

Mid-term Review of the project: Waste Collection and Transportation in Mongolia (2019-2023)

on behalf of the Swiss Cooperation Office in Mongolia

Final Report

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1. Introduction

1.1 Introduction and method for the Review

The Project “Waste Collection and Transportation Management (WCTM) in Mongolia,” funded by the Swiss Agency for Development and Cooperation (SDC), is at a critical point in terms of its potential for achieving positive long-term impacts. This report presents the findings from an independent mid-term Review of the Project. The report includes a recommended strategy for activities in the final year to enhance potential impacts of the Project.

The core work for the Review of the project was carried out in April 2022, including a mission to Ulaanbaatar. The team for the Review included an international consultant and a Mongolian consultant. The Review had been delayed by about eight months because of travel restrictions related to the pandemic. The method for the Review included numerous meetings with stakeholders, including at ministry, municipal, district and khoroo level; with representatives of the Councils in the two pilot districts; khoroo section leaders and community representatives in the pilot areas; the waste management companies (TUKs), and also meetings with other relevant donors/IFIs. An awareness event in Chingeltei District, organised by the Project Team, was also attended. A stakeholder discussion workshop was facilitated at the end of the mission, attended by a total of 22 participants.

The structure of this document takes the format of the OECD criteria for evaluation in Sections 2 to 7 (i.e. relevance, coherence, effectiveness, efficiency, impact and sustainability). Section 8 provides conclusions and recommendations. Appendix 1 lists the meetings carried out; Appendix 2 lists the documents reviewed; and Appendix 3 illustrates the Project timeline. Appendix 4 includes an assessment of the current results and potential results related to the indicators in the Project Logframe.

The draft Report for the mid-term Review was updated in May 2022 to take into account the comments by SDC and the Project Team.

1.2 Overview of Project objective and outcomes

The Project was planned in 2018 and early 2019, designed with the following objective and outcomes:

Objective - Improve waste collection and transport system for the poorest and least developed areas of Ulaanbaatar.

- **Outcome 1** – Effective regulations for implementation of the national Law on Waste Management (2017) are in place.
- **Outcome 2** – Improved service quality and effectiveness in waste collection and transport in selected districts.
- **Outcome 3** - Improved financial sustainability and efficiency in the waste management.

1.3 Project Stakeholders

The main intended end beneficiaries of the Project are the people living in the poorer ger areas of Ulaanbaatar. Key stakeholders include the City Governor's Office and Mayor's Office, the Municipality of Ulaanbaatar (MUB) Environmental Pollution and Waste Management Department, the District Governors' offices (and the District Councils), the Khoroo administrations, and the waste collection companies (TUKs). The Ministry of Environment and Tourism (MET) is an additional important stakeholder.

1.4 Overview of timeline

An overview of the Project timeline is presented in Appendix 3. The Project started in March 2019 and the focus during the first six months was on baseline assessment, analysis of the financial system for waste management, analysis of the legal framework, etc. Based on these activities, a revised Project Mandate was signed in October 2019. Several activities, such as initial training courses and initial planning of pilot projects had started before Mongolia closed its borders in March 2020 because of the pandemic. The country did not open for visitors until February 2022 and, one month later, the remaining pandemic-related restrictions on travellers were lifted. The Chinese border is still closed, except for the import/export of goods. The process for importing goods across the border remains much slower than before the pandemic.

2. Project Relevance

OECD definition: The extent to which the intervention objectives and design respond to beneficiaries' global, country, and partner/institution needs, policies, and priorities, and continue to do so if circumstances change.

The core driver for the design of the SDC Project was the inadequate waste collection and transport system for ger areas of Ulaanbaatar. Over 50% of the population of Ulaanbaatar live in these areas, which have much poorer households than the more central apartment areas. Feedback indicates that inequality is worsening, particularly as a result of the pandemic. In fact, the pilot districts selected for the Project, Chingeltei and Songinokhairkhan, have about 80% of their population living in ger areas, according to the Project Team. Most households in ger areas use coal-fired stoves for heating. Many do have electricity connection, but most do not have connection to water, which has to be collected from communal taps. Waste collection has been very inadequate in these areas, with low collection frequency leading to illegal dumping. Investment in improved waste collection in ger areas is consistent with the Mongolia Sustainable Development Vision 2050 as well as the objectives of the Swiss Cooperation Strategy at the time of project design in 2018. During the Review, meetings were held at khoroos with representatives of the local community and section leaders. The feedback in these meetings was that the three main equal priorities for those areas are: very poor air quality in winter; pollution of groundwater from wastewater; and inadequate waste management / illegal dumping. Apart from waste collection in ger areas, the other waste management priority at the time of project design related to the standard of waste disposal, and this was the core focus of the Ulaanbaatar Solid Waste Modernisation Project, funded by EBRD (see Section 3 on coherence).

As well as collection from ger areas, regulations were a priority to underpin what was then a new national Law on Waste Management (2017), as well as the need to restructure the tariff method to a per person basis, in line with the Law, and to increase tariffs to improve cost recovery and reduce subsidies. These priorities on regulations and tariffs were confirmed in the consultations during the Review.

The design of the SDC WCT Project was highly relevant and continues to be so. Since then, the Project was changed significantly in consultation with stakeholders to include components to pilot recycling, including procurement of equipment and collection vehicles. The growth of the recycling market since then, confirmed by the significant growth in the number of recycling collection points, has confirmed that recycling is an appropriate direction for waste policy in Ulaanbaatar. The inclusion of a pilot system for collection of mixed recyclable materials, rather than more segregation with more bins, is considered appropriate for reasons of simplicity and additional costs. However, feedback indicated that the priority problem with waste management in ger areas was, and continues to be, the infrequent collection, partly because of the low capacity of the vehicle collection fleets of TUKs. Although to test recycling as a pilot project in the ger areas would present useful lessons, a focus on simply strengthening waste collection systems, rather than partly on recycling, might have been more relevant in terms of addressing priorities (i.e. improving collection coverage as a first step before recycling).

3. Project Coherence

OECD definition: The compatibility of the intervention with other interventions in a country, sector or institution.

The main other interventions to strengthen solid waste management in Ulaanbaatar are currently funded by IFIs and donors. They are:

- EBRD (Ulaanbaatar Solid Waste Modernisation Project, which focuses on waste disposal and management of construction waste).
- The Asia Foundation (Promotion of green technologies in waste management for food waste management).
- ADB (Medical Waste Management Programme; Ulaanbaatar Community Food Waste Recycling).
- EU Project (on plastic recycling managed by Caritas).

At the time of design of the SDC-funded Project, the other projects being funded therefore covered the main other priority on improvement of waste disposal, as well as other waste types such as medical waste, construction waste and food waste. The SDC Project therefore had strong coherence in terms of project design and addressing the gap in priorities of waste collection in the poor ger areas.

It is the EU project on plastic recycling that would potentially have the most connection with the SDC Project. The EU project includes some pilot work in Ulaanbaatar, including some in ger areas, as well as some work in another province. Representatives from three of the four projects were consulted during the Review and all stated that the Project Team for the SDC Project had not proactively reached out to discuss formal linkages and coherence. There has been some direct dialogue with the EU plastics project, initiated by Caritas. It is noted that the current ICON Senior Technical Expert also works on three other donor/IFI waste projects in Ulaanbaatar, so it can be assumed that there must have been at least some informal dialogue on project linkages.

The Project Team has been utilising training facilities funded by SDC, for example through the Governance and Decentralisation (GDP) programme. The MUB Training and Research Centre and Legal Research Development Centre have been the venues for some of the training activities, which is positive in terms of synergies and efficient use of SDC funds.

One aspect widely agreed is that there is a lack of overall coherence between projects in solid waste management in Ulaanbaatar, as is the case apparently with many sectors that involve substantial international development funding. Ideally, an initiative to have a strategic working group on waste development projects in Ulaanbaatar should come top-down from MUB, and in 2019 there was such a meeting, or be driven by MET for projects covering all of Mongolia. It is understood that both MUB and MET have recently been considering initiating such working groups. If such an initiative is not started in the near future, then, with the ICON Senior Technical Expert working part-time for three of the four main projects, there is an opportunity for the SDC Project Team to have additional impact and initiate such a working group from the bottom-up for the next year, with the aim of handing over co-ordination to MUB or MET by the end of the Project. Proactively leading such an initiative would address the current weakness in the coherence of the SDC Project.

4. Project Effectiveness

OECD definition: The extent to which the intervention achieved, or is expected to achieve, its objectives, and its results, including any differential results across groups.

This section addresses the effectiveness of Project implementation towards its objectives and intended outcomes. Two aspects need to be highlighted when reviewing the Project performance against the expected results:

- Many of the detailed indicators and targets in the Project logframe are unclear. In particular the physical area to which a target applies needs clarification in many cases (e.g. pilot areas, pilot khoroos, pilot districts, etc). An analysis of Project performance against the logframe is provided in Appendix 4, and this demonstrates that SDC and the consultants need to clarify and agree the intended meaning of the indicators. Depending on how the indicators are interpreted, the analysis shows that several are unlikely to be achieved by the end of the Project. It is noted that the indicators had been already changed between the version of the logframe in the original invitation to tender and the current version in the Project Mandate (October 2019).
- At the time of the Review (April 2022), there had been no international visitors of the Project Team since January 2020 because of the pandemic travel restrictions. The next Project visitors were in Mongolia in early May 2022, which is a gap of 27 months. The Mongolian Team members have therefore been managing the project on the ground, including during lockdown periods in Mongolia. The review of the Project progress so far towards the results must take into account the impacts of the pandemic.

4.1 Review of the Effectiveness of Project implementation of Outcome 1: Effective Regulations and Standards for the implementation of new law are in place

4.1.1 Regulations and standards

Following the legal analysis carried out in 2019, the Project Team has been preparing regulations, standards and guidelines on solid waste management. These outputs are at different stages (Table 4.1). The targets in the logframe need some clarifications, but they do state that eight regulations, standards of guidelines should be developed by the Project and the title of Outcome 1 states that they should be "in place".

Table 4.1 - Status of regulatory documents developed under the Project

Regulatory document	Progress as presented by Project Team on 15 April 2022
1. Regulation on cleaning, sorting, collection, transport, recycling, regeneration, disposal or burial of ordinary waste.	Approved in February 2020 by City Council and ratified by Ministry of Justice.
2. Regulation on operation of community inspectors on waste management and payment of monetary incentives to them.	Approved in July 2021 by Governor and ratified by Ministry of Justice.
3. Regulation on giving economic incentives to citizens, entities and organisations engaged in waste sorting and recycling.	This regulation has been developed and presented to the Council, but not yet approved.

4. Regulation on issuing permission for operating a waste disposal site, landfill and regeneration activities.	This regulation has been developed and presented to the Council, but not yet approved.
5. Waste bins standards and requirements for apartments, gers and entities.	This regulation has been developed and presented to the Mayor's office. It has reportedly been adopted by the Municipal Council in March 2022.
6. Standard for marking of goods produced from recyclable and recycled resources.	Report presented to MET and the standard is under development by the Project Team.
7. Guidelines for calculation of cost-based waste fees.	Handbook prepared and presented to stakeholders.
8. Guidelines for the financial management of MSW management (Swiss experience).	Handbook prepared.

The first regulation on cleaning, sorting, collection, transport, recycling, regeneration, disposal or burial of ordinary waste was developed by the Asia Foundation, and the Project Team had a role in advising the MUB on the draft regulation. The importance of this document was discussed during the Review. Although this document might be considered as not applicable to count towards the target of eight documents being developed under the Project, the Project Team apparently had a significant contribution to the document being adopted, which is the most important aspect. Therefore, it is considered that this document should count towards the target. The regulation was a priority need for MUB at the start of the Project.

Experience shows that the key points related to regulatory documents developed under consultancy projects are:

- Whether the documents are going to be implemented and enforced.
- Whether the regulatory documents address the actual waste management priorities in Ulaanbaatar.

