



OKA

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(AMASYA-ÇORUM-SAMSUN-TOKAT)

**REGIONAL INNOVATION
STRATEGY (2013-2023)**



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1. Introduction

Innovation, first described as “the pushing power of development” by Joseph Schumpeter, economist and politic scientist, in 1911, is important not only in national level but also in regional level for development and competitiveness. Therefore for the past 20 years, in many countries throughout the world, regional innovation strategies have been designed and implemented.

In Turkey, innovation is used as an important tool to decrease regional differences, successfully realize the regions’ development processes and attain goals in employment, prosperity and sustainable competitiveness.

Middle Black Sea Development Agency (OKA) started “Regional Innovation Strategy and Action Plan” activities in November, 2011. This document is expected to be a roadmap to activate the region’s innovation potential. This project that took 9 months, prioritized participation for the preparation of strategy and paved the way for implementation of strategy. In the context of the project, the workshops were realized in 4 cities of the region which are Amasya, Çorum, Samsun and Tokat. In these workshops, with the active participation of public institutions, private sector, NGO’s and universities’ representatives, the current situation of the region regarding innovation was discovered with different aspects; the steps to be taken for innovation based development were determined.

After all these activities, Middle Black Sea Regional Innovation Strategy was prepared based on new concepts and elements of new generation regional innovation strategies, including “smart specialization” approach. According to this, the strategy is supposed to be focused on small number of priorities to get competitive advantage nationally and internationally. The strategy is expected to be implemented with the effective coordination of public and private sector, NGO’s and universities, described as four helixes.





2. Current Situation of Middle Black Sea Region Regarding Innovation

2.1 Utilization from R&D & Innovation Financial Supports

In the last 5 years, 207 projects of organizations in Middle Black Sea Region have been funded by R&D and Innovation Financial Support Programs. Among the institutions that support projects, TÜBİTAK is in the first place with 145 projects. The vast majority of the projects supported by TUBITAK (118) have been funded by Research Funding Programs Directorate (ARDEB) for research projects and scientists raising projects executed by universities and public institutions. 27 projects have been supported by Technology and Innovation Funding Programs Directorate (TEYDEB) for R&D and Innovation oriented activities of private sector.

% 80 of 55 projects supported by KOSGEB in this region have been funded under the program “R&D, Innovation and Industrial Applications”. 11 projects have been funded under the program “Cooperating and Leaguings”, designed to increase private sector’s working, doing business together and using common sources. Çorum has 6; Samsun has 5 projects under this program.

3 projects from Çorum have benefited from the R&D project support provided by Technology Development Foundation of Turkey (TTGV). Another support for developing cooperation in R&D and Innovation is SAN-TEZ Program executed by the Ministry of Science, Industry and Technology. In the last 5 year period, only 3 projects benefited from this support which aims to develop university–industry cooperation. Again, only one project benefited from “Techno-Venture Capital” program’s support, a start-up capital given by Ministry to technology based entrepreneurs.

2.2 R&D and Innovation Infrastructure

2.2.1 Technology Development Zones (TDZs)

Even if technology development zones haven’t been operational yet, according to data from Ministry of Science, Industry and Technology; there are 3 TDZs with ongoing infrastructure works. Çorum Technology Development Zone’s establishment application was approved by Council of Ministers on 30th of January, 2012 and published in Official Gazette No: 28227, dated 8th of March, 2012. Tokat Technology Development Zone’s foundations were laid on 5th of June, 2012. Samsun Technology Development Zone is planned to be operational in 2013. According to the responses to the survey done in the scope of work, in Samsun and Tokat Technology Development Zones, respectively, 25 and 50 company are expected to take place, which are mostly operating software development activities.

2.2.2. Incubators

In Samsun, there are 2 incubator centers. According to the survey, a total of 39 companies operate in incubators, 13 of them in Ondokuz Mayıs University Technology Development Center (TEKMER), 26 of them in SABEK Business Development Center (İŞGEM). While there are mainly software companies (% 23), agricultural and forest machinery manufacturing firms (% 15) in TEKMER, %50 of firms in SABEK are manufacturers in healthcare sector (supplies, surgical instruments, orthopedic articles, etc.). Other companies in İŞGEM work on advertising, lighting, decoration, wooden materials, and facade systems. In addition, European Union Business Development Center (ABIGEM) that was founded in 2008 continues its operations.



2.2.3 Organized Industrial Zones (OIZs)

According to data from the Ministry of Science of Industry and Technology, Middle Black Sea Region has a total of 16 OIZs (Samsun: 5, Tokat: 5, Amasya: 4, Çorum: 2). According to the survey, the number of companies in these OIZs is 485 in 2012. There are two specialized (sector-oriented) OIZs that draw attention: Samsun-Food OIZ and Suluova Livestock OIZ.

Geographical location and transport facilities of OIZs are important in terms of cost and management of raw materials / intermediates procurement processes, as well as access to markets inside and outside of the region. According to this, the OIZs in Çorum and Tokat are the most disadvantaged areas in terms of access to the sea, due to their geographical location. In addition, the OIZs in Çorum draw attention as the most remote regions on average to railway and airway transport.

When concentrated sectors in OIZs are evaluated, we can see that the food sector is important. The second concentrated sector is metal industry. Machinery, forest products and plastic products follow these two sectors.

From OIZ, the export is realized mainly to USA, European countries (mainly Germany) and China. The companies in Samsun Central, Çorum and Merzifon OIZs realize the majority of export in this region. When OIZs export numbers are analyzed between 2007 and 2011, an increase is observed despite the global financial crisis.

2.2.4 Clusters

In this region, the cluster activities in the strategic sectors that started and continue are listed below.

