TURKEY

1. General Policy Framework

Documents entitled “Science and Technology Policy of Turkey – Summary” and “Policy Making Bodies in Science and Technology” have been provided to the OECD Secretariat. The first report dates from January 1999 and the recent decisions of the Supreme Council for Science and Technology at its meeting of 20 December 1999 are not covered in this report.

The Supreme Council for Science and Technology approved an Agenda at its meeting of 25 August 1997. At its meetings of 2 June 1998 and 20 December 1999, it made some additions and amendments to this Agenda.

*Additions and amendments of 1998 cover the following items:*

*Maximum benefit from “off-set” agreements in enhancing technological capacity.*

A Study Group has been formed to establish a mechanism to evaluate the “off-set” proposals and prepare draft documents in order to make better use of off-set agreements signed within the framework of large scale projects for procurement and manufacturing of goods and services under license to enhance the technological capacity of the country. For this purpose, the Ministry of Defence, Higher Education Council, Under-secretariat of Defence Industry, the Scientific and Technical Research Council of Turkey (TÜBİTAK), Technology Development Foundation of Turkey (TTGV) and the Turkish Telecommunication Corporation (TURK TELEKOM) will prepare a co-ordinated report and submit this to the Prime Minister within four months.

*Provision of the necessary funds to establish a National Innovation System*

Launching of a survey for the National Innovation System is the core of present Science and Technology Policy which aims to enhance the innovative capacity of Turkish Industry.

*Designing a National Policy on Megascience*

The first step for a national policy on megascience is to determine the appropriate area(s) and subject(s), and next to search for optimisation of national funds and available manpower while considering the participation in international joint megaproject(s). The “search for criteria studies” in Megascience will be conducted by TÜBİTAK with the contribution of the Turkish Academy of Sciences (TÜBA), the Turkish Atomic Energy Agency (TAEK) and other related agencies and eminent scientists.
Additions and amendments of 1999 cover the following items:

“The Master Plan for the National Information Infrastructure” has been completed, and a draft regulation for establishment of the National Council of Information Technologies, which will co-ordinate the implementation of the Master Plan, has been adopted. Considering the vital importance of the implementation of The Master Plan, The Supreme Council envisages the establishment of The National Council of Information Technologies as soon as possible.

Enlarging the coverage of Government Assistance

Revision of the existing regulations on “R&D Assistance Program to the Industrial Companies by the Government” to broaden assistance to cover all enterprises including those of service sectors and agriculture; and to encourage public and private firms to invest more in R&D activities and facilitate bureaucratic procedures.

The selection of some critical technologies for Turkey

Advise on studies to be started for selection of “critical technologies for Turkey” based on the economic, social and political targets of the country, in relation to the capacity of Turkish science and technology system.

The determination of measures to support the reverse brain drain

Efforts to gain capability in science, technology and production should facilitate a reversal of the Turkish brain drain. They will be co-ordinated by the Higher Education Council (YÖK). A Joint Committee of the Turkish Academy of Sciences (TÜBA), TÜBİTAK and the Turkish Atomic Energy Agency (TAEK) will prepare a report to the Prime Minister within six months.

Designing a National Policy on molecular biology, genetic engineering and biotechnology

A Study Group will be formed with participation of TÜBA by TÜBİTAK and The Technology Development Foundation of Turkey (TTGV) to formulate a National Policy on molecular biology, genetic engineering and biotechnology, and determine priorities and proposals for allocation of available funds.

The new R&D structure on earthquake and natural disaster management

After the Marmara Earthquake of summer 1999, TÜBİTAK was appointed as the co-ordinator of the scientific efforts and given the responsibility to establish “The National Earthquake Council”. In relation to these efforts, the following measures were taken:

- The establishment of a Seismological Data Bank for Turkey.
- A system for evaluation and improvement of existing buildings with respect to their resistance to earthquakes.
- Investigation of the major geological fault systems of the Marmara Sea–bed and the earthquake potential of the whole region.
Science and Technology policy changes over 1998 and 1999 have thus been both in response to new imperatives like earthquake needs and objectives, and evaluation of the previous policies and programs.

2. **Policies related to the recommendations of the TPJ report**

2.1 **Incentives and support for R&D**

Starting from 1999, TTGV is implementing the Industrial Technology Project (ITP). This is a follow up to the Technology Development Project which started in 1991. The project will continue to support the upgrading of technological activities of Turkish private sector firms. The core activity of the Foundation would be the co-financing of product and process innovation among private enterprises, with a special emphasis on SMEs. It will also promote linkages between the national R&D institutions and industry.

**Chance in direct support for R&D:** The Working Group on Small and Medium Sized Enterprises prepared a report in May 1998 for the improvement of the “R&D Assistance Program for the Industrial Companies by the Turkish Government”, conducted by TÜBİTAK on behalf of Turkish Government. A decree concerning this Program was published by The Money and Credit Co–ordination Committee in 4 October 1998 as an amendment to the First Decree of 1995. Changes with respect to the R&D assistance Program are as follows:

