COMMUNITY DEVELOPMENT CARBON FINANCE
TASHKENT SOLID WASTE COMPOSTING PROJECT

ENVIRONMENTAL IMPACT ASSESSMENT

INDUSTRIAL BOARD MAHSUSTRANS

April 2007
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EXECUTIVE SUMMARY

i. The main purpose of the project is to introduce aerobic windrow composting of municipal solid waste to allow Tashkent’s main solid waste operator to generate and sell greenhouse gas (GHG) emission reductions (ERs) to earn income to support citywide solid waste management, to reduce releases of harmful gas from the landfill, and to improve conditions for the city’s waste pickers. Composting also will produce material for covering the landfill and expand the life of the landfill. The proposed project consists of two components: (i) aerobic composting and (ii) waste picker improvement program.

Aerobic Composting Component

ii. This component consists of introducing a 400 tonne per day aerobic windrow composting operation into the ongoing landfill operations at the 59 hectare Akhangaran landfill site which currently receives 2,000 tonnes per day. A land area of 7.5 acres of the site will be completely filled and leveled so the windrow composting area can be prepared for installation of a cement platform. The aerobic windrow composting operation is designed to: (a) reduce the waste flow to the landfill, (b) control leachate contamination, and (c) eliminate methane emissions from the main landfill and thus capture carbon credits.

iii. The design is based on the use of the least cost windrow technology for composting, use of robust and reliable equipment, availability of spare parts, local know how, and intimate knowledge of the workings of the Tashkent solid waste management system. The solid waste company’s existing front end loaders will be used to turn the compost piles. Mechanized equipment has been avoided due to their high investment and maintenance costs.

iv. The Akhangaran landfill is located approximately 35 km south of the center of Tashkent City in the Akhangaran district of Tashkent Province. The total area of the landfill is 59.0 hectares of dry land. The highest point is 446 meters; the deepest 424 meters. The landfill area has a low inclination towards the south. There are no residential areas or industrial facilities in the immediate vicinity of the landfill. The unloading of incoming waste currently takes place through four unloading concrete pads each of which has an access road. The landfill has been in use since 1967, and has by now exhausted 50 percent of its design capacity. The remaining life of the landfill is estimated to be at least 35 years (2042).

v. For the purpose of the project, IB Mahsustrans plans to make available a land area equaling 7.5 hectares in the south-eastern part of the landfill. The project, however, will require an area of 4.5 hectares. The investigation area extends about 100 ha and encloses the adjacent agricultural and fallow areas. Accordingly, the new landfill is completely inside the investigation area.

Community Development Component

vi. The project includes a community development component that is directed at improving working conditions for waste pickers, the community group that will be affected by the project. This group includes the waste pickers operating at the main
landfill, the waste pickers operating at non-secure collection points throughout the city, and the operators of secure collection points. The proposals for this component include:

(a) **Provision of waste picker facilities.** Carbon funds would be used to finance the costs of constructing toilet and shower facilities and canteen for the waste pickers operating at the composting facility and main disposal area as well as providing protective clothing (gloves, vests) for them.

(b) **Construction of secure collection points.** Carbon funds would finance the construction of additional secure collection points at socially and environmentally appropriate locations around the city. The actual locations would need to be determined with the participation of residents, mahalla committees, and local NGOs in various districts around the city.

(c) **Youth education fund.** If feasible, the project sponsor would make available funds to support on a limited basis the evening education of children and youth who are collecting waste at in-city markets, non-secure collection points, and secure collection points. The classes would allow this vulnerable group to obtain reading and writing skills during the hours when they are not engaged in waste picking.

**Environmental Impacts**

vii. **Impacts on Water Quality.** Leachate generation is considered one of the main potential impacts of the proposed compost facility on water resources. From this perspective, Tashkent is fortunate in having a relatively dry climate with annual precipitation of some 367 mm per year. The main source of leachate is the wet waste itself, which can form leachate as the waste is placed on the windrows in heaps up to 2 m high. New technologies involving recycling of low grade compost can limit the amount of leachate formed and can greatly speed up the composting process, thus further limiting leachate formation (that is, the moisture content of the wastes is rapidly reduced). However, there are no natural water bodies or shallow production aquifers located near the facility which makes it highly unlikely that surface or ground water bodies will be contaminated by the facility. Thus there will be no potential impact on offsite groundwater due to the slight potential for infiltration to subsurface layers because of the very low permeability of the local clay soil.

viii. Any leachate produced in the composting areas will be collected and returned to the composting process as there is a negative water balance for this part of the project. The returned leachate enhances the composting operation by producing a better quality product in a shorter time than operations that do not return leachate to the compost piles.
ix. **Impacts on Air Quality.** The fresh waste that is received in the screening and sorting operations does not emit offensive odors but if allowed to accumulate due to poor housekeeping will quickly start to decompose generating offensive odors and conditions that are unpleasant for the workers. Some leachate may also be generated in these operations and must also be collected by composted absorbents and recycled to the composting waste piles.

x. In case waste piles are allowed to accumulate at the receiving area, another potential negative environmental impact that could occur is the emission of methane and carbon dioxide as well as various volatile organic compounds, hydrogen sulfide, ammonia, and mercaptans with their distinctive foul odor. This would occur only as a result of poor housekeeping practices.

xi. The windrow composting process itself has the highest potential for odor generation, if it is not well controlled. However, the high temperatures reached in the windrow process destroy pathogens and pasteurize the waste. The waste is loaded directly onto the windrows by the tipping trucks and do not require forming by front end loaders thereby further reducing worker contact with raw waste.

xii. Windrow technology is highly affected by weather conditions. Although saturation of the waste by rainfall can produce anaerobic conditions, this will not present a problem at this site due to the limited rainfall in Tashkent. Although odors from a composting operation can be a nuisance and a potential irritant to nearby communities (odors are the primary source of public opposition to composting plants worldwide), this site is well located sufficiently far from residential areas as to have zero impact.

xiii. **Noise Impacts.** Any noise impacts from the turning of waste will be negligible. Moreover, the landfill site is not located near residential areas. The closest residential area is 4 kilometers away from the landfill site.

xiv. The EMP outlines the required measures for monitoring the level of compliance achievement of the project as well as the efficiency of the composting operations. It also includes a set of measures to strengthen the capacity of IB Mahsuustrans in terms of enhancing the capability of the organization to supervise and monitor the progress and efficiency of the required mitigation measures. The minor negative impacts associated with the proposed project, which require appropriate measures to be implemented during different stages of project development, are considered as the basis of this EMP.

### Proposed Environmental and Social Management Plan

| **Composting Plant** | 1. good housekeeping and maintenance of equipment  
| | 2. regular washing of work areas after completion of daily processing  
| | 3. clearing of spilled wastes  
| | 4. immediate transport of rejects to landfill |
| **Control of leachate** | 1. installation of cement compost pad with leachate drains and sump |
|                | 1. use modern composting techniques  
| Vector control | 2. good housekeeping and maintenance of equipment  
| Vector control | 3. pest control program  
| Worker health and safety | 1. health and hygiene training and posters  
| Worker health and safety | 2. provision of personal protection equipment  
| Worker health and safety | 3. health monitoring  

**Public Consultation and Disclosure**

xv. The preparation of this project involved extensive consultations with the potential beneficiaries of the Community Development Program component and the broader range of stakeholders interested in the carbon finance composting operation. The main consultative activities included the following:

(a) Waste picker assessment carried out by Expert Fikri, a social science research firm based in Tashkent, which involved quantitative surveys of waste pickers operating at non-secure collection points around the city and operators of secure collection points; focus groups discussions with waste pickers operating at the main landfill, and in-depth interviews with other relevant stakeholders (for example, solid waste management professionals, NGOs, Mahallah Committees).

(b) Announcement of the proposed CDCF Tashkent Solid Waste Composting Project and availability of the EA for public disclosure and consultation.

(c) Public consultation to discuss the environmental and social impacts of the proposed CDCF composting project was held in Tashkent on February 16, 2007.

xvi. The issues raised at the public consultation held at Tashkent are detailed in annex 1.
ENVIRONMENTAL IMPACT ASSESSMENT

The main purpose of the project is to introduce aerobic windrow composting of municipal solid waste to allow Tashkent’s main solid waste operator to generate and sell greenhouse gas (GHG) emission reductions (ERs) to earn income to support citywide solid waste management, and to improve conditions for the city’s waste pickers. The proposed project consists of two components: (i) aerobic composting and (ii) waste picker improvement program.

This Environmental Impact Assessment (EIA) examines the potential negative and positive environmental and social impacts of the proposed project and compares them with any feasible alternatives. Recommendations are made as to the measures needed to prevent, minimize, mitigate or compensate for any adverse environmental or social impacts, especially those that are irreversibly significant and improve environmental performance. The following presents the description of the project and its location as well as the existing environmental and social conditions (Section 1), existing legal and institutional framework (Section 2), analysis of project alternatives (Section 3), environmental and social impacts associated with the proposed alternative (Section 4) the environmental and social impact mitigation plan (Section 5), and information on the public consultation and disclosure measures carried out as part of the preparation of this project (Section 6).

1. DESCRIPTION OF PROJECT

The proposed project consists of two components: (i) aerobic composting and (ii) waste picker improvement program.

Aerobic Composting Component

This component consists of introducing a 400 tonne per day aerobic windrow composting operation into the ongoing landfill operations at the 59 hectare Akhangaran landfill site which currently receives 2,000 tonnes per day. A land area of 7.5 acres of the site will be completely filled and leveled so the windrow composting area can be prepared for installation of a cement platform. The aerobic windrow composting operation is designed to: (a) reduce the waste flow to the landfill, (b) control leachate contamination, and (c) eliminate methane emissions from the main landfill and thus capture carbon credits.

