Waste Management in Turkey: Assessment of potential for Turkish-German cooperation

An extract of the country study "Waste management in Turkey" as part of the project 'Identification and transfer of waste management concepts, services and products in (potential) EU candidate countries as well as emerging and developing countries with scientific support'

UFOPLAN 2014 - FKZ 3714 31 336 0

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Assessment of potential

Since the adoption of the first environmental law in 1983, Turkish waste management has been **gaining momentum**. A major step forward came in the form of the country's recognition as an EU candidate country and its later inclusion in **EU accession negotiations**. The current legal stance in regard to the environment in Turkey is largely aligned with that of the EU. The task now is to build on the progress made over the past decades, promote the implementation of political and legal requirements, and fully exploit the potential for development in the waste management sector working towards a sustainable recycling economy. In order to achieve this, a joint effort is required from political, local and private stakeholders in Turkey, as well as its European and international partners.

The environmental and legal framework conditions are comprehensive and cover a broad spectrum of material flows. However, the **adoption of a national waste management law** could also contribute to a stronger legal codification of waste management. **Harmonising policies and administration on a common waste management strategy** and long-term goals, including collection, recycling, and disposal quotas, are decisive in the process of developing such a law. As well as this, there is potential for **more effective regulatory control** to comply with existing waste management standards. **Increasing local and national supervision capacities** could contribute significantly to an improved implementation of existing legal acts and consequently negate the discrepancy between the waste management legislation and regulations on paper and their actual implementation.

There is a certain amount of potential for optimising not just the effectiveness, but also the efficiency of regulatory work. Specifically, there could be a better **allocation of responsibilities and tasks**, for example, among the ministries and authorities involved, which would streamline licensing for waste-to-energy projects. On the level of **local authorities and waste management associations** an **increase in financial, technical, and staff capacity** could above all have a positive effect in terms of modernising Turkish waste management. The current bottlenecks make the work of these two central stakeholders more difficult, and have a particularly negative effect on waste collection and transport.

The greatest potential in the waste collection and transport sector lies in the **development of an extensive separate collection system for municipal waste, especially bio-waste**. Big cities in which such systems are already in place, can be taken as a standard for further implementation in rural areas. The consistent enforcing of separate waste collection is particularly relevant when thinking about **expanding the commercial recycling economy**. The action plan for recycling demonstrates great ambition on the part of the Turkish government for this sector of waste management. According to current information, however, further efforts are needed to reach the desired quotas of 60% for recycling plastics, paper/cardboard, metal and glass by 2020. Something that might help higher reclamation and recycling quotas would be the **introduction of a nationwide deposit system**, e.g. for plastic bottles. Currently there are only a few isolated research and development projects that use the German deposit system as a model to some extent.

The biggest potential in waste disposal lies in **landfill construction and decontamination**, including landfill gas extraction and use. Although nationwide the number of unregulated landfills is still higher than the number of regulated ones, an increasing percentage of Turkish municipal waste is being sent to regulated landfill sites. Their capacities will soon be exhausted, and so there is a real need to build new, regulated EU-compliant landfills and clean up old sites. This means that future plans for modernising landfills can build on the constant-

ly improving landfill technology of the last ten years in Turkey. As landfill will continue to be the main method of municipal waste disposal in Turkey for the foreseeable future, **biogas utilisation, from landfill gas among other things,** is an option. The potential for this form of regenerative energy generation is estimated at more than **3TWh a year**; currently, existing capacities exploit considerably less.

In addition, all signs are pointing to the idea that in the next few years we will see an increased **interest in waste incineration technologies**. Although the plans to build a facility for incinerating municipal waste still have not been implemented in Istanbul, around 20 more Turkish cities have registered their interest in introducing this kind of technology. If concrete plans were to be initiated in this sector, it is likely that there would be a need for **high-quality education and training for technical staff** alongside the construction of facilities.

As well as decisions in favour of or against certain waste technologies, the future development of Turkish waste management is dependent on **funding issues**. The entire Turkish waste sector is suffering from chronic underfunding, where the brunt of the burden is borne locally. However, revenue from the green tax specifically introduced to combat this problem is not usually enough to finance local waste services. Whether or not the financial situation for local authorities and waste management associations can be strengthened is dependent to a large extent on **nationwide waste charges**. Currently, only 30-40% of local authorities in Turkey levy these charges. As well as taxes and charges, private sector investment also plays a decisive role in the continued development of a waste management infrastructure. Because of the unstable situation in Turkish domestic and foreign politics, Turkey's current **capital investment** is comparatively weak. **Stabilising political relations** would send a positive message to both domestic and foreign investors.

