



CAPACITY BUILDING AND NETWORKING IN MUNICIPAL SOLID WASTE MANAGEMENT – EXPERIENCES FROM MEXICO, LESSONS FOR OTHER COUNTRIES?

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Abstract

Capacity building in solid waste management (SWM) is a continuous need in Mexico. Even though the country has a lot of well qualified professionals, few of them are working in SWM and fewer still in the public sector. Urban SWM is, by law, the task of the municipalities, in which the local government and also most of the decision makers in the administrations are changing at least every three years. This affects strongly the sustainability in the sector. On the other side there is an increasing demand for adequate SWM services to achieve the standards of the new national legislation. In order to address the lack of appropriately qualified people in the different departments of the municipalities linked to the sector, the Mexican National Environmental Ministry SEMARNAT² and GTZ³ on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ) prepared and implemented a capacity building programme in SWM. Started in 2004, this programme has already shown direct impacts on the target group. Other Latin-American countries have shown interest in participating in the network that has developed around the programme. In some of them, training in SWM has already been provided.

1. Introduction

Mexico, with its more than 100 million inhabitants, generates some 90,000 tons of municipal solid waste daily. In the Greater Metropolitan Area of Mexico City more than 20,000 tons per day have to be treated and disposed. Only about 60 % of the municipal waste is disposed of in landfills, with none of them fulfilling the new Mexican technical landfill standards⁴. This still represents a big issue for the responsible officials of the government institutions and administrations at the federal, state and municipal levels.

In January 2004 the first “General Law of Prevention and Integral Management of Waste”⁵ on a national level was put into action. At the moment the bylaws are being prepared for the specific issues of this national law. This law is divided into four main categories: urban solid waste, solid waste for special treatment (non-hazardous industrial waste), hazardous waste and contaminated sites.

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3 Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH (German Agency for Technical Cooperation); for more information see www.gtz.de

4 On 20.12.2004 the new national technical norm NOM-083-SEMARNAT-2003 about the demands of location, construction and operation of municipal landfills was put into effect. The transition period is about three years.

5 Ley General de Prevención y Gestión Integral de Residuos (2003).

The municipal governments are responsible for the management of urban solid waste. Due to the conditions created by the constitution, the municipal administrations are only in office for three years and there is no re-election. Therefore not only politicians, but also the professional staff change at least every three years. In most cases the people put in charge are not sufficiently qualified to carry out the job. Therefore, there is a great need for continuous awareness and capacity building, starting at the different governmental levels and including the technicians in the private sector.

Since 1997, the GTZ has been collaborating with the Ministry of Environment of the State of Mexico (SEGEM⁶) in a Municipal Solid Waste Management Project. The Project provides consultancy and cooperation in the technical, institutional and legal areas. Another important component is training. During the first years of the project, more than fifty courses were held for municipal personnel regarding the different aspects of integrated SWM. This allowed the project staff to receive extensive training. Since the target groups of the training measures generally have very little background knowledge in this field, the material is presented in an easy and understandable manner. In July 2001 the present federal government of Mexico initiated the “Crusade for a Clean Mexico⁷”. As part of this, the GTZ project started the capacity building programme.

2. Creation of the Network of Environmental Promoters in SWM

For both partners – SEMARNAT and GTZ – it was clear that only an intensified training of SWM promoters would enable a better standard of SWM, so that these people could develop their acquired knowledge in order to improve the local situations in the approximately 2,400 municipalities located in 31 Mexican states and the Federal District of Mexico City. By the training measures, the knowledge at the municipal level of the legal requirements and the practical application of integrated SWM should be improved. The first cycle of training took place in 2004, the second one in 2005/2006 and a third one, due to start in April 2006, has already been approved by both institutions due to the high demand for the courses.

2.1 Requests of the participants

The candidates for the training courses have come from the delegations of SEMARNAT in each state and from other public environmental institutions at the state level. In the end, about 60 members of the various environmental institutions on federal and state levels participated successfully in the first course. The second cycle has been opened to participants of the academic and private sectors. The institutions to which the participants belonged had to pay for all the expenses of the participants (plane ticket and hotel accommodation). Participants of the academic and private sector additionally had to pay a fee of about US\$ 500 for the course.