The design is based on the use of the least cost windrow technology for composting, use of robust and reliable equipment, availability of spare parts, local know how, and intimate knowledge of the workings of the Tashkent solid waste management system. The solid waste company’s existing front end loaders will be used to turn the compost piles. Mechanized equipment has been avoided due to their high investment and maintenance costs.

The input waste to the plant will be supplied from selected districts in Tashkent and delivered to the plant in 10 tonne vehicles. The waste will be weighed at the weighbridge entering the main landfill site, and then unloaded at the reception area. Deliveries will be scheduled at the main gate and weighbridge at the landfill so that
the most suitable waste loads containing fresh wet household and market waste are
dispatched to the compost area.

The contents of approximately 20 percent of the incoming waste will be sent directly
to the composting area onto the concrete lined windrow pad. This pad will be sloped
and have facilities that can collect any leachate that may seep from the windrows. Windrow piles will be formed by front end loaders, and then by means of large mobile windrow turners, turned every 7, 14, and 21 days and collected on the 28th
day. Moisture, oxygen levels, and temperature in the windrow piles will be regularly
checked by on-site quality control staff to ensure optimum conditions for the
composting process.

After the 28 days at the primary compost pads, the processed coarse immature
compost will be taken to the secondary compost pads where it will be turned every 2
weeks for a period of 60 days.

After the 60 days on the secondary compost pads, the raw composted waste will be
loaded into trucks and taken to the main part of the landfill to be used as cover
material for the landfill. The raw compost matures naturally as it is placed on the
landfill. This composted material has several very important functions as landfill
cover: (i) it retains moisture; (ii) it oxidizes the methane and other gases that escape
from the landfill which will results in additional GHG emission reductions; (iii) it
reduces leachate production; (iv) it reduces odors; (v) it greatly improves the visual
impact of the landfill; (vii) it prevents destruction of any vegetation by oxidizing the
undesirable gases; and (viii) purifies the air around the landfill site.

The preliminary layout of the plant has been designed as shown in Annex 1.

Community Development Component

The project includes a community development component that is directed at
improving working conditions for waste pickers, the community group that will be
affected by the project. This group includes the waste pickers operating at the main
landfill, the waste pickers operating at non-secure collection points throughout the
city, and the operators of secure collection points. The proposals for this component
include:

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funds to support on a limited basis the evening education of children and
youth who are collecting waste at in-city markets, non-secure collection points, and secure collection points. The classes would allow this vulnerable group to obtain reading and writing skills during the hours when they are not engaged in waste picking.

Location of the Project

The Akhangaran landfill is a managed landfill located approximately 35 km south of the center of Tashkent City in the Akhangaran district of Tashkent Province. The total area of the landfill is 59.0 hectares of dry land. The highest point is 446 meters; the deepest 424 meters. The landfill area has a low inclination towards the south. There are no residential areas or industrial facilities in the immediate vicinity of the landfill. The unloading of incoming waste currently takes place through four unloading concrete pads each of which has an access road. The landfill has been in use since 1967, and has by now exhausted 50 percent of its design capacity. The remaining life of the landfill is estimated to be at least 35 years (2042).

Adjacent to the present landfill area there are areas for agricultural development, such as corn and clover fields. The little valleys are predominantly occupied by meadows and fallow land. The agricultural land use is of spray-type and gets its irrigation water from a large irrigation channel, which flows from the highest point of the hill. This channel is a tributary of the channel system of the Kara Zu which belongs to the Syr Darja system.

Investigation Area

For the purpose of the project, IB Mahsustrans plans to make available a land area equaling 7.5 hectares in the south-eastern part of the landfill. The project however will require an area of 4.5 hectares. The additional area secured for composting could be used in the event the project sponsor decides to increase the volume of compost produced and resulting emission reductions. The investigation area extends about 100 ha and encloses the adjacent agricultural and fallow areas. Accordingly, the new landfill is completely inside the investigation area.

Environmental Conditions - Current Situation

The environmental analysis of the current situation includes an assessment and evaluation of the following parts of the nature and culture: humans and land use; flora, fauna, and biotopes; water; climate; landscape; and culture.

Humans and Land Use

The structure of the investigation area is divided into the following three parts: area of the landfill, surrounding area used for agricultural purposes, and surrounding fallow land.

Baseline Conditions

Settlement. In the immediate and further vicinity of the landfill, there are no residential or industrial areas. On the landfill site, there are some buildings which are
part of the landfill facilities, such as the weighbridge, administrative building, water pump, transformer, maintenance shed, gate, and record-keeping shed.

Traffic. The landfill is connected with the regional street system by an asphalt access road. The distance from the Akhangaran highway to the landfill area is only a few hundred meters.

Land Use. Adjacent to the landfill area, there are areas for agricultural development, such as corn and clover fields. A fruit tree plantation is located near the landfill facilities. The little valleys are predominantly occupied by meadows and fallow land. The agricultural land use is of spray-type and gets its irrigation water from a large irrigation channel that flows from the highest point of the hill. The channel is a tributary of the Kara Zu channel system belonging to the Syr Darja system.

There is a group of 25 waste pickers working at the landfill, who come primarily by walking along a footpath from a village located approximately 4 to 5 kilometers away.

Technical Infrastructure. Near the entrance to the landfill property, a major line of electrical transmission crosses the access road.

General Planning. According to the "Scheme of the General Plan of Tashkent-City (1997)," the area is shown as a long-term landfill for Tashkent City, and is thus accepted from the perspective of city planning.

Recreation. There are no recreational facilities in the investigation area.

Analysis

The investigation area is affected by dust and the noise of the ongoing landfill operations. Another item is the impairment of the landscape by the landfill itself, with its deep fill, and steep slopes.

Sensitive settlements, particularly residential areas or industrial areas, are not in the vicinity of the landfill. However, there are about 25-30 waste pickers that are allowed access to the landfill at any one time. While this work provides a steady stream of income, it also presents health risks to the waste pickers. Domestic animals are prohibited from grazing at the site. However, some of the waste pickers reportedly recover discarded food wastes to bring home to their domestic animals.

Flora, Fauna, and Biotopes

Baseline Conditions

Flora/Fauna. The potential natural vegetation of the landfill area and the adjacent areas is the ephemere- semi- dessert of the Central Asian loess semi-dessert. This is a wide spread vegetation formation in Kazakhstan and the north of Uzbekistan.

The flora and fauna in the investigation area is determined by the prevailing land use. Thus syanthropic plants and animals are the characteristic species here. The area around the landfill is primarily used for agricultural purposes. Corn and clover, fruit
trees, melons, and vegetables are planted in irrigated areas. Only certain arid hills and the deepest points of the little valleys, which are wet from water draining and leaking from the irrigation system, are covered by natural plants.

The majority of the plants are ephemera and ephemeredes i.e. annuals and perennials (grass) with short vegetation period. That means they grow only from autumn to the end of spring. The typical plants of the area are those which occur in the steppe and the semi-desert vegetation and those on limited azonal locations like swamps, along irrigation channels, and the banks of streams and rivers.

The fauna in the area is characterized by wide spread species such as Pica pica, Corvus cornix, Passer montanus, and Turdus merula. In the grooves and on the dry hills there are amphibia such as Rana ridibunda, Bufo viridis and reptiles such as Gymnodactylus vussowi, Ophisaurus apodas, Ablepharus deserti, Coluber vaverdieri, Elaphe dione, and Natrix tesselata.

In the investigation area there are no rare, endemic or relict species that are included in the "Red Book of the Republic of Uzbekistan."

Biotopes. Arable farming appears along the hills in the surrounding of the landfill area and occupies the majority of the area surrounding the landfill. Some rudimentary natural vegetation also is growing here, essentially between agricultural plots. On the hills along the concrete irrigation channels, special vegetation is developed which is composed by ruderal vegetation and reed bank vegetation. The fallow land is characterized by nearly the same vegetation. The typical species are Phlomis thapsoides, Tanacetum pseudoachillea, Achillea millefolium, Hordeum bulbosum, Poa bulbosa, Bromus spec., Artemisia spec., Amaranthus spec. Along the irrigation channels there are sparse tree and bush vegetation. The typical species are Amydalus spinosa, Rosa canina, Hulthemia berbarifolia, Morus alba, M.nigra. Salix spec. At the entrance of the landfill there is a tree plantation and a tree-lined road.

Analysis

The whole investigated area is impacted strongly by quatemary factors. The natural landscape and balance is influenced by the landfill and, to a greater extent, by irrigation of the surrounding agricultural fields. Due to these impacts, the vegetation and biocoenosis are completely anthropogenic, especially the wet locations in the valleys with the reeds are completely caused by controlled and uncontrolled irrigation water flow.

The investigation area is an anthropogen-dominated plane. Natural biotopes are very rare, and the biodiversity is very low with the exception of some areas along the concrete irrigation channels and the deepest points of the valleys where examples of the area's natural wetland-type vegetation are growing. Therefore, the capability of the investigation area excepting these wet locations, as a biotope for rare or landscape- typical flora and fauna is not significant. The sensitivity against landfill related impacts is very low. However the reed vegetation is very sensitive as a supportive ecosystem for the area, and has a high efficiency as a biotope of swamp and reed biocoenosis.
Soils

Baseline Conditions

In the entire investigation area, the glacial aeolian sediment loess forms the geological underground where grey soils (Serosemes), which show arid climate conditions, could develop. The characteristic soil class is sandy clay. The upper soil layers are low in humus content and calcareous. When irrigated, this soil is a good for agricultural use. Some soils in the valleys have saltcretes.