There is a major difference between "developed", "approved", "adopted", and "implemented" in relation to regulatory documents. Many such documents developed on other donor projects end up "just sitting on the shelf" and not being implemented. This is often because the engagement of key decision-making stakeholders had not been carried out. It is positive that the Project Team have been presenting the documents to key stakeholders, including at some working group meetings. A step up in policy dialogue activities is needed to move these documents towards adoption and implementation, particularly given the large amount of work put into the development of the documents. The working group approach would be a useful forum for the step up of dialogue, but meetings with individual stakeholder organisations will also be required.

Feedback indicates that the following regulations / standards / guidelines are perceived as a priority by the stakeholders in MUB:

- The regulation on cleaning, sorting, collection, transport, recycling, regeneration, disposal or burial of ordinary waste - this was a priority for implementation of the Law on Waste Management (2017), and has been adopted.
- The regulation on operation of community inspectors on waste management and payment of monetary incentives has been adopted. This was a priority although it is

noted that not all districts have inspectors (e.g. Chingeltei District does not have inspectors) and the consultants could recommend a solution to this in their final report.

- Waste bins standards and requirements for apartments, gers and entities was adopted in March 2022. Given the many different types of bins observed in Ulaanbaatar, this standard is important. It is positive that the model contract prepared under the Project requires new bins to comply with this standard.
- Guidelines for the calculation of cost-based waste fees. These guidelines have been developed into a handbook. The Project Progress Reports indicate that the guidelines have been approved, but it is unclear which stakeholder(s) have approved them. As of April 2022, no districts are implementing the guidelines.

The regulation on giving economic incentives to citizens, entities and organisations engaged in waste sorting and recycling is quite innovative in terms of regulating the provision of monetary and other benefits to those who recycle. The regulation has been developed in draft and has been under consideration by MUB for some time. There are already some market-driven initiatives being implemented without the regulation in place (e.g. reverse vending machines in some buildings). Adoption of this regulation will be useful, but it is uncertain whether such a regulation is a priority. In addition, feedback during consultation is that the MUB is concerned about budget needed for implementation and indicates that this regulation has little chance of being adopted in the timeframe of the Project.

A major risk to adoption and implementation of the regulatory documents prepared is that there have been significant changes in management personnel recently at key stakeholders, in particular in the Environmental Pollution and Waste Management Department of MUB, and also some District Governors. Much work had been done by the Project Team to develop the understanding and commitment of the previous key decision-makers to these draft regulatory documents. There is a priority need for a major step up in policy dialogue activities with the new managers to re-build an understanding of the benefits of the draft regulations, and to increase the chances of adoption and implementation. The plan for policy dialogue needs to take into account all relevant stakeholders for adoption of regulations, including the Governor's Office of MUB. It is noted that MET does appear to be engaged in the Project at this time.

At local level there appears to be a strong system for monitoring and supervision in terms of the section leaders and some inspectors at Khoroo, but common feedback is that there continues to be widespread illegal dumping in many areas of the City, implying enforcement capacity is weak overall. It is positive that the Project Team has provided training in the regulations to raise understanding. It is important that refresher training is provided in the final year of the Project, particularly for the training courses that were online and/or to those organisations that have had changes in management.

There were indications in the consultations during the Review from MET and MUB that the Waste Law might be amended in the next year or two. There was a request for the Project to provide a set of recommendations for improving the Waste Law, which, given the experience of the Project Team and the work on legal analysis, would be a useful task for MET and MUB. Provision of such advice would also contribute to building the relationship with the key stakeholders in terms of policy dialogue.

4.1.2 Awareness

The Project has a major component on raising awareness. The baseline survey on awareness and attitudes was carried out in 2019 for randomly selected households in Chingeltei and Songinokhairkhan Districts. The awareness activities have focused on the impacts of waste on the environment and public health, and on encouraging participation in solutions involving recycling, collection and transport. The activities have included face-to-face meetings with households, posters and various information leaflets, use of social media, awareness events, working with schools, and a "garbage monster" play for children, which has reportedly been widely watched. As with several other Project tasks, the amount of awareness activity is a significant achievement given the pandemic restrictions in Mongolia.



School competitions - Chingeltei District, April 2022



Awareness event and children's play, Chingeltei District, 23 April 2022

There is little doubt that the extensive awareness activities under the Project will have had positive results on the attitudes of a significant number of residents. The planned repeat of the public survey on attitudes will provide results on the impacts of the awareness activities for several of the indicators in the logframe by comparison with the data from the first survey in 2019. It is suggested that the sample size for the next survey is significantly increased to provide confidence in the results, including households from khorroos not involved in the pilot projects. If only the same households are surveyed again, then there would be an expected increase in awareness because a survey itself is a tool that raises awareness.

There has not yet been enough time to test the pilot projects, adapt the collection systems, etc. The recycle shops, new vehicles, etc, are not yet being used. It would be sensible therefore to delay the survey until at least September when there has been more time to test the pilot projects and the survey results will be more meaningful.

There were numerous requests from stakeholders in Khorroos and TUKs during the Review that awareness raising activities should be continued or stepped up during the remaining time of the Project. As the waste collection systems are tested in pilot areas, and recycle shops are set up, awareness should focus on enhancing these aspects. The recycle shops will be a major opportunity to act as hubs for raising awareness. The Project Team has been planning several initiatives linked to the Recycle Shops, including school visits.

The work plan for the final year should also include awareness related to other priority aspects, such as focusing on the implementation of the tariff systems. Raising awareness that proper waste management costs money will support the activities to try to encourage improvements to the tariff system. The awareness messaging by the Project team has included the point that improvements in waste collection will need increased revenues / tariffs. It is important for District Administrations to understand that if tariffs are increased, then there needs to be visual improvements to the standards of waste management services.

4.2 Review of the Effectiveness of Project implementation of Outcome 2: Improved service quality and effectiveness in waste collection and transportation in selected districts

4.2.1 Waste collection contracts

Ulaanbaatar currently has 27 waste collection companies (TUKs) operating. This is an increase in the number from 19 companies at the time of the baseline study in 2019. Most are public (i.e. district-owned) companies. One positive outcome already achieved by the Project Team is that an improved contract has been prepared and approved by the Municipality (the Mayor signed an Order in February 2021 requiring Districts to use the contract). This is a three-way contract, which is important as the involvement of the Municipality can ensure consistency of the provisions, such as ensuring the new bin standards are a requirement. One of the most important aspects will be that a new contract will be for 4 years, replacing the previous/existing contracts that are renewed each year subject to performance. Such a 4-year contract gives confidence for private companies to invest more in maintenance and equipment, and the feedback from the two private TUKs consulted during the Review is that the contract would level the playing field with the public (district-owned) TUKs. The progress reports from the consultants indicate that 20 of the 27 TUKs operating in Ulaanbaatar have signed the contracts. However, the two TUKs under contracts in Chingeltei District are not yet operating under the new contract. This is an area of focus of the Project Team to try to persuade the District of the benefits of the model contract and to further strengthen the governance impacts of the Project.

4.2.2 Pilot waste collection and GPS Monitoring systems

The pilot project planning started in 2019 and the procurement plan was approved in mid-2020. The pilot areas cover parts of two khoroos in each of the two pilot districts (Chingeltei (Khoros 7 and 12) and Songinokhairkhan (Khoros 2 and 3)). The components of the pilot projects include:

- Installation of two separate bins for recycling and for general waste for 1000 khashaas (250 khashaas per pilot area) was started in late 2021 and completed in early 2022.
- GPS system designed to monitor collection and transport of waste from the installed bins in the pilot areas, which have QR codes, to the disposal site. This system has been under testing by ICON since March 2022. The GPS system will have wider benefits that just the pilot areas because all collection vehicles operating in the pilot districts

apparently now have GPS tracking devices (i.e. not just the vehicles collecting from pilot areas), which is a positive impact from the Project.

- Nine sets of larger 1m³ bins have been procured and were received in January 2022. Three of the sets have been set up in schools. More schools or other locations need to be identified as a priority for the other six sets of bins that are currently in storage.
- 33 CCTV cameras have been set up in places in pilot khoroos where there was illegal dumping. These cameras can be easily moved to other areas to widen the monitoring activities.
- The foundation works for the Materials Recovery Facility (MRF) near the disposal site in Songinokhairkhan District have been completed. The import of metal frames for construction was delayed by the slow movement of goods across the border with China, but were received in May 2022. According to the Project team, the MRF, when operational, will have the capacity to serve the pilot areas if operating 8 hours per day.
- Contracts for two waste collection vehicles (for dedicated collection of recyclable materials) were signed with a Korean supplier. There were significant delays with the delivery because of restrictions at the border with China. This has now been resolved as of May 2022.
- Four recycle shops are being planned and are expected to be operational by August 2022. They will play an important role in raising awareness.

In parallel to the implementation of the components of the pilot projects, training has been provided to inspectors in Songinokhairkhan District and section leaders at pilot khoroos in both Districts, and to the relevant TUKs. Awareness materials have included guidance for households on items to separate and also collection schedules.

During the Review there was positive feedback from the stakeholders consulted at khoroos, including community members, on the impact of the CCTV cameras at reducing illegal dumping (and other crimes). In addition, most of the streets out of those observed driving and walking in the pilot khoroos during the Review had minimal amounts of litter. The pilot projects, and particularly the associated awareness activities, have already had a positive impact in those areas in terms of streets becoming cleaner.



Bins in pilot area of Songinokhairkhan District, April 2022



Clean streets were observed in the pilot areas of Songinokhairkhan District, April 2022

The GPS system for waste collection has started testing, with only ICON currently having access to the IT system to monitor the process. The system does need more testing, and will need extensive training and supervision at districts (and MUB) to ensure it is understood and used.

Although the QR code system on the new bins, for tracking waste collection, will be useful if replicated, it currently only covers 1000 bins. The part of the system on GPS tracking of the TUK vehicles, and the CCTV cameras and plate reading technology at all four disposal sites in Ulaanbaatar, are likely to have a wider and longer-term impact on the waste collection system as they make it much easier to track the waste flows to the approved disposal sites. This provides a more robustly monitored and transparent system, which will help reduce bad practices (such as illegal dumping) and potentially corrupt behaviour. This intervention is therefore in line with the SDC objectives of supporting Mongolia in improving governance. It will be important for the work plan to include activities to raise the profile of these successful interventions with MUB and other districts, providing demonstrations on the GPS tracking software, to encourage the take up of GPS systems in all waste collection vehicles in all districts.

On the ground in Khorooos, the scanning system of QR codes on bins has only been used by collection teams for a few weeks or months depending on the pilot khoroo. The feedback from drivers during the Review included concern that it takes time to scan the QR code. However, the other system being replaced, where households bring out waste when the truck is nearby can also have delays. The new system has the benefit that the residents do not need to be at home at the scheduled time of waste collection.

The main finding related to the pilot project is that those collection components that are being tested have not yet had sufficient time to properly test and learn lessons. Feedback from consultation with Section Leaders and community members in the pilot Khorooos during the Review (Box 4.1) confirmed that the collection systems need much more testing and adapting. Pilot projects by definition are set up to test and learn new or adapted systems.

Box 4.1 - Common points of feedback during meetings with community representatives from the pilot project areas

During the Review, group meetings were held with section leaders and residents in Songino-khairkhan (Khoros 2 and 3) and Chingeltei (Khoroo 7) (only Section Leaders were in the meeting in Khoroo 12 in Chingeltei). The three meetings with residents involved a total of 31 residents. For some residents, the bins had only just been installed (Chingeltei) and were not yet being used; for some the collection system had started three months before. The residents for the meetings were selected by the Khoroo Administrations (not randomly).



Meeting with Section Leaders and residents in Khoroo 2, Songinokhairkhan District, 19 April 2022.