- Çorum Food Processing Machinery Cluster: Led by the Ministry of Economy, in the context of “SME Cooperation and Clustering Project” funded by Republic of Turkey and European Union, this cluster is supported as one of the five clusters in Turkey. Local stakeholder in the project is Çorum Chamber of Commerce and Industry. In this project, activities are executed to increase the international market entries of SME’s and improve their competitiveness in these markets.¹
- Samsun Medical Industry Cluster (MEDİKÜM):² It was founded in 2011 to improve leaguening of the firms that operate in medical industry sector in Samsun; to enlarge and strengthen the sector by acting as the central figure in the issues of sales, procurement and R&D. By 2012, 56 companies operating in this sector are members of this association. MEDİKÜM has set a strategic plan for the medical industry, consisting of 21 items. In addition, Current Situation of Samsun Medical Industry Sector Analysis and Specialized Organized Industrial Zone Feasibility Report were published in 2012 with Direct Activity Support of OKA. This sector’s 2023 target for the export volume is 1 Billion Dollars. The sector is one of the clusters supported by “SME Cooperation and Clustering Project”.
- Merzifon Built-In Cluster:³ “Merzifon Built-In Cluster Project” was carried out in Merzifon Organized Industrial Zone with Direct Activity Support of OKA. As a result, the cluster development strategy and its road map were prepared. This cluster provides employment for more than 1000 employees and more than 30 engineers; shows important breakthroughs to improve the competitiveness, has R&D and design capability and developed international connections.

¹ <http://www.smenetworking.net/>

² <http://www.medikum55.net/>

³ http://www.oka.org.tr/ContentDownload/merzifon_ankastre_raporu.pdf





2.2.5 Laboratory Infrastructure

In this region, there are 7 experimental laboratories and 1 quality certification institution accredited by Turkish Accreditation Agency (TÜRKAK). Among these 7 laboratories, 4 are in Samsun; 2 are in Tokat and 1 is in Çorum. 3 laboratories are owned by private sector companies. According to data of TÜRKAK, there is no laboratory accredited in Amasya. The region's only accredited certification body is located in Samsun. Even if awareness on the issue began to occur since 2009 in this region, there is lack of accredited calibration laboratories for calibration of machinery and equipment used in the production process and accredited Product Certification Institutions that can contribute to marketability of the products and the competitiveness of firms.

2.3 Intellectual Property Rights

According to the data of The Turkish Patent Institute (TPE), in this region, a total of 138 patents, 188 utility model, and 226 industrial design applications were made between 2007 and 2011. All applications for intellectual property rights in the region, compared to the country's total applications, are very low (0.9%). In the region, in the same years, a total of 2432 trademarks were registered.

Table 1. Middle Black Sea Region; Patents, Utility Models, Industrial Design, Trademark Applications & Registrations Number; 2007-2011

| | Patent | | Utility Model | | Industrial Design | | Trademark | |
|---------|--------|-------|---------------|--------|-------------------|--------|-----------|---------|
| | A | R | A | R | A | R | A | R |
| Amasya | 11 | 0 | 22 | 12 | 42 | 37 | 312 | 211 |
| Çorum | 46 | 7 | 46 | 58 | 35 | 33 | 823 | 460 |
| Samsun | 57 | 6 | 97 | 58 | 131 | 109 | 2.297 | 1.148 |
| Tokat | 24 | 3 | 23 | 16 | 18 | 16 | 752 | 523 |
| TR83 | 138 | 16 | 188 | 144 | 226 | 195 | 4.184 | 2.342 |
| TR | 14.037 | 2.599 | 14.921 | 10.100 | 32.096 | 30.335 | 355.920 | 185.917 |
| TR83/TR | %9,8 | %6,2 | %12,6 | %14,3 | %7,0 | %6,4 | %11,8 | %12,6 |

Source: The Turkish Patent Institute (TPE), 2012

A: Application; R: Registration

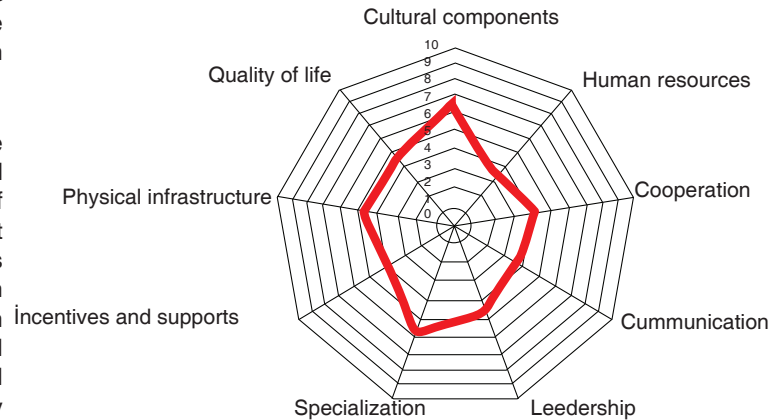


2.4 Regional Innovation Milieu

Current situation of Middle Black Sea Region's innovation milieu has been analysed by the workshops held in the provinces of region. The result of the assessments made in these workshops is shown in Figure 1.

According to this, the fact that local public have the cultural values and norms supporting innovation and entrepreneurship is the most noteworthy advantage of the region. Another positive point is the advancement provided by the specialization in the prominent sectors in the region. On the other hand, the need for human resources, strong leadership, improved communication and cooperation between the actors, creation of regional innovation support programmes, strengthening physical infrastructure and higher quality of life are the priority areas indicated by the stakeholders in the region.

