

C Case study / Turkey: Improvement of Industrial Hazardous Waste Classification, Data Base/Inventory and Control

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C.1 Background and Objectives

Hazardous waste production in Turkey has increased considerably since 1980ies due to strong economic growth. Turkey's data, inventories or estimations on waste, though incomplete, indicated that between 2000 and 2003 more than 1 Mio. ton of industrial hazardous waste were generated annually. Because of its hazardous characteristics, these wastes are significant risk for environment and human health and therefore need to be specially controlled by the authorities.

As a candidate country Turkey is beneficiary of EU-funded projects. Besides technical assistance to draft specific investment plans for waste related EU-Directives, two Turkish-German Twinning Projects supported the transposition of EU-Directives on waste, including the European List of Waste. Whilst the Turkish regulation on hazardous waste came into force in 2005 and though awareness on hazardous waste was growing, the level of guidance was still weak.

To improve implementation of the new legal framework and of the management of hazardous industrial waste as a whole, the Turkish Ministry of Environment and Forestry (MoEF) cooperated with GIZ GmbH on the LIFE06 TCY/TR/292 'HAWAMAN' PROJECT.

C.2 Approach, Achievements and Results

To improve hazardous waste handling and the enforcement by environment administration and the compliance by waste generators -industry- needs to be addressed likewise.

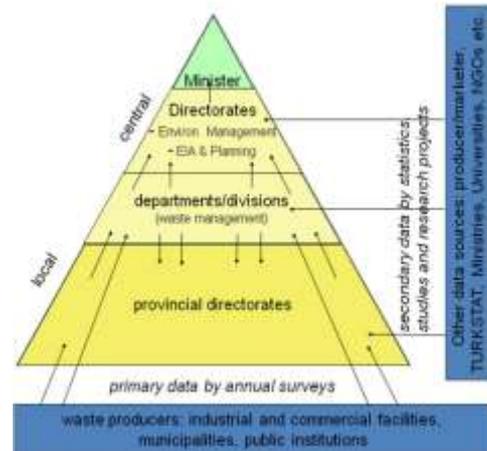
The LIFE 'HAWAMAN' PROJECT raises the enforcement capacities on national and local level and the compliance capacities of the industrial waste generators, through support to hazardous waste identification and classification by an exhaustive set of manuals and guidelines and training of specialists in public and private sector:

- Branch specific especially for Turkish industry, which is required to identify and report their waste according to the classification of the European List of Wastes,
- Waste type specific especially for the environmental agencies, which have to work with the waste inventory, and do the monitoring and control of waste streams, treatment and disposal facilities.
- (Electronic) check lists applied in training-on-the-job for environmental inspectors to improve monitoring of waste generators and treatment/disposal facilities.



It improves the knowledge of the authorities on the actual situation of hazardous waste handling, supports the compliance of the industrial waste generators, through:

- Introduction of a standardized electronic record system with direct data input by industrial waste generators facilitating the obligatory reporting to the environment administration.
- Regularly updated data base on industrial waste generators, treatment/disposal facilities and hazardous waste streams available at the competent authority for information, decision-making and enforcement. Customized tools enable the administration to compile, display and visualize data on demand.
- Annual updated data base on hazardous waste.



Pic: Data flow model

The electronic record system was developed and programmed in 2008 in a cooperation of the Turkish Ministry of Environment and Forestry (MoEF) and the Turkish Statistical Institute TURKSTAT with support by the German ARGUS GmbH.

The record system consists of 3 main parts:

- A Business Register, which includes all basic data of the industrial waste generators;
- A Facility Register, which comprises of basic data and the data from their licenses;
- A Waste Data Section, where the waste amount per waste type are recorded annually.

The provincial directorates of the Ministry distribute passwords to access the system to the industries in their scope and control the data input of these users/waste generators. The Ministry maintains the entire electronic system, creates passwords for new users, updates the business and facility registers and validates all waste data. It also consults its provincial directorates and the waste generators on waste classification, recovery and disposal.