- The amount of R&D assistance was increased from 50% to 60%.
- Support for personnel expenditures is increased to 60% for large companies and 75% for small- and medium-sized enterprises.
- Financial support for R&D procurement from domestic R&D establishments was increased from 10% to 30% of the research contract.
- R&D in environmentally sensitive technologies was given priority in addition to flexible manufacturing systems, advanced materials, genetic engineering/biotechnology, space and aeronautical engineering and technology. The project support will be increased by 20% for projects on priority areas.
- The expenditures for registration of patents, utility models and industrial designs by the Turkish Patents (TPI) Institute are included in the support scheme in addition to the expenditures for patent applications to TPI.
- International Projects (EUREKA, COST, IST) will be supported by 50% of the basic amount. Such support may be increased to 60% by additional contributions.
- The total amount of R&D expenditures of universities and/or research agencies jointly participating in international projects with industrial firms should not exceed USD 100 000 per project.
- R&D expenditures of industrial firms established jointly by more than one industrial establishment, the Technology Development Foundation of Turkey and/or the Scientific and Technical Research Council of Turkey will be supported by 60%.
- It will be possible for industrial firms to submit joint R&D projects.
2.4 Technology Diffusion and Networking

The Supreme Council for Science and Technology at its meeting of 25 August 1997 made a decision on “The arrangements on medium and long range public procurement policy”. Amendments and additions were made on this issue by the Supreme Council in the 1998 and 1999 meetings. Under the co-ordination of the Ministry of Industry and Commerce, studies have been made to use public procurement policy to enhance the science and technology capacity of Turkey in 1999. The purpose is to design a general framework of a new public procurement policy based on research intensive and high-tech goods and determine the necessary improvements in legislation for this purpose. At its last meeting, the Supreme Council decided that the final report on this issue will be submitted to the Prime Minister within four months.

2.5 Technology based firms and new growth areas

“The Decree on the Principles of Venture Capital Investment Partnerships” was published in the Official Gazette of 6 November 1998. But this is a general purpose decree which does not provide any specific arrangement or mechanism providing promotion for innovative initiatives.

Studies have also been conducted under the co-ordination of The Treasury for new legislation which will ensure the establishment of new ventures based on future technologies. “The Report on the Measures to be Taken for Development of Venture Capital Investment Partnerships”, by the Treasury, was sent to the relevant institutions in July 1999.

“The Master Plan for the National Information Infrastructure” was completed and submitted to the Supreme Council for Science and Technology at its Fifth Meeting of December 20, 1999. The Council has adopted a draft regulation for establishment of The National Council of Information Technologies which will co-ordinate the implementation of the Master Plan. The Supreme Council, considering the vital importance of the implementation The Master Plan envisages the establishment of The National Council of Information Technologies as soon as possible.

Studies on “The setting up of regulatory rules on the studies of biotechnology and genetic engineering” were completed and the report of the Joint Study Group of TÜBA and TÜBITAK was submitted to The Supreme Council for Science and Technology. The Study Group proposes to establish “The National Biosecurity Council”. The Supreme Council decided that the studies to establish this Council will be carried out under the co-ordination of TÜBITAK.

2.7 Globalisation

As stated in Section 2.3 “The decree on R&D Assistance Program for the Industrial Companies by The Turkish Government” was published in 4 October 1998, providing an important support to universities and research institutions for their participation in international projects. According to this decree, the total amount of R&D expenditures of universities and/or research agencies jointly participating in international projects with the industrial firms, cannot exceed USD 100 000 per project within the support framework.

Turkish Participation in the Fifth Framework Information Society Technology (IST) Programme

The European Commission IST Programme and the Turkish R&D Grants to Industry Programme will finance joint research projects undertaken in IST Programme.
The main points of the Protocol with EC DG XIII for Turkish Participation in the IST Programme:

- The EC–IST Programme and the Turkish R&D Grants to Industry Programme will finance joint research.
- The level of funding for Turkish participants will depend on TÜBITAK–TIDEB (TÜBITAK’s Support and Assessment Unit for Technological Innovation) rules and on successful negotiation of the research contract.
- The TÜBITAK contribution will be in accordance with the 4th November 1998 government decree on R&D Grants to Industry.
- Turkish universities and research institutes can also receive additional TÜBITAK–TIDEB funding if they participate jointly with a Turkish industrial partner.
- TÜBITAK will provide a list of Turkish experts for the evaluation process undertaken by the EC–IST Programme.
- Rules for ownership, publicity and exploitation of results and transfer of technology will be those of the applicable EC IST Programme contracts.
- DGXIII and TÜBITAK will publicise this scheme extensively through their websites and publications.

Within the framework of EUREKA the following programs have been started:

E!2144 EUROFOREST – New Technologies oriented to Improve Sustainable Management in the European Forestry Sector (BIOTEC)

E!1884 EURIMUS (DEF) – EUREKA Industrial Initiative for Microsystems uses (INF)

2.8 Policy Evaluation

Studies have been conducted within the framework of the National Innovation Project to evaluate the mechanisms of support for innovation. In this respect, the “R&D Assistance Program for Industrial Companies by the Turkish Government”, which was administrated by TÜBITAK’s Support and Assessment Unit for Technological Innovation, and activities of The Technology Development Foundation of Turkey (TIDEB) have been evaluated.

130 R&D projects supported by TTGV were also surveyed and evaluated. It is envisaged that the evaluation of the TTGV support to firms will be continued periodically. In addition, the State Institute of Statistics has conducted a survey on “Technological Development and Use of Technology Services in the Manufacturing Industry of Turkey” in 1999. The survey covers 2 100 firms that answered “The Technological Innovation Survey in the Manufacturing Industry”. These firms benefited from the TÜBITAK Marmara Research Center and The National Metrology Institute’s services. This survey will be repeated in 2001 and 2003 parallel to the “Technological Innovation Survey in the Manufacturing Industry” and will cover 4 000 firms including the 2 100 firms previously surveyed.