Figure 1. Assessment of Middle Black Sea Region's innovation milieu



2.5 Innovation Performance of Middle Black Sea Region

Enterprises, public institutions and schools in Middle Black Sea Region are carrying out studies in different aspects of innovation and important success stories come out. According to the field research done during the strategy preparation process, in the last 3 years, of all the institutions in the region

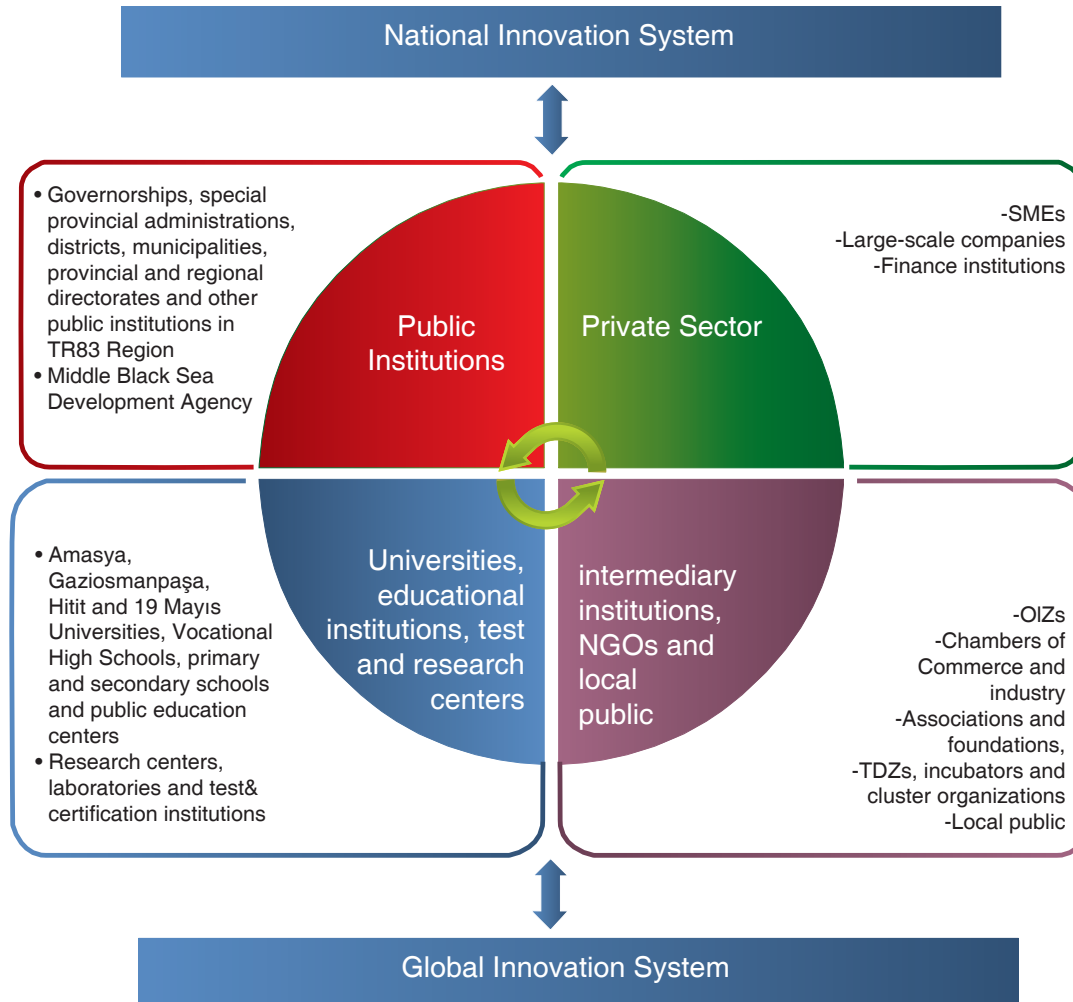
- 60% have developed new products/services and introduced to the market/use
- 69% have made considerable improvement in existing products/services
- 69% have developed and applied new business/production processes
- 71% have made considerable improvement in existing business/production processes
- 59% have applied new marketing/service delivery methods
- 50% have made considerable changes in the design and packaging of products
- 53% have carried out studies on the issues of environmental protection, energy efficiency and use of renewable energy sources
- 69% have made organizational changes for increasing institutional efficiency and decreasing costs.



2.6 Regional Innovation System

Middle Black Sea Regional Innovation System stands for the four-helix structure formed by the enterprises, public institutions, universities, other education institutions, NGOs, local public and the interaction between them. Additionally, the other components of the system are cultural norms, customs, social rules and history. Regional innovation system grows out of the cooperation between the actors in the system and effectiveness of the system depends on the quality and density of the relationship between these actors. Middle Black Sea Regional System is connected with the national and global innovation systems, as all the other regional innovation systems.

Figure 2. Middle Black Sea Regional Innovation System





2.7 SWOT Analysis for Regional Innovation Milieu

SWOT analysis for the current situation of Middle Black Sea Region regarding innovation is prepared by the workshops held in the four provinces and field research carried out during the process.