Analysis

Due to the deep waste deposits, the soil underlying the area of the landfill does not appear to have a high efficiency in realizing soil functions like ground water formation and location for land use or biotopes. Therefore the sensitivity against landfill related impacts is also very low. By contrast, the soils used for agriculture have, according to their undisturbed properties, a high efficiency as production factor for agriculture and location for biotopes. Accordingly, they have a high sensitivity against any existing landfill related impacts.

Ground Water

Baseline Conditions

In the investigation area there are two water-bearing horizons, which are situated in the quaternary sediments. The first one is shallow and appears in interval 4.50 - 7 m under the surface. The second one is situated at depths of 80 - 150 m. This lower water-bearing horizon has good water quality and is used as irrigation and tap water.

The two ground water horizons are protected against landfill related impairment by a thick sandy clay layer, particularly the deeper aquifer, which is the one that is locally most prevalently used for local drinking water supply wells.

Analysis

According to the low permeability of the subsoil, which is very thick clay, infiltration of the groundwater by waste is not significant. The subsoil consists of a very thick clay layer, which has a low permeability. Therefore the groundwater is not very sensitive against any contaminated water that may originate from the landfill. The subsoil layer has a high efficiency in protecting the groundwater against pollution.

Surface Water

Baseline Conditions

The investigation area has no natural surface waters. Due to the far-reaching use of the area for irrigated agriculture, two concrete irrigation channels cross the area in the east of the present landfill area towards the south. These channels are partially destroyed and subject to significant leakage. The irrigation water used within the immediate vicinity of the landfill is taken from a main irrigation channel that is
situated in the north of the landfill. This irrigation channel is part of the Syr Darja System. Its water comes from the water channel "Hanaryk" from the Chirchik River and flows into the system of the Kara Zu, which is a tributary of Syr Darja. Where the channels are destroyed, the farmers have constructed little grooves in the soil. These grooves distribute the water into smaller grooves that irrigate the fields. The result is wide spread irrigation. In the deepest points of the little erosion valleys, the water is collected and contributes to permanent wet and swampy conditions, sometimes shallow ponded areas of water (i.e., artificially created wetlands) are developed. Below the landfill, on both sides of the access road, there are shallow water bearing grooves that flow and are hydraulically connected to the Syr Darja system.

Analysis

The irrigation system is nearly destroyed. As a result, some uncontrolled irrigation water reaches the bottom of the landfill.

The irrigation channels are not natural waters. Thus their ecological efficiency is very low, albeit its significance for agriculture is high. The efficiency of the little water-bearing grooves with regard to ecology and water management is low. However, there are amphibia and reptiles living in the grooves. Therefore the grooves are sensitive with regard to the overall area’s ecological needs, and may be sensitive to any leachate that could come from the existing landfill. The composting facility, however, is not expected to generate any leachate.

Climate and Air Quality

Baseline Conditions

The investigation area belongs to the arid climate zone of the half desert. Table 1 shows the characteristic annual average temperature and the annual average precipitation.

<table>
<thead>
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<th>Months</th>
<th>Average temperature (°C)</th>
<th>Average precipitation (mm)</th>
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<tbody>
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<td>46</td>
</tr>
<tr>
<td>February</td>
<td>2.0</td>
<td>39</td>
</tr>
<tr>
<td>March</td>
<td>7.9</td>
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<td>6.7</td>
<td>40</td>
</tr>
<tr>
<td>December</td>
<td>2.0</td>
<td>46</td>
</tr>
</tbody>
</table>

Average/a 13.6 367
The average temperature runs to 13.6 °C. Four months, May, June, July and August have an average temperature that exceeds the 20°C-border, while the precipitation in these months is very low (50 mm.). Thus the landfill area experiences an arid situation in these months. Accordingly, the weather in the summer season is hot, dry, and stable. This summer drying time is responsible for the limitation of tree and bush growth (continental wood border) throughout the area surrounding the landfill.

Winter is characterized by unstable weather with many thaws, short frosts, and heavy precipitation. Strong frosts rarely occur.

Wind speeds are low. The quantity of days with dust, storm, and wind each year is low, at an average of five days per year. In January, the main wind blows from the north, east, and northeast; in July, from the north and northwest.

The maximum daily amount of precipitation runs to 50 mm, precipitation can be noted on 100 days/a, snow lies during 43 days/a. The average monthly temperature on the surface of the ground is 1.9°C, at depths of 20 cm the temperature exceeds 0°C.

Tashkent and its surroundings belong to the climate zone IV G within Uzbekistan. This zone is characterized by average July temperatures between 25 °C and 28 °C, and average January temperatures between -15°C and 0°C.

Tashkent is part of a region that is very sensitive against climate-related contamination of the atmosphere.

Analysis

The air hygenics are heavy preloaded by landfill related pollution, such as flying waste, dust, and smoke. The wind blows polluted air over the agricultural fields and other lands, including the valley wetlands created from irrigation water leakages.

Landscape

Baseline Conditions

The landscape in the investigation area is determined by the landfill area and by the asymmetric erosion grooves and slides. Due to the land use and the arid climate, a far-reaching open and amorphous landscape divided by the erosion grooves has developed. Very typical features of the landscape are the lineation of the reeds along the irrigation channels and the wide spread reeds in the valleys. Only a few trees, such as mulberry trees and poplars, are growing along the channels and mark their location. Fields occupy the hills and their slopes. The low intensity of the land use and the uncontrolled irrigating make it possible for grasses and shrubs to grow nearly everywhere. Therefore the landscape does not have the typical character of an agricultural landscape because the abrupt changes are absent. Accordingly, a landscape is developed with a lot of sliding transitions. The access road is tree-lined.

Analysis
The landscape is heavily preloaded by the landfill area. The other part of the investigation area shows a typical Uzbek agricultural landscape with varying relief. Because of its gently sloping topography, the area is very sensitive to changes in relief by the existing landfill. Its efficiency is due to the heavy preloading low, but the potential to develop a typical Uzbek agricultural landscape is high.

Cultural Property

There are no buildings or structures that have a high socio-cultural significance (for example, mosques, churches, schools, or other monuments) in the investigation area.

2. LEGAL AND INSTITUTIONAL FRAMEWORK

This chapter covers the existing legal and institutional frameworks that apply to the proposed composting operation at Akhangaran Landfill.

Legal Framework

In Uzbekistan, the legislation relating to the protection and use of natural resources and environmental protection consists of laws, Presidential decrees, Government resolutions, ministerial regulatory acts, and local authority acts. The legislation that relates to the composting project includes the laws and regulations relating to environmental assessment and solid waste management.

The main principles of environmental legislation in Uzbekistan have been laid down in the Republic’s Constitution. There are contained within the following articles:

- Article 55 stipulates that the land and its subsoil, water, flora and fauna and other natural resources are a national asset that should be rationally used and protected by state;
- Articles 47 and 48 define the citizens’ liabilities to comply with the Constitution and laws;
- Article 50 makes citizens responsible for careful nature treatment;
- Article 51 obliges citizens to pay legally established taxes and describes the powers of state authorities, including those arising from the regulation of ecological relations (i.e., Article 100).

Environmental Protection Law. The Uzbekistan Environmental Protection Law, adopted on December 9, 1992 (amended on May 6, 1995; April 25, 1997; December 25, 1998; and August 31, 2000) provides a framework for environmental impact assessment (EIA) and state ecological review (literally, state ecological “expertise” – SEE) requirements and processes in the country. Article 4 establishes the mandatory nature of SEE as a means to achieving environmental protection within various types of public- and private-sector economic activities. It further aims to prevent irreversible environmental consequences and to ensure reproduction of natural resources. Article 8 stipulates that environmental management and use of natural resources is governed by applicable national legislation, regulations, and normative acts issued by the Cabinet of Ministers, the State Committee for Nature Protection (SCNP), and local state authorities. Article 11 establishes the SCNP, subordinate to the parliament, as a duly authorized state body for environmental protection and
control. Its decisions are mandatory for implementation by public- and private-sector entities and individuals.

Chapters IV-V, Articles 14-23 set general requirements, rules, and procedures for the use of the environment as well as a framework for regulating environmental quality through norms and standards. Chapter VI, Articles 24-27 is devoted to SEE, which is established as a mandatory environmental measure that must be implemented prior to making an economic decision. The law prohibits the implementation of projects without a positive finding, or conclusion, to the SEE. Chapter X, Articles 41-46, establishes environmental requirements for various types of economic and other activities. According to this chapter, decisions on development and implementation of large industrial and other projects that may have significant negative environmental impacts may be made only by Cabinet of Ministers, based on the conclusion of the SEE.

Law on Ecological Expertise. The Law on Ecological Expertise was adopted on May 25, 2000 to integrate various EIA and SEE requirements found in various laws. Article 1 of the Law on EE defines EE as a process necessary to obtain compliance of a proposed or forecasted activity with environmental norms and standards and to determine whether or not implementation is permissible. An EE must be conducted at various stages prior to decision-making on implementing a specific project or activity. It determines the level of environmental risks and impacts that the proposed activity of project may have on the environment and public health. It subsequently assesses the adequacy of and justification for the proposed environmental protection and mitigation measures. Article 5 stipulates that the following principles are to be the basis of an EE: (a) lawfulness; (b) objectivity; (c) justification; (d) mandatory consideration of environmental security requirements; (e) presumption of environmental danger that stems from all economic and other activities; (f) comprehensiveness (completeness) of assessment of the impact of economic activities on the environment and public health; and (g) independence.