The following presents the most common point made, in no particular order:

- *"Guests now come to my house and mention the streets are clean".*
- *"The bin design is weak, especially the lid".*
- *"The lock to the bin is quite weak".*
- *"The bins are too small".*
- *"The number of collections per month need to increase".*
- *"TUKs sometimes do not stick to the dates in the collection schedule".*
- *"It is good that we do not need to be at home when the truck visits".*
- *"No objection to increased tariffs, if service quality improves".*

It is clear that some lessons are already being learned, but that the system needs much time (e.g. six months) to test and adapt before there can be good confidence in the results. An example is that several residents said that the bin is too small, but the solution might be to increase collection frequency.

It is noted that the testing is already generating some lessons. For example, one khoroo in Songinokhairkhan District currently has a system where a TUK vehicle is collecting both types of waste at the same time, and one khoroo has a system where the TUK is collecting just recyclable materials in a collection round. It is positive that different systems are being tested. Facilitating the sharing of lessons will be an important task for the final year of the Project (Box 4.2).

Box 4.2 - Consultation workshop during the Mid-term Review

A stakeholder discussion workshop was facilitated at the end of the mission, attended by 22 participants (including the two Review consultants and four from the ICON team). The participants included representatives from the administrations of all four pilot khoroots, from both district administrations, from the three TUKs involved in the pilot projects, from MUB Waste Management and Environmental Pollution Department, and from MET.



Consultation workshop for the Review
(27 April 2022).

There was much discussion on practical aspects of the pilot projects, as well as on the problems and bottlenecks that are constraining changes to the tariff system. The main takeaway point from the workshop was that stakeholder meetings and working groups, sometimes with a mix of organisations, will be essential in the final year of the Project so that good practices and lessons can be learned from the pilot projects and so that a combined approach might be taken for tariffs if feasible.

Earlier that week, the ICON team had organised a training session for khoroot governors in Songinokhairkhan District to share good practices and lessons, and this had reportedly been successful in raising interest and commitment to improving waste collection.

It is essential that the work plan for the final year of the Project includes actions to accelerate the set up of the remaining components and more detailed day-to-day monitoring and support to the pilot projects. Much monitoring, supervision and on-the-job training will be needed, for example when districts take over the GPS monitoring system, when the recycle shops start up, when the new vehicles are used, and also advice on the ground as khoroots and the TUKs try different systems. All these lessons need to be compiled into a detailed report on recommended future waste collection systems in ger areas of UB, with guidance to districts and khoroots on implementation and roll out of the systems. Such a document needs to be produced in a highly professional manner, similar to the handbook on tariff method. Such an output was specifically requested by MUB during the Review. Ideally, it would be prepared and printed by the end of December 2022 so that it can be presented to MUB and districts across Ulaanbaatar during the final three months of the Project to enhance the chances of replication. The document should be presented to the Governor and Mayor Offices of MUB and district offices in terms of support for replication, and to donor organisations in terms of potential funding (SDC should be engaged in such meetings). The Mongolian Recycling Association and relevant NGOs should also be engaged.

4.2.3 Training programme

The Project Team has put in a major effort in training of different organisations, including representatives from MUB, pilot districts and pilot khoroots, and most TUKs. As at 15 April 2022, 34 training courses had been provided in total, 14 of which were online. The training

courses has been attended by a total of 1376 participants (including 871 women). This compares to a target of 300 total participants in the logframe. Example training activities include:

- Several training sessions in waste regulations to MUB, district offices and TUKs.
- Training to inspectors in all 43 khoros in Songinokhairkhan District.
- Training to Section Leaders in the four pilot khoros in waste collection systems and legislation.
- Training in KPIs to selected district offices and TUKs.
- Training in occupational health and safety to selected district offices, khoroo offices and TUKs.
- Training in legal aspects of human rights and sexual harassment in the workplace to Chingeltei TUK LLC.
- Several training sessions in waste management balanced scorecard to MUB, district offices and TUKs.
- Training in international standards to pilot district offices and TUKs.
- ISO 9001 training and support to TTsU TUK in Songinokhairkhan.
- Hands-on training in collection and transport of recyclable wastes, use of QR codes, etc, to collection teams at pilot TUKs.
- Training in financial planning for waste management to nine district offices and TUKs.
- Training in the waste tariff method to MUB and the two pilot district administrations.

The above list of training indicates a major positive effort from the Project Team, with the indicator of total participants a long way above target. Training to multipliers has been particularly effective, for example to the section leaders, who are each responsible for oversight of 200-300 khashaas. The section leaders in the pilot khoros in Chingeltei District not only clearly understand the new systems, but also stated during the consultation for the Review that they are confident that they would be able to provide the same training in waste collection and recycling to other section leaders in other khoros. Such a "train-the-trainer" approach has therefore been an excellent strategy by the Project Team for the hands-on training. Engaging the section leaders to train other section leaders in other khoros themselves, supervised initially by the Project Team, is a sustainable approach. It might also be enhanced by exploring synergies with the Caritas-managed project that includes on plastic recycling in the ger areas. Training to wider groups of section leaders beyond the pilot khoros would need to be simplified for two reasons: (i) there are many section leaders (in Songinokhairkhan District there are about 400, of which 11 are in the pilot Khoros 2 and 3 and have received detailed training); (ii) during the remaining timeframe of the Project the other Khoros will not receive bins, so would not be provided with training in the new collection system, but instead with simplified training and awareness.

Much of the training had to be provided online because of pandemic-related restrictions on meetings with groups. For some of the courses, refresher training would therefore be beneficial. The Project Team has a detailed training plan but it is important to update this for the final 11 months of the Project to focus on priorities for impact, including adding refresher training for those priorities. During the development of the overall revised work plan, an updated capacity assessment should be carried out, including identification of gaps

in knowledge and commitment. This should particularly take into account the changes in personnel at key stakeholders such as MUB, which will need to have additional training. The revised training plan should focus on topics for which expanding the training would have most impact (e.g. pilot waste collection system, tariff method). More sessions with groups of participants from different stakeholder organisations (e.g. khoroos, TUKs) would be beneficial and should be included in the training plan. This approach on sharing good practices and lessons was supported by all the various stakeholders represented at the consultation workshop in the Review. During ongoing implementation of the pilot projects, additional training needs should be included in the plan related to the components not yet started, for example any training required in the operation of the MRF and recycle shops.

The recent Progress Report included a note that a study tour was proposed by the Steering Committee for the final year. However, although some study tours can be useful, it is considered that this would have limited impact and it is better to focus on more training to strengthen the chances of implementation in other khoroos and districts.

4.3 Review of the Effectiveness of Project implementation of Outcome 3: Improved financial sustainability and efficiency of waste management

Improved waste management will cost money. Tariff levels in Ulaanbaatar are very low (2500 MNT/khashaa in ger areas); and have been unchanged since 2006. This is one of the main reasons the waste collection and transport system is inadequate. The current operation, even with its low level of performance, is no way near cost recovery with over 50% of costs being paid through subsidies from MUB. Feedback during consultation with stakeholders during the Review (including with community members) is that most people would be willing to pay more provided they receive a better quality service. Improvement in the tariff system and collection of higher revenues is the central priority for strengthening waste management performance in Ulaanbaatar.

The Project Team carried out financial analysis of the waste management system and prepared a document: *"Guidelines for calculation of true cost-based waste fees"*. This handbook is a very professional published document, which is an important aspect in terms of its use. The guidelines include calculation on tariffs on a per person basis, rather than per household, which is a requirement in the Law on Waste.

Training has been provided by the Project Team in the tariff method to the pilot districts of Songinokhairkhan and Chingeltei. Sukhbaatar District also participated in the training. As well as the three trained district offices, Khan-Uul District has asked the Project Team for support and has received some ad-hoc advice. In addition, it is understood that Nalaikh and Bayanzurkh Districts are adopting changed tariffs. There is therefore some momentum and the Project Team should be credited with contributing to this potential change in such an important issue. However, the increase in tariffs and the reduction of subsidies (which are apparently not managed with a transparent approach), is a highly political and difficult intervention.

During consultation in the Review, the main reasons given by district administrations for not adopting increased tariffs were:

- Concern about perception and reaction of voters. Tariff levels is a political issue everywhere.
- Many poor households are having extra financial difficulty because of the impacts of the pandemic, and raising tariffs at this time would therefore have negative impacts on some households.
- It would also be inappropriate for district government to raise waste bills during a time that the national government has been paying electricity bills as subsidies to households during the pandemic; (the previous waste fee started to be reintroduced in January 2022 but the ending of all pandemic-related subsidies on electricity will apparently not be until July 2022).
- It might be difficult for one district to raise waste tariffs when neighbouring districts keep tariffs the same, so a combined approach for the districts at the same time would be sensible.

The high quality handbook on tariffs and the training that has been given so far during the Project do provide an opportunity for the Project Team to facilitate change for this important issue. There are opportunities because, as a first short-term step, the districts can increase their revenues (potentially more than double) from waste collection simply by charging existing tariffs to unregistered households. This would not require formal approval from Councils, which otherwise could take much time. The Project's planned approach of persuading districts to take such an approach would quickly demonstrate impact in terms of a more positive revenue collection, and increase momentum and potential commitment to improving the overall tariff structure. The Project Team is preparing invoicing software and this can be tested in the pilot areas where households in all the 1000 pilot khashaas have now been registered under the Project. It is noted that Chingeltei District has already registered all households, according to the Deputy Governor, so the charging of tariffs to newly registered households could be tested on a wider basis.

As well as testing the registration and invoicing system as part of the pilot, additional training would be useful. This could be refresher training to Songinokhairkhan, Chingeltei and Sukhbaatar Districts in the tariff method, and new training is recommended in the tariff method to the six other districts.

Ultimately, however, the adoption of tariffs is beyond the control of the Project Team. Therefore, a realistic target by the end of the Project is for the Team to ensure relevant key stakeholders have all the knowledge and information needed for a decision on tariffs.

This will require a major focus on policy dialogue with the key decision-making stakeholders (e.g. District Governors' Offices, District Councils, MUB (including the Governor and Mayor Offices)). Such dialogue has been shown to positively influence policy-makers through step-by-step relationship-building and policy advice. This is the type of dialogue and relationship that the Project Team had done so well to achieve with the previous Waste Management Department in MUB. Building such relationships and trust with senior policy-makers at District Governors' Offices, District Councils and MUB will take considerable time, and requires a detailed plan that includes several visits of an experienced international

consultant in cost recovery to supplement the dialogue from the Mongolian Project Team. The short timescale remaining on the Project is working against the building of relationships and therefore policy dialogue activities in May/June are important, before the summer break. A combination of extensive policy dialogue activities with provision of further training in the tariff method will give the Project Team a chance of creating impact on this important aspect through achieving the target of ensuring relevant key stakeholders have all the knowledge and information needed for a decision on tariffs. Such an approach was supported by the participants of the consultation workshop for the Review.

The set up of the working group on finance, cost recovery and tariffs by the Project Team was an applicable approach, which was unfortunately affected by the pandemic restrictions on meetings. The working group has recently restarted and will be an important vehicle for policy dialogue.

In order to inform the plans and tasks for the final year related to this Outcome 3 on tariffs, the Project Team should as a first step carry out a rapid review of current tariff approaches in different districts. Lessons can be learned from Nalaikh and Bayanzurkh Districts, which have been testing steps to start to adopt different tariffs.

Another aspect of the activities under Outcome 3 has been the training provided to TUKs in cost calculations and business management. The feedback on this training has been positive and further training and/or refresher training would have benefits to TUKs.

5. Project Efficiency

OECD definition: The extent to which the intervention delivers, or is likely to deliver, results in an economic and timely way.

5.1 Implementation timescales

Given the restrictions of the pandemic, the Project Team, and particularly the Mongolian members, should be given credit for many of the activities that have been implemented in difficult circumstances. However, the pandemic has greatly set back the timeline for implementing the pilot projects, meaning there is much less time than originally planned for testing the pilot project systems. As mentioned, it is important that the pilot systems have at least 6 months of testing and adapting before lessons can properly be learned and disseminated.