Table 2. SWOT Analysis Matrix For Regional Innovation Milieu

| STRENGTHS | WEAKNESSES |
|--|--|
| <ul style="list-style-type: none"> • Existence of strong manufacturers operating internationally • Diversity of transportation networks in the region • Existence of renewable energy resources • High number of young and entrepreneur people • Existence of firms prone to risk-taking and innovation • Existence of universities and vocational schools • Existence of clustering activities in the region • Regional stakeholders experienced in project management • Existence of production and innovation infrastructures (TDZs, OIZs, etc.) • The fact that local public attach great importance to education and entrepreneurship | <ul style="list-style-type: none"> • Need to improve the relationships and culture of cooperation between the actors in the system • Difficulties of most family firms in institutionalization, organization and planning • Lack of qualified human resources because of the migration of well educated people from the region • Need to develop the R&D and innovation capabilities and infrastructures of the firms in the region • Deficiencies of the firms in branding, promotion, design and marketing • Need to improve the cooperation between universities and firms • Need to increase awareness on innovation in the society • Low level of incentives and finance for innovation |
| OPPORTUNITIES | THREATS |
| <ul style="list-style-type: none"> • Increase in the importance attached to R&D and innovation in Turkey • The fact that provinces in the region are in 3. 4. and 5. regions in the new investment incentive system and R&D and environmental investments are supported • Development of measures to commercialize the results of academic researches • Opportunity of becoming a logistics center thanks to increases in railway investments and other facilities • Active participation in national and international programmes for research and innovation | <ul style="list-style-type: none"> • Ongoing migration from the region due to deficiencies in social and economic opportunities. • The fact that the region is not preferred for large-scale industry investments • Decrease in the competitiveness of the regional products due to cheap import products from China and India • The fact that plains are not utilized in agriculture and agricultural fields are affected by environmental pollution • Global and regional economic crisis. |





3. Middle Black Sea Regional Innovation Strategy

3.1 Vision and Goals

In order to use innovation as an efficient tool for development and competitiveness of the Middle Black Sea Region, it is important to have a vision that all stakeholders agree on. Shared efforts through this vision will realize the required acceleration for desired development in the region and to reach development goals. Vision of regional innovation is based on common future goal determined through participation and contribution of stakeholders.

Innovation Vision of Middle Black Sea

Thanks to innovative and entrepreneur society together with its competitive sectors, Middle Black Sea Region will be a pioneer region for development at national and international level in 2023

Strategic goals depending on the findings mentioned and the desired vision are below:

- Turning the region into an international brand mark (for) having high competitiveness in strategic sectors,
- Becoming an attraction center for qualified labor thanks to companies with high innovation performance,
- Hosting R&D and innovation centers of national and international companies thanks to suitable environment for innovation and incentives,
- Increasing the comfort and the quality of life of the whole society through “Inclusive innovation” approach.



3.2 Strategic Goals

Short and medium term goals intended for strategic Indicators of Middle Black Sea Region are below (Table). Mentioned goals are foreseen by taking into account the results of the implementation of road map determined under Innovation Strategy and Action Plan of Middle Black Sea Region, national objectives related to innovation and regions abroad similar to ours.

Table 3. Strategic objectives related to innovation in Middle Black Sea Region

| Indicator | Existing situation | Short term objectives (As of 2018) | Medium term objectives (As of 2023) |
|--|--------------------|------------------------------------|-------------------------------------|
| The proportion of R&D expenditures within Regional GDP | : | 1% | 2,5% |
| The proportion of researchers within total employment in the region (full time equivalent) | : | 0,5% | 1,5% |
| Number of annual patent application | 36 | 80 | 150 |
| Number of annual utility model application | 43 | 100 | 200 |
| Number of annual industrial design application | 62 | 150 | 300 |
| Number of doctorate students studying science and technology in the regional universities | 491 | 700 | 2000 |
| Newly established innovative firms+ start ups (annual) | : | 200 | 500 |
| Regional added value per capita | \$ 6.914 | \$ 12.000 | \$ 17.000 |
| Total export of the region (2011, USD) | \$ 686 million | \$ 1 billion | \$ 2 billion |
| Regional unemployment rate | 5,3% | 4% | 3% |

: Data is not available



3.3 Strategic Breakthroughs

Strategic breakthroughs that the region will focus on during the development and competitiveness phase based on innovation are as follows:

- Increasing innovation performance of private sector and increasing entrepreneurship based on innovation
- Strengthening R&D and innovation infrastructure together with human resources
- Encouraging and disseminating social innovation and innovation in public services.

Activities related to these are available in the parts below:

Figure 3. Strategic Breakthroughs of Regional Innovation Strategy of Middle Black Sea Region





3.3.1 Increasing innovation performance of private sector and increasing entrepreneurship based on innovation

Comparative advantage of the region is likely to rise if the economic value and employment increase, existing firms invest in innovation and new dynamic firms are founded.

The first step will be increasing R&D and innovation practices in strategic sectors of the region. Priority sectors during the strategy phase are below:

- Medical device and equipment
- Machinery, equipment and domestic appliances
- Agriculture and food
- Tourism
- Natural stone and soil industry

Medical device and equipment sector has been developing in Samsun. Clustering activities of the sector is an important step for competitiveness. The companies should invest in R&D and innovation more and systematically by the way economic value and employment could be increased. Machinery, equipment and domestic appliances sector especially food processing machinery in Çorum and electrical equipment and domestic appliances in Merzifon has a potential for generating comparative advantage. Making 17% of total exports in Samsun, machinery sector stands out in the region⁴. Clustering activities pave the way for development of the sector. Agriculture, food and tourism sectors are to be developed and strengthened in terms of value added and employment. Natural stone and soil industry (marble, tile, brick) stands out in Amasya, Çorum and Tokat.

Further steps regarding this field are below:

3.3.1.1 Increasing R&D and innovation activities in strategic sectors:

1. A support programme intended for encouraging R&D and innovation projects will be implemented. The projects related to product, process, organization and marketing innovation in the relevant sectors will be supported within the context of the programme. The support will not be just a financial support. The companies will be provided an expert to develop project ideas, to choose the project with highest economic value and to design and implement the selected project ideas minimizing technical, administrative and financial risks.
2. The steps needed for companies in strategic sectors to benefit from national and international supports will be realized. The companies will be enabled to benefit from national support programmes especially those of Ministry of Science, Industry and Technology, Ministry of Economy, TÜBİTAK, KOSGEB and to carry out projects aiming at increasing their competitiveness via

⁴ <http://www.makinebirlik.com/tr/samsun>





funds of European Union and other international institutions. In addition to this, studies intended for increasing investment in R&D and environment in the context of “Decision About Public Incentives for Investment” coming into force with the cabinet decision dated June 19th 2012 and numbered 2012/3305, will be carried out.

