SANITATION IN MONGOLIA: EXPERIENCES, CHALLENGES AND RECOMMENDATIONS

#WECAN'TWAIT

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List of Abbreviations

ACF	Action Contre la Faim
ADB	Asian Development Bank
ADP	Area development program
AF	Asia Foundation
CDIA	Cities Development Initiative for Asia
CLTS	Community led total sanitation
CNDS	Comprehensive National Development Strategy
GADA	Ger area development agency
GAHP	Ger area housing project
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (German Federal Enterprise for International Cooperation)
HH	Households
KFW	Kreditanstalt für Wiederaufbau (Reconstruction Credit Institute)
JMP	Joint Monitoring Programme
LA	Local Authorities
MED	Ministry of Economic Development
MCUD	Ministry of Construction and Urban Development
MDG	Millennium Development Goals
MUBC	Municipality of Ulaanbaatar City
MEGD	Ministry of Environment and Green Development
MOH	Ministry of Health
MDG	Millennium Development Goals
MNT	Mongolian Tugrod
MRCS	Mongolian Red Cross society
NSC	National Statistical Committee
UBCAP	Ulaanbaatar Clean Air Project
UDCP	Urban Development and Construction Project
UFZ	Helmholtz Centre for Environmental Research – UFZ
UNDP	United Nations Development Programme
UNICEF	United Nations Children›s Fund
USIP	Ulaanbaatar Services Improvement Project
USIP2	Second Ulaanbaatar Services Improvement Project
WB	World Bank
WSRC	Water Service Regulatory Commission
WV	World Vision
WWCTP	Ulaanbaatar Waste Water Central Treatment Plan

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Introduction

The present report aims at analyzing the sanitation sector in Mongolia and its performances toward the delivery of sound services to the Mongolian population. In this work sanitation is referred to as provision of facilities and services for the safe disposal of human urine and feces. The wider aspect of maintenance of hygienic conditions, through services such as garbage collection and wastewater disposal was not specifically addressed in this report.

The analysis focuses on rural, peri-urban and spontaneous urban areas that are not connected to the central water and sewerage system and on how these areas are provided with sanitation facilities and services. Hence great focus is given to onsite sanitation. Onsite sanitation, as also called, decentralized sanitation refers to "system of sanitation where the means of storage are contained within the plot occupied by the dwelling and its immediate surroundings. It may be disposed of on site or removed manually for safe disposal" as stated by WHO[1].

The report starts with a context analysis where the legal frameworks on sanitation as well as national programs on sanitation are reviewed. A mapping of actors working in the sanitation sector provides an overview of the most significant experiences carried out in the area of sanitation in Mongolia during the last years. In the light of the context background a SWOT analysis follows, highlighting the strengths, opportunities, weaknesses and threats of the sector.

Challenges and difficulties that are preventing a good performance of the sector are then further analyzed and a set of recommendations for the future sector direction and development are given.

This report aims to be a working tool for the different stakeholders active in the sanitation sector in Mongolia and decision makers working on the institutional arrangements that can optimize the sector performances.

The report Information are updated to January 2015.

1 *WHO (2006)*

Executive summary

This work was motivated by the fact that sanitation in areas not served by water and sewer infrastructure has not registered a visible improvement during the last ten, fifteen years in Mongolia.

This is true both at Soum or Aimag level as well as at Ulaanbaatar level where 65% of the population, approximately 180.000 household relies on unimproved pit latrines characterized by very poor construction and poor hygiene conditions. Bigger effort in fact was put in the improvement of water access and, at least at Ulaanbaatar Municipal level, in the expansion of the water infrastructure.

How to trigger household's motivation to improve their sanitation facilities? What's the role of the WaSH actors in this process?

The legal framework shows a clear gap of responsibilities when it comes to provision of sanitation services in areas not seved by sewerage infrastructure: households are responsible by law to care for their onsite sanitation facility that is considered as a private good. Different levels of the government are responsible for the provision of utilities in those areas served by sewerage infrastructure. This also brings arguably to providing a subsidy for wealthier sectors of population, those living in urban central areas connected to the infrastructure, and leading to clear inequality.