There are three procurement contracts that had not been completed as of end of April 2022, but there was some positive progress in May:

- The contract for the two collection vehicles was signed in July 2021 and delivery was delayed by the import restrictions at the border with China. This has now been resolved in May 2022 because the UB representative of the Korean supplier can provide identical vehicles. These need to start operation in June for six months of testing of systems to be implemented in order for dissemination on the pilot projects to be carried out in January to March 2023.
- The steel frames for the MRF were ordered in November 2021 and the delay was potentially more serious. This is because some concrete works are needed for the construction of the MRF and such works cannot be conducted from October to March inclusive because of the cold temperature in Ulaanbaatar. As of May 2022 the materials have been delivered and construction will need to start as soon as possible. The MRF will take three months to construct.
- The proposals for supply of MRF equipment were received in late April. The slow rate of goods crossing the border with China presents a risk of delays in delivery of the equipment.

It is essential that the Project Team keeps fully on track of the situation with delivery of the MRF equipment. As this is a Project for the Municipality, options to utilise any leverage the MUB might have in fast-tracking the delivery across the border should be identified. If no such options exist, then it might be possible for SDC to influence senior stakeholders to fast-track the import. Although such options might not be possible, it is important that their potential is investigated. SDC should be approached for help if high-level meetings are needed on this issue.

5.2 Project budget

The total (maximum) budget for the four-year Project is 3.85m CHF (about 4m USD at April 2022 exchange rate), with the main budget lines being:

- Over 1m CHF was allocated for the time of the international consultants (28% of the total budget).

- Just over 300,000 CHF (8%) for Mongolian consultants.
- The estimated cost of "administrative funds" was 2m CHF (53%) which covers:
 - training (about 500,000 CHF);
 - awareness activities (about 400,000 CHF);
 - procurement of equipment and other supplies (estimated in the Project Mandate (October 2019) to be about 1.1m CHF).
- About 550,000 CHF for local support services, office headquarters and reimbursable expenses.

The coverage of the waste collection component of the pilot project is 1000 Khashaas (equivalent to about 2500 households or about 10,000 people (0.7% of the population of Ulaanbaatar)). Although there are several other important investment components in the pilot project, such as CCTV cameras and the GPS vehicle tracking system, the perception is that the pilot project potentially has a very low cost-benefit in terms of number of beneficiaries. However, by definition, a pilot project is only successful if lessons are learned and the positive aspects are replicated elsewhere in the City. Therefore, the cost-benefit is assessed as very low, unless the systems are properly rolled out elsewhere in Ulaanbaatar. Although the cost per beneficiary of the pilot projects is very high, the cost per beneficiary would be expected to reduce significantly if the pilot projects were to be replicated over a large area.

In terms of budget utilisation, it must also be noted that the Project has other important components and not just the pilot projects. For example the consultation during the Review demonstrated that the training and awareness components have had significant impact not just in pilot areas, but for other stakeholders (e.g. policy-makers, TUKs, residents) in the wider waste management system beyond just the pilot areas.

There is currently a surplus for the budget line on international consultants and a large surplus on the reimbursable expenses budget (i.e. travel costs). There is a significant expenditure to date compared to forecast at this stage of the budget for Mongolian consultants. These situations with those budget lines would be expected given the travel restrictions during the pandemic and the need for the in-country team to take on more of the tasks.

It is recommended that a restructuring of the budget is carried out for the final year of the Project in line with a revised and more detailed work plan. As part of this, it is suggested that a major part of the surplus budget is passed over to the team of Mongolian consultants, provided they have the required capacity available, and it is understood that this has been agreed in principle by SDC in May 2022. For the final 11 months of the Project, the international inputs will only be efficient if a small core team is used, and therefore the international team budget line should be revised to cover several visits of fewer consultants (e.g. for example, depending on the tasks in the revised work plan, a core team of three international consultants covering finance/cost recovery, hands-on solid waste collection and recycling systems, and policy/project management). The international consultants must now spend a high proportion of their remaining work time in Mongolia, not at home office, to have impact. If this is not possible, then it is recommended that some of the budget line for international consultants is moved to the Mongolian consultants.

The stakeholder feedback on the work of the Mongolian consultants has been positive, and the efficiency of their work also perceived to be positive given that they still have some of the original budget remaining after such a long time period without international inputs in Mongolia. It is also surprising that the opportunity given by SDC to the Project Team for a transfer of part of other budget lines to increase the budget line for Mongolian consultants was not taken up by the Project Team during the pandemic. An increase in tasks and inputs of Mongolian consultants at the start of 2021, which SDC stated that they had suggested, would likely have put the Project in a stronger position at this time to have impact.

5.3 Project management

Several aspects of project management will need to be adapted in the final 11 months to ensure a focus on priorities, otherwise there is a strong risk of drift in the Project implementation and minimal longer-term impact. In particular:

- A lack of project work plans to the necessary detail has been identified. The work plan attached to the Progress Report is a level too high for use to properly manage a project of this scale unless individual task plans are developed. A lack of task plans for the pilot projects is a concern, particularly given the delays so far. There are detailed task plans for training and awareness activities, but apparently not for other activities. This point supports the perception of a overall lack of prioritisation of tasks, and this approach needs to be corrected for the final 11 months if the Project is to have impact by its end.
- Progress reports should be restructured to be much more useful. The reports repeat the same text in most places. Our experience is that getting into a habit of copy and paste of such reports means that priorities can easily be missed. It is noted that the "challenges" section in the latest report (April 2022) does not highlight the major risk of change in team in the Environmental Pollution and Waste Management and the associated high priority to engage extensively with the new team. In particular the Progress Reports are missing clear points on priority actions and detailed work plan for the subsequent six months. They are written in a way that is very difficult to interpret.
- Many of the indicators in the logframe for the Project are particularly unclear, as demonstrated in the analysis in Annex 4. For the final year of the Project, it is recommended that the indicators are fully clarified. There should be a working meeting with SDC and the Project Management Team to go through and revise the indicators in the logframe.

It is noted that some problems in relation to the above points are partly due to the inevitable disconnection between the international and Mongolian team because of the pandemic.

As mentioned in Section 4, a major focus is essential in the final 11 months on the priorities, and in particular on organisation and implementation regular policy dialogue meetings, including day-to-day follow-up actions to communicate and build relationships. The Mongolian Project Team have been the main drivers of the Project activities and results during the time of the pandemic, but none of their team has been working full-time. It is recommended that, depending on the agreed revised work plan, a full-time Mongolian Project Manager is needed, and a full-time Mongolian Project Co-ordinator, for the final 11 months of the Project, in particular to organise such activities.

For such a project with many components and activities SDC would have found it difficult to monitor properly the detailed Project actions and to keep track of whether the Project is properly focusing on priorities for impact. This is partly because of the difficulties with holding meetings over the two years of the pandemic, and partly because of the lack of clear and detailed work plans for the Project and low quality progress reporting (although it is noted that there were no requests from SDC to amend the format of the progress reports). This is demonstrated by the SDC strategic document titled *Phasing Out Programme Mongolia 2022-2024*, published in January 2022, which wrongly includes the text that implies there have been positive impacts already on waste collection: "*leading to improved service quality, effectiveness and financial sustainability of waste management in the municipality of Ulaanbaatar.*" Although there have been some positive interventions by the Project (e.g. GPS tracking on collection vehicles in two districts, improved contracts adopted for 20 of 27 TUKs), such positive results as implied in the document had not been achieved on a wide scale in the Municipality of Ulaanbaatar at that time.

It is recommended that the use of the budget surplus in the final year of the Project should only be approved by SDC subject to the following conditions, most of which would be expected anyway for the implementation of such a large multi-million CHF project:

- A much more detailed and much clearer work plan must be produced, with task plans and visit plan, by 13 May 2022 in a format that is much easier to use and monitor than the existing work plan, including responsibilities and deadlines for actions.
- The work plan should include detailed plans for policy dialogue on regulations and tariffs, training and awareness, and a marketing "roadshow" on the pilot collection systems to encourage roll out of the systems to other areas.
- A core team of priority international consultants should be identified and must visit several times for policy dialogue activities, supporting the pilot projects, etc, starting May/June. A first visit in September is too late, which is why the work plan is needed by 13 May so that visits in May/June can be arranged. It will take time for them to get up to speed, and policy advice needs working relationships.
- ICON appoints at least two full-time consultants, with clear responsibilities, as full-time Mongolian Project Manager and full-time Mongolian Project Co-ordinator.
- Much improved progress reporting templates, detailed quarterly reports and brief monthly reporting, are needed if agreed by SDC, and ad-hoc updates in critical tasks.
- The detailed work plan would be updated monthly and attached to progress reports.
- SDC must step up involvement in terms of tracking project implementation for the critical final year or appoint an independent Mongolian project monitoring consultant.
- If all procurement items are not received by end July 2022 then SDC should consider a time extension of 3-6 months for specific tasks, but with no additional budget.

5.4 Procurement

The information in Box 5.1 compares the limits for different procurement types in the Swiss Federal Department of Foreign Affairs (FDFA) procurement guidelines, and demonstrates that the contracts up to April 2022 were in line with the FDFA procedures in terms of types of procurement procedures used. At the time of the Review, the price for MRF equipment had just been received in the tender and is apparently under the threshold. The registration software and procurement compliance will need to be checked by SDC for those contracts.

Box 5.1 - Procurement

The requirement for the procurement contracts was that they should be in line with the procurement guidelines for contractors of the Swiss Federal Department of Foreign Affairs (FDFA). The procurement contracts were summarised by the Project Team in the Procurement Plan (July 2020) and this included the estimated price amounts at that time. The contract types were a mix of the "Direct Award" category and "Invitation Procedure".

The important aspect for limits for the type of selection procedure are:

- For **services**, below 150,000 CHF is direct award, between 150,000 CHF and 230,000 CHF is invitation procedure, and above 230,000 CHF the requirement is for international tendering.
- For **goods**, below 150,000 CHF is direct award (as of 2021), between 150,000 CHF and 230,000 CHF is invitation procedure, and above 230,000 CHF the requirement is for international tendering.
- For **construction works**, below 150,000 CHF is direct award, between 150,000 CHF and 2,000,000 CHF is invitation procedure, and above 2,000,000 CHF the requirement is for international tendering. (It is understood that the limit for direct award for works has been increased to 300,000 CHF in the updated guidelines in 2021, but the limit of 150,000 CHF in the earlier guidelines applies for the Project because procurement for the construction works started before the new threshold).

Contract	Estimated amount in Procurement Plan (July 2020) (CHF)	Type of procedure used for procurement	Actual contract amount (CHF)
Works			
Collection points	13,200	Direct Award	13,200
Civil works for MRF	260,417	Invitation Procedure	287,790
Goods			
Bins and containers	204,800	Invitation Procedure	214,463
CCTV system	9,000	Direct Award	36,588
Collection trucks	140,000	Invitation Procedure	137,062
Recycling stores	80,000	Invitation Procedure	15,910
MRF equipment	199,800	Invitation Procedure	Unknown at time of Review but under the threshold according to the Project consultants.
Services			
Data centralisation software	30,000	Direct Award	20,456
Registration software	N/A	Direct Award	Unknown at time of Review
Integrated information system	N/A	Direct Award	20,658
Scavengers survey	N/A	Direct Award	18,106

Other contracts have been small and included procurement related to provision of training and awareness activities, and the total amount invoiced for those contracts added to 69,693 CHF as of April 2022, and therefore these contracts for services are well below the maximum level for direct award.

6. Project Impacts

OECD definition: The extent to which the intervention has generated or is expected to generate significant positive or negative, intended or unintended, higher-level effects.

As typical for most pilot projects, the pilot components of the Project would not necessarily be expected to result in a major impact during the Project given the waste collection system is being tested in such a small area. The pilot projects will only result in significant impacts if lessons are learned and systems are replicated across other areas of Ulaanbaatar. Other components of the Project, such as the development of regulations and the tariff method, will have impact if the outputs developed by the Project Team are adopted and implemented. The potential increase in tariffs towards cost recovery would reduce the subsidies paid by MUB to TUKs through districts, which is a source of inefficiency and potential source of corruption. Project impacts on tariff levels would therefore have a positive impact related to governance. In terms of the investments under the Project, it is considered that the GPS tracking system of vehicles to the disposal sites is likely to have a high positive impact, including contribution towards improved transparency, provided detailed training to MUB and the districts is given on handover, plus supervision during the first three months of use.