3. ‘SME-Big Company Visit Programme’ will be designed and then implemented. The program which will be a response for the expectations of the companies intended to develop their competence and capabilities related to R&D and innovation, aims at accelerating the process of learning and developing competence by bringing together SMEs and big companies. Visits will be realized first within the cities of the region, then at regional level and finally at national level. Internationalization of the programme in the midterm will be realized by visiting leader companies abroad in order to increase the competencies of SMEs.
4. “Support Programme for Developing Global Entrepreneurs” will be implemented in the medium term. This programme aims at launching, accelerating and facilitating the process of “opening out to new markets” and “increasing the market share” which are emphasized by companies during the field studies. Activities like cross border relationship in addition to export, involving in international network, opening up branches/offices and setting up partnerships abroad will be promoted. Studies indicate that internationalization of the companies goes hand in hand with performance increase. Proactive internationalization supports growth, raises competitiveness and ensures the company’s sustainability in the long term⁵. Despite its advantages, internationalization is risky for SMEs. SMEs may sometimes lack knowledge and competencies for setting up accurate links, managing judicial process as well as overcoming financial problems.
5. Supported fields in the context of the programme are those below:
 - o Raising awareness on the issue between regional enterprises
 - o Acquisition and dissemination of qualified knowledge regarding countries, markets and sectors
 - o Specializing in branding, foreign marketing and sale and bringing up human resource
 - o Integration of regional enterprises to national and international networks
 - o Providing guidance and mentoring according to each enterprises’ situation and needs
 - o Supporting branding investments
 - o Providing access to national supports related to the issue

5 European Commission (2008), Supporting the internationalisation of SMEs: Good practice selection



3.3.1.2 Improving R&D and innovation cooperations:

1. There will be a support programme implemented for the 2 or more regional enterprises coming together to develop innovation projects falling into “new for the firm” category and realize them. In the framework of the programme, there will be not only financial support but also guidance and mentoring in many fields such as responsibility and sharing of intellectual property as well as commercializing the results in order to develop an effective cooperation model. At the same time, in order that enterprises develop collaborative work there will be trainings to increase social and personal skills. In that respect, this programme will support clustering activities in the region. In addition, taking into account the difficulty of finding partners for the projects, there will be a regional database established which simplifies finding partners and also there will be activities bringing together potential partners. The universities will be encouraged to participate into the projects together with enterprises. For that reason this kind of projects will be supported with more attractive conditions.

3.3.1.3 Enabling establishment of new firms based on innovation:

1. There will be awareness raising and training activities in regional universities between academicians, students and graduates on the issue of entrepreneurship and commercializing of research results. Related to this issue, success stories from the world, Turkey and Middle Black Sea Region will be disseminated, information meetings and workshops as well as project market activities will be organized.
2. One to one mentoring and guidance services will be provided to academicians, students and graduates who have entrepreneurship potential and who are willing to realize innovative ideas or commercialize research results. In the scope of this activity, results of present research will be analyzed by the experts and the ones which have patenting and commercializing potential will be determined and establishment of university spin off enterprises will be ensured. In each university a technology transfer center aimed at serving in the subject will be formed.
3. Annual business plan contest will be organized targeting potential entrepreneurs who want to start up their firms in the value chains of the strategic sectors. The winners will have startup capital, office support and mentoring support. The relevant support will be financed through sponsorships from the region.
4. Successful business people in Middle Black Sea Region and other regions of Turkey or in foreign countries will be encouraged to open business employing human resources and university students of the region. For this reason, potential investors will be identified and contacted, necessary initiatives will be taken to attract R&D and innovation activities to the region.
5. A business angels network composed of successful and wealthy entrepreneurs and business people of the region will be established. Necessary initiatives will be taken to add people into this network who have their origins in the region but work in other regions. In addition, other business angels networks in other regions/countries will be contacted and relevant business opportunities will be promoted. Necessary coordination mechanisms will be formed in order to ensure that business angels investment will be channeled to develop high value added products and services in strategic sectors.
6. In the universities of the region lectures on applied entrepreneurship and creative thinking will be opened and establishment of entrepreneurship clubs will be encouraged.





7. A pool of mentors will be formed in order to guide potential and present entrepreneurs and help their integration into global networks. As mentioned frequently in the field works, one of the most important needs of small enterprises and new entrepreneurs is regular mentoring providing knowledge intensive business service. In order to provide this support a regional Mentor's Pool Programme will be designed composed of experienced entrepreneurs and experts who have expertise in strategic fields that the companies need. The steps of Mentor's Pool Programme are; ethical and professional rules regulating mentor-entrepreneur relations, integration of experienced and knowledgeable experts and organizing regular events bringing together mentors, entrepreneurs and business owners.

