTH IS	The project envisages introduction of permanent video surveillance system in public health institutions, introduction of electronic medical file for each citizen, new health ID – electronic health ID, centralized web portal with all information on the entities included in the health care system.	Ministry of Health	2008 /2011
HEALTH SECTOR DEVELOPMENT PROJECT IN THE REPUBLIC OF MACEDONIA	The realization of the project will ensure improvement of the capacity of the MoH and the HIF when implementing the health policies, health insurance, financial management, conclusion of contracts with the health service providers, as well as developing efficient scheme for hospital service restructuring.	World Bank	2004/2010
PROCUREMENT OF SOPHISTICATED MEDICAL EQUIPMENT FOR THE PUBLIC HEALTH INSTITUTIONS	The project envisages procurement of sophisticated medical equipment for the public health institutions. The project covers: 17 university clinics and institutes – Skopje; Clinic for Maxilofacial Surgery – Skopje; Hospital for Surgical Diseases “St. Naum Ohridski” – Skopje; Hospital for Gynecology and Obstetrics “Cair” – Skopje; Hospital of Traumatology and Orthopedics “St. Erazmo” – Ohrid; Institute of Nephrology – Struga; Institute of Cardiology – Ohrid; 15 general hospitals; 3 psychiatric hospitals; Institute of Lung Diseases “Kozle”; Special Hospital – Jasenovo and TBC Institute – Skopje.	Ministry of Health	2008/2012
ESTABLISHING A STUDENT’S HEALTH INFORMATION SYSTEM	The project’s main goals are up to date dissemination of the information on contemporary public healthcare problems in students	Institute of Public Health	2008/2012

	gathered through the Global Research of Student's Health (GRSH) and follow up of progress of the implementation of the national strategy for Student's Health.		
GENDER AWARE POLICY ANALYSIS OF THE HEALTH CARE SECTOR (DRG)	This project seeks to explore the implications on gender of the policy measures recently promoted by the Macedonian government striving to increase Macedonia's competitiveness and decrease public spending. The project consists of gender sensitive analyses that will use the following tools: gender aware policy appraisal, gender-disaggregated beneficiary assessment.	CRPM	2007/2008
EVALUATING THE CAPACITIES OF SOCIAL SCIENCE RESEARCH INSTITUTIONS IN MACEDONIA	The goal of the project is compiling a complete overview over research capacities in the area of social sciences in Macedonia. In this sense, the following information needs to be provided: Current status of research at public universities and a number of most important policy research organization (PRO) and their contact details, general framework (higher education arrangements, current reforms processes and their status, etc.), important international stakeholders, initiatives and projects and recommendations for the future focus of interventions.	CRPM	2008/2009

* - Large health projects are planned or implemented projects with a total budget over 1 million EUR.

Health research project in Macedonia can be divided in two groups (public/national and private research projects). The national research projects concerning health are the ones that are carried out by the state infrastructure and are mostly funded by state budget via the Ministry of Education and Science or other national institution. The total ongoing number of national health research projects is 37, of which 30% are undertaken by the Faculty of Medicine, Faculty of Pharmacy, Faculty of Dentistry and the relevant Institutes, 20% are conducted by the Research Center for Genetic Engineering and Biotechnology at MASA and the rest is realized by the other relevant public research entities in the country (13 research Institutes). The number of private health research projects that are ongoing is 21. Most of them are undertaken by private research

units in private health institutions and other R&D units within the medical private enterprises. Major research center presents the Special Hospital for Surgical Diseases – FILIP II, that conducts large percent of the health research (30-40%) and the rest is divided among the private sector research capacities.