The organization committee defined the profile of the participants as follows:

- Involvement of the organisation in issues of municipal SWM
- A SWM related career and an interdisciplinary vision of the subject.
- An interest in improving issues related to SWM in the municipality.
- Capability for planning and developing solutions for SWM issues.
- A position inside the organization which guarantees a replication of the obtained knowledge.
- Sufficient time to participate in the various stages of the entire course and apply the knowledge in the municipalities.
- Interest and ability to present the obtained knowledge in the municipalities.

6 Secretaría de Ecología del Gobierno del Estado de México (SEGEM)

7 Cruzada por un México Limpio

In addition to the profile request, the institution that sends a candidate had to assure that they would fulfil all their duties as a member of the Network, specifically to participate in all the courses and, having completed their training, to apply the contents of the course in the municipalities of their respective states. The participants of the academic and private sector are expected to have an interest on their own in applying the acquired knowledge, as it offers a possibility to earn money with it.

The entire course took a total of 80 hours during the first cycle and 90 hours during the second one, divided into different steps.

2.2 Objective and contents of training information

The objective of the capacity building programme is to improve the knowledge of municipality officials responsible for SWM by means of environmental promoters.

The course material was developed from the extensive material that had been prepared during the previous five years within the GTZ cooperation. The training material consists of 20 chapters concerning legal, financial, institutional and technical (collection, composting, recycling and landfill disposal) aspects. The training material also addresses questions of how to incorporate the informal sector into SWM and how to build awareness in the population. The various topics were presented in a PowerPoint presentation (more than 700 slides) with corresponding explanations on a CD used in addition to a hardcopy. The CD also contained complementary material such as manuals, books and related documents which were prepared by GTZ or other institutions within the cooperation agreement. The participants therefore had a very extensive access to material that allowed them to conduct training courses in their communities without the need to carry out their own investigations.

2.3 Implementation of the training modules

2.3.1 First training module:

The first training module was characterized by presentations and discussions of the various chapters. Additionally, representatives from the private sector and other public institutions were invited to give practical viewpoints on specific topics. This triggered important discussions that contributed to a harmonious understanding of municipal waste management. Furthermore, the three day meeting offered continuous opportunities to exchange thoughts about the problems and the solutions that have been implemented in the different states of the country. In the second cycle the module has been extended to four days, especially in order to treat in more detail new aspects of legislation and its application.

Between the first and the beginning of the second training module the participants had the task of getting acquainted with the material and preparing an individual presentation based on the information they had received. They also had to prepare a work schedule for the implementation of training measures, limited to a time period of two months.

2.3.2 Second training module:

The second training module was divided into three equal regional events (north, centre and south of the county). The main topics comprised of a two-day training presentation, i.e. the participants learned presentation techniques such as attitude, body language, the use of visual aids (PowerPoint, Flip-board, Images, etc.). The participants were given the opportunity to try these techniques when making their own presentations and were then given feedback on their performance from their respective group. A survey among the participants showed that this was considered a very important element, as they frequently had to make presentations without receiving any feedback.

In additionally, visits were arranged to technical sites such as compost plants and landfills to give the participants a more practical link, and provide an opportunity for explaining concrete problems and

solutions.

The presentations of the participants and their work schedules for implementation plans were discussed, adapted and approved by the organizers of the event.

2.3.3 Implementation of training measures in the State of the respective participants

The participants were requested to implement their work plans in their respective states within the time period between the second and third training course. Participants of the academic and private sector were free to select where they would work. A broad spectrum of different approaches among the participants was observed. Some addressed one or several municipalities with specific topics, others focused on non-governmental organizations or schools. Representatives from about half of the states opted to implement the concepts, while mutually carrying out the training through coordination between the representatives of SEMARNAT delegations and federal institutions in accordance with the intention of the organizers. This is remarkable because in several cases the governments of the states were from different political parties, which makes it more difficult to work together.

2.3.4 Third training module:

The third training module basically consisted of the participant's reporting and a discussion of the adequacy of the material provided for training purposes. The participants also gave feedback on possible improvements. Among the participants the material was used in a variety of ways. Some used them directly without any changes; others made important changes to meet the regional requirements and situations.

2.3.5 Follow up:

The participants of the second generation of courses profited from the comments made by the first generation participants, which enriched the teaching of the first module. Additional information has been included mainly with regard to legal aspects, namely the implementation of the new landfill norm. In this way an exchange about problems and experiences between the participants of the first and second generation was achieved.