3.3.1.4 Encouraging the public for entrepreneurship and innovation:

In order to raise awareness on entrepreneurship and innovation and motivating entrepreneurship in areas like –agro-food and tourism which cover the whole segments of the society, following steps will be implemented:

1. Formulating and developing new business ideas will be encouraged specifically among women, young people, unemployed university graduates. In this respect the relevant target group will be encouraged to benefit from SME Development Organization (KOSGEB).
2. Successful role models will be promoted by putting forward successful entrepreneurs and sectoral competitions will be organized in traditional sectors especially tourism and agro-food to promote innovation (Tourism Entrepreneur of the Year, Most Innovative Tourism Enterprise and Innovation in Agriculture etc).
3. The development and dissemination of programmes instructing innovative entrepreneurship to students in primary and secondary schools will be realized (Youth Entrepreneur Training Programme which is implemented in some high schools of some provinces, one of which is Samsun. Also, Gümüşhacıköy High School started to work for implement a similar programme. The dissemination of the programme will be ensured by benefiting from other high schools' experiences). In relation to this, necessary steps will be taken to have innovation and innovative entrepreneurship courses in vocational schools; in cooperation with enterprises it will be ensured that students at vocational schools will be equipped with necessary innovation skills. To this end, the Ministry of Education will be contacted.
4. Innovative entrepreneur networks will be formed where entrepreneurs of provinces share their experiences and discuss their common problems. In this way, it is aimed at forming a support platform. In this way, entrepreneurs will be informed of each other.
5. It will be ensured that in Technology and Design courses of primary courses which aims at bringing innovation and entrepreneurship culture and skills, the themes social innovation and implementation targeting innovation in strategic sectors will be lectured. In addition, at the end of the year a fair will be organized to present the works of the students.
6. In cooperation with Provincial Education Directorates and other relevant institutions, it will be ensured that innovation culture will be introduced beginning from pre-school education. To this end, restructuring of curriculum will be discussed.



3.3.2 Strengthening R&D and Innovation Infrastructure and Human Resources

For increasing the competitiveness of the regional enterprises, the quality of R&D and innovation infrastructure has an important role. While it is necessary to strengthen present infrastructure's functions, also the lacking infrastructure should be completed. For this the steps that should be taken are:

3.3.2.1 Developing pre-incubators, incubators and techno-parks:

1. Pre-incubators will be established for enterprises planned to be founded by academic entrepreneurs (university students, graduates and academicians). These incubators will serve for developing business ideas and projects in commercial and technical ways. Before entrepreneurship activity starts in practice, in order to reduce technical and commercial risks and preparing the entrepreneur candidate for the next step necessary infrastructure, training and guidance will be provided in this pre-incubators. These pre-incubators will be established in 4 universities of the region, too. The entrepreneurs who graduate successfully from these pre-incubators will go Technology Centers (TEKMER) and Business Development Centers (İŞGEM). In the last phase of this process, the entrepreneurs will be placed in techno-parks. For this reason, necessary facilities will be provided for R&D units of enterprises and the entrepreneurs who have R&D origin except academicians.
2. The techno-parks in the region are going to be established by a vision contributing to economic and social development of the Middle Black Sea Region. The structuring and activities of techno-parks will be shaped according to this vision. In this respect priority will be given to enterprises which operate in the value chains of the strategic sectors and have strategic partnerships. For the techno-parks, Guidance Committees will be formed composed of high ranking representatives of universities, public and private sector. Committee will be responsible for determining strategic directions of techno parks, developing necessary facilities for improving strategic sectors. Besides, the techno parks will serve for new enterprises' incubation, knowledge and technology transfer to universities, support to clustering activities and training human resources for R&D and innovation. To implement these activities successfully, there is need for an experienced management team. In order to increase the knowledge and experience of management team and Guidance Committee, international and national examples will be visited. Cooperation with best practices will help to internalizing the tacit knowledge. This process will be speeded up by formal trainings.
3. In order to make sure that present TEKMER and İŞGEM will serve better to more enterprises, necessary facilities will be provided. Successful incubator models will be analyzed, good models will be transferred. Depending on the success of pre-incubators, incubators in the other provinces of the region will be planned. Some of the techno-parks will be separated for providing incubation service and base.

3.3.2.2 Establishment of R&D, innovation and design centers:

1. Medical Technologies R&D and Innovation Center will be established in order to increase the value added in strategic sectors by realizing R&D activities, developing new technologies, bringing up new researchers and serving for testing and certification. The center which is going to be set up in Samsun will be as an investment increasing the prestige of the region and as an attraction center for the qualified labour force. In relation to this subject, with the leadership of Ondokuz Mayıs University a team of regional universities will be formed and this team will have site visits to similar examples (for example medical research





centers in Scotland and Germany) to prepare a business plan of the center. After the preparation of the business plan, for the establishment of the center and for the projects resources will be taken from The Scientific and Technological Research Council of Turkey and The Ministry of Science, Industry and Technology. Together with the center, master's degree and doctoral programmes will be designed and implemented in the regional universities.

2. "Food Technologies R&D and Innovation Center" will be established to give service to agriculture and food sectors. The establishment of the organization will be executed as mentioned above. The center will serve with its laboratory in product, process, and technology development in addition to food biotechnology, microbiology, food security etc. The center will have main duties such as developing specialists and researchers in these fields. With this purpose, master's degree and doctoral programmes will be put into use. of Tokat Gaziosmanpaşa University and will operate with the active participation of the regional universities and sectoral institutions.
 3. "Machinery and Material R&D and Innovation Center" will be established for the development of high quality and unique products in the regional machinery sector. The center will be established by the leadership of Çorum Hitit University and principles mentioned above will be followed in the organization and activities of the center.
 4. Serving mainly for the strategic sectors a "Regional Design Center" will be established. The design center will serve for the private sector in the region by producing unique and high added value product and package designs. The center will be established in Amasya to serve for all the sectors for developing designs focused on marketing innovation in cooperation with the private sector. Paralelly to the planning period of the center, The Industrial Design Department of The University of Amasya will be strenghtened in terms of academic staff, academic curriculum and pyhsical infrastructure. For this reason, The University of Amasya will cooperate with the universities which have strong industrial design departments (METU, ITU, etc.) and will sign protocolles to form the base for the transfer of knowledge and expertise.
 5. To serve to all institutions and sectors "Middle Black Sea Regional Innovation Center" will be established. The main facilities of the center will be; to create the awareness for innovation in all the regional institutions and in public; to collect and disseminate datas about global developments and innovation trends in the strategic sectors; to establish innovation culture in public bodies and to train how to manage innovation processes by support of trainings and consultancy services; to begin projects and cooperation between public bodies/ cities/ regions/ international partners. Additionally, the center will determine human resources needs of the enterprises and take the necessary measures in this respect.
- In all the centers to be established:
 - Cooperation between private sector, public bodies and universities will be essential;
 - Organization, activities, anticipated outputs, results, and impacts will be determined scientifically and included in five year strategial plans and yearly bussiness plans
 - To reach to the highest point of added value, their performance will be measured every year according to performance criteria to be detemined annually
 - The following criteria will be included in the performance criteria chart: the number of intellectual property rights applications (patent, utility model, industrial design registration, etc), the number of researches which will be commercialized by the



