

International Transport Forum 2010 Transport and Innovation: Unleashing the Potential

CASE STUDY - TURKEY

The following information is based on a response to a survey carried out by the International Transport Forum on innovative policy initiatives within member countries, and countries' efforts to promote innovation.

Briefly describe innovative policy initiatives that your government has succeeded in implementing in the transport sector in recent years. Please take the widest possible definition of innovation, including innovative technologies (e.g. ITS), policies, practices (e.g. new pricing mechanisms), etc.

In order to achieve continuous development, the Turkish Government places great emphasis on innovation in terms of policy and practice. Investing in IT systems is regarded to be fruitful for the transport chain in its entirety.

The Ministry also provides special support to projects that yield results in various innovation developments. In accordance with this policy approach, a “**National Public Research Programme for Transport**” was prepared in 2006, which displays examples of transport-related R&D projects to be carried out by institutions connected or related to and affiliated with our Ministry. Many of these projects are comprised in the above-mentioned programme, of which some are currently in progress, while the others are in the development phase.

One of the most significant steps taken in accordance with the policy for innovation in the transport sector is that the Government has put forth the establishment of a **National Transport Research Centre** as a strategic goal under its 2009-2013 Strategic Plan. Scheduled to be launched in 2010, this Centre aims at performing research, development, consultation and implementation of innovative technologies for the improvement and facilitation of the transport and communication sectors.

In addition, there is an ongoing process for constituting a **R&D Department Unit** under the Ministry of Transport and Communications, which will carry out innovation and R&D policy building of the Ministry whilst ensuring co-ordination between research units and connected, related and affiliated organisations, as well as conducting educative and informative activities on innovation.

The scheduled **10th International Transportation Forum** of Turkey, held in September 2009, also featured “Innovation” as an individual panel. The innovation panel is expected to give out decisions, recommendations and a possible road map which will encourage initiatives for innovation in transport sub-sectors.

The Ministry's innovation policy aims at providing fast, reliable, effective and high-quality transportation and communication services. Continual construction of dual carriageways in road transport, high-speed train projects in rail transport and the launch of 3G service in the communication sector are among many examples of recent innovation initiatives. Other innovative policy initiatives under the auspices of our Ministry which have successfully been implemented in recent years are as follows:

Road Transport & Facilitation of Customs Procedures:

- The General Directorate of Land Transport has undertaken a project called “GUM-KART” by which customs transactions are made safer, faster and better recorded. The project has enabled payers to make their payments by an electronic debit card called “GUM-KART”.
- Another project called “Mobile Customs Project” allows users to access various information on their customs declarations through their mobile phones.
- **RoderNet Electronic Transit Guarantee Service for Transporters:** RoderNet is an electronic transit customs system designed and developed by RODER (Ro-Ro Transporters Association) and a foreign partner in order to integrate the EU customs automation system (NCTS). The system was put into practice for operations across Trieste in December 2006 and through the Bulgaria-Romania route in May 2008. Through this system, the following facilities are presented for use by Turkish transporters:
 - Submission of electronic declarations in EU and other customs areas,
 - Easy access to the guarantee coverage,
 - Online monitoring of declarations and financial status,
 - Pricing is based on groups, not on declarations,
 - Simple, user-friendly, web-based and multilingual program.

Railways:

- **High-Speed Train Projects:** In order to connect major cities with high speed lines, a far-reaching infrastructure programme was started in 2004. The first high-speed train operation was launched in March 2009 between Ankara and Eskişehir, which also constitutes one of the most important legs of the Ankara-İstanbul High-Speed Train Project.

Construction works for Eskişehir-İstanbul, Ankara-Konya and Ankara-Sivas high speed lines are underway.

- **Block Train Transport:** Block train transport refers to a system where no shunting for locomotives and wagons from the origin to the destination point takes place. Turkish State Railways has started block trains in 2003 with the aim of providing more regular services in a shorter time.

- **IT Applications:** In parallel with the e-government policy, several applications such as online reservations and ticketing, real-time train location tracking, electronic documentation management, and real estate management by GIS have been launched in order to provide a more user-friendly service to customers.
- **Promoting private sector participation:** In line with the 9th Development Plan objectives, private companies have been encouraged to enter the Turkish railway sector, resulting in the establishment of several private companies: the Hyundai-Eurotem High-Speed Train Factory, the Kardemir Rail Production Facility and the Vossloh Fastening Factory.