Key competencies in health research fields

Macedonia has a health system that undergoes development changes, mostly in the primary and secondary healthcare sector. The R&D fields of research are numerous because there a plenty of health institutions that conduct research for public and institutional use of the findings and incorporate them in improving the standards of the Macedonian health system. But the official R&D structure is limited to several entities that have major role in the Health R&D field. The analysis of these organizations suggests that the country's key competencies are in the following areas:

- Molecular diagnosis and characterization of hereditary diseases
- Forensic identification
- Education in molecular biology
- Dentistry and esthetic dentistry
- Cardio surgery
- Tertiary healthcare
- Social and occupational medicine
- Pharmaceutical industry
- Healthy food and drinking water

Health research infrastructure

The list show below encompasses the most important institutions in the area of health research activities:

1. Research Centre for Genteic Engineering and Biotechnology (RCGEB) at the Macedonian Academy of Sciences and Arts (MASA) (www.manu.edu.mk)
2. Sector for Immunology and Microbiology and Sector for Social Medicine at the Macedonian Institute for Public Health (www.iph.mk)
3. Research laboratories of specific clinics at the University Clinical Centre (www.ukcs.org.mk)
4. 18 Institutes with R&D Units in the structure of the Faculty of Medicine, University of SCM – Macedonia (www.medf.ukim.edu.mk)

5. Institute for Biology – Faculty of Mathematics and Natural Sciences, USCM (www.pmf.ukim.edu)
6. Special Hospital for Surgical Diseases "FILIP II" (www.cardiosurgery.com.mk)
7. Center for Regional Policy Research and Cooperation Studiorum (www.studiorum.org.mk)
8. Center for Research and Policy Making- CRPM (www.crpm.org.mk)
9. WHO Country Office in Macedonia (www.un.org.mk)
10. UNICEF Office in Macedonia (www.unicef.org/macedonia)
11. H.O.P.S. (www.hops.org.mk)
12. H.E.R.A. (www.hera.org.mk)

2.3. Key drivers of health research

Main health sector trends in Macedonia

The overall objective of health policy in Macedonia is to create a system that is aligned to the needs of the population and that can operate efficiently with the resources available. Health promotion, health education and a gate-keeping role for Primary Care are high on the policy agenda. The privatization of public facilities will continue to be the subject of further discussions. Besides these, there is much allocation of resources for modernization of the health sector in the country. This is done by introducing and developing ICT in the Health, more specifically by development of the health information system through incorporation of electronic medical records for the patients and development of medical Bioinformatics, development of diagnostic related group system (DRG) and obtaining research on medical expert systems, and finally introduction of the ID health card.

The continuous advancement in health education is still main topic, and there is constant development of more advanced medical and health studies, postgraduate studies, training studies and workshops. There is a constant need of producing new, well educated and skillful human capacity in this sector that will improve not only the overall health sector, but the R&D capacity in the country in the health area.

There is also a tendency for international collaboration in experience exchange programs, regional and international projects and international and regional collaboration and partnership in the health sector.

Main socio-economic challenges in Macedonia

The highest challenge ever remains the limited capacity of Macedonia's institutions such as: slow administrative procedures, judicial inefficiency, and rigid cadastre and property rights. Areas with special weaknesses are considered to be: undefined property, non-transparency of procedures in economic transactions, a non-effective banking sector, slow judicial and public administration services. As a result of the unsuitable business climate, domestic and international investors are discouraged to operate in Macedonia resulting in weak economic growth of the country. The high unemployment rate generates an elevated degree of poverty in the country. A low degree of competitive advantage of domestic companies is visible when compared to the European economy. A considerably high level of the informal sector operates in Macedonia, generating distorting effects on the domestic economy. The structure of exported goods in Macedonia, whether in quantity or quality, remains unbalanced.

The country makes progress each year by implementing EU standards in its administrative and judiciary system. Significant efforts are invested in preparing the country for EU membership – national legislation is being adapted to EU legislation in all areas covered by EU law, EU standards are adopted in economic, political and social areas and comprehensive horizontal reforms of the public administration are conducted. Regularly monitored by the European Commission, the EU approximation process in Macedonia commands large chunk of the country's political and economic resources and enjoys overwhelming public support.

But Republic of Macedonia has made considerable progress towards EU membership if we take into consideration the regional geopolitical and domestic political circumstances, combined with the socio-economic situation of the country from its independence to the present day. However, much remains to be done in the country's EU aspirations.