private sector, the number of the start-ups established by the researchers in the centers and the number of master and doctoral researchers.

- The managers of the center will professional experts in their fields. Research and design teams will be composed of full time experts as well as researchers from the universities within the region. Depending on the need, managers, researchers and designers would be transferred from other regions.

3.3.2.3 Developing clustering activities:

For the clustering activities to serve for regional development and competitiveness, the cooperation of all stakeholders and actors is essential. In this context the main steps will be:

1. Partnership projects in the subjects of R&D and innovation will be started by the members in the existing clusters with references to best practices in the global contexts.
2. Necessary steps will taken to establish clusters comprising 4 provinces in the sectors of agriculture-food, tourism and stone&soil. For this aim; in each city a sectoral clustering committee will be formed by the leadership of the sectoral delegates so that successful regional, national and international best practice examples in clustering can be visited in their places. Benefiting from the know-how and experience of these examples, road maps will be prepared for three sector clusters. All cluster activities will focus on the development of high quality and unique products and services, increase in national and international market shares. In the medium-term clusters will be matched with national and international clusters and partnership between clusters will be developed.

3.3.2.4 Improving regional universities:

For the empowerment of regional universities in education, research and third mission (commercialization of researches and public service) steps will be taken. The following steps are:

1. In the regional universities necessary studies will be done to open departments which will support education and research activities in the strategic sectors, develop suitable curriculum for the daily and future needs and develop academic staffs by number and quality. The universities will determine the priorities for research and innovation activities with regard to their current research infrastructures, specialized research areas, strategic needs of the region and global trends and anticipations
2. The regional research infrastructure inventory will be entered into the TÜBİTAK TARABİS system perfectly. The research infrastructure inventory will be disseminated to all universities, researchers and private sectors within the region, neighboring regions and Turkey.
3. The inventory of researches and expertise fields of academicians and researches in the regional universities will be done and entered into the TÜBİTAK ARBİS system. The research inventory will be disseminated to the academicians regional, neighbour and national universities and to the private sector for encouraging academicians and researchers to cooperate.
4. Mentoring services will be provided for the academicians and researchers to develop, involve and manage national and international research projects. In this context, additionally, regular training programmes on developing and managing research projects, will be organized for researchers and university students and if needed, consultancy services will be provided.





5. The researchers and academicians in the region will involve in national and international projects and cooperation of regional universities with the universities and research institutions in Turkey and Europe will increase.
6. A staff exchange programme comprising education and research activities will be started among the academic staff of the regional universities. At the second stage of these programme mobility will be carried out with the other universities in Turkey too. At this point, the universities which have carried out successful researches and education activities in the strategic sectors of the region will have the priority in this activities.
7. The post-graduate programmes of the regional universities will be strengthened and especially the number of doctoral students will be increased. Thesis and research studies producing results with economic and social values will be carried out. In addition to this, to increase the activities of the researchers in the regional universities in quantity and quality, a one or two years post-doc scholarship programme will be designed and implemented.
8. A prestigious “researcher and young researcher awards” will be organized and implemented in the region.
9. Initiatives will be made to get EU funds which have been developed for the pre-accession period of Turkey in order to increase the mobility of researchers and strengthen the research and innovation infrastructure of the region.
10. A regulation will be put into use that will provide intellectual property rights applications will be made before the publication of the results reached at the end of the researches in the universities and the other education centers. In accordance to this regulation, technology transfer offices, will actively cooperate with university directorates. In addition, for applications for intellectual property rights, studies will carried out to benefit from the programs run by KOSGEB and TÜBİTAK.
11. The universities will organize short term training programmes in cooperation with enterprises to train intermediate staff to gain qualifications and innovation capabilities needed by the private sector. Therefore, the curriculum programmes in the life-long education centers of the universities will be reviewed and updated together with the industrial organisations and needed trainings will be lectured by qualified trainers.