Maritime Transport:

- **Cabotage Zone Work Study Project:** Finalised in 2007, this project has produced the following outcomes: improvement of passenger and cargo transport in the Cabotage Zone, shifting road traffic to maritime, or with combined transport, so as to reduce the use of road transport, identifying the actual opportunities and capabilities due to appropriate investment by private entities.

Road Infrastructure:

- Application of mechanistic design method to pavement design,
- Updating specification for flexible pavement design,
- Studies on the development of retaining structures,
- Extended use of computer-controlled laboratory equipments,
- Initiation of performance-based road construction and related materials,
- Certification and accreditation of central and divisional testing laboratories.

Civil Aviation:

- Built-Operate-Transfer Projects for airports;
- Policies to increase the number of domestic flights;
- Modernisation of the Air Navigation Systems and Infrastructure.

Communications:

With the objective of supporting innovation in the communication sector, the “**Electronic Communications Law**” of 2008 was enacted with the aim of promoting R&D activities as well as investments and implementation of technological innovations. In this regard, 20% of the revenue of the Information and Communication Technologies Authority will be available for R&D activities.

What initiative(s) does your country have to promote innovation in the transport sector? Are these initiatives part of a larger effort to promote innovation across the economy? Please provide any additional material you have regarding these initiatives, including web sites, reports, etc.

There are a number of public organisations which support and fund research projects, not only in the transport sector, but also for other sectors: the State Planning Organisation, the Scientific and Technological Research Council of Turkey (TUBITAK), and the Small and Medium Industry Development Organisation.

Performing within TUBITAK, the Higher Council of Science and Technology meets annually to take the highest-level decisions on science, technology, innovation and R&D in our country, both in transport and in other sectors. The decisions taken therein are binding and implemented in all sectors. This Council, where R&D activities and innovative activities are evaluated and encouraged, can be considered as the main guiding mechanism to support innovation in all economic sectors. (Further information on the Higher Council of Science and Technology meetings, decisions taken and presentations made therein are available at: www.tubitak.gov.tr/home.do?ot=3&query=btyk).

The decisions taken in these meetings force institutions to prepare research programs. In this context, our Ministry prepared the “National Transport Public Research Program” in 2006, in collaboration with TUBITAK (The Scientific and Technological Research Council of Turkey) and relevant public institutions connected or related to and affiliated with our Ministry.

The program comprises 46 R&D project proposals, some of which have been finalised, bringing about innovative developments in the sector.

The “National Transport Public Research Program” prepared in 2006 is available at www.tubitak.gov.tr/tubitak_cotent_files/ARDEB/laogag/Ulusal_Ulastirma_Kamu_Arastirma_Programi.pdf.

What are the specific objectives of these initiatives? (e.g. Do they focus on certain challenges, such as climate change or safety, or on certain modes? Do they take a wider approach focusing on all of the challenges faced by transport?)

These initiatives generally have a rather ample approach, giving importance to the renovation of existing infrastructures, capacity-building, efficiency, safety and environment.

National Transport Public Research Program, cited under 2.1, put forth ideas and insights on R&D projects focused on solutions to problems that exist in transport sub-sectors.

On the other hand, the Ministry of Transport and Communications is continuously working on innovations to address the priorities and needs of each sector. High-speed railway projects and the launch of 3G services are among the various solid results of the process to achieve sector-specific objectives.

As for the road infrastructure projects mentioned herewith, the main objectives are to provide feasible, safe and engineering-wise-economical road design and construction, and to reduce accidents.

Concerning general transport infrastructure needs of the country; other topics might be earthquake-resistant designs, wave effect-stability of breakwaters, and shore protection works.

In the aviation sector, two examples can be given of initiatives which focus on specific sub-sectoral needs;

- “Unimpaired Airports Project” has recently started with the aim of setting up the necessary infrastructure for people with reduced mobility which covers several innovative renovations at airports, to enable them to travel alone and to reduce the difficulties they are faced with,
- In order to achieve a sustainable and environmentally-friendly development, another project titled “Green Airports” has been launched in Turkey aiming at reducing the detrimental effects of airport activities.

