

TURKISH NATIONAL MARINE RESEARCH STRATEGY DOCUMENT

1. REFERENCE:

Turkish National Maritime Research Strategy (TNMRS) was prepared by Navigation, Hydrography and Oceanography Services Plan and Coordination Council (Council) established according to the provisions of the Regulations according to the Application of the Law of Navigation, Hydrography and Oceanography numbered 1738 put into effect by the Cabinet Decision dated 28/5/1979 and numbered 7/17725 and the Law of Navigation and Hydrography Services dated 30/5/1973 and numbered 1738.

2. INTRODUCTION:

The sea employs many natural resources important to mankind such as food and energy and offers socially, economically and ecologically valuable facilities making human life more attractive. Besides, the sector of maritime transportation has great importance with regards to the sound implementation of the economical activities. All these factors make great contributions to the welfare and economy of the countries.

Understanding world seas and our maritime jurisdiction areas better and making use of them in a sustainable manner are among the principal aims. There is a need for creating and applying a marine research strategy and the policies depending on this strategy urgently to determine the marine research priorities which are national profit oriented, to direct the research projects towards determined aims, to determine the essential position to be in the international platform.

The issues such as determining the living and non-living marine sources in and under the seafloor and in the water mass on this seafloor, their sustainable usage, environment protection, climate changes, tourism, energy and law were approached as a whole in accordance with the national interests in the preparation period of TNMRS.

3. AIM:

The aim is to realize the marine research priorities of Turkey as a whole towards national interests and necessities in order to reach a level that competes with international studies effectively, productively, scientifically and technically, to make our country arbiter and director in international platform by creating policies towards national interests.

4. SCOPE:

TNMRS covers all of the institutions and organizations active in this area.

5. THE SITUATION OF MARINE RESEARCH IN TURKEY AND THE NEED FOR A STRATEGY

a. The present situation of Turkey in marine research:

(1) The situation of scientific and technical staff: The number of the academic staff is limited in the universities conducting researchs in the field of marine sciences. It is evaluated that our country will have inadequacy of instructors in this field in the event that a new generation doesn't grow up. Similarly, there is inadequacy of specialist, researcher and technical staff in the public institutions and private organizations. One of the most important problems in this issue is the

unconcernedness of the young researchers to marine sciences because of the financial fears and employment problems.

After all, we have respectable scientists recognised in international area of the marine sciences. We can take advantage of those mentioned scientists to the greatest extent either for education or for research projects. Besides, in recent years there is a developing awareness of the necessity for new marine and maritime policies in public institutions in the frame of our international responsibilities. This situation will make positive reflections on the development of marine sciences and contribute to the training of qualified personnel.

(2) The situation of research infrastructure and research vessels: The infrastructure and standards of the observation station that provides permanent data for verification to operational oceanography, fish stocks prediction models and pollution measurements / simulations and ocean modelling systems in Turkey. High technologies in this field used in developed countries cannot be benefited in our country. A policy to supply these kind of systems and to start research and development initiatives towards developing technologies in this field and to maintain those mentioned systems is required.

Marine sciences is a multidisciplinary research area requiring a strong infrastructure and sustainable financial resources. Marine research institutions and universities include various research vessels. There is a need for a sustainable, joint system that will provide the modernization of the existing ships when needed, updating of the measuring systems and devices parallel to the developing technologies, employment and deployment of the mariner staff, solving the problems in maintenance and reparation of the ships.

b. The situation in other countries:

Our country isn't in the level desired according to medium and long term marine research policies and strategies and an institutional establishment in a national level that has the skill to actualize the marine researchs required by those strategies when compared to the other NATO member countries and the countries of EU. EU countries headed towards a cooperation between institutes by improving the integrated projects in the scope of EU framework programmes, improved their infrastructures and gave importance to the education of the new generations in different areas by the circulation of the young scientists within the EU countries in the last ten year period that the potential in our country's marine research activities have been decreasing. EU, developing these studies from 2000s has prepared the Water Framework Directive and Marine Strategy Framework Directive and started implementing.