It is positive that the Project Team has worked hard to create the situation where there is a foundation for long-term impact, provided a detailed work plan is prepared and implemented in line with the recommendations in this Review. The Project Team will need to focus extensively on encouraging replication of the pilot projects and on implementation of the regulations and tariffs for the Project to have significant impacts. Otherwise the Project will drift to a conclusion of just a few positive short-term impacts and minimal long-term change.

The perception based on consultation with stakeholders during the Review is that the training and awareness components of the Project are having an impact. Unfortunately many of the indicators in the logframe are unclear, but for some it will be useful to compare the feedback from the new survey of public attitudes with the similar survey in 2019 to make a judgement on change. Actual examples of positive current impacts observed during the visits to pilot khoros included relatively clean streets and no illegal dumping at sites where CCTV cameras were located.

The wider objectives of the Project focused on the health and well-being of residents in the poorer ger areas and the problems with inequality. If pilot projects are rolled out, and/or if tariffs are increased so that the waste collection service improves, then the Project would likely have a strong contribution to positive impact on these aspects in the longer-term.

It is important that the tariff methods take account of vulnerable households by including guidance on calculating affordability and necessary subsidies. However, the handbook on tariff methods only gives brief mention to this. The needs and calculation methods for subsidies should therefore be integrated in detail into future training on the tariff method.

The Project developed a Gender Mainstreaming and Good Governance Plan in 2019 and has had a focus on involvement of women, and reporting relevant indicators on gender. For example, as at 15 April 2022, the training courses have been attended by a total of 871 women and 505 men. It is understood that it is women who currently have the cleaning roles in many households. Most of the Section Leaders (13 of 14) consulted across the two pilot districts during the review, and both Inspectors consulted in Songinokhairkhan District, were women. These Inspectors and Section Leaders were generally positive about the Project interventions and have attended the training and been involved in awareness activities. However, the waste management sector is traditionally dominated by men in many countries, in particular the waste collection teams. The additional point that three of the four TUKs that were consulted during the Review are managed by women, contributes to the positive perception on gender aspects in the sector in Mongolia. In addition, one of the training courses provided to TUKs was on Prevention of Sexual Exploitation, Abuse and Harassment in the work place. No concerns over PSEAH were raised during the consultation activities for the Review. COWI and ICON informed that they provide training to permanent staff on such aspects on an annual basis. It is suggested that the next Progress Report includes information on results of gender mainstreaming and summarises the Project activities related to PSEAH.

At this stage, no significant employment creation has been reported by the Project. It is suggested that the Project Team reviews this point during future activities and reports any new employment associated with the Project. One positive aspect is that about 10 workers will be needed to operate the MRF established by the project and it is planned that many of these will be sourced from the informal sector working at the landfill.

Finally, because of concern that removal of recyclables during the pilot projects might impact the revenues of waste pickers, a detailed survey of waste pickers was carried out by the Project Team. The survey concluded that such a small quantity of recyclables (i.e. from 1000 khashaas) segregated at an earlier point in the collection system would not significantly impact the income of the waste pickers. The guidance document on replication of the pilot projects will need to include points that pickers could be formally employed or supported in future recycling systems where pilot project collection is widely rolled out.

In summary, most of the potential impacts, including on public health and inequality, depend on whether the pilot projects are replicated at the end of the Project and whether the tariff method is implemented.

7. Project Sustainability

OECD definition: The extent to which the net benefits of the intervention continue, or are likely to continue.

The original design of the Project had a focus on sustainability and replication of the pilot projects. It recognised that a robust framework of regulations needs to be implemented for a sustainable waste management system, and in particular that a sustainable system requires much improved cost recovery.

Training and awareness have been positive components of the Project and it is important that these activities continue in the final year with a focus on sustainability of the project interventions and impacts. In particular, repeating the training in the tariff method to other districts will have benefits to raise the understanding and knowledge, particularly as parallel policy dialogue will be needed with stakeholders to encourage adoption of the tariffs. General training and awareness in solid waste management to other khoroos in the pilot districts, led by the multipliers (section leaders) who have already received training, would be beneficial.

There are many cases of vehicles procured under other donor projects not being sustainable because of lack of funds or capacity for operation and maintenance, but the perception is that this is not the case for this procurement. The Mongolian Project Team indicated that the suppliers have some of the maintenance responsibility for the first three years of operation, and that the TUKs do have some maintenance capacity. However, it would be sensible if the Project Team check the maintenance requirements of suppliers and capacity of the two TUKs receiving vehicles, and also the availability of spare parts given the current difficulties of import. In addition, the updated capacity assessment should also identify responsibilities and the Project team should continue to check any capacity problems related to operation and maintenance of other pilot components, such as the GPS tracking, maintenance of the CCTV cameras, etc.

The contracting system for waste collection and transport in Ulaanbaatar is fairly non-competitive at present. Most of the 27 TUKs are public (district-owned) and their collection areas are allocated directly and contracts automatically renewed if performance is assessed as satisfactory. One aspect for the Project is that the new vehicles will be provided to two public TUKs in Songinokhairkhan District. This will significantly enhance their operations, but potentially could distort competition with private TUKs, two of which stated during the Review that they operate with old second-hand vehicles. In addition, the Project Team has worked effectively with one public TUK to improve its management systems towards ISO standards. This is positive for the individual TUK, and is likely to enhance performance in the pilot area for which that TUK is responsible, but such support to one public TUK company does not necessarily help towards a more competitive framework for waste collection and transport. The activities by the Project Team on the model contract, if signed for all TUKs, will help towards a more level field of competition and therefore towards a stronger and sustainable system.

The new vehicles will only be operating in the pilot areas for 2-4 days per month. At other times, the TUKs will use them for other areas. The EU plastic recycling project managed by Caritas recently enquired with the Project Team whether one of the new vehicles could be used to collect separated recyclables at the households in their small pilot project in one of the same Khorooos. It is uncertain why the answer from the Project Team was negative and it is suggested that such an approach would contribute, if only a little, to the more sustainable use of the vehicles and also enhance collaboration between projects.

EBRD is managing another project on waste disposal in Ulaanbaatar. By July, EBRD hopes to start a technical assistance project for up to two years on waste management legislation and tariffs. Although this will focus more on disposal tariffs, there are strong synergies between that project and some of the core components of the SDC Project. It is recommended that the Project Team reach out to EBRD to ensure the lessons and outputs prepared under the SDC Project are taken into account by EBRD, and that joint policy dialogue on tariffs could be co-ordinated.

As with all pilot projects in small areas, the key to sustainability is learning the lessons and ensuring replication. In turn, replication depends on finding funding for further investments. There is a risk that the lessons from the pilot projects will not be learned in time to be presented to relevant stakeholders who would be responsible for the policy decisions or funding for roll out. There is also a risk that the tariff system will not be amended. The recommendations on developing a detailed work plan, and focusing on policy dialogue activities, also apply here in terms of enhancing sustainability. A professional handbook of guidelines on policy and implementation of the pilot projects, including details on capital and operational costs and the lessons from the pilots, should be prepared by the Project consultants and presentations made to policy-makers in MUB and the districts as well as to potential funding agencies. It is suggested that the Project Team and SDC should jointly carry out a series of such presentations.

After the end of the Project, unless there is a strong chance of replication of the pilot collection systems in other khorooos, the TUKs that own the vehicles might decide not to send them to the 250 khashaas to collect a relatively small amount of recycling, but might decide to focus on more efficient use of the vehicles by using them for collection of the much higher quantity of recyclable materials in commercial areas. In this case, there is a risk that the bins procured under the pilot project will simply become yet another set of different types of recycling bins where the collected waste is actually combined and transported to the disposal site. The GPS system used on bins would then not be used. Even in this scenario, the GPS system for vehicle tracking would probably continue to be used, and the Project could still have a strong and sustainable impact if more of the regulations developed and the tariff method are adopted and implemented.

8. Conclusions and Recommendations

Box 8.1 - Reminder of Project objective and outcomes:

Objective - Improve waste collection and transport system for the poorest and least developed areas of Ulaanbaatar.

Outcome 1 – Effective regulations for implementation of the national Law on Waste Management (2017) are in place.

Outcome 2 – Improved service quality and effectiveness in waste collection and transport in selected districts.

Outcome 3 - Improved financial sustainability and efficiency in the waste management.

8.1 Overall conclusion

The pandemic has had a major impact on the Project implementation, in particular it has caused serious delays. The Project is highly unlikely to achieve fully its original objectives and outcomes by March 2023. There are some aspects beyond the control of the Project Team, for example political decisions on increasing waste tariffs.

The results of the Project so far are a strong achievement given the situation with lockdowns and international travel bans during over two years. At the moment the Project is on course to achieve significant impacts, most of which would likely only be for the short-term and to a low number of beneficiaries. As discussed in this Report, it would not be expected for pilot projects to achieve wide scale impact at the end of the Project. However, the work to date has set up the foundation for opportunities for the Project to achieve significant longer-term impacts, including on public health and inequality. The achievement of such long-term impacts will require a substantial effort during the final year of the Project with highly focused and organised project management and activities.

Recommendation: The following broad targets for the end of the Project are within the control of the Project Team and should be adopted to ensure focus for the final 11 months of the Project. If achieved, they would give a strong chance of major impact:

- Ensure useful results (lessons) are obtained from pilot projects and widely disseminated.
- Ensure there is a high chance of replication of the collection system in other areas.
- Ensure relevant key stakeholders have all the knowledge and information needed to make a decision on tariffs.
- Ensure that the regulations that have been developed are adopted .

8.2 Specific conclusions and recommendations

The following sections provide brief conclusions and sets of inter-related recommendations. The recommendations on policy dialogue (on regulations, tariffs and roll out of pilot projects) are high priority because they could lead to long-term positive impacts.

Pilot project results

The key challenge related to the pilot projects is that the pandemic has set back the timeline and therefore there is much less time to test and adapt the pilot collection systems.

Recommended activities:

- Step up the hands-on working on the ground with the teams in the pilot khoroos, including TUKs, to supervise and adapt collection systems, and including an international waste specialist for a fresh assessment and advice on pilot projects.
- Continue to check the maintenance responsibilities and requirements for all components of the pilot projects, and identify any associated training needs and guidance documents.
- Step up dialogue with Chingeltei District to demonstrate the governance benefits of the contracts and therefore to encourage adoption of the model contracts.
- Major focus on training and supervision for the GPS tracking system of vehicles to the disposal site, which is currently the main component on target for long-term impact.
- Ensure the set up of the recycle shops by start of August 2022 (there are no constraints to this task in terms of imports).
- Delay the repeat of the survey of public attitudes until September or October when the pilot systems will have had more opportunity for testing, and the results of the survey will be more meaningful.
- Plan the survey for a higher sample size so that there is confidence in the results, including some households in the districts that are not part of the pilots.
- Record lessons learned, other details such as operational costs, and prepare a high quality report on waste collection systems in Ulaanbaatar, printed by end of December 2022.

Roll out of collection systems

The cost-benefit of the collection systems for the pilot projects is very low in terms of number of beneficiaries covered by the Project. However, this is expected to be the case for most pilot projects. The cost-benefit will greatly increase if the pilot systems are adapted as needed and replicated in other areas of Ulaanbaatar.

Recommended activities:

- Prepare a strategy and action plan for stakeholder engagement on replication, including presenting the report on waste collection systems (described above) in a series of meetings to key decision-making stakeholders (e.g. MUB, MET, district administrations) from January to March 2023. This should also include GPS tracking of vehicle movements.
- The strategy to encourage roll out should include different approaches, such as meetings with individual organisations, group meetings with several stakeholders, involving the management from the pilot khoroos in the meetings, etc.
- Prepare an additional action plan for a "roadshow" of meetings to present the pilot project results and the report on waste collection systems to potential funding

organisations, NGOs working in the sector, etc, to try to identify opportunities for funding for roll out of the collection systems. Involve SDC in such meetings as needed.