Again, the Mongolian national standard on onsite sanitation, though currently under revision, has set very demanding requirements for improved pit latrine. In fact It is not consistent to the Mongolian context and to the capacity of households to accomplish to it.

In areas not connected to the water and sewerage network local authorities' interventions related to the monitoring of the sanitary conditions of their administrative areas focus mainly on the provision of services in the area of solid waste management.

Harsh climate conditions, on the other hand, make it difficult to adopt simple onsite technical solutions widely used in temperate countries.

The sanitation sector is not prioritized in the government agenda and in the WaSH actors' agenda as well. It is most often included in the wider area of infrastructure provision in all the programs focusing in urban development. Many current programs in fact mainly focus on providing infrastructure connections to public services and buildings hence not directly and timely covering the needs of households. The ambitious programs focusing on the redevelopment of Ulaanbaatar Ger area foreseeing the expansion of the sewerage infrastructure and the connection of all household to utilitiy services will be completed in a long time span. No temporary improvement is foreseen in the meantime in those areas characterized by unimproved onsite sanitation facilities.

The resilience of those communities adopting traditional social norms on sanitation and environment protection is what makes it possible to live in those areas with a very poor access to sanitation. At the same time those communities are stuck in the customary knowledge of social norms on sanitation that is not promoting a good motivation to step out from the use of unimproved pit latrine and shift to improved sanitation solutions.

The optimization of legal framework and standards is needed as a first start to revitalize the sanitation sector. **Advocacy on sound sanitation** has to be strongly encouraged as a tool that can work at different levels. As first instance advocacy at government level has to be carried out **to feed the political** will and **prioritize the sanitation agenda.**

The **integration of onsite sanitation in the sector of urban services provision (by public utilities i.e.)** should be achieved as a first step to promote a strategic planning.

In a country on the rise of economic growth as Mongolia, unimproved sanitation in areas not served by water and sewer infrastructure is highly hindering a fair and fast improvement of households' living standards and is mining at the eradication of poverty.

Advocacy on sound sanitation can indeed trigger households' interest and engage them in a process of behavior change aiming at improving **residents' living standards**.

Coordination of all the actors working in sanitation is crucial as well as **the capitalization of the successful experiences in improving sanitation in areas not connected to the water and sewerage network in Mongolia and experiences based on community participation.** Each actor's role and contribution should be identified aiming at providing residents of areas not connected to the water and sewerage network with **sound technical solutions.**

National programs and plans focused on supporting the improvement of sanitation in areas not connected to the infrasturctures system should be part of **the overall strategy on sanitation** and should be conducted together with urban development programs aiming at the expansion of the infrastructure. Improved onsite sanitation solutions as temporary solutions conducted together with long term infrastructure expansion should be highly promoted.

Local authorities as well as households are crucial actors of the process and their direct involvement ensures the ownership, durability and sustainability of these processes

In the framework of the report the following recommendation to optimize the sanitation sector are proposed and further discussed.

Recommendation 1: revision of the legal framework

Recommendation 2: wash actors soundly coordinate and establish a sanitation coalition to promote solutions for onsite sanitation

Recommendation 3: advocate and campaign on sanitation as a mean to improve Mongolian citizens' living standards

Recommendation 4: launch of national programs on improvement of sanitation in human settlements not served by water and sewer infrastructures.

1. Methodology

The methodology utilized to carry out the current consultancy has foreseen two phases. The first phase was based mainly on the use of two operative tools: field interviews of the stakeholders and documentation review. The analysis of the data collected during the first phase of the work brought to the preparation of the draft report and preliminary recommendations. Thanks to these tools in fact the actors mapping and legal framework and context analysis of the sector in Mongolia were prepared.

The work also took advantage of the ACF WaSH Forum scheduled during the field work for the preparation of this report. Focus discussion groups on sanitation were held during one of the WaSH Forum session. The result from the focus group gave an additional contribution at the research development and fed the research with the outputs of the discussion of different stakeholders.

A further focus group discussion has been organized aiming at investigating the role, responsibilities and actions of local authorities working in the local government of UB ger area.