Article 11 of the Law on EE specifies that the following are subject to SEE: (a) drafts of state programs and concepts and regional and spatial development schemes for various sectors of the economy; (b) construction site selection; (c) pre-design and design documentation; (d) drafts of normative, technical, and methodological documentation to regulate economic and other activities; e) documentation related to new technologies, equipment, and materials; (f) existing facilities with negative environmental and health impacts; environmental programs and ecological disaster zones; and (g) all types of urban development, design, and planning documentation, etc.

Article 15 of the Law on EE explains what documents must be submitted to SEE for a proposed or an operating project (activity). For proposed projects, EIA documentation shall include a draft EIA declaration, a declaration on environmental consequences, and, when required by the legislation, an EIA statement; and for operating projects, draft environmental norms and an EIA statement and/or an environmental audit. A proponent shall submit to the SCNP: (a) a draft EIA declaration prior to initiation of the SEE, (b) an EIA declaration prior to the approval of a project’s technical and economic justification, and (c) a declaration on environmental consequences prior to an authorization of start operating the project.
Administrative Framework. Article 12 of the Law on EE reconfirmed the SCNP as a duly authorized government body responsible for (a) developing and approving norms, instructions, procedures, methodologies, and guidance on SEE and environmental audits; (b) managing and conducting SEEs; (c) inviting necessary experts to participate in SEEs; (d) in cases of negative SEE conclusions, submitting notifications to banking and other credit institutions to prohibit or terminate financing of respective projects; and (e) monitoring and ensuring compliance with the conclusions of SEEs. Article 13 clarifies that the SEE units of the SCNP and respective regional and Tashkent offices of the State Committee are authorized to conduct mandatory state ecological reviews. Articles 8-9 and 16-18 regulate the rights and obligations of a project proponent and SEE experts. Article 19 stipulates that SEE be completed in 30 days; however, the Chairman of the SCNP can, in the most complicated cases, extend the timeframe to no longer than two months, after which a conclusion must be issued. The conclusion has legal force and is valid for three years.

The SCNP, through its State Ecological Review Unit, (and respective regional offices), is responsible, under the guidance or instruction of the Cabinet of Ministers, for coordinating EIA preparation by a project proponent with local authorities and relevant ministries (Health, Agriculture and Water, Economy, etc). It is also responsible for assembling SEE expert commissions, which usually include members from the SCNP, independent experts (from sectoral research and design institutes and academia) representatives of other relevant government agencies, local authorities, and non-governmental organizations. Other legally required types of review (such as sanitary-epidemiological) proceed independently, but in cases when the same activity or a project is assessed, their results and conclusions may be crossed-referenced and/or submitted to the Cabinet of Ministers for a broader and more integrated state review. The Chairman of the SCNP has final authority to sign off on the conclusion prepared by an expert commission and to forward it to the relevant decision-maker.

Public Participation. Article 4 of the Environmental Protection Law establishes “glasnost” (that is, openness and public availability of environmental information as a principle of national development). Article 12 proclaim the right of citizens to (a) live in an environment that is favorable and healthy for current and future generations; (b) demand and receive environmental information; (c) safeguard nature and rationally use its resources; and (d) unite in public (nongovernmental) organizations. Article 27 stipulates that independent expert groups, on the initiative of public associations (nongovernmental organizations), can conduct a public EE with their own financing or pro bono.

Article 6 of the Law on EE also proclaims “glasnost,” stipulating that SEE proponents may inform the public of the initiation of a project’s SEE. If a notification has been issued (announced), project proponents are required by law to announce (publish) its results within a month.

Environmental Impact Assessment Review Process. The environmental assessment of projects (EIA and SEE) is conducted in two steps. The first step involves environmental agencies or companies carrying out an environmental impact assessment of a proposed project. The second step is to submit the outcome to the
The appropriate authorities under the SCNP who carries out the state environmental expertise. These documents have established the following environmental assessment procedure for projects:

Environmental supervision of project begins at the inception phase where the idea of project launching emerges. The Draft Environmental Impact Statement (DEIS) is prepared at this stage. It incorporates the data sufficient for making a principal decision on a feasibility of the intended activities on the site proposed by the project proponent or its alternatives.

The assessment outputs in the form of DEIS are passed over for state ecological expertise (SEE) to evaluate completeness, sufficiency, credibility and correctness of the environmental impact assessment and conclusions as well as to identify if further elaboration is needed and, if so, its scale, depth and detailing degree. If the assessment is lacking sufficient justification for making an objective decision, it is sent back for revision. The expert findings serve as grounds for Conclusion signed by the Head of the SEE.

The second phase of the EIA procedure includes preparation of an Environmental Impact Statement (EIS) for the projects where the environmental assessment revealed a need for supplementary explorations, field surveys, special analyses, prototype experiments and development of additional well-grounded environmental mitigation measures. The submission of the EIS for state ecological expertise preceeds the feasibility study approval (EIS is obligatory in ~30% cases for 1st category projects and in ~10% cases for 2nd category projects). For projects belonging to the 1st and 2nd category, the EIS should be prepared if it is set and reasoned in Conclusion of State Environmental Expertise on DEIS.

The final phase of the EIA procedure is the Statement on Environmental Consequences (SEC) that contains data on legally established limits for air emissions, discharges, and waste generation of the intended economic activity. The document development takes place at the stage of project detail designing and a positive SEE Conclusion on it serves as the basis for the projects operation.

Projects of the 4th category need to prepare only Draft Environmental Impact Statement. It should include the following information:

- Site layout with indication of land use types;
- Description of production technologies;
- Data on the available sewage system and wastewater discharge requirements;
- Air emission amounts and composition;
- Waste amounts and disposal requirements;
- Environmental actions.

If the SEE ascertains that the structure or/and contents of the submitted documents do not meet the requirements of the effective Regulation on SEE or other regulatory documents, it issues a negative conclusion concerning further consideration with explanation of reasons for such rejection.
The public is involved in EIA/SEE in cases of potential social impact. A need in public discussions is stated and justified in the course of the DEIS preparation. Public discussions are not normally held when a project relates to site reconstruction, upgrading, or technological modernization because it is deemed that in such cases the environmental situation improves due to the replacement of worn-out and obsolete equipment by new installations with advanced automatic control systems. In cases involving green-field activities or expansion of an existing site with establishment of new production lines, public hearings (if any) are held during the first or second phase of the EIA.

**EA Clearance and Compliance**

Construction and operation of the proposed Tashkent Solid Waste Composting Project can be initiated upon receiving clearance on the EA/SEE from the SCNP.

No land acquisition is needed for the proposed composting project because all land that will be used under the project is already under the control of IB Mahsustrans. The environmental pollution control measures will be in compliance with the relevant laws, regulations, and standards as described earlier in this chapter.

**Solid Waste Management Legislation**

In 2002, The Government of Uzbekistan enacted a Solid Waste Law. The main objectives of the law are to prevent the adverse effect of waste on the life and health of the population and the environment, and to promote waste reduction and waste recycling activities. The Law establishes legal, institutional, and economic fundamentals for waste management; specifies the directions of state regulation of the sector; and establishes powers of the central and local government authorities (summarized in Table 1). The Law also regulates waste standardization, storage, and disposal; environmental certification and state registration; hazardous waste transportation; and the maintenance of the state cadastre of waste disposal and utilization sites. The Law institutes the system of compensatory payments for waste disposal, and specifies measures to promote waste reduction and recycling activities. In addition to the Law on Environmental Protection of the Republic of Uzbekistan initially adopted in 1992 and the Solid Waste Law, other laws and resolutions of the Cabinet of Ministers relating to solid waste management include the following:

**Laws**


**Resolutions of the Cabinet of Ministers of the Republic of Uzbekistan**

- “Regulations for Imports and Exports of Ozone-Destructive Substances and of Products Containing these Substances” issued on March 14, 2000;
- 151 “Regulations for Imports and Exports of Environmentally Hazardous Products and Waste” issued on April 19, 2000;
• “Streamlining the Operations of Companies for Utilization and Disposal of Lamps and Devices Containing Mercury” issued on October 23, 2000;
• “Improvement of the System of Fees for Pollution of the Environment and Waste disposal in the Territory of the Republic of Uzbekistan” issued on May 1, 2003;
• “Approval of the Statute for Licensing Operations in Turnover of the Source of Ionizing Radiation”; 
• “Approval of the Statute for Licensing Operations in Mining of Precious and Rare Earth Metals, and Precious Stones”

Other Regulatory Acts

• Statute for Procedures of Establishment and Waste Cadastres of the Republic of Uzbekistan;
• RD 118.0027719.1-91-91 – Procedures to Issue Permits for Waste Storage (Land Disposal);
• RD 118.0027714.25-93 Procedures for Undertaking State Environmental Oversight of the Facilities for Disposal of Solid Household Waste of Residential Areas of the Republic of Uzbekistan;
• RD 118.0027714.31-94 Procedures for Undertaking State Environmental Oversight (Inspections) of the Facilities for Disposal of Toxic Industrial Waste of Businesses in the Republic of Uzbekistan;
• SanPiN # 0068-96 of the Republic of Uzbekistan – Sanitary Rules for Collection, Storage, Transportation, Treatment, and Disposal of Solid Household Waste in the urban areas of the Republic of Uzbekistan;
• SanPiN # 0056-96 Establishment and Maintenance of Healthcare Institutions of the Republic of Uzbekistan;
• Temporary Classificator # 4286-87 of Toxic Industrial Waste and Technical Recommendations for Identification of Toxicity Category of Industrial Waste of the Ministry of Health of the U.S.S.R. and State Committee for Science and Technologies of the U.S.S.R.
• RD 118.0027714.60-97 Environmental Protection. Treatment of Industrial and Consumption Waste. Terms and Definitions.
• KMK 2.01.12-96 Landfills for Treatment and Land Disposal of Toxic Industrial Waste. General design regulations.
• SanPiN # 0026-2002 Stocktaking, Classification, Storage, and Treatment of Industrial Waste.
• SanPiN # 0149-04 Sanitary Rules and Norms of Waste Collection, Storage, and Removal by Healthcare Institutions;
• SanPiN # 0157-04 Sanitary Requirements to Storage and Treatment of Solid Household Waste in Special Landfills in Uzbekistan.
Air and Noise Pollution Regulations/Standards

National noise level standards exist in Uzbekistan and will be applied in the design and operation of proposed Akhangaran composting project.