- Continue to organise and facilitate training sessions with mixes of different stakeholders to share good practices and lessons learned in waste collection from the pilot projects.

Tariff system

The current tariff levels are very low so that high subsidies have to be paid to cover the costs of the collection system. The Project Team have prepared a high quality handbook on the tariff method and there is some interest and momentum at districts for changing the tariff system. This presents an opportunity for long-term impact of the Project. Tariff levels are a highly political decision, with many factors influencing the decision. The Project Team should ensure relevant key stakeholders have all the knowledge and information needed to make a decision on tariffs.

Recommended activities:

- Rapid review of the current approach at all districts because some districts have been considering changes to their tariff systems, and at least one district has registered all households.
- Carry out extensive policy dialogue activities at all relevant levels on the tariff method, including with all district administrations and engaging with MUB, including Governor's Office.
- Offer training in the tariff method to all district administrations.
- Ensure the training includes actions to identify vulnerable households and to calculate subsidies to such households as part of the tariff method.
- Involve an international specialist in finance and cost recovery in the policy dialogue and training activities, including several visits of that specialist, starting May/June 2022.
- Utilise the contacts of SDC and ask them to organise meetings at high levels as needed.

Regulations

The Project Team has worked hard to prepare regulations, standards and guidelines to support the Waste Law, and three regulations are in place. Actions are needed over the final year to ensure every chance that the other regulatory documents prepared are adopted and implemented. Again, this will require a focus on policy dialogue with the decision-making stakeholders to ensure they understand the benefits of the regulations, standards and guidelines. This is particularly important given that there are new decision-makers where personnel changed in MUB, district, councils, etc.

Recommended activities:

- Develop and implement plans for policy dialogue activities involving meetings about the regulatory documents with individual organisations plus facilitate joint meetings with different organisations as needed, to ensure all organisations understand the benefits of the documents.
- Towards the end of the Project provide recommendations on improvements to the Waste Law, as requested by MET and MUB.

Policy dialogue / stakeholder engagement

The main potential impacts of the Project described above are (i) replication of collection systems; (ii) implementation of tariff method by districts; (iii) adoption of regulations prepared by the Project team. Progress towards achieving all of these is at a critical point

where a major step up in policy dialogue and stakeholder engagement is needed, with regular meetings, communication and building relationships to gain trust. This is particularly important given the change in personnel at key management positions in MUB and district administrations.

Recommended activities:

- Preparation of a detailed policy dialogue plan as a core component of the Project work plan.
- Stepping up the policy dialogue activities in May/June (not waiting until after the summer break).
- Depending on the tasks in the revised work plan, identifying three key international consultants to carry out several visits to Ulaanbaatar, starting in May/June, to join the Mongolian team in the policy dialogue activities.
- Robust monitoring of the implementation of the actions in the policy dialogue plan.
- Including SDC in some of the meetings with senior counterparts so that the importance and benefits of the interventions can be further emphasised.

Governance

Several components of the Project have focused on governance aspects in line with SDC objectives of supporting Mongolia in improving governance. These include adoption of improved contracts for 20 of 27 TUKs. In particular, the GPS tracking system for the TUK vehicles in the pilot districts, and the CCTV cameras and plate reading technology at all four disposal sites in Ulaanbaatar, are likely to have a wider and longer-term impact on the waste collection system as they make it much easier to track the waste flows to the approved disposal sites. This provides a more robustly monitored and transparent system, which will help reduce bad practices (such as illegal dumping) and potentially corrupt behaviour. This is an important opportunity for wider, long-term impact. The Project tasks (recommended above) on dialogue to encourage adoption of the tariff method in line with the Waste Law would have the potential for positive impacts through achieving increases in tariffs towards cost recovery. This would reduce the system of subsidies paid by MUB to TUKs through districts, which is a source of inefficiency and potential source of corruption. Project activities on tariff levels could therefore have a highly positive impact related to governance.

Recommended activities:

- The revised work plan should include activities to raise the profile of these successful interventions with MUB and other districts, providing demonstrations on the GPS tracking software, to encourage the take up of GPS systems in all waste collection vehicles.

Training and awareness

Training and raising awareness activities are positively impacting participants and will continue to be important activities related to all the above Project directions. Therefore there are many specific tasks for the final year.

Recommended activities:

- Rapid update of the capacity assessment and identification (or confirmation) of the priority gaps in capacity at key stakeholders, taking into account the changes in management at counterpart organisations.

- Include in the capacity assessment identification of training requirements related to maintenance of the pilot project investments.
- Update of the training plan for the final year of the Project;
- Include training in tariff method to all districts.
- Include refresher training for those priority topics for which participants were online and/or for which key roles in counterpart organisations have changed personnel.
- Facilitate and supervise a train-the-trainer approach so that section leaders in pilot khoros provide general solid waste management training and awareness to section leaders in other khoros in their districts.
- On-the-job training and supervision related to testing waste collection systems in the pilot projects.
- Implement training sessions with participants from a mix of organisations (e.g. khoroo section leaders, teams from TUKs, etc) to share good practices and lessons learned.
- Include the important training and supervision for the GPS tracking system of vehicles to the disposal site, when the system has been tested and handed over to district administrations and MUB.
- Training related to supporting new components of the pilot projects as they are implemented (recycle shops, new vehicles, and MRF).
- Ongoing activities to raise awareness through khoroo administrations, TUKs and particularly schools, including to support the implementation of the pilot projects.
- An extra focus on using the recycle shops, when operating, as hubs for awareness-raising.

International specialists

There have been no international team visitors since January 2020 because of the pandemic and there has been an inevitable disconnect between the international and Mongolian team. Visiting international specialists will take time to get up to speed. Given the need for a focus on rebuilding relationships with key stakeholders to encourage adoption of outputs, starting international visits from September will be too late, and visits in May/June are needed before the summer break. A small core international team would be more efficient for the final year of the Project.

Recommended activities:

- Include in the work plan a visit plan for a core team, recommended to be three international specialists (depending on the tasks in the work plan): (i) finance and cost recovery; (ii) solid waste collection systems with a particular focus on hands-on practical aspects; (iii) project management / stakeholder engagement at policy level.

Project management and reporting

The overall work plan for the Project is at a higher-level than expected and, although some components (e.g. training and awareness) have more detailed plans, the lack of detailed task plans is a concern. Progress reports are difficult to understand, miss some of the key risks, and do not look forward in terms of planning (they exclude priorities for the next reporting period). A step change in project management and task monitoring is needed to have a chance of achieving the longer-term impacts, and to avoid the Project drifting to a conclusion. Many of the indicators in the logframe are very unclear and need re-wording or at least explanatory points of clarification on what was meant. It is recommended that the use of the budget surplus in the final year of the Project should only be approved by SDC

subject to the recommendations on project management and visits of a core international team being agreed.

Recommended activities:

- A working meeting with the Project Management Team and SDC is needed to clarify and revise the indicators in the logframe (Appendix 4 provides analysis of the logframe). If it is inappropriate to change the logframe at this stage, then it is suggested that explanatory notes should be added to reflect the clarifications agreed in the working meeting.
- A much more detailed and much clearer work plan must be produced for the final year, with task plans and visit plan, in a format that is much easier to use and monitor than the existing work plan, including responsibilities and deadlines for actions. This work plan is likely to be needed by 13 May 2022 so that visits of international consultants can be arranged for May/June.
- The work plan should include detailed task plans, with more specific actions, responsibilities and timescales, recommended elsewhere in this section, (e.g. for policy dialogue on regulations and tariffs, training and awareness, and a marketing “roadshow” on the pilot collection systems to encourage roll out and funding of the systems to other areas). Such task plans should help with weekly prioritisation of actions.
- Depending on the agreed revised work plan, ICON appoints at least two full-time consultants, with clear responsibilities, as full-time Mongolian Project Manager and full-time Mongolian Project Co-ordinator.
- Much improved progress reporting templates, detailed quarterly reports and brief monthly reporting and/or ad-hoc progress reports on critical aspects, are needed. More attention is needed in reports on highlighting the project risks /constraints to achieving impact, and more attention on priorities for the next reporting period. It would be useful if the next Progress Report includes a summary of results of gender mainstreaming activities and a summary of Project activities on PSEAH.
- The detailed work plan would be updated monthly and attached to progress reports.
- SDC must step up involvement in terms of tracking project implementation or appoint an independent Mongolian project monitoring consultant.

Abbreviations

IFI	International Finance Institution
MET	Ministry of Environment and Tourism
MRF	Materials Recycling Facility
MUB	Municipality of Ulaanbaatar
PSEAH	Prevention of Sexual Exploitation, Abuse and Harassment
SDC	Swiss Agency for Development and Co-operation
SWM	Solid Waste Management
TUK	Waste Service Company (<i>Tohijilt Uilchilgeenii Kompani</i>)
WCTM	Waste Collection and Transportation Management
UB	Ulaanbaatar

Appendix 1 - List of Meetings - internal only

Appendix 2 - List of Documents

1) Project outputs

Baseline documents

- Updated SWM Baseline (dated June 2019)
- Environmental and Social Analysis (July 2019)
- Gender mainstreaming and good governance plan (July 2019)
- Legal analysis (October 2019)
- Analysis of financial framework (August 2019)

Planning documents

- Approved Pilot Project Concept (March 2021)
- Approved Procurement Plan (March 2021)
- Approved Plan for General Awareness Raising (March 2021)
- Approved Awareness Raising Strategy for the Pilot Regions (March 2021)
- Approved Capacity Building Plan (March 2021)
- Selected Awareness Raising Materials (September 2021)
- Waste Scavengers Survey Report (September 2021)
- Training Events (September 2021)
- Legal Conclusion on the Issues of Procurement on Selection of Waste Transportation Companies (September 2021)

Regulations, standards and guidelines

- Regulation on Inspection (Act No: 5395) (September 2021)
- Regulation on Incentives (September 2021)
- Waste Bin Standard (UCS 1701A) (September 2021)
- Handbook on Calculation of Waste Fees on a Per Capita Basis (September 2021)
- Guidelines for calculation of true cost-based waste fees (2021)
- Guideline for the Financial Management of Municipal Waste Management of Zurich City (September 2021)

2) Project Document and Progress Reports

- Original Project Document 2019
- COWI Mandate signed 16 October 2019
- Annual Progress Report (6 April 2020) (for period 1 April 2019 to 31 March 2020)
- Semi-Annual Progress Report (30 September 2020) (for period 1 April 2020 to 30 September 2020).
- Annual Progress Report (31 March 2021) (for period 1 April 2020 to 31 March 2021).
- Semi-Annual Progress Report (30 September 2021) (for period 1 April 2021 to 30 September 2021).
- Annual Progress Report (31 March 2022) (for period 1 April 2021 to 31 March 2022) (Draft).