The second phase of the work was based on the feedbacks from the presentation of first results to ACF field staff in Mongolia.

A continuous coordination and collaboration with ACF Mongolia mission staff facilitated the arrangements of activities in the field and thanks to ACF network it was possible to meet different relevant stakeholders.

As stated by the TOR this research attempts to investigate on the reasons why in the very last years the sanitation situation of urban and rural areas in Mongolia not served by the water and sewer infratructure did not show any measurable improvement and on how to trigger households' interest in improvement of sanitation facilities.

2. Context analysis

a. The legal framework

A brief analysis of the legal framework and of standards on the sanitation sector in Mongolia can be the starting point to have a better understanding of the context.

The "Hygiene and Sanitation Situation Report For Ger Areas, Mongolia"[2] prepared in 2006 in the framework of the Community led infrastructure project by USIP2 and the Municipality of Ulaanbaatar city helps us to recall the legal framework of sanitation in Mongolia. The same document identifies 3 phases in the history of sanitation services delivery in Mongolia, phases linked to the political transformation through which the country has undergone since the '90s. As mentioned in the report before the democratization process the provision of water and sanitation services was centralized under the Ministry of Health, during the transitional and post transitional period, no nationally designated agency was clearly identified to plan and implement interventions in the area of sanitation[3].

The 1998 law gives general indications about requirements in terms of sanitation conditions and identifies the actors involved in sanitation services listing their responsibilities.

The powers of different level of Government actors' involved in sanitation are listed and their operative duties are mentioned. Paragraph 15.2.1 states that "Aimag, capital city, soum and District governors are in charge for "draft proposals for ensuring normal sanitary conditions and submit to the Khural of Citizens' representatives of the respective level for approval".[4] Paragraph 15.2.5 specifies that their task is also: "To control the use and operation of markets, sources of drinking and household water, rivers, springs, sewage system, clean water network, water drainage system, arms of rivers, water holes, lavatories, waste disposal points, cemeteries, and cleaning facilities located in their particular territory and take actions to eliminate the

2 *CLIDP PMU, USIP2,MCUB (2006)*
3 *Ibid. page 11*
4 *Parliament of Mongolia (1998), article 15.1.2.1*

breaches revealed"[5] and in paragraph 15.2.7 it is added that Aimags, Capital city, Soum and District khural's citizen representatives and Governors are responsible "to promote movement for sanitation based on the public initiative of their respective territory and provide assistance in exercising public control"[6].

In terms of financing point 15.2.8 gives interesting information when it says that these bodies should "include in each year annual budget expenditure required for ensuring normal sanitary conditions".[7]

At the same time paragraph 1.6.1.1 , dealing with Bagh and Khoroo Khurals of citizen's representatives, says that among their powers they can "involve organizations, business entities and individuals in the activity to ensure normal sanitary conditions within their respective territories".[8]

Nevertheless when sanitary conditions are referred to, in the urban setting, the concept is assimilated to sewerage network and infrastructure provision and the budgeting allocation is meant to cover maintenance and construction of infrastructure facilities such as sewerage networks.

One of the most interesting part of the law, for the purpose of this report is paragraph 1.8.1.3 clearly stating that "residents of housing that are not connected to the central water supply and water disinfecting drainage have to build and use lavatories, sewage pits and waste disposal containers in accordance with the sanitary regulations and standards".[9] This is the only section of the law that mentions onsite sanitation. The sanitation law stretches a clear demarcation among the urban Centre connected to the sewerage networks and the areas that are not served by sewerage infrastructure. An inconsistency can be highlighted: if on one side local governments are requested to allocate resources and call for annual budgets to improve the sanitation conditions, at the same time, citizens are requested to provide by themselves to set up sanitation facilities in the area where no central connection is available.