Please describe the funding arrangements associated with your efforts to promote innovation in transport:

Innovative transport projects are mainly financed by the Ministry of Transport and/or the institutions connected or related to and affiliated with the Ministry. When necessary, projects are incorporated with TUBITAK’s financial support when the Ministry is the main beneficiary.

Additionally, taking the widest definition of innovation, we can also consider yearly investment programme allocations, support from the State Planning Organisation, infrastructure aids from the Central Budget, and donations of EU Framework Programmes as other financial resources for innovation in transport.

For example, TCDD is currently conducting research projects under 1007 and FP7 programmes. 1007 is a research programme implemented by TUBITAK for public institutions, and FP7 is an international research programme implemented by the European Union.

Since “The Electronic Communications Law” of 2008 has come into effect, 20% of the Information and Communication Technologies Authority’s revenue has been made available for research and development activities.

What is the lead ministry or agency for your efforts to promote innovation in transport?

The Ministry of Transport and Communications takes the lead in supporting innovative efforts in the transport sector.

What other public entities are involved and what are their roles?

In the process of innovative transport developments, TUBITAK (The Scientific and Technological Research Council of Turkey), as the primary authority of Turkey on science and technology, and the State Planning Organisation, which approves the investment programs of transport-related public institutions, are the public bodies that provide technical and financial support to the Ministry.

The Prime Minister’s Office, Undersecretary of Customs, the Ministry of Industry and Commerce and Undersecretary of Foreign Trade are the other public bodies which contribute to transport-related innovations.

Municipalities, universities, NGOs and private companies, the Union of Chambers and Commodity Exchanges in Turkey (TOBB), and the Chambers of Commerce and Industry can be counted as other partners involved in the innovation process.

What international partnerships are involved in this?

OECD, UNECE, IRU, BSEC, BSEC-URTA, TRACECA, FIATA, CLECAT, IATA, IRF, PIARC (World Road Association), ITA (International Tunnelling Association), FHWA (Federal Highway Administration), several EU countries and Transport Research Centres of the other countries can be considered as potential international partners for innovation efforts and processes.

In addition, Turkey is an associate member of the EU's 7th Research Program and the Ministry can propose projects or participate in project consortiums.

Please provide a summary of any results or outcomes already achieved as a result of your efforts to promote innovation in transport?

Even though it is believed that the results or outcomes of the innovation process should be evaluated over a longer time period, the outcomes achieved so far can be listed as follows:

- The establishment of Hydraulic Research Center under the JICA Co-operation Programme;
- Build-Operate-Transfer Projects;
- Systematic Modernisation of Air Traffic Management Resources in Turkey (SMART);
- Studies on ADS-B (Automatic Dependent Surveillance-Broadcast) implementation in Trabzon TMA with Eurocontrol;
- Initiation of cooperation with TUBITAK for research and development in the field of aviation in order to promote national manufacturing;
- Involvement in the SESAR (Single European Sky Air Traffic Management Resources) Project via Eurocontrol;
- Introduction of a Quality Management System in the Air Navigation Services;
- Introduction of a Safety Management System in the Air Navigation Services;
- Preparation of Design Guide of Flexible Pavements;
- Preparation and implementation of Technical Specification for Roads;
- Accreditation and ISO 9001 Certification of central laboratories; and
- RoderNet Electronic Transit Guarantee Service for Transporters, E-Document portal which covers automatic TIR Carnet pre-notification for road freight operators and is secured by an electronic signature method.

What are the principal means by which your agency keeps track of new innovations and trends in transport?

Since developing safe, secure, environmentally-sensitive, accessible and rapid transportation and communication infrastructure are our main objectives, our Ministry keeps track of new innovations and trends in transport while further attention and progress still need to be shown.

Biannual strategic plans, surveys, co-operation with academic institutions, sector-specific journals or publications, international and regional events, seminars, conferences as well as following up best innovation and R&D practices or projects applied in other countries constitute the means of tracking new innovations.

Additionally, the Ministry possesses a hydraulic research laboratory where innovative research for transport infrastructure can be undertaken.