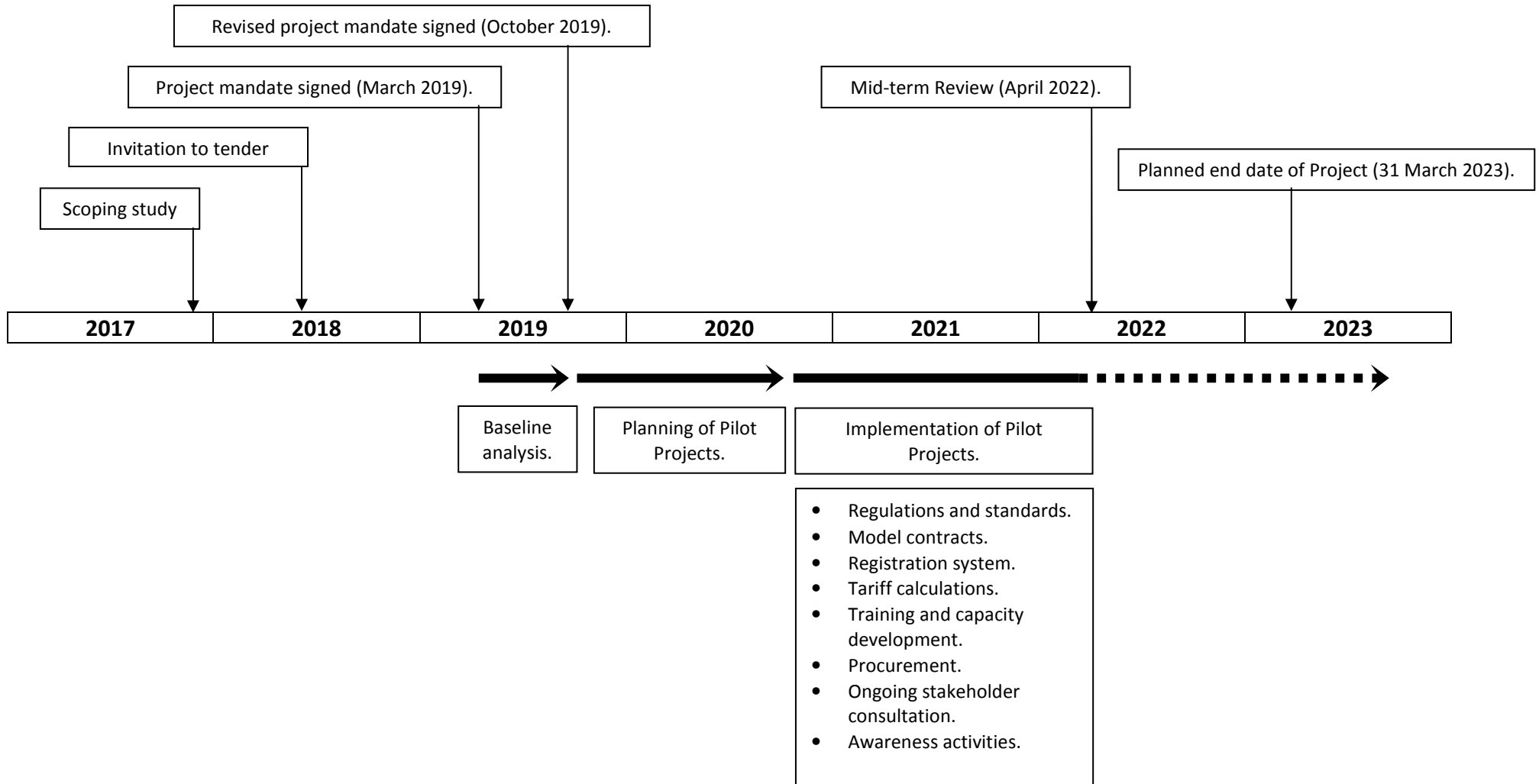
3) Notes of Meetings

- Minutes of 1st Steering Committee Meeting 29 January 2020
- Minutes of 2nd Steering Committee Meeting 20 August 2020
- Minutes of 3rd Steering Committee Meeting 26 February 2021
- Minutes of 4th Steering Committee Meeting 12 November 2021
- Minutes of 1st Meeting of Working Group 2 - 24 April 2020
- Minutes of 1st Meeting of Working Group 3 - 29 April 2020

4) Other background documents

- SWM Scoping Study, December 2017
- Swiss Cooperation Strategy for Mongolia 2018-2021.
- Swiss Cooperation Programme - Phasing Out Programme Mongolia 2022-2024.
- Project Factsheet October 2019
- Government Action Plan, Mongolia, 2020-2024
- Mongolia Sustainable Development Vision 2050
- Procurement guideline for FDFA contractors, Version 2, January 2021
- Letter from SDC to Project Team on progress reporting (6 September 2021)
- Field Trip Report, SDC, 11 November 2021

Appendix 3 - Project Timeline



Assessment of the current results and potential results related to the indicators in the Project Logframe

Outcome 1: Effective Regulations and Standards for the implementation of new law are in place.

Indicator in logical framework	Note from Progress Report (31 March 2022)	Comment from mid-term review (April 2022)	Conclusion from review
<p><i>Government regulations, decisions, and standards for implementation of the new regulations:</i></p> <ul style="list-style-type: none"> - Baseline (B)- 2019:0 - Target(T) - 2023: 4 	<p>Status (31/03/22): 2023 target achieved(2 regulations approved;1 regulation partially approved; 1 standard (waste bins) approved; 1 standard being finalised; 2 procedures on determining waste fee per capita and unit tariff incorporated into approved handbook and published).</p>	<p>Good progress on this indicator. However, the key point is that the indicator does not state whether the outputs should be "developed", "approved", "adopted" or "implemented". These would be very different in terms of achieving impact. The title of the outcome includes the words "in place", which implies the target is for them to have been formally adopted (and hopefully being implemented).</p> <p>The links between this indicator (target of 4) and the one below in Output 1.1 (target of 8) need to be clarified.</p> <p>Overall, much Project Team effort has been put into development of draft regulations; two have been adopted. A significant effort is now needed on engaging relevant policy stakeholders in discussion on the benefits of the other draft regulations and standards so that they are adopted.</p>	<p>Expected to be achieved by the end of the Project; (but the indicator needs clarification).</p>
<p><i>Increase in population's knowledge on waste legislation:</i></p> <ul style="list-style-type: none"> - B (2019): 9% of the population of the target districts have "good" knowledge; 41% have "moderate" knowledge; 24% have "poor" knowledge; and 26% "don't know". - T (2023): +25% increase to "good" and "moderate" knowledge. 	<p>Status (31/03/22): 2023 Target not yet achieved (<i>Training was undertaken with the Training Research Centre for civil servants on the waste law on 8 November 2021 with 175 participants from 9 districts participating. Training also took place on 23 March 2022 on the regulation ("Operation of public inspectors on waste management and payment of monetary incentives to them") for the waste management public inspectors from all 43 khoroos of Songinokharkhan District. Awareness activities have also been implemented to support pilot project concept and "general" awareness raising on MSW management</i>)</p>	<p>Survey of public needs to be planned, and this will show the results for this indicator. Recommend the survey is delayed until at least September when the pilot projects have had more time for testing.</p>	<p>Expected to be achieved by the end of the Project; (but confidence in results depends on survey design and sample size).</p>

Output 1.1 Sectoral guidelines/regulations/ standards for implementing of the new law are developed			
Indicator in logical framework	Note from Progress Report (31 March 2022)	Comment from mid-term review (April2022)	Conclusion from review
<i>Number of secondary legislations, policies, regulations, standards and guidelines developed with TA</i> - B (2019): 0 - T (2023): 8	<i>Status (as of 31/03/22): 2023 target not yet achieved (Two regulations approved; one regulation partially approved; one standard approved; one standard being finalised; two procedures developed, approved, and incorporated into a handbook).</i>	Good progress on this indicator, but uncertain if eight will be developed, approved and implemented. The indicator requires the document to be "developed", which does not necessarily mean achieving the impact of the outputs being "implemented", and contradicts the title of the outcome, which includes the words "in place". The note in the column (to the left) on progress that two procedures were developed into a handbook needs clarification in term of whether this is one or two of the target of eight documents. According to the Project team consulted during the review, eight documents are at various stages of development.	Expected to be achieved by the end of the Project; (but the number of documents being prepared needs clarification).

Output 1.2 Awareness on waste management is raised with focus on collection and transportation in line with the new law guidelines.			
Indicator in logical framework	Note from Progress Report (31 March 2022)	Comment from mid-term review (April 2022)	Conclusion from review
<i>Increase in knowledge about the waste collection schedules:</i> B (2019): 71% of population in target districts have no knowledge/ 29% have good knowledge. T (2023): 41% increase to 70% of population having "good" knowledge.	Status (as of 31/03/22): 2023 target yet to be achieved (<i>Implementation of general and pilot project awareness raising strategies</i>).	Extensive awareness activities have been carried out. Survey of public attitudes and awareness needs to be planned, and this will provide some relevant results for this indicator. Recommend the survey is delayed until at least September when the pilot projects have had more time for testing.	Expected to be achieved by the end of the Project; (but confidence in results depends on survey design and sample size).
<i>Complete prohibition of waste burning due to a better understanding of impacts:</i> - B (2019): 20% burn waste - T (2023): 0% burn waste	Status (as of 31/03/22): 2023 target yet to be achieved (<i>Implementation of general and pilot project awareness raising strategies</i>).	This indicator needs particular clarification. The area covered by the indicator is uncertain (i.e. UB, pilot districts or just pilot khorroos). The measurement method of the baseline 20% needs clarification. If the measurement method is by survey, then it might be useful to compare to other (non-pilot) khorroos in the two pilot districts.	Risk of not achieving by the end of the Project; (but the indicator needs clarification before a judgement can be made).
<i>75% of the population in the ger areas of the two target districts has received awareness campaigns with focus on collection and transportation.</i>	Status (as of 31/03/22): 2023 target yet to be achieved (<i>Implementation of general and pilot project awareness raising strategies</i>).	Extensive awareness activities have been carried out in the pilot areas (khorroos) and two pilot districts. The indicator implies 75% of population of districts, rather than pilot khorroos or areas. Unlikely that this target will be achieved for the whole districts, but very likely to be achieved for pilot areas. The interventions that qualify as "Receiving awareness campaigns" need to be clarified, as this could mean anything from receiving a flier, access to facebook, up to receiving detailed hands-on training. If the indicator is confirmed to mean the districts, then the surveys need to be designed so that the sample is taken across different khorroos in both districts.	Risk of not achieving by the end of the Project; (if the indicator is for the whole of the two districts, but the indicator needs clarification).

Outcome 2: Improved service quality and effectiveness in waste collection and transportation in selected districts.

Indicator in logical framework	Note from Progress Report (31 March 2022)	Comment from mid-term review (April 2022)	Conclusion from review
<p><i>Satisfaction rate of residents with the services is increased:</i></p> <ul style="list-style-type: none"> - B (2019): Average of 29% in the target districts rated service as “good”, and 50% as moderate. - T (2023): +20% increase in “good” classification and “moderate” classification 	<p>Status (31/03/22): 2023 target not yet achieved (<i>20 of the City’s TUKs have amended their contracts in line with the model contract</i>)</p>	<p>Indicator needs to be clarified because it refers to target "districts" but would expect it to be for "pilot project areas" because these should have received a better service whereas there would be minimal change in service performance expected outside the pilot areas in the districts.</p> <p>The note in the column on progress about contracts is less relevant here, and more relevant under Output 2.1.</p> <p>The uptake of model contracts by TUKs is a significant achievement, but the meetings in the review indicate the two contracts with TUKs in Chingeltei District have not yet been replaced by the model contract prepared under the Project.</p>	<p>Expected to be achieved by the end of the Project; (the above conclusion is based on the assumption that the indicator means target pilot areas; indicator needs to be clarified).</p>
<p><i>Increase in knowledge about the waste collection schedules:</i></p> <ul style="list-style-type: none"> - B (2019): 71% of population in target districts have no knowledge/ 29% have good knowledge. - T (2023): 41% increase to 70% of population having “good” knowledge. 	<p>Status (31/03/22): 2023 target not yet achieved (<i>Awareness raising plans are being implemented. Procurement of the supplies/ services to implement the pilot project concept is approaching completion</i>).</p>	<p>Indicator needs to be clarified because it refers to target "districts" but would expect it to be for "pilot project areas" because these should have received a better service whereas there would be minimal change in service performance expected outside the pilot areas in the districts.</p>	<p>Expected to be achieved by the end of the Project; (the above conclusion is based on the assumption that the indicator means target pilot areas; indicator needs to be clarified).</p>
<p>Reduction in fly-tips/illegal dumps in the target districts</p> <ul style="list-style-type: none"> - B (2019): 67% of population reported waste littering/fly tips in target districts - T (2023): 25% of population reports waste littering/ fly tips in target districts 	<p>Status (31/03/22): 2023 target not yet achieved (<i>Procurement of the CCTV system to help prevent fly-tipping has been completed and cameras installed around fly-tipping areas. Awareness raising campaigns are being implemented</i>).</p>	<p>Indicator needs to be clarified because it refers to target "districts" but would expect it to be for "pilot project areas", which have received CCTV cameras. Feedback received in the review was positive on the impact of the CCTV cameras.</p>	<p>Expected to be achieved by the end of the Project; (the above conclusion is based on the assumption that the indicator means target pilot areas; indicator needs to be clarified).</p>

Output 2.1 Improved contracting model between City Municipality and private TUKs.			
Indicator in logical framework	Note from Progress Report (31 March 2022)	Comment from mid-term review (April 2022)	Conclusion from review
<i>Templates/standard for new contracting modalities are developed</i> - B (2019): 0 - T (2023): 2	Status (31/03/22): 2023 target achieved <i>(Letter of Approval from Mayor's Office in January 2021).</i>	Two templates have been developed and approved.	Achieved.
<i>Number of contracts (with improved contracting modalities) exist between MUB, two districts and two TUKs in each selected district</i> - B (2019): 0 - T (2023): 6	Status (31/03/22): 2023 target achieved <i>(20 TUKs have updated their contracts in line with the model contract).</i>	<p>The uptake of model contracts by TUKs is a significant achievement, but the meetings in the review indicate that the two contracts for Chingeltei District have not been signed and they are operating under the old contracts.</p> <p>The target of six is confusing because there are three TUKs serving the pilot areas (two public TUKs in Songinokhairkhan and one private TUK in Chingeltei). The two TUKs in Songinokhairkhan are using the new contract but the contract for the one in Chingeltei has not yet been adopted.</p>	Expected to be achieved by the end of the Project; (probably already achieved but the reported number (20) of contracts signed and in operation needs checking).