Table 1: Existing Laws and Regulations Related to Sanitation in Mongolia

Laws/Regulations, Year Approved, Approving Authority	General Content
Government policy on public health, 2001 [Parliament Decree#81]	To provide better understanding on hygiene services, standard for toilet, sewerage and waste water system, and improve of treatment technologies
Sanitation Law, 1998 [Parliament]	To provide better and secure hygiene environment and ensure standard environment living for community
City water supply and sewer law, 2002 [Parliamen]	To provide guidance for clean and standard water for city and settlement residents, coordination of waste water system and water treatment plant engineering structure
Law on water, 2004 [Parliament]	TO provide proper use of water and water basin, its activities for coordination
Domestic and manufactory waste law, 2003 [Parliament]	To coordinate activities of collecting, transferring, preserving, disposing and recycling waste.
Health law, 1998 [Parliament]	Sharing laws for citizen rights and responsibilities for health
Protection and hygiene standards of the community water resource, 1995 [Decree 167/335/a/171, Ministry of Environment, Health and Infrastructure]	To establish a zone to protect water resource from polluting, shortage and change of quality
Drinking water, Hygiene requirement and monitoring. MNS 900-92, 1992 [Bureau of National Standard and Measurement]	Monitoring and requirement of central water supply
Hygiene requirement and regulation on selection of water resource for drinking and domestic water , 1992 [Bureau of National Standard and Measurement]	Information not available
Regulation on defining waste water disposal area, 1995 [Decree 167/335/a/171, Ministry of Environment, Health and Infrastructure]	Regulation on defining wastewater disposal area for household and institution, which are not connected with sewerage system.
Inner lining of domestic waste water and pits, 1995 [Decree #A/54, Ministry of Health]	Information not available
NOTE: The law on land privatization was enacted in 2003 - the law provides individual adult Mongolian to privately own a piece of land - including those living in Ger-areas. The average size of land in khashaa is about 0.07 hectare or 700 square meters.	

Source: Hygiene and situation report for Ger area, CLIDP PMU USIP2 pag.16

5 *Parliament of Mongolia (1998), article 15.1.2.5*
6 *Parliament of Mongolia (1998), article 15.1.2.7*
7 *Ibid, article 15.2.8*
8 *Ibid, article 16.1.1*
9 *Ibid, article 18.1.3*

Lower levels of authorities are supposed to promote and disseminate standards and best practices and to monitor and enforce sanitary requirements. These duties refer to ensure "sanitary conditions within their respective territories"[10] and "organize actions for enforcing sanitary requirements at the waste disposal and sewage points and cemeteries and for observance of the sanitary security regime at the water sources and monitor implementation thereof". No specific focus is highlighted on monitoring households' sanitary conditions or onsite sanitation facilities conditions. For what it is expressed in the law, the only scenario for the involvement of government authorities in the planning and budgeting of sanitation services is referred to infrastructure provision and maintenance. As a matter of fact there are consolidated settlements, i.e. the Ger area of Ulaanbaatar with around 180.000 households were the responsibility of sanitation lies in the hands of citizens since those areas are not connected to the central sewerage network and are relying on onsite sanitation.

Undoubtedly one of the most relevant changes in the country after the nineties was the introduction of the law on land privatization entitling each household to own a land title, and reinforcing the concept of a clear demarcation between public and private responsibility for service provision related to sanitation. This event stresses even more the perception that residents living in areas not connected to the sewerage network or in spontaneous areas growing around the urban center were left alone to deal with the provision of urban sanitation services.

The most relevant updates in terms of legislation in the recent past are the amendment of the water law in 2012 and the introduction in January 2012 of the *law on utilization of urban settlement's* water supply and sewage.

The law on water 2012 introduces the concept of integrated water resource management. The Ministry of Environment and green development is the government body appointed to prepare a management plan. When it comes to the management of *water facilities* (as defined by law) The Ministry of Construction and urban development is responsible for the realization of infrastructures (in coordination with Aimag government and the area River Basin Authority).

10 *Ibid, article 16.1*

The law on Utilization of urban settlement's water supply was also introduced in January 2012. The law appoints the Ministry of Construction and urban development for the legislation and policy on water supplies and sewage and identifies the implementers at Aimag government level. The law also establishes the Water Services Regulatory Commission with the mission of defining fares and fees for all the services related to water and sanitation.