According to the mentioned directive many EU countries created their own national marine research strategies and completed the necessary legal arrangements. Similarly, USA determined a 10 year of marine research strategy in 2007 and introduced the aims towards this strategy. Parallel to this, there are Marine Research Centers supported by the state in which researchs of marine sciences are performed in the frame of the determined strategies in many developed countries.

c. The need for a Marine Research Strategy:

Because of being bounded by seas, having strategically important straits and rich inland water resources Turkey should take advantage of these areas in maximum degree and protect them.

There is need for doing the necessary planning and developing the strategies, creating and strengthening the infrastructure so that Turkey can reach the power and position to direct the marine policies in our region. The efficiency of Turkey in a geopolitically very important area will increase in parallel with the establishment of the marine research priorities, strategies and aims and with the application of productive, effective, scientific and technological research projects intended to actualize those strategies, aims and priorities.

Acknowledging the potential at sea, protecting it and performing planned, programmed and continuous researchs in order to take advantage of them in maximum degree is an unavoidable necessity.

Developing and applying TNMRS has great importance with regards to the geopolitical position of our country. Turkey's taking place in the research activities of the EU as a candidate and undertaking a director role for creating policies is possible with right policies and strategies to be followed. The issues need to be evaluated primarily are the influences of the probable results of the marine and maritime policies of EU in the seas surrounding Turkey. A scientific support will be provided to the protection of the Country's rights and interests by the marine research strategy to be created in parallel with our national interests and the policies related to this strategy.

Besides, the EU integrated marine research and maritime concept that started to be applied in the coasts and maritime jurisdiction areas of all the EU countries will add value to our maritime sector, increase the competitiveness in the world, turns it to economical advantage encouraging the joint approach and the cooperation crossing the borders and the union of forces in condition that turkey reconstructs the marine and maritime research practises and conforms them to EU standarts.

6. AIMS OF TURKISH MARINE RESEARCH STRATEGY

a. to have strong, scientific knowledge accumulated regarding our seas and areas of interest, to this extend

(1) efficient marine research performances in our seas and maritime jurisdiction areas,

(2) encouraging marine research performances in the areas that are out of Turkey's maritime jurisdiction areas such as Antarctica and Arctic with a global point of view,

b. to overcome the difficulties in the administration of the research vessels , to develop a sustainable joint administration model,

c. to develop and maintain existing observation devices and systems,

ç. to develop national marine data and information management system and to establish the data/info sharing network,

d. to support the decision makers creating policies regarding the ecosystem approached management of seas and marine protected areas and the management and planning of integrated coastal areas,

e. to prepare and apply Marine Research Programme (NMRP) that provide marine researchs in a kind of nationally cooperative and coordinated way.

f. to contribute the global and regional international marine research projects and marine policies and to have scientific infrastructure and knowledge to provide these contributions by referring to Turkey's national interests.

g. to increase the number of scientists studying in this field.

7. COURSE OF ACTION

a. NMRP will be prepared and put into practice in order to prosecute the marine researchs within the priorities to be determined according to the strategical aims and plans of Turkish public and private institutions and in the frame of our national rights and interests.

b. The support for scientific data and information will be provided to the decision makers by possessing more comprehensive, concrete data and info regarding Turkey's maritime jurisdiction areas and areas of interest for the purpose of helping constitution of policies appropriate to national rights and interests.

c. The development and sustainability of the infrastructure and professional experts to perform advanced studies of research and observation in the future will be provided.