Combining this with a general **strengthening of legal security** would promote improved capital investment as well as an **exchange of international expertise and technology**. Concrete measures would be, for example, more transparent processes for the allocation and execution of tasks, making the purchase of land easier for foreign companies and reducing the required domestic value-added share for waste-to-energy plans.

There is also the potential for a more efficient exchange of expertise in Turkey. Using the results of academic research more effectively in planning and implementing waste management ideas, as well as putting a more practical emphasis on vocational training, could help in achieving the **link between science and practice** necessary for such an exchange.

This wealth of potential, together with a generally positive development in the last ten years, indicates a bright future for further modernising Turkish waste management despite the challenges it currently faces. The two following graphs give a final overview of the areas for potential development identified and described in the study. These are defined by likelihood of implementing a specific measure (x axis) and the effect implementing them will have (y axis) in improving the waste management situation as a whole. Building on this, it is assumed that there will be a lot of urgency to implement measures with high implementation reserves and a high impact potential (red). Measures with lower levels of urgency are marked with yellow (medium) and green (low) accordingly. (Figure 1) This colour scale, based on the "traffic light system" is also used in the benchmark analysis (Appendix VII), in which Turkey's waste management situation is compared with waste management plans and implementations in the EU/Germany.

In Figure 2 only those development potentials are highlighted which lend themselves to Turkish-German co-operation. This assessment is based on the existing study and is taken only from a German perspective.