It is important to note that even this law does not refer directly to the topic of sanitation and does not identify responsibilities in the area of services provision[11]. The law mentions that special licenses are classified for "service to transport waste water by specific purpose car"[12]. This is referred to all those companies that are carrying out emptying services for onsite sanitation facilities as septic tanks, holding tanks or pit latrines. This is the only service related to decentralized sanitation that is mentioned and deemed to be regulated by law. It has to be noticed that in the current Ger area redevelopment set up the emptying service will sensibly increase as many high rise building part of approved housing projects will be provided with holding tanks that will require periodical servicing[13].

The existing set of laws shows as sanitation provision is not fully integrated in the legal framework.

It has to be highlighted that specifically in the sanitation sector the shift from a fully government centralized service provision system to a demand based provision has not been supported by policies, strategies and adequate investments aiming at supporting the residents of spontaneous settlements rapidly growing in the fringes of the urban centers at capital and aimag/ soum centre level.

b. On Standards and guidelines

The Mongolian "Pit latrine and soak pit standard" dates back to 2008 (MNS 5924:2008): VIP latrines, as well as non-percolating emptyable VIP with side and bottom lining are introduced in the standard, including annex technical drawings. The standard also defines separate soak pits (lined soak pit working as holding tanks indeed) suitable for grey water disposal. The standard

11 *Bock, Franziska (2014)*
12 *Paliament of Mongolia (2012 a), article 12.2.14*
13 *Donati, Pier Francesco (27/10/2014a)*

sets also the respect distances: 15 mt from private/ public buildings, 20 mt from water points and 200 m from rivers.

The standard is quite high in terms of technical performances and gives detailed technical requirements in terms of dimensions of all the different components of the toilet.

It is questionable what the philosophy behind this standard is, in fact in terms of technical requirements it is arguably inconsistent to the context situation of the Ger areas as well as to the financial capacity of households.

According to different actors interviewed compared to few years ago Mongolian policy is improving in terms of consistency and attention to options for sanitation facilities[14].

Early in 2013 UNDP in the Framework of the WaSH goal project has prepared a catalogue for sanitation solutions at household level aiming at disseminating information on potential technologies the household could adopt. Even if some technical solutions illustrated are questionable for the Mongolian context this initiative is interesting and represent the willingness to link the gap between institutions and households facing the sanitation issue in unconnected areas.

Recently a standard on small scale wastewater treatments has also been approved, comprising of technical requirements and setting maximum quantities allowed in terms of pollutants in the effluents.

At the moment of this report writing a new standard on onsite sanitation facilities is under approval.

The standard preparation has a very important meaning because it represents the raising interest and concern of the Government to take into consideration those residents that in the very next future most unlikely will be connected to the central sewerage system.

The Ministry of health through the decree 355th established a working group composed of representatives from: Ministry of Health, Agency of specialized inspections of Ulaanbaatar City, Mongolian University of Science and Technology, Construction development Centre, ACF Mongolia, Mongolian RED Cross, Mongolian Pubblic Health Professionals' Association, Construction development centre, UNICEF, Gerel LLC.

As anticipated by the working group members, the standard is mainly including health, hygiene and environment requirements for onsite sanitation, no technical requirements are included. The standard is accompanied by a "manual for building on sanitation facilities" including different technical options.

At the time of this report writing the Ministry of urban Development has started the process to update the standard MNS 5924:2008.

The works of the two ministries appear however not to be coordinated. It is in fact said that both standards will provide technical guidance on onsite sanitation options.

Hence fragmentation and technical consistence of the options proposed in the standards covering onsite sanitation appear to be still an issue. In the wider context, the weakness and inconsistency of standards clearly reflect the lack of an overall roadmap and direction for onsite sanitation expressed, as it will be wider reported, in national policies and programs.

c. Policies and Program

The situation of policies adopted at country level reflects the situation of the legal framework and shows a lack of focus on a systematic programming on sanitation. No specific plan addresses sanitation or the improvement of sanitation conditions as a whole. Sanitation is always linked to water or to infrastructure provision in the urban context. The theme of sanitation in Mongolia is never faced directly at policies and national programs level: no road map on sanitation has been developed.