ç. Repeated works will be prevented by the help of coordination and cooperation, marine researchs will be executed with lower cost and higher productivity and using higher technology by more efficient and productive coordination of our research vessels.

d. An efficient source management will be done through assessment of marine living resources stock changing year by year under the influence of some factors such as climate, pollution, excessive hunting within national strategies and international acts that Turkey takes side with.

e. Researchs about determination of non-living natural resources mainly hydrocarbons and development of potential marine related alternative energy will be maintained.

f. Researchs in capacity building studies regarding climate prediction will be done and information towards plannings about the natural disasters following the climatic changes will be gathered, methods based on scientific analyses will be gathered.

g. Research and modelling studies will be done regarding the effects of marine related natural disasters (earthquake, tsunami, underwater landslide, coastal erosion, etc) and marine pollution and the necessary data infrastructure will be completed to this extend.

ğ. National and/or international funds of marine researchs will be used more efficiently.

h. Efficient use of financial resources for performing marine researchs , data collection, data sharing of the institutions in the frame of their own regulations, cooperation, national coordination in the frame of developing human resources will be ensured.

- i. Research and Development activities for the devices and systems used in marine researchs will be conducted and dependence on foreign sources will be decreased by developing new technologies, systems and abilities.
- i. Scientific contribution to the formation of environmental policies by observing water quality and ecosystem in our seas.
- j. Contributions to the targets of reaching good environment and good water quality by evaluating all the activities regarding marine environment in the frame of quality criteria to be determined in an integrated approach for sustainable usage of our seas will be made.
- k. Decision makers will be supported by constituting integrated management models regarding the sustainable usage of sea and coastal areas.
- l. Possibilities of developing the prediction models for physical, chemical and ecological mechanisms by determining the characteristics about the interaction of the seas between atmosphere, surrounding seas and the coast and developing the continuous observation and measurement capacity in the seas will be created.
- m. An infrastructure in the national level will be constituted regarding the sustainable management of sea protection areas and determination of sea habitats.
- n. Marine data and information network will be established.

Action plan shown in Appendix A in order to reach the goals determined in the scope of TNMRS will be applied.

8. COORDINATION OF THE NATIONAL MARINE RESEARCHS

In order to reach the strategical aims, coordination of the marine researchs is the main reference point. To this extent, in the frame of legal regulations, a two layered national marine research coordination model composed of Council and Performing and Directing Committee of the Council (PDCC) to be established from the body of the Council will be applied.

a. Navigation, Hydrography and Oceanography Services Plan and Coordination Council:

The council will constitute a Committee named PDCC to be chosen from its own body in order to actualise the decisions of TNMRS. The Committee will evaluate the studies of PDCC in its routine and extraordinary meetings, negotiate the issues that PDCC wants to bring to the agenda of the council and commission PDCC in the issues considered necessary.

Prepared within the body of the Council in order to perform according to the national interests, to prevent repeated operations and to enhance cooperation, NMRP will be submitted for the approval of the cabinet according to the relevant regulations.

b. Performing and Directing Committee of the Council (PDCC):

A performing and directing committee featuring to direct in national marine researchs to contribute to the plannings and international relations in this issue is required.

PDCC will offer proposals to the Council via technical studies over following the decisions of the Council, performing the duties of marine researchs, reviewing TNMRS periodically.

The Council will establish the operation principles of PDCC and PDCC member institutions and organizations. A General Secretary and a Vice General Secretary to be elected by the Council will function within the body of the PDCC and at least one of them will be an academic member of a university.

The Council will evaluate the studies of PDCC in the annual routine gatherings and extraordinary meetings and assign PDCC for the issues considered necessary.

PDCC will be responsible for offering its proposals to the Council regarding the performance of the tasks given by the Council.

Revising TNMRS biennially, PDCC will give advices to the Council regarding the amendments projected.

9. AUTHORITIES AND RESPONSIBILITIES

The implementation of TNMRS, determining the priorities of marine research in parallel with the mentioned strategy and revising TNMRS biennially is the responsibility of the Council. Considering the advices and the decisions of PDCC , the Council is responsible for coordinating marine research activities according to the mentioned strategy, updating TNMRS Action Plan and making necessary relevant arrangements.

PDCC is responsible for preparing primary fields to be supported in the marine research studies and submitting to the approval of the Council.