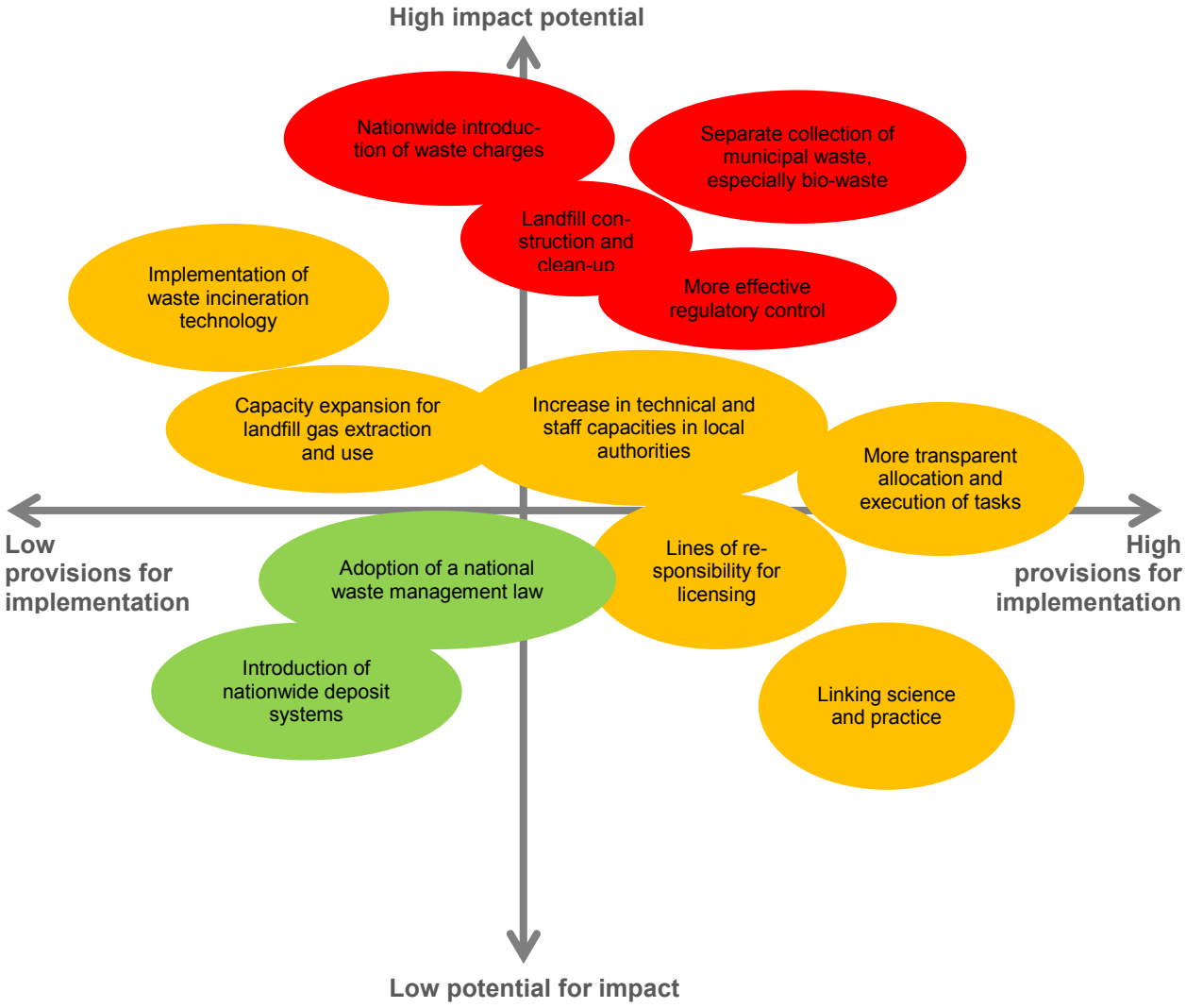

Figure 1: Assessment of potential

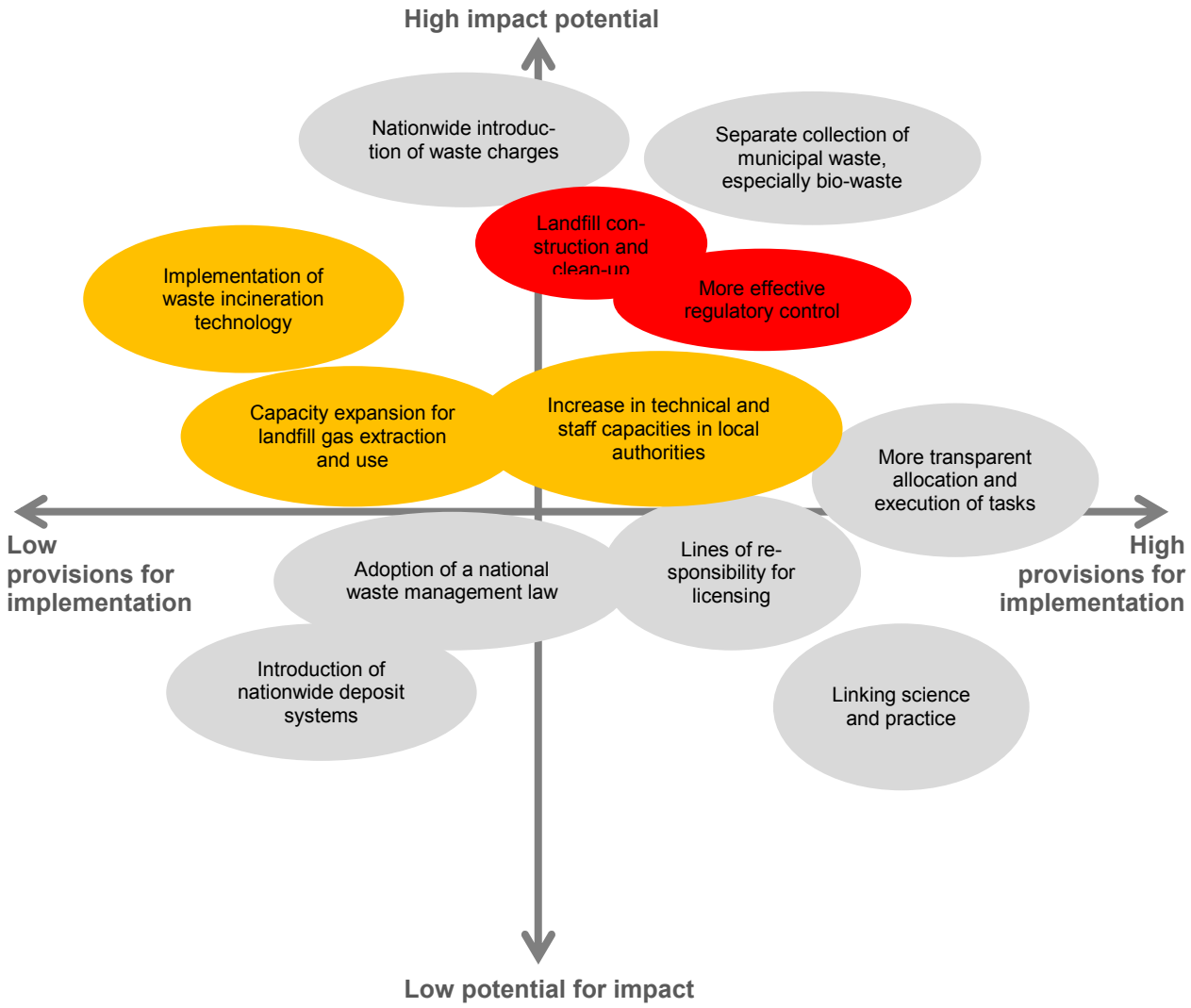

Figure 2: Potential for Turkish-German cooperation