National Water Program

The National Water Program of Mongolia was approved on 2010 in the framework of the comprehensive National Development Strategy as part of the efforts to succeed to the Millennium Development goals. The implementation of the Program in two phases (2010/2015 and 2016/2021) aims at water resource protection, sustainable water resource management and the setup of healthy and safe environment

14 *Donati, Pier Francesco (05/11/2014)*

conditions for the Mongolian population.

The management of the program is left to the Ministry of Environment and Green Development. The program's action plan monitoring is left to the National water committee.[15]

Section 3.4[16] of "orientation for activities and measures for the implementation of the national water programme", includes measures aiming at water conservation, the adoption and implementation of advanced technology for reuse an treatment of wastewater.

Paragraph 3.4.18[17], the very last one in the section in the second stage 2016-2021 for improving treatments of sewage and its reuse, mentions the will to adopt advanced and environmental friendly technologies for toilets (dry toilets i.e.) and reuse of waste water (supposedly grey water) from households, entities or tourist camps not connected to the water supply or sewage system, reducing the amount of wastewater generated from their daily operations.

Out of the 6 goals[18] mentioned in the Programme one aims at increasing yearly the number of households connected to the centralized network (30.000 thousand in total[19]) together with a general improvement of the housing conditions.

It is interesting to note that also in the National Water Program the improvement of access to sanitation is mainly envisioned in extension of the water and sewerage public utilities networks. With the current number of around 180.000 unconnected households only in UB, it is difficult to foresee what the coverage of the intervention will be.

Only the mentioned section 3.4.18 foresees alternative technologies for not connected areas, but those technologies are not linked to any concrete goal or result of the programme.

The fragmentation of the responsibilities within the government actors and the lack of a clear agenda for the provision of sanitation services in those areas not provided by the coverage of the central sewerage system has clearly impacted on the lack of improvement in the access of sanitation for the largest part of the population in Mongolia.

15 *Ibid., page 12*
16 *Government of Mongolia, resolution 24/2010*
17 *Ibid.*
18 *Ibid., article 6*
19 *Ibid., article 6.2*

Millennium Development Goals Joint Programme

In 2013 the first consistent count on access to sanitation was done in Mongolia as part of the efforts to accomplish to MDG 7 (Ensure environmental sustainability) target 15 "*Reduce the proportion of people without sustainable access to safe drinking water and sanitation by 2015*". UNDP, responsible at country level to assist the monitoring of the Millennium Development Goal, supported the government in upgrading its capacity in assessing the access to water and sanitation facilities. This helped the government to be aware on the limited access to sanitation and to quantify the phenomenon.

The Mongolian National statistics committee in fact made an order to follow a standard definition of improved and unimproved sanitation facilities countrywide that made the counting consistent and made the 5th report figures vary from the previous ones where inconsistencies where found because of different standards followed countrywide for the calculations. The "map on adequacy of meeting standard required for water supply and sewerage facilities" gave indications to be applied countrywide for the calculation. It has been already mentioned that standards in Mongolia are quite high[20]. In fact if according to the JMP i.e. "pit latrine with slab" is considered an improved sanitation facilities, it is unimproved according to the Mongolian current standard. Nevertheless it is believed that this factor did not cause a very high reduction in the calculation of improved sanitation facilities. As per the last report on Millennium development goal produced by MED[21], the goal for sanitation, formulated in reducing the proportion of population without access to improved sanitation to 60% has not been achieved at the date of the report preparation (September 2013). Nevertheless it is mentioned that the proportion has increased in Khangai region and Ulaanbaatar city. Several stakeholders during field interviews confirmed that according to the forthcoming 6th report, the goal on sanitation is achieved[22]. It has been noted[23] that the achievement is mainly due to the commitment of the Government in the area of housing project The "New development" programme adopted in 2010 by the State great Hural has produced in the period from 2010

20 *Donati, Pier Francesco (28/10/2014)*
21 *MED (2013): pag. 116*
22 *Donati, Pier Francesco (03/11/2014a)*
23 *Donati, Pier Francesco (10/11/2014a)*

to 2012 32200 housing units[24].