3. INTEGRATION OF MACEDONIA IN THE EUROPEAN RESEARCH AREA IN THE FIELD OF HEALTH

At the Lisbon Summit in March 2000, the European Council adopted a strategy listing the strategic goals of the Union for the next decade. The strategy focuses on creating a dynamic, knowledge-based economy with strong emphasis on utilising the benefits of information and communication technologies as well as linking research and innovation closer to economic growth and employment.
Based on the Lisbon Strategy, the EU introduced changes in its Research and Development policy and introduced the Information Society policy. Both these policies contain programs, projects, legislation and regulations which need to be adopted and implemented by each candidate state during the accession period.
Based on the latest evaluation of the EU Commission and on our assessments, we can classify Macedonia's performances in harmonizing EU legislation to national legislation in these two categories: (i) areas in which Macedonia stands relatively well in adopting the Acquis and needs little effort to achieve it; (ii) and areas in which Macedonia needs medium effort in adopting the Acquis.

I. Areas in which Macedonia stands relatively well in adopting the Acquis and needs little effort to achieve:
- Fisheries
- Economic and monetary policy
- Statistics
- Enterprise and industrial policy
- Trans-European networks
- Science and research
- Education and culture
- External relations
- Foreign, security, and defense policy
- Financial and budgetary provisions

II. Areas in which Macedonia needs medium effort in adopting the Acquis:

- Freedom of movement for workers
- Right of establishment and freedom to provide services
- Free movement of capital
- Financial services
- Consumer and health protection

Researchers' mobility is expected to increase as the country gradually is getting further access to EU funded mobility programmes, such as TEMPUS and Framework Programmes and as the country has secured an agreement with the EU to liberalize the visa regime for students and researchers. Participation in the Framework Programme 7 (FP7) has been secured by signing a Memorandum of Understanding with the EU in June 2007, which allows Macedonia to participate in FP7 at an equal level with member states.

4. SWOT ANALYSIS OF THE HEALTH RESEARCH CAPACITY IN MACEDONIA

Strengths	Satisfactory level of researchers Equipped infrastructure in the research institutions Established legal framework for R&D and S&T in the country Numerous research projects and national strategies Internationally educated human capacity Increasing number of PhD students and young researchers Increasing number of NGO think-tanks in the country Increasing number of research papers and patent innovations
Weaknesses	Unsatisfactory level of budgetary, public funds for R & D Insufficient S&R infrastructure, equipment& materials Inefficient institutional infrastructure Unsatisfactory transfer of knowledge and research results in the business sector Inconvenient distribution of researchers by sectors (the number of researchers in the business sector is very low) Small investments in applied research and innovation Low level of private investments in R&D sector Unsatisfactory level of young researchers ratio in the total number of researchers Serious brain-drain problems.
Opportunities	Participation in international research projects International collaboration on a regional level Membership in EU research bodies

	Membership in other global health organizations (WHO, UNICEF, etc.)
Threats	Destabilization of the economic and political climate in the country Destabilization of the process of regional collaboration National conflicts with the neighbors

5. HEALTH RESEARCH PRIORITIES FOR MACEDONIA

Health research priorities on the basis of the country's readiness:

1) Establishment of an IT health network - to strengthen health information via incorporating an IT sector in each health institution, generating public healthcare database, public access to healthcare information and enabling an inter-institutional network of health research information.
2) Development of evidence based clinical guidelines – research and development of clinical guidelines for every healthcare practice, introduction of monitoring strategies for diseases (such as DRG) and introducing EU standards in the healthcare services.
3) Strengthening of capacity in health policy, planning, management and financing in the private sector – development of healthcare research network and R&D health units in the private sector, introducing legal framework to ease and promote the development of private research institutions and funding.

Health research priorities on the basis of future potential:

1) Procurement of high-tech research equipment for modernization of health research– this can be done by funding investments in the acquiring process of new technology and by promoting patent development and innovation research in health science and technology.
2) Prevention of brain drain and further development of think-tanks – our country is faced with serious brain drainage which could be stopped by modernization of the educational programs, making them more attractive to our student population, accumulation of large amount of government grants for further scientific development of postgraduate students and government sponsorship of think-tanks.
3) National strategy for promotion of molecular diagnostics and genetic engineering – having in mind the already developed research capacity in

these areas of research it can be very easy to develop the country's research capacities to promote further research and scientific improvement of these fields of interest, so Macedonia can become one day regional leader in molecular diagnostics and genetic engineering.