Methane Emissions and Kyoto Protocol

Officially, the Kyoto Protocol belongs to the United Nations Framework Convention on Climate Change (UNFCCC). It is an international treaty dealing with greenhouse gas emissions and global warming. The treaty was negotiated in Kyoto, Japan and adopted on 11 December 1997. Six greenhouse gases targeted includes: carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, HFCs, and PFCs.

Open dumps and landfill sites are a source of the greenhouse gases (methane and carbon dioxide) produced when organic waste in landfills decomposes. The effective management of methane is important, as it is a potent greenhouse gas with a global warming capability over 21 times that of carbon dioxide.

On June 20, 1993, Uzbekistan ratified the treaty which would enter into force on March 21, 1994. Through the Clean Development Mechanism, IB Mahsustrans will qualify for carbon credits resulting from activities that reduce methane emissions form the Akhangaran landfill. The required reduction of greenhouse gases can be achieved through aerobic composting of municipal solid waste.

Institutional Framework for Environmental Management

There are numerous institutions engaged in environmental and solid waste management in Tashkent. These institutions and their key responsibilities relevant to the project are presented in Table 2.

Table 2. Roles of Different Institutions Responsible for Municipal Solid Waste Management in Tashkent

<table>
<thead>
<tr>
<th>Institution</th>
<th>Roles and Responsibilities</th>
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</table>
| State Committee for Nature Protection| ① Regulating authority for implementation of all activities according to environmental laws and regulations  
② carries out supervision over compliance with the existing legal requirements with regard to waste handling and disposal  
③ coordinates activities of the concerned government agencies in the areas of waste management  
④ maintains the State Cadastre of landfills and waste processing facilities  
⑤ develops and approves waste generation norms and waste disposal standards  
⑥ develops and approves waste disposal quotas. |
| Ministry of Health                    | ① Monitoring of abiding by the rules and regulations pertaining to all solid waste handling activities  
② Supervision of the separate collection of waste in all hospitals, polyclinics, clinics and doctor’s offices  
③ Control of hygienic conditions in all waste treatment plants |
| UzKommunxizmat Agency                 | ① Technical regulation of household waste generated nationwide  
② Develops government waste management programs and submits them for approval of the Cabinet of Ministers  
③ Monitors the state of collection, transportation, recycling, and treatment of household solid waste |
Municipality of Tashkent
③ Monitoring all activities of the municipal solid waste management system of Tashkent to ensure its stable and smooth operation.

Local Government Bodies
③ Participation in nationwide waste management programs;
③ Approval of local waste management programs;
③ Promoting business initiatives in waste management;
③ Making decisions for location of waste management facilities in appropriate areas;
③ Supervision of compliance with household waste management legislation.

Mahallas
④ Participation in addressing the issues of location of waste management facilities in appropriate areas;
④ Facilitate sanitary clean-up of residential areas and timely payment of fees for collection of household waste;
④ Perform public oversight of sanitary and environmental state of waste management facilities.

IB Mahsustrans
③ Coordinate all the activities of solid waste management system in Tashkent
③ Recycling (by Mahsustrans subsidiary)
③ Landfilling at the Akhangaran landfill site
③ Preparation of the solid waste statute of the waste management plan
③ Preparation of an annual waste report
③ Information and statistics related to solid waste management
③ Consulting services for the erection of waste treatment plants and new technologies for recycling
③ Transfer and transport all kinds of municipal solid wastes to Akhangaran landfill
③ Lease vehicles and contract out waste collection to private operator in Sergeli District
③ Supervise, control, and monitor private companies engaged in transfer and transport activities

IB Mahsustrans District Garages
③ Collection of wastes within the districts
③ Conclude contracts with private collectors
③ Conclude contracts with private companies for material recycling within their jurisdiction
③ Monitor, control, coordinate and supervise all the activities of their districts.

Yunusobad District Garage
③ Solid waste collection in Yunusobad district only.

3. ANALYSIS OF PROJECT ALTERNATIVES

An analysis of project alternatives is an essential component of an EIA, as it aids in establishing whether there are viable alternatives to the proposed project, in terms of the project location and proposed technology to be used, which may provide the same function with an overall reduced negative environmental and social impact. The project development has considered the following alternative approaches: (a) the “do-nothing” option (that is, continuation of existing collection and disposal and options for the adoption of a low cost composting alternative); and (b) low-cost windrow composting at a site on the existing main landfill.

Alternative 1: Do Nothing Alternative

The “do-nothing” option would entail a continuation of the existing collection, transfer and disposal of municipal solid waste practices. The main impacts associated with the current solid waste management
practices are related to the continued production of methane gas at the main landfill.

**Alternative 2: Low Cost Aerobic Compost Treatment**

Compost processing can occur in simple environments that are completely subject to external forces or in complex and highly controlled environments. There are two principle types of aerobic composting techniques, agitated and static. In the agitated method, the material to be composted is agitated periodically to introduce oxygen, to control temperature, and to mix the material to obtain a more uniform product. In the static method, the material to be composted remains static and air is blown through the composting material. IB Mahsustrans has decided to use the simple aerobic windrow composting system. The open windrow system requires far lower investments than the other aerobic composting systems, is simple to operate and is suited to the yearly ambient conditions at the site.

4. ENVIRONMENTAL AND SOCIAL IMPACTS OF LOW-COST AEROBIC WINDROW COMPOSTING

**Aerobic Composting Component**

The aerobic windrow composting component of the project will occupy a site that is already used for receiving waste. The site is shown in Figure 1 in the south west corner of the Akhangaran landfill site. No residents are located within a 4 km radius of the proposed composting site.

**Impacts on Soil**

The proposed project will lay down a firm base and cover it with cement slabs for all areas where compost will be produced. Cement slabs are already placed on the road leading to the landfill site and on all internal roads. Compost pads will be sloped to side drains that will discharge into collection sumps so that any leachate and site drainage can be recycled to the composting windrows.

Use of compost as a landfill biofilter cover has additional benefits. As described above, the composted material has several very important functions as landfill cover: (i) it retains moisture; (ii) it oxidizes the methane and other gases that escape from the landfill which will results in additional GHG emission reductions; (iii) it reduces leachate production; (iv) it reduces odors; (v) it greatly improves the visual impact of the landfill; (vii) it prevents destruction of any vegetation by oxidizing the undesirable gases; and (viii) purifies the air around the landfill site.

**Impacts on Water Resources**

Leachate generation is considered one of the main potential impacts of the proposed compost facility on water resources. From this perspective, Tashkent is fortunate in having a relatively dry climate with annual precipitation of some 367 mm per year. The main source of leachate is the wet waste itself, which can form leachate as the waste is placed on the windrows in heaps up to 2 m high. New technologies involving
recycling of low grade compost can limit the amount of leachate formed and can greatly speed up the composting process, thus further limiting leachate formation (that is, the moisture content of the wastes is rapidly reduced). However, there are no natural water bodies or shallow production aquifers located near the facility which makes it highly unlikely that surface or ground water bodies will be contaminated by the facility. Thus there will be no potential impact on offsite groundwater due to the slight potential for infiltration to subsurface layers because of the very low permeability of the local clay soil.

Any leachate produced in the composting areas will be collected and returned to the composting process as there is a negative water balance for this part of the project. The returned leachate enhances the composting operation by producing a better quality product in a shorter time than operations that do not return leachate to the compost piles.

Impacts on Air Quality

The fresh waste that is received in the reception area does not emit offensive odors but if allowed to accumulate due to poor housekeeping will quickly start to decompose generating offensive odors and conditions that are unpleasant for the workers. Some leachate may also be generated in these operations and must also be collected by composted absorbents and recycled to the composting waste piles.

In case waste piles are allowed to accumulate at the receiving area, another potential negative environmental impact that could occur is the emission of methane and carbon dioxide as well as various volatile organic compounds, hydrogen sulfide, ammonia, and mercaptans. This would occur only as a result of poor housekeeping practices.

The windrow composting process itself has the highest potential for odor generation, if it is not well controlled. However, the high temperatures reached in the windrow process destroy pathogens and pasteurize the waste. The waste is loaded directly onto the windrows by the tipping trucks and do not require forming by front end loaders thereby further reducing worker contact with raw waste.

Windrow technology is highly affected by weather conditions. Although saturation of the waste by rainfall can produce anaerobic conditions, this will not present a problem at this site due to the limited rainfall in Tashkent. Although odors from a composting operation can be a nuisance and a potential irritant to nearby communities (odors are the primary source of public opposition to composting plants worldwide), this site is well located sufficiently far from residential areas as to have zero impact. The closest residential area is 4 kilometers away from the landfill site.