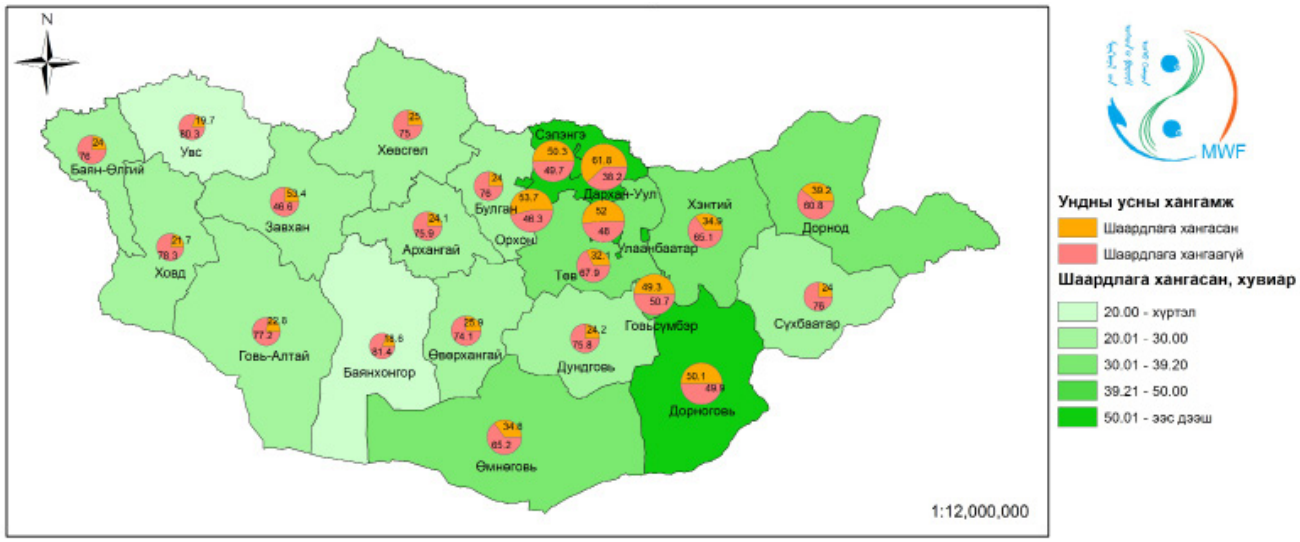
At Capital level the housing projects did not focus on areas not connected to the centralized sewerage network but focused on saturating the available areas of Ulaanbaatar downtown (areas provided with infrastructures). Hence the new "improved sanitation facilities" falling in the counting are not resulting in the improvement of sanitation access in ger areas where the situation of sanitation keeps on being stagnating.

Besides that, other national projects on urban development (the New Soum project that will be further mentioned) are extending/providing the sewerage system at soum level to public buildings hence contributing to the increase of improved sanitation facilities.

reached except for the urban areas where most of the households are connected to the sewerage pipelines. It has been noted that is very difficult for the government to reach specific households in areas not connected to the water and sewerage network because it is up to households to improve their sanitation facilities[25]. Once again there's no improvement at this stage for households in fact they are not directly benefitting from the infrastructures improvement.

The recent report released in Mongolian by MCUD "Mongolian Water and Sanitation" focusing exclusively on water and sanitation in Mongolia with information updated to 2014, shows indeed how the goal on sanitation was achieved at national level. The following tables shows the access to improved sanitation according to the last 2014 report.