Output 2.2 An enhanced and strengthened GPS based monitoring system for waste collection and transport.			
Indicator in logical framework	Note from Progress Report (31 March 2022)	Comment from mid-term review (April 2022)	Conclusion from review
<i>Registration system in place to improve monitoring of waste disposal to existing dumpsites: % of TUK vehicles in target regions with appropriate sensors in place:</i> - B (2019): 0 - T (2023): 100%	Status (as of 31/03/22): 2023 target achieved (<i>Fleet reader system installed at City's four waste disposal sites. Operators trained</i>).	Feedback from the review is that this intervention of CCTV and automatic technology to monitor and record vehicles arriving at all four of the disposal sites is already helping track waste flows. The GPS system for vehicles is covered below.	Achieved.
<i>% of dumpsites that have surveillance cameras installed to prevent illegal dumping:</i> - B (2019): 0 - T (2023): 50%	Status (as of 31/03/22): 2023 target achieved (<i>CCTV system installed at all locations where fly-tipping has been identified in co-operation with Topika LLC</i>)	The indicator is uncertain and it is assumed by "dump sites" means illegal dump sites rather than official disposal sites. The definition of an illegal dump site is also difficult, for example in terms of whether regular littering in one place would be classed as a dump site. Also the area for the indicator is not specified (it is assumed that it is for the pilot areas). The next progress report should be clear on how many such sites were existing at the time of the baseline. The key point is that feedback received from local stakeholders during the review was already highly positive on the impact of the CCTV cameras.	Expected to be achieved by the end of the Project; (just needs clarification that 50% of the main illegal dump sites have had CCTV installed, and also that the indicator is for pilot areas).
<i>Developed and installed software that allows the Mayor's office to receive, and unite, data from the GPSs of the respective TUKs</i> - B (2019): 0 - T (2023): 1	Status (as of 31/03/22): 2023 target achieved (<i>Software developed; OR codes have been affixed to each bin in the pilot khorooos; system being thoroughly tested prior to roll-out</i>).	Software has been developed and installed at relevant TUKs and is currently being tested by ICON. Significant training and support will be needed at districts and MUB when the IT monitoring system is handed over.	Expected to be achieved by the end of the Project.
<i>% of residents in the ger areas in the target regions which receive a bi-monthly waste collection service, <u>in reality</u>:</i> - B (2019): 37% (average) - T (2023): 74% (average)	Status (as of 31/03/22): 2023 target not yet achieved (<i>Model contract adopted by TUKs; awareness raising campaign ongoing</i>).	It is assumed that "target regions" in the indicator means pilot areas. New collection systems are being implemented in the pilot areas using the installed bins, but for some households in Chingeltei district the collection from those bins was being phased in and had not started (as of 20 April 2022).	Expected to be achieved by the end of the Project; (indicator needs to be clarified).

Output 2.3 Improved capacities of professionals in the solid waste management sector			
Indicator in logical framework	Note from Progress Report (31 March 2022)	Comment from mid-term review (April 2022)	Conclusion from review
<i>Number of professionals trained</i> - B (2019): 0 - T (2023): 300	Status (as of 31/03/22): 2023 target achieved (1366 <i>Participants trained to-date</i>)	Extensive training has been carried out, with significant amounts online. Target achieved, but for the priority topics refresher training would be beneficial.	Achieved.
<i>Extent to which participants assess improvement in their capacity</i> - B (2019): 0 - T (2023): average by 15%	Status (as of 31/03/22): 2023 target not yet achieved <i>(Survey being planned in the second quarter of 2022 to assess adsorption of training).</i>	Survey of training participants to be carried out.	Expected to be achieved by the end of the Project.

Outcome 3: Improved financial sustainability and efficiency of waste management.

Indicator in logical framework	Note from Progress Report (31 March 2022)	Comment from mid-term review (April 2022)	Conclusion from review
<p>% of services subsidised from public funds</p> <ul style="list-style-type: none"> - B (2019): 35% (source: Mayor's Office of UB City); - T (2023): 20% 	<p>Status (31/03/22): 2023 target not yet achieved (Methodology for calculating waste fee on a per capita basis approved; tariffs calculated for pilot districts).</p>	<p>It is uncertain if this indicator refers to target districts or the whole of UB. Adoption of increased tariffs is a political decision outside the control of Project team although they can influence decision-makers through extensive policy dialogue activities. Pandemic-related impacts on levels of household income, and other government subsidies on electricity, are holding back adoption of higher waste tariffs. The Project team have developed a highly professional handbook on tariff methods. Target unlikely to be achieved by end of Project but important that the team expands their focus on all districts related to adoption of the tariff method, and provides the decision-makers with all the information that they need on which to base a decision on tariffs.</p> <p>In several places for the indicators in Outcome 3 in the logframe, the Progress Report states that the "method for calculating the waste fee on a per capita basis is approved". But it is not clear which stakeholders have approved the method, which is currently not being implemented.</p>	<p>Risk of not achieving by the end of the Project; (indicator needs to be clarified).</p>
<p>Increase in revenue collection from clients (measured as effective revenues in relation to maximum possible revenues)</p> <ul style="list-style-type: none"> - B (2019): 70% (source: Mayor's Office of UB City); - T (2023): 84% 	<p>Status (31/03/22): 2023 target not yet achieved (Registration system developed for the khashas in pilot khoros; Training on average incremental cost analysis; Methodology for calculating waste fee on a per capita basis approved).</p>	<p>Indicator is uncertain on what area of clients is covered. If it is the pilot areas only, registration has been carried out and invoicing software is being developed, and there is an opportunity for districts to test invoicing on a per household basis.</p>	<p>Risk of not achieving by the end of the Project; (indicator needs to be clarified).</p>
<p>Improve collection rate in ger areas:</p> <ul style="list-style-type: none"> - B (2019): 70% (source: Mayor's Office of UB City); - T (2023): 85% 	<p>Status (31/03/22) 2023 target not yet achieved (Registration system developed for the 1000 khashas in the pilot khoros).</p>	<p>This indicator is particularly confusing in terms of area covered. Uncertainty in the difference between this indicator and the one above, and the reason that the targets are 84% or 85% needs clarification.</p>	<p>Risk of not achieving by the end of the Project; (indicator needs to be clarified).</p>

Output 3.1 Tariff system for waste collection and disposal based on per capita collection method is developed and tested			
Indicator in logical framework	Note from Progress Report (31 March 2022)	Comment from mid-term review (April 2022)	Conclusion from review
<i>Number of clients or khoroo where per capita tariffs are tested</i> - B (2019): 0 - T (2023): all khoroo's in pilot districts	Status (as of 31/03/22): 2023 target achieved (<i>Waste fee per capita calculated and approved for Chingeltei and Songinokharkhan Districts</i>).	<p>The review findings disagree with the Progress Report. The tariffs have not been tested on a per capita basis anywhere in the pilot districts. It is understood that the Project consultants have adjusted the point in the revised Progress Report to confirm the target has not been achieved.</p> <p>The Project team should persuade the two pilot districts about the benefits of testing the tariffs for at least the pilot areas, but these might start as a per household basis (including previously unregistered households) as a first step, and then per capita later. The target of all Khoroos in pilot districts implies testing across all 62 khoroos in the two pilot districts, and this needs to be clarified.</p>	Risk of not achieving by the end of the Project; (indicator needs to be clarified).
<i>% of households in UB are billed based on new per capita tariff</i> - B (2019): 0 - T (2023): 50	Status (as of 31/03/22): 2023 target not yet achieved (<i>Methodology to calculate waste tariff is being rolled out to other districts along with supporting training/awareness raising</i>).	Unlikely to be achieved in UB in the timescales of the Project but major Project team activity will have influence on the decisions on tariffs by key stakeholders.	Risk of not achieving by the end of the Project.

Output 3.2 An improved client registry and billing system for households and businesses is developed			
Indicator in logical framework	Note from Progress Report (31 March 2022)	Comment from mid-term review (April 2022)	Conclusion from review
<i>% of UB residents in the target regions registered in the improved registry</i> - B (2019): 0 - T (2023): 100%	Status (as of 31/03/22): 2023 target achieved (<i>Registration system developed, albeit reduced geographic scope covering the pilot khoroos only</i>).	The households in the pilot areas have reportedly been registered, i.e. 250 khashas in each pilot area that have received bins. The indicator is ambiguous because of the words "target regions", which could mean all households in the two pilot districts. The indicator needs to be clarified.	Expected to be achieved by the end of the Project; (indicator needs to be clarified).

Output 3.3 Improved cost calculation and budgeting tools for private and public TUKs are piloted and applied.			
Indicator in logical framework	Note from Progress Report (31 March 2022)	Comment from mid-term review (April2022)	Conclusion from review
<i>Number of open public tenders implemented in the target regions in line with new processes and regulations</i> - B (2019): 0 - T (2023): 5	Status (as of 31/03/22): 2023 target not yet achieved (<i>Tariff methodology developed; Model WCTM approved and adopted by 20 TUKs; Legal conclusion on issue of procurement for selecting TUKs</i>).	Feedback from the review is that tenders are not carried out for waste collection. Contracts for specific areas are allocated directly to TUKs. Contracts tend to be renewed based on good performance. This indicator almost certainly will not be achieved.	Risk of not achieving by the end of the Project.

Output 3.4 Procurement processes and regulations of WM services are developed.			
Indicator in logical framework	Note from Progress Report (31 March 2022)	Comment from mid-term review (April2022)	Conclusion from review
<i>Evidence-based cost calculation and budget model is developed</i> - B (2019): 0 - T (2023): 1	Status (as of 31/03/22): 2023 target achieved (<i>Tariff methodology approved; Financial model finalised</i>).	Tariff method has been developed, and training carried out to three districts. However, the method has not been implemented. Normally it would be expected that the indicator would require the output to be "implemented", not just "developed".	Achieved; (based on the indicator stating the output has been "developed" rather than "implemented").
<i>Number of TUKs applying the new cost calculation and budgeting tools</i> - B (2019): 0 - T (2023): 4	Status (as of 31/03/22): 2023 target mainly achieved (<i>Model contract adopted by 20 TUKs; tariffs recalculated on a per capita basis; legal conclusion on procurement issues</i>)	Training has been provided and well received by some TUKs consulted during the review. The Project team need to check the number of TUKs using the tools.	Expected to be achieved by the end of the Project.