3.3.2.5 Improving organized industrial zones and other infrastructures:

The increase in regional innovation activities is in close relationship with the infrastructural development of OIZs and the other physical infrastructural strengthening activities. Accordingly;

1. The services and infrastructures provided by OIZs (transport, energy, communication, etc.) will be reviewed and improved with a view to increase the competitiveness of the enterprises they are hosting. In long run, experts in innovation and competitiveness will be employed in OIZs so that they can get into touch with enterprises who need consultancy about innovation and competitiveness.
2. The number of specialized OIZs will increase.
3. With the participation of senior representatives of the relevant institutions and the private sector, working groups on the issues of urban aesthetics, sustainable urbanization, transportation, communication, and effective environmental and energy management will be established in which the needs and areas of improvement will determined and the actions will be



implemented in order to meet them. This aspect of the matter is very important to develop the tourism sector in the region and attract qualified investment and human resources

4. Laboratories with services of test, measurement and certification in the areas needed by the sectors in the region will be established

3.3.3 Encouraging and disseminating social innovation and innovation in public services

In order to increase added value in economy and public values in the region and get success in the process of development, innovation should be activated not only in the private sectors but also in public bodies. On the other hand, to overcome social difficulties and problems and enable the public to play their role in development process, social innovation should also be encouraged. Social innovation triggers innovation in the other sectors at the same time, by creating employment opportunities and increase in activity, efficiency and performance in public services. Thus, Middle Black Sea Regional Innovation Strategy, has the aim of featuring social innovation and public innovation at least as economic sectoral innovation. The activities related to the subject according to the strategy are as following:

3.3.3.1 Launching social innovation programme:

Within this context, projects will be designed and implemented to solve social problems by using different and innovative approaches and develop sustainable activities creating values for different segments in the society. In this context, it will be encouraged to develop projects with cooperation of different institutions (NGOs, private sector, public bodies and universities) so that regional innovation system will raise awareness and strengthen all regional actors in the subject of social innovation.

3.3.3.2 Disseminating eco-innovation practices:

Eco-innovation practices will be disseminated throughout the whole region with the close collaboration of public and private sectors, NGOs and academic world. In order to guarantee the region's economic, social and environmental sustainability and increase the brand value of the natural resources and maintain its balance, eco-innovation practices will be critically important and will be adopted systematically in the whole region. For that purpose following activities will be carried out:

- Adoption of environment friendly activities:
 - Installation of recycling containers in order to recycle the wastes in the whole region;
 - Adoption of energy saving methods in the whole touristic, public and private buildings;
 - Dissemination and promotion of effective irrigation methods in the rural parts of the region.
 - Promotion of clean production and eco-efficiency principles in the manufacturing industry
 - Encouraging “paperless-office” principles and uses in the whole government and private offices
 - An effective public transportation infrastructure and encouraging people to use public transportation
 - Monitoring and taking the necessary precautions about the practices that damages the environment or might in the near future and consumes too much energy





- Investments will be realized to disseminate consumption and production of renewable energy resources: Especially wind and solar energy resources must be exploited effectively
- Promoting and generating best practices in environment friendly uses like eco-hotel, eco-dining or eco-campus: Dissemination of touristic elements like restaurants and hotels minimizing the ecological footprints, practicing energy saving, recycling and garbage management and using organic products In this manner, after necessary preparation phases, these hotels and restaurants will be encouraged to apply for the “Environment Friendly Accommodation Place” certificate from the Ministry of Culture and Tourism. Hence with the awareness raised by the best practices promotion of ecologically friendly will be dispersed to public offices, universities and organized industrial zones. Especially all the activities under this section will be advertised in the national press and create an attraction factor for the region.

3.3.3.3 Encouraging innovation in public services:

In order to identify and promote the implementation that will maintain and increase the efficiency, effectiveness and user satisfaction in public services certain committees will be established in the province scale. These committees will be composed of members from public offices, universities, civil society organizations and design a road map on how to foster innovation in public services.

3.3.3.4 Extending the opportunities of micro-finance for social innovation ideas:

A micro-finance program will be developed in order to enable the ideas of social innovation projects designed by civil society organizations, citizens who are willing to implement social responsibility projects and students from universities or any other level of education, come to life. Primarily, some pilot projects across the region will be commenced that might create extensive affect, be best practice and increase the social capital of the region. Thusly greater effect will be realized with relatively small amount of money. Necessary amount of funds will be raised by public contribution, sponsorship, social responsibility budgets of the firms and any donation from involved partners. During the design phase of the program world examples will be analyzed in detail so that the risk will be minimized and the program effects will be maximized.



4. Governance of Regional Innovation and Structuring of Strategy Implementation

Having an inclusive role and organization structure, OKA will have the coordinative role of the activities regarding the implementation period of Middle Black Sea Regional Innovation Strategy. Since the key actors and main decision takers of the region are in the administrative board of OKA, agency's administrative board seems to best fitting into coordination of implementation and monitoring phase of the strategy. In the operational scale of implementation of the strategy general secretariat of OKA will have the main role and a small unit of implementation team will be constituted under the scope of agency. In addition to implementation team, consultancy board will be constituted and be responsible of a successful coordination. Consultancy board will be composed of representatives of strategic sectors in the value chain and university, private sector or NGO members who are involved in the topic.

As the duty of the regional innovation strategy coordination team is the smooth implementation of the strategy, team will be in close collaboration with the innovation committees. Innovation committees will be composed of committee members and other key actors according to past experiences and expertise area. Main topics of expertise will be as follows:

1. Medical Devices and Tools Innovation Committee
2. Machinery production and House Appliances Innovation Committee
3. Agriculture and Food Innovation Committee
4. Tourism Innovation Committee
5. Natural Stones and Soil Industry Innovation Committee
6. Social Innovation and Innovation in Public Services Committee





5. Monitoring and Evaluation Frame for the Strategy Implementation

A successful monitoring and evaluation framework is necessary for a smooth implementation of Middle Black Sea Innovation Strategy. In this strategy there is two legged monitoring and evaluation structure.

1. Activities designed and planned in the strategy document: For each activity, program and project defined in this strategy document will be monitored according to specific targets and indicators. Definition, monitoring and evaluation of activity/project/program based indicators, will be handled by regional innovation strategy coordination team in collaboration with committees.
2. Due to regional innovation performance: Data will be gathered according to indicators specified and thusly region's innovation performance will be reached out.