Noise Impacts

Any noise impacts from the turning of waste will be negligible. As mentioned, the landfill site is not located near residential areas.
Impacts on Flora and Floral Habitats

No impact is expected from the project on the ecological environment.

Impacts on Fauna and Faunal Habitats

The current anaerobic processing of waste at the site have attracted vectors (birds) that can carry disease and can cause a nuisance, if not health impacts, on waste pickers and other staff of the solid waste company. In the proposed aerobic composting plant, rodent and insect infestations are most likely to occur in pre-processing areas, as the high temperatures generated during the composting process discourage rodent burrowing activities and destroy housefly eggs and larvae. However, with a good management and maintenance system, attention to matters of worker hygiene and adopting a synchronized pest control program, health conditions at the plant site should improve considerably.

Impacts on Socio-Economic and Cultural Environment

The community development component of the project is expected to have positive impact on the waste pickers operating at the main landfill, those operating at non-secure collection points around the city, and the operators of the city’s secure collection points. On the basis of an in-depth citywide waste picker assessment and consultations with other stakeholders, the expected benefits include: (a) improved staff facilities for waste pickers operating at the main landfill (for example, restrooms, canteen, showers) and protective clothing (gloves, vests, boots); (b) a small number of additional jobs for waste pickers at the main landfill; (c) construction of additional secure collection points to be managed by neighborhood; and (d) funds to support after hours youth education program.

Compost workers may be exposed to a common fungus known as *Aspergillus fumigatus*, endotoxins, or other allergens. *A. fumigatus* is common in decaying organic matters and soil. Inhalation of its airborne spores causes skin rashes and burning eyes. While healthy individuals may not be affected, immuno-compromised individuals may be at risk. Employees are the most sensitive to exposure of *A. fumigatus* because of their frequent proximity to decaying organic matter. Composting facility workers who have asthma, allergies or compromised immune systems, could suffer health effects as a result of exposure to bioaerosols. Good housekeeping and compliance with occupational health standards and guidelines through proper personal safety equipment and training will minimize the potential health impacts.

At the landfill, the construction of staff facilities for the waste pickers operating at the landfill and composting facility will impose only construction impacts that will be managed on site. The site already has water supply and sanitation infrastructure which will be connected to the new facilities.

The area lacks any features of archeological and cultural heritage value. Thus, the project will not have impacts on these resources.
Aesthetic Impacts

Visual impacts arising from the compost facility are considered to be minimal since the project will take place in an already existing facility where landfill operations have been upgraded under the World Bank and EBRD financed Tashkent Solid Waste Management Project. Because the project site is located well back from the road, and is not overlooked by any other factories or residential areas, its visual impact is limited.

Any visual impacts associated with the construction of new secure collection points will not be significant. Past household surveys revealed that the residents of Tashkent prefer these facilities over the non-secure collection points. Any visual impact would be an improvement over those caused by the non-secure collection points.

5. Environmental and Social Management plan

The potential negative impacts of the proposed project were introduced and discussed in the previous chapter together with their major source(s) and the corresponding receiving environment(s). The Environmental Management Plan (EMP) aims to provide IB Mahsustrans with a series of mitigation measures required for reducing and/or eliminating any adverse environmental and social impacts of the proposed project. Furthermore, the EMP outlines the required measures for monitoring the level of compliance achievement of the project as well as the efficiency of the composting operations. It also includes a set of measures to strengthen the capacity of IB Mahsustrans in terms of enhancing the capability of the organization to supervise and monitor the progress and efficiency of the required mitigation measures. The minor negative impacts associated with the proposed project, which require appropriate measures to be implemented during different stages of project development, are considered as the basis of this EMP.

<table>
<thead>
<tr>
<th>Composting Plant</th>
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<tbody>
<tr>
<td>Air emissions and odor control</td>
<td>5. good housekeeping and maintenance of equipment</td>
</tr>
<tr>
<td></td>
<td>6. regular washing of work areas after completion of daily processing</td>
</tr>
<tr>
<td></td>
<td>7. clearing of spilled wastes</td>
</tr>
<tr>
<td></td>
<td>8. immediate transport of rejects to landfill</td>
</tr>
<tr>
<td>Control of leachate</td>
<td>3. installation of cement compost pad with leachate drains and sump</td>
</tr>
<tr>
<td></td>
<td>4. adopt modern composting technique</td>
</tr>
<tr>
<td></td>
<td>3. reuse leachate by spraying onto compost windrows</td>
</tr>
<tr>
<td>Vector control</td>
<td>4. use modern composting techniques</td>
</tr>
<tr>
<td></td>
<td>5. good housekeeping and maintenance of equipment</td>
</tr>
<tr>
<td></td>
<td>6. pest control program</td>
</tr>
<tr>
<td>Worker health and safety</td>
<td>4. health and hygiene training and posters</td>
</tr>
<tr>
<td></td>
<td>5. provision of personal protection equipment</td>
</tr>
<tr>
<td></td>
<td>6. health monitoring</td>
</tr>
</tbody>
</table>
6. **public consultation and disclosure**

The preparation of this project involved extensive consultations with the potential beneficiaries of the Community Development Program component and the broader range of stakeholders interested in the carbon finance composting operation. The main consultative activities included the following:

1. Waste picker assessment carried out by Expert Fikri, social science research firm based in Tashkent involving quantitative surveys of waste pickers operating at non-secure collection points around the city and operators of secure collection points; focus groups discussions with waste pickers operating at the main landfill, and in-depth interviews with other relevant stakeholders (for example, solid waste management professionals, NGOs, Mahallah Committees).

2. Announcement of the proposed CDCF Tashkent Solid Waste Composting Project and availability of the EA for public disclosure and consultation.

3. Public consultation to discuss the environmental and social impacts of the proposed CDCF composting project was held on February 16, 2007.

Annex 1 presents the minutes of the stakeholder consultation.
ANNEX 1

RECORD OF STAKEHOLDER MEETING
FOR THE PROPOSED COMMUNITY DEVELOPMENT CARBON FINANCE
TASHKENT SOLID WASTE COMPOSTING PROJECT (400 T/D CAPACITY)

Date and Venue: February 16, 2007, 10 am, the Conference Hall of the Tashkent Territorial Association of Communal Services, Tashkent, Uzbekistan.

The Stakeholders Meeting was organized by IB Mahsustrans, the project sponsor, and was attended by environmental and social NGOs, the representative of local residents, the concerned government agencies and departments, the staff of IB Mahsustrans, and mass media representatives. The purpose of the meeting was to solicit comments and recommendations with regard to the environmental and social aspects of the proposed CDCF Tashkent Solid Waste Composting Project.

Professor S.T. Kudrathodjaev, the Press Secretary for the Prime Minister, chaired the meeting. In his opening remarks, he welcomed the participants and discussed the importance of proper waste management and disposal. He emphasized that the City of Tashkent, which has historically been considered a “Jewel of the East” and “Gateway to Central Asia,” is a large megapolis with a large population and industry generating substantial amounts of waste and, therefore, insufficient attention to proper waste management could result in serious cataclysms. He referred to President Karimov’s recent report on the results of the economic and social development of Uzbekistan in 2006, in which the President emphasized the importance for the country to adopt the most advanced technologies available in Europe and elsewhere in the world and, at the same time, while the country is going through a period of rapid economic development, priority should be given to protecting the environment. Mr. Kudrathodjaev then briefly talked about the existing environmental problems in Uzbekistan and the world which contribute to global warming. He informed the participants that the proposed Tashkent Waste Composting Project has been supported by both the Government of Uzbekistan and the World Bank. He commended the proposed project as it is based on the right principle of “turning waste into money”. He then requested the project sponsors to provide information about the proposed project.

Mr. B.A. Mamadaliev, the Director of IB Mahsustrans, welcomed the participants, and informed them about the results of the successfully completed Tashkent Solid Waste Management Project that was financed by the World Bank and EBRD and allowed to completely renew and renovate the vehicle fleets, construct three transfer stations, and to substantially improve the quality of services and the sanitary conditions in Tashkent. He informed the participants that with a view to further improving the SWM system in the city, Mahsustrans is in the process of preparing jointly with the World Bank a waste composting project at the Akhangaran landfill. He briefly described how the project activities will be organized and what benefits the project will bring, including the receipt of substantial carbon credit revenues over the period of eight years. He said that Mahsustrans intends to use 50 percent of the revenues to cover the capital and operating costs associated with the project, while the remaining 50 percent will be used for further development of the SWM system in
Tashkent, including through construction of additional waste collection points and purchase of waste compactors and equipment.

**Mr. G.D. Rustamov, Solid Waste Management Specialist,** delivered a power point presentation focusing on the purpose of the proposed project, the reasons for and consequences of the global warming, and the procedures for implementing CDM projects. He then provided detailed information about the proposed project which will be based on a low-cost windrow composting technology, the project costs and benefits to be realised through the project, including its social development component that will support waste pickers.

The presentation was followed by a round of discussions (summarized below) during which the project proponents answered questions from the participants.

After the discussions, the Chairman made his closing remarks in which he spoke at length about the need to improve “the waste culture” of the population, and the important role the local mass media should play in this process.