Since the beginning of the course, the participating organizations have been aware that even comprehensive training could not be enough to cover all the needs on a municipal level. The demand for training courses will continue in the future because of a high personnel turnover due to political conditions. This was perceived from the beginning, so that further measures are being implemented and others are being planned.

As far as the follow up of the course is concerned, the most important thing is not to let the participants who have been trained as environmental promoters stand alone in the execution of their tasks, but to provide them with backup and support from SEMARNAT and GTZ.

3. Webpage

In the context of the follow up an independent webpage (www.giresol.org) was set up which functions as an important element of the training measures. The webpage is operated and maintained by both partner institutions. It is the first Spanish language webpage dedicated specifically to municipal waste management; another web page is operated in Brazil in the Portuguese language. It is divided into a general access area and another area designed exclusively for the course participants.

The public access area of the webpage includes several documents that may be downloaded free of charge. These not only include legislative information such as laws and standards, manuals and specialized literature prepared within the scope of the GTZ projects, but also information from other institutions, such as the Mexican Ministry of Social Development SEDESOL, as well as successful and

documented individual measures that may serve as examples for other municipalities, etc. This service is already being used by a large number of people in Latin America and on occasions even beyond its borders; up to now more than 40,000 visits to the site have been registered. The more than 100 books and documents in the public area of the site have been accessed or downloaded more than 12,000 times. In addition to the virtual library, practical cases in SWM from Latin-American countries are posted in order to motivate the exchange of information on successful measures.

An exclusive part of the webpage is only accessible to participants of the training courses and includes the complete and constantly updated training material.

In addition to the continuously provided information, further training of promoters is available upon request. Thus, partially finalized training concepts are discussed and adapted to the needs of the respective federal states. In individual cases, initiators also participate in providing additional training.

4. Results and achieved impacts

The capacity building programme and network of urban solid waste management in Mexico has been one of the most successful in the last years. Some of the most important results are as follow:

- Nearly 100 environmental promoters have been trained; most of them apply their acquired knowledge in training municipalities and in building environmental awareness in schools or civil groups. Some participants of the first generation already have left the network due to the loss of their work as a consequence of changes in the governments.
- Beside training and awareness building at municipal level, in several states the promoters took initiatives to take further steps in SWM. Some examples: elaboration of new state legislation in the sector, formulation of state SWM programmes including diagnostics, support for the municipalities in the development of SWM programmes on their level, preparation of standard tender documents with support of GTZ, etc. Important measures are distributed by the webpage “giresol” to make them available to other users.
- Since the new technical norm for landfill took effect, there has been a big need for capacity building in this field. During six months in more than 60% of the states, representatives of the municipalities have been trained in through collaborative efforts involving SEMARNAT, GTZ and members of the network. Additionally, the trained people support the municipalities in the elaboration of legally required regulation plans for the dumpsites.
- In less than 18 months more than 800 (35 %) of the municipalities in Mexico participated in training courses held by the network members.
- Helped by their new knowledge, some state governments or municipalities started planning and constructing new landfills in accordance to the new technical norm and the closing of the open dumpsites.
- For the first time, the most famous university of Mexico – UNAM – started a course on SWM as an obligatory part of its civil engineering programme. This course is given by members of the network using the course material.
- Other Latin American countries like Guatemala and Costa Rica have already declared their interest in copying the network and the capacity programme for proper use.

5. Conclusions:

Not only in Mexico, but also in most of the other developing countries there is still a big need to improve the SWM sector. Capacity and awareness building alone is not enough, but is an important element. Generally there are few professionals with middle and higher university education working in this sector because it has still a low image. Responsible officials at municipality level are often people who have been “trained by doing”, without a solid base of knowledge.

This training programme and network does not substitute the need for more technicians and higher qualified professionals, but it closes a gap in the lower levels of administration and in the practical application of solid waste treatment, as well as in the area of awareness building. So this programme should not be seen in concurrence to what universities are teaching, but can be seen as complementary to it.

The capacity building programme and network can be copied by other countries, but it has to be adapted to the special situation of each of them. Modifying it to suit special circumstances is necessary as far as the legislation is concerned as well as to be appropriate for the technical and economical situation of each country. In the case of Central America, GTZ took the initiative and started a regional project in order to amplify the impact already achieved in Mexico.

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