Prepared for setting a course for efficient usage and improving of the infrastructure and financial resources , coordination, data and info sharing , data collection, cooperation, developing human resources and research capacity in all the activities within the scope of marine resources in Turkey , TNMRS will not interfere in duties and responsibilities of the relevant institutions within the scope of their own regulations related to marine researchs and will be in force as a supportive and guiding document. Relevant institutions and organizations will maintain marine research activities that they are responsible to perform within the frame of their tasks.

APPENDIX A

ACTION PLAN REGARDING THE IMPLEMENTATION OF THE TURKISH NATIONAL MARINE RESEARCH STRATEGY

(2015 - 2023)

Implementations	Responsible/Partner Institutions and Organizations	Calendar
	Priority 1: Constitution and implementation of National Marine Research Programme (NMRP)	
National Marine Research Programme will be constituted.	<p>Coordinator: Navigation, Hydrography and Oceanography Services Plan and Coordination Council (COUNCIL), The Scientific and Technological Research Council of Turkey.</p> <p>Partners: Ministry of Environment and Urbanization, Ministry of Foreign Affairs, Ministry of Food, Agriculture and Livestock, Ministry of Energy and Natural Resources, (General Directorate of Mineral Research and Exploration, Turkish Petroleum Corporation), Ministry of Development, Ministry of Forestry and Water Affairs, Ministry of Transportation, Maritime and Communication, Office of Navigation, Hydrography and Oceanography, universities and other research institutions having physical and human infrastructure in the field of marine sciences.</p>	2015 - 2015
	Priority 2: Strengthening the researcher capacity and	

	increasing the employment opportunities.	
2.1 A road map will be determined for researcher training in the field of marine sciences and a researcher trainee management model will be established.	Coordinator: COUNCIL, Ministry of Development, Ministry of National Education, Council of Higher Education. Partners: Ministry of Foreign Affairs, The Scientific and Technological Research Council of Turkey, universities and other research institutions having physical and human infrastructure in the field of marine sciences, faculties of law.	2016 – 2016
2.2 Researcher trainee programmes in basic marine sciences (oceanography, marine geology and geophysics, hydrography) will be implemented.		2016 – 2021
2.3 Researcher trainee programmes in maritime law will be implemented.		2016 – 2021
2.4 Studies over increasing the employment capacities of academicians and researchers coming from those programmes will be done.		2016 – 2018
	Priority 3: Strengthening the infrastructure of research and increasing its efficiency in usage.	
3.1 Detailed existing situation of the marine sciences research infrastructure will be analysed, current developing trends in this field will be examined and the research infrastructures report required in marine sciences will be prepared with reference from those studies.	Coordinator: COUNCIL Partners: Ministry of Environment and Urbanization, Ministry of Energy and Natural Resources (General Directorate of Mineral Research and Exploration, Turkish Petroleum Corporation), Ministry of Food, Agriculture and Livestock, Ministry of Development, Ministry of Forestry and Water Affairs, Ministry of Transportation, Maritime and Communication, The Scientific	2015 – 2015

<p>3.2 Existing situation of research vessels will be analysed, their remaining lifetimes will be established, Research Vessels Management Model will be designed.</p>	<p>and Technological Research Council of Turkey, Council of Higher Education, universities and other research institutions having physical and human infrastructure in the field of marine sciences.</p> <p>Coordinator: COUNCIL</p> <p>Partners: Ministry of Energy and Natural Resources (General Directorate of Mineral Research and Exploration, Turkish Petroleum Corporation), Ministry of Food, Agriculture and Livestock, Ministry of Transportation, Maritime and Communication, ONHO, The Scientific and Technological Research Council of Turkey, universities and other research institutions having physical and human infrastructure in the field of marine sciences.</p>	<p>2015 – 2016</p>
<p>3.3 An inventory for the machinery and equipment belonging to our public institutions and universities used in marine sciences will be created and an analysis of productivity will be made. As a result of those studies, ‘Machinery – Equipment Inventory’, ‘Machinery Equipment Productivity Analysis’, ‘Roadmap for the improvements in existing machinery and equipment’, ‘Sample model for joint use of Machinery – Equipment’ will be prepared.</p>	<p>Coordinator: COUNCIL</p> <p>Partners:, Ministry of Energy and Natural Resources (General Directorate of Mineral Research and Exploration, Turkish Petroleum Corporation), Ministry of Food, Agriculture and Livestock, Ministry of Transportation, Maritime and Communication, ONHO, The Scientific and Technological Research Council of Turkey, universities and other research institutions having physical and human infrastructure in the field of marine sciences.</p>	<p>2015 -2017</p>