**STAKEHOLDERS RECOMMENDATIONS AND CONCLUSIONS:**

The participants in the Stakeholders Meeting thanked Mahsustrans and the World Bank for the invitation to participate in the discussion of the proposed CDCF Tashkent Solid Waste Composting Project and expressed their full support to Mahsustrans’ initiative to implement the first project of this kind in Uzbekistan. The participants stressed the need for implementation of similar projects in other cities of Uzbekistan as landfilling is the main method used in the country for waste disposal. It was also proposed that at the final stage of project preparation, another round of public consultations be held involving a broader range of stakeholders and mass media organizations.

The participants unanimously agreed that the proposed project is financially viable, and meets the environmental, economic, and social objectives of Uzbekistan.

**LIST OF ATTACHMENTS**

Appendix I: Stakeholders Meeting Agenda
Appendix II: Summary of Stakeholder Concerns/Questions/Comments/Answers
Appendix III: List of Participants in the Stakeholders Meeting
Appendix IV: Copy of the Newspaper Advertisement Announcing the Stakeholders Meeting
Annex V: Copies of Press Reports
Attachment I

Stakeholders Meeting Agenda

COMMUNITY DEVELOPMENT CARBON FINANCE TASHKENT SOLID WASTE COMPOSTING PROJECT

February 16, 2007, Friday, the Small Conference Hall of the Tashkent Territorial Association of Communal Services

10:00 – 10-15 Welcome and Introduction

- Welcome and Introduction – Mr. Sh. Kudrathodjaev, the Press Secretary of the Prime Minister of the Republic of Uzbekistan
- Introduction - Mr. B. Mamadaliev, Director, IB Mahsustrans

10:15 – 11-00 Background Information on the Kyoto Protocol and the CDCF Tashkent Solid Waste Composting Project

Power Point Presentation by Mr. G. Rustamov, Solid Waste Management Specialist

- Introduction to the Kyoto Protocol and main principles of carbon finance
- GHG potential for global warming
- Flexible mechanisms of the Kyoto Protocol
- Introduction to the proposed CDCF Tashkent Solid Waste Composting Project
- The GHG effect of landfills
- SW composting process
- Composting methods
- Volume and composition of solid waste generated in the City of Tashkent
- Prospects for implementation of the composting projects
- Environmental and social assessment of the project
- Conclusion
- Q&A Session
11:00 – 11:50 **Open Discussions**
Discussion participants: B. Mamadaliev, G. Rustamov, B.
Nishanbaev, O. Borovikov, L. Zavyalova and others

- Questions and Answers Session

11:55 – 12:00 **Closing Remarks**
Mr. Sh. Kudrathodjaev, Press Secretary for the Prime Minister of the Republic of Uzbekistan
## SUMMARY OF STAKEHOLDER CONCERNS/QUESTIONS/COMMENTS/ANSWERS

<table>
<thead>
<tr>
<th>Stakeholder Concern / question / comment</th>
<th>Answer / outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Ms. L.V. Zavyalova, Coordinator, EuropeAid Project “Technical Assistance to CA Countries in Fulfilment of Global Climate Change Commitments »]</td>
<td>(i) Explained that the data on the biogas composition was obtained from scientific literature. No special measurements of biogas have been carried out at the Akhangaran landfill so far. The data on the morphological composition of waste in Tashkent was obtained by international consultants in 2002 and 2006. In addition, in the period of January 31-February 3, 2007, an analysis of waste composition was carried out using the internationally accepted method “ASMT International”.</td>
</tr>
<tr>
<td>(i) Inquired from what sources the landfill biogas and waste morphological composition data has been received. Proposed that a certified laboratory carry out the analysis of the morphological composition of waste and biogas.</td>
<td>(ii) Recommended that Mahsustrans consider increasing the planned production of compost from the currently planned 400 t/d (20% of the total) so as to maximise future CC revenues. Explained that once the ERPA has been signed with the Bank, it will not be possible to upscale with a view to receiving more CC revenues without going again through costly ER registration and certification procedures.</td>
</tr>
<tr>
<td>(ii) Recommended that Mahsustrans consider increasing the planned production of compost from the currently planned 400 t/d (20% of the total) so as to maximise future CC revenues. Explained that once the ERPA has been signed with the Bank, it will not be possible to upscale with a view to receiving more CC revenues without going again through costly ER registration and certification procedures.</td>
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</tr>
<tr>
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<td>(ii) Explained that only waste rich in organic content (mainly from market places and SCPs) can be used for composting purposes. The share of such waste in the total amount of waste generated in the City is approximately 25 percent. In addition, increasing the compost production target would require extending the land area designated for the composting project, and the land area available at the Akhangaran landfill for this purpose is limited. Agreed to take these recommendations into account while finalising the project design.</td>
</tr>
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</tr>
<tr>
<td>[Ms. Dilbar Zainitdinova, Director of the Ecological Law NGO “ARMON”]</td>
<td>(i) Overall, supported this socially targeted project and recommended that:</td>
</tr>
<tr>
<td>(i) Overall, supported this socially targeted project and recommended that:</td>
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<tr>
<td>- the reference to “health monitoring” in the “Environmental and Social Management Plan” of the draft Environmental Impact Assessment report (EIA) be changed to “preventive healthcare” as it will be important not only to monitor the health status but to take measures aimed at disease prevention among the waste pickers;</td>
<td></td>
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<td>- the Environmental Impacts section of the EIA report be strengthened by including results of engineering and geological research; the impact of the wind rose needs be assessed and discussed in the report;</td>
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<td>- measures that would be taken under the project to prevent potential fires at the landfill be described;</td>
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<td>- environmental risks as well as air, water, and soil pollution scenarios be developed.</td>
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<tr>
<td>(ii) Offered to share with Mahsustrans information about around 700 existing composting technologies that NGO “ARMON” obtained from a representative of a Russian SWM company during a recent SWM conference in Almaty</td>
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<tr>
<td>(ii) Offered to share with Mahsustrans information about around 700 existing composting technologies that NGO “ARMON” obtained from a representative of a Russian SWM company during a recent SWM conference in Almaty</td>
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<tr>
<td>(iii) Recommended that Mahsustrans review those 700 composting methodologies and make a comparative analysis before finally agreeing to the proposed low-cost approach, as low cost does not necessarily mean most economic.</td>
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<tr>
<td>[Mr. A.U. Khaliloev, Chairman of Mahalla “Huroso” of Tashkent</td>
<td>Agreed to take these recommendations into account while finalising project documents.</td>
</tr>
</tbody>
</table>
City] Requested that “Huroso” mahalla be included in the project so that it can benefit from its social development component through:

- construction of a secure collection point in the “Huroso” mahalla;
- organization of information campaigns among the residents of the “Huroso” mahalla that would help promote residents’ willingness to engage in waste separation and recycling activities.

Explained that the community development component was still in the planning stage, and thanked him for his suggestion which will be taken into account during the next phase of project planning.

[Ms. G.F. Zubkova, Specialist, Centre of Hydrometeorological Services]  
(i) Inquired how project implementation will be monitored;  
(ii) Recommended that Mahsustrans duly comply with the agreed composting methodology so as to ensure that there is no difficulty in obtaining a positive conclusion of the ER validation agency.

(i) Explained that a detailed monitoring plan and procedures will be prepared as part of the Project Design Document (PDD).

[Ms. L.A. Brostimova, Specialist of the “TashNIIPI GenPlan” Design Institute]  
Inquired if the ecological expertise for the project has been completed.

Clarified that the project is in the process of preparation. Once the project has been prepared, it will undergo ecological expertise.

[Mr. S.T. Kudrathodjaev, Press Secretary for the Prime Minister]  
(i) Recommended that under the “Youth Education Fund” of the Community Development Component of the project, 10 to 12 percent of funds be allocated to support mass media in their activities aimed at:

- raising public awareness;
- training children and youth in sanitary culture;
- promoting waste separation and recycling activities among the population;
- promoting residents willingness to keep their homes, house entrances, and the territory of the City clean;
- increasing the awareness of the population with regard to the need to treat the nature with care.

(ii) Recommended that another round of public consultations involving a broader range of stakeholders and mass media be organized in the final stages of project preparation.

Thanked for these recommendations and provided assurances that these recommendations will be taken into account in the process of project finalization.
# Attachment III