In the quarter of every year the user/waste generator accesses the electronic system with its password to review their basic data, select the waste types, insert the corresponding amount generated and select the recovery/disposal facilities or the interim storage/internal stock, which received the waste.



Pic:
Electronic Waste Record System

Before the start of the electronic waste record system MoEF received hazardous waste data from less than 5% of the industrial waste generators. For the second annual waste survey in 2010 more than 50% of the industrial waste producers (by employees) recorded their waste data electronically.

The Environment Ministry has been reorganized to Ministry for Environment and Urbanization in 2012 and is still actively involved in improving the quantity and quality of the waste data bases. The Ministry's waste department assumed the waste classification and data gathering as a long-term tasks and conducts regular meetings with the provincial directorates on the outcomes of the data surveys and for training on system application and waste classification until today.

C.3 Conclusions and Lessons learned

Even with sufficient legal requirements in place, environment administration is often faced with the low awareness of (industrial) waste generators on their hazard waste generation and handling options, which results in mixed waste and disposal in inadequate sites. Consequently identification and reporting of hazardous waste to the authorities is few and often lacks quality. On the other hand, industry, which started to classify and separate hazardous waste, needs solutions for these waste streams and the waste treatment and disposal sector has to be developed in-line with the demand.

In address these problems, the two-fold approach of the LIFE 'HAWAMAN' PROJECT responds to administrative tasks of the environment authorities at central to local level.

(1) Waste record system and the customized data base tools

- Enable hazardous waste departments at central level:
 - to create awareness on distinct legal duties and enhance industry's perception of the environment authorities;
 - to coordinate with its local level based on standardized codes for waste generators and facilities, correlated waste data and information sources etc.;
 - to inform own and other Ministries quickly about the actual situation (location and capacity of hazardous waste facilities, waste streams and the applied treatment, disposal or storage, annual waste generation per province etc.);

- to identify fields of action, e.g. underperformance of certain industry branches or large on-site stocks of certain wastes or reporting errors induced by knowledge gaps in industry;
- to support national statistics, information and reports.
- Enable hazardous waste departments at local level:
 - to facilitate standardized control and apply the base data and inventories of companies / facilities on inspections;
 - to inform province administration about their waste situation.
- Increase industries' awareness on their waste generation to draw more attention to compliance in the field.

(2) Guidance on hazardous waste identification and classification

- Industry branch specific guides ideally issued together with an industrial association:
 - enhance hazardous waste control capacities of the environment inspectors by increase their production specific knowledge;
 - meet the support demands by industry to correctly apply legal requirements.
- Waste type specific guidance completes the applicability of laws/regulations (e.g. European List of Waste) and is ideally spread by a network of trained specialists to improve hazardous waste management as a whole.

Prerequisites for successful implementation of (1) and (2) are:

- Existing legal framework defining waste and its hazardousness, responsibilities of waste generators and facilities including reporting duties, inspection and control responsibilities for the competent authorities and include definitions of waste recovery/disposal options and a waste classification system (e.g. European Waste List or similar system);
- Guidance on waste classification and waste data bases are developed in a joined action to support the waste generator in identification of waste types to improve the quality of the waste data reported;
- Strong cooperation between the local and central level of the environment administration in implementation of the record system and quality maintenance of the data base;
- Sufficient programming and technical capacities at the environment administration or cooperation with the statistical institutions for data base support;
- User-friendly system design, e.g. by pull-down tables for waste types according to the local waste classification system, up-to-date facility register;
- Commitment of the IT and waste Department to cooperate and to continuously consult and train their provincial directorate staff.

C.4 Links and Materials available

Information on the LIFE 'HAWAMAN' PROJECT is available at the website:

<http://www.lifetcy06.cevreorman.gov.tr/gosteren.php?id=153>

Please note that most documents are in Turkish language only

ARGUS: www.argus-statistik.de