<p>3.4 Evaluating the need for the establishment of Turkish Marine Research Center (TMRC) to operate the long term measurement / observation systems and marine vessels, a study will be done regarding its structure, way of work, staff requirements, advantages and disadvantages and the regulations to be grounded.</p>	<p>Coordinator: COUNCIL, MRE General Directorate, The Scientific and Technological Research Council of Turkey Marmara Research Center</p> <p>Partners: Ministry of Environment and Urbanization, Ministry of Foreign Affairs, Ministry of Food, Agriculture and Livestock, Ministry of Development, Ministry of Forestry and Water Affairs, Ministry of Transportation, Maritime and Communication, ONHO, Disaster and Emergency Management Presidency, universities and other research institutions having physical and human infrastructure in the field of marine sciences.</p>	<p>2015 - 2016</p>
	<p>Priority 4: Representing Turkey in international projects of marine sciences, developing coordination and cooperation in relation to efficient participation to those mentioned projects.</p>	
<p>4.1 Together with our research institutions more active participation will be provided especially in European Union projects. EU 2014 – 2020 Framework Programme calls will be evaluated.</p>	<p>Coordinator: COUNCIL</p> <p>Partners: Ministry of European Union, Ministry of Environment and Urbanization, Ministry of Foreign Affairs, Ministry of Food, Agriculture and Livestock, Ministry of Energy and Natural Resources, (General Directorate of Mineral Research and Exploration, Turkish Petroleum Corporation), Ministry of</p>	<p>2015 – 2020</p>

<p>4.2 A roadmap will be prepared for taking an active role in regional and global cooperation platforms and following new initiations.</p>	<p>Forestry and Water Affairs, Ministry of Transportation, Maritime and Communication, Office of Navigation, Hydrography and Oceanography, Disaster and Emergency Management Presidency, The Scientific and Technological Research Council of Turkey, universities and other research institutions having physical and human infrastructure in the field of marine sciences.</p>	<p>2016 -2017</p>
	<p>Priority 5: Reconstructing the Infrastructure of National Hydrography and Oceanography Data Management/Sharing</p>	
<p>5.1 Because of the fact that collected marine datas show varieties (oceanographic, bathymetric, biological, chemical, geological, geophysical, etc., distributed data center management system will be used instead of managing those datas from a single center. The communication between those mentioned data systems will be provided through secure web network. The National Hydrographic and Oceanographic Data and Information Center will be established. All data and information will be in the center and they can be accessed.</p> <p>5.2 The principles of data</p>	<p>Coordinator: ONHO</p> <p>Partners: Ministry of Environment and Urbanization, Ministry of Foreign Affairs, Ministry of Food, Agriculture and Livestock, Ministry of Energy and Natural Resources, (General Directorate of Mineral Research and Exploration, Turkish Petroleum Corporation), Ministry of Forestry and Water Affairs, Ministry of Transportation, Maritime and Communication, General Command of Mapping, The Scientific and Technological Research Council of Turkey Marmara Research Center, universities and other research institutions having physical and human infrastructure in the</p>	<p>2015 -2019</p>

sharing between data centers included in the network in the extent of that system and the end-users will be established.	field of marine sciences.	
--	---------------------------	--