**LIST OF PARTICIPANTS THE STAKEHOLDERS MEETING FEB. 16, 2007**

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Organization and Postal Address</th>
<th>Role in the SWM Sector</th>
<th>Telephone</th>
<th>E-mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mr. Sherzodhon Tadjiddinovich Kudrathodjaev</td>
<td>Press Secretary, Office of the Prime Minister of the Republic of Uzbekistan, Movarounnahr str., #3, Tashkent, Uzbekistan</td>
<td>Facilitates public information campaigns aimed at improving the sanitary and environmental conditions in the City of Tashkent.</td>
<td>139-82-75</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Ms. G.F.Zubkova</td>
<td>Specialist, Centre of Hydrometeorologic Services, Uzbekistan “Uzgidromet”</td>
<td>Responsible for weather forecasts and climate analysis; taking stock of GHG emissions. Participates in the preparation of the National Cadastre of GHG in Uzbekistan. Prepares annual reports on GHG to the National Commission for Climate Change.</td>
<td>135-85-13 133-61-17</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Mr. A.D.Abdulhalikov</td>
<td>Deputy Chairman, Tashkent Oblast Nature Projection Committee, Buyuk Ipak Yuli, 143, Tashkent, Uzbekistan</td>
<td>Responsible for environment protection in the Tashkent Oblast where the Akhangaran landfill is located and where the proposed project will be implemented</td>
<td>66-45-42 65-06-46</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Mr. Bahtiyor Sultanovich Rahmanov</td>
<td>General Director, Tashkent Territorial Association of Communal Services, Druzhba Narodov Sq., #1a, Tashkent, Uzbekistan</td>
<td>IB Mahsustrans is a structural division of the Tashkent Territorial Association of Communal Services (TTACS). All the waste compactors and equipment used in Tashkent are owned by TTACS and have been leased to Mahsustrans. TTACS has overall responsibility for SWM in the City of Tashkent.</td>
<td>144-53-14</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Mr. Sarvar Ziyaev</td>
<td>Head of the Investment Department, Tashkent city Khokimiyat, Movarounnahr str., #3, Tashkent, Uzbekistan</td>
<td>Supervises the implementation of investment projects in the City of Tashkent. The Tashkent Solid Waste Management Project was implemented under the direct supervision of the Investments Department of the Tashkent City Hokimiyat</td>
<td>133-19-71</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Mr. Artur Airatovich Mustafin</td>
<td>Deputy Chairman, Tashkent City Nature Protection Committee, Druzhba Narodov str., #7,</td>
<td>Oversees the implementation of the nature protection programs, and compliance with the provision of the National Waste Law in the territory of the City of Tashkent</td>
<td>173-86-79 187-21-45</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Mr. Bahtiyor Akbarovich Mamadaliev</td>
<td>Director, IB “Mahsustrans”, Industrial zone “Bekabad”, Tashkent ring road, Tashkent, Uzbekistan</td>
<td>IB Mahsustrans is main solid waste operator responsible for collection, transportation, processing, and disposal of solid waste in the City of Tashkent.</td>
<td>397-06-70 107-58-86</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Ms. Z.I.Abduraimova</td>
<td>Tashkent “Mahalla” Fund, Movarounnahr str., #6, Tashkent, Uzbekistan</td>
<td>Coordinates the activities of the mahalla and neighborhood committees in the City of Tashkent with regard to waste management in the mahallas and neighborhoods. Provides assistance in ensuring timely collection of waste.</td>
<td>133-22-84</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Mr. Rauf Asatullaevich Kurbanov</td>
<td>Deputy General Director, Tashkent Territorial Association of Communal</td>
<td>On behalf of TTACS, coordinates the activities of IB Mahsustrans and other solid waste operators.</td>
<td>133-43-53</td>
<td></td>
</tr>
<tr>
<td>No.</td>
<td>Name</td>
<td>Position/Role</td>
<td>Responsibilities</td>
<td>Contact Information</td>
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<tr>
<td>10</td>
<td>Mr. Olimjon Rahimov</td>
<td>Lead Specialist, “Uzkomunhizmat” Agency, Niezbek Yuli, #6, Tashkent, Uzbekistan</td>
<td>Responsible for development of SWM methodology, regulations and standards at the national level.</td>
<td>134-07-45 318-64-88 <a href="mailto:Rahimov@uzkomunhizmat.uz">Rahimov@uzkomunhizmat.uz</a></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Mr. Botir Nishanbaev</td>
<td>Director, Tashkent Enterprise for Waste Recycling, Zebo Shamsudtinova str., #42 Tashkent, Uzbekistan</td>
<td>Responsible for the management of the Akhangaran landfill and supervision over the compliance with the environmental protection measures at the closed in-city landfills.</td>
<td>90-66-39 104-34-26</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Ms.L.A.Brostilova, Ms. A.S.Ushakova, Mr. B.G.Ashimov</td>
<td>Specialists of “TashNIPI GenPlan” Design Institute, Bobir str., #14, Tashkent, Uzbekistan</td>
<td>Participates in the development of the Solid Waste Management Section in the General Construction Plan for the City of Tashkent. Participates in the preparation of plans for future development of the SWM system in the City of Tashkent.</td>
<td>55-50-28 55-47-28</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Ms. Darya Konstantinovna Kim</td>
<td>Chief Accountant, IB “Mahsustrans”, Industrial zone “Bekabad”, Tashkent, Uzbekistan</td>
<td>Oversees the financial and economic activities of IB Mahsustrans</td>
<td>397-29-60 103-85-02</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Mr. Rahmatulla Akmalov</td>
<td>Chief Specialist, Tashkent Territorial Association of Communal Services, Druzhba Narodov Sq., #1a, Tashkent, Uzbekistan</td>
<td>Responsible for coordinating the activities of IB Mahsustrans and other solid waste operators in the City of Tashkent.</td>
<td>42-34-12</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Ms. Lilia Vasil’evna Zavyalova.</td>
<td>Coordinator, EuropeAid Project “Technical Assistance to CA Countries in Fulfilment of Global Climate Change Commitments”</td>
<td>Participates in the development of legal and regulatory acts of the Republic of Uzbekistan in the area of registration and implementation of CDM projects.</td>
<td>135-76-31 159-57-91 67-38-29 <a href="mailto:zavlilya@mail.ru">zavlilya@mail.ru</a></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Mr. Shukhrat Asilovich Inogamov</td>
<td>Deputy Manager, IB “Mahsustrans”, Industrial zone “Bekabad”, Tashkent, Uzbekistan</td>
<td>Responsible for financial and economic activities of IB Mahsustrans.</td>
<td>397-02-11</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Ms. Ulugoi Dalieva</td>
<td>Radio “Poitakht” Reporter, Movarounnahr str., #12</td>
<td>Participates in the public information campaigns about measures taken to improve the sanitary and environmental conditions in the City of Tashkent.</td>
<td>132-26-47 <a href="mailto:radio@mail.ru">radio@mail.ru</a></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Ms. Dilbar Zainitdinova</td>
<td>Director, Ecological Law Centre ARMON 100100, Tashkent, Bobur str., #20</td>
<td>Conducts trainings and public information campaigns in the area of environmental legislation. Provides expert advice to the public in the area of environmental legislation.</td>
<td>362-11-35 <a href="mailto:armonuz@yandex.ru">armonuz@yandex.ru</a></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Mr. Rustam Murzakhanov</td>
<td>Specialist, Ecological Centre ARMON 100100, Tashkent, Bobur str., #20</td>
<td>Conducts research and provides expert advice on environmental aspects of waste management projects.</td>
<td>362-11-35 <a href="mailto:armonuz@yandex.ru">armonuz@yandex.ru</a></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Mr. Gafur D. Rustamov</td>
<td>Solid Waste Management Specialist, IB Mahsustrans, Industrial zone “Bekabad”, Tashkent, Uzbekistan</td>
<td>Assists IB Mahsustrans on all technical aspects of the Tashkent Waste Composting Project.</td>
<td>144 48 49 gafurustamov@mai l.ru</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Ms. Sabina Umarova</td>
<td>IB Mahsustrans, Industrial zone “Bekabad”, Tashkent, Uzbekistan</td>
<td>Provides logistical support and translation services to the staff of IB Mahsustrans</td>
<td>144 48 49</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Mr. Oleg Borovikov</td>
<td>Operations Consultant, World Bank Country Office in Uzbekistan</td>
<td>Coordinates project preparation activities under WB-supported infrastructure projects in Uzbekistan</td>
<td>138-59-42 138-59-50 <a href="mailto:Oborovokov@worldbank.org">Oborovokov@worldbank.org</a></td>
<td></td>
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<tr>
<td>No.</td>
<td>Name</td>
<td>Position</td>
<td>Activity</td>
<td>Phone No.</td>
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<tr>
<td>25</td>
<td>Mr. A.U. Haliloev</td>
<td>Chairman, “Huroso” Makhalla Uchtepe rayon, Tashkent</td>
<td>Supervises the activities of the “Huroso” mahalla, and has responsibility for improving the sanitary conditions in the territory of the mahalla</td>
<td>275-00-16</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Mr. H.K. Panjiev</td>
<td>Reporter, “Tashkent Okshomi” daily</td>
<td>Participates in public information campaigns to inform the population about the implementation of programs aimed at improving the sanitary and environmental conditions in the City of Tashkent.</td>
<td>133-07-60</td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Mr. Sh. Ruziev, Ms. O.Rusakova</td>
<td>Reporters, “Toshkent Poytakht” TV Channel</td>
<td>Participate in public information campaigns to inform the population about the implementation of programs aimed at improving the sanitary and environmental conditions in the City of Tashkent.</td>
<td>114-14-62, 114-14-65</td>
<td></td>
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</table>
STAKEHOLDERS MEETING ANNOUNCEMENT IN THE PRESS
(published in the February 12, 2007 issue of Vecherniy Tashkent daily)

INVITATION FOR PROJECT DISCUSSION

For information of concerned persons, specialists and organizations

In the context of the Kyoto protocol on Climate Change and the International Bank for Reconstruction and Development program on funding and implementation of Clean Development Mechanism projects, the “Composting of Municipal Solid Waste at Akhangaran landfill in Tashkent city” project have been developed by the production association “Mahsustrans”.

With the purpose of reaching consensus in respect of social and environmental benefits and determination of project monitoring indicators, “Mahsustrans” intends to conduct appraisal and discussion of the indicated project with concerned persons, specialists and organizations.

Project review and discussion will be held on February 16, 2007, from 10.00 a.m. to 12.00 p.m. in the Small meeting room of the Tashkent territorial communal – operational association at the following address: Tashkent, 700027, Druzhba Narodov avenue, # 1a, 2nd floor

Concerned persons, specialists and organizations are invited to participate in the discussion of the project.
ANNEX 2
DETAILED DESIGN MAPS

Figure 1. Location of the project activity site.
ANNEX 3

REFERENCES

Expert Fikri. Waste Picker Assessment (not yet available).