Figure 1. Percentage of population with improved sanitation facility in Mongolia (at national level)



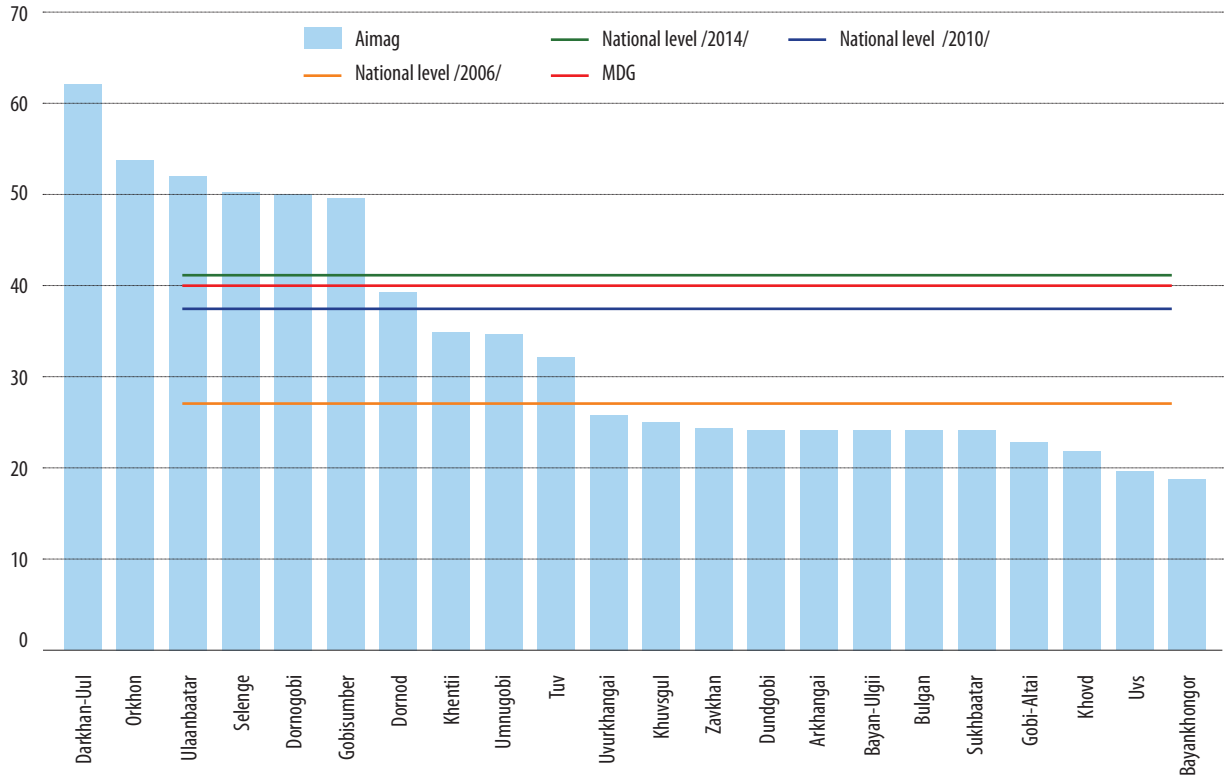
Source: Mongolia Water Forum Uskhelts

In specific Aimags in fact the goal is far from being

24 MED (2013): pag. 117

25 Donati, Pier Francesco (28/10/2014)

Figure 2. Percentage of population with improved sanitation facility in Mongolia (at national level), based on 2010 Population and Housing Census data.



Source: Mongolia Water Forum Uskhelts

Table 2

	1990	2000	2005	2010	2015
Country average	77,4	77,0	73,4	76,8	60,0
Western region	-	96,5	-	95,5	-
Khangai region	-	89,7	-	91,1	-
Central region	-	79,4	-	79,7	-
Eastern region	-	84,9	-	85,8	-
Ulaanbaatar	-	51,2	-	62,2	-

Source: MED (2013) - Proportion of population without improved access to sanitation (Data base of MDGs indicators at the NSC, taking from MCUD)

Government urban and infrastructures development programs

Recent government policies, expressed in The Comprehensive National development Strategy (approved in 2008), mainly linked to the fulfillment of the Millennium development goals, set targets for the improvement of living conditions in terms of comfortable housing facilities, and indirectly targeting also the improvement of sanitation condistions. One of the millennium development goals in fact aims at increasing to 30% the percentage of population living in comfortable housing with connection to engineering facility.

The "new soum" and 100.000 housing program (in UB and Aimag centres), part of the "New Development" mid term programme (2010-2016) implemented in the framework of the Comprehensive National development strategy (as well as the above mentioned

national Water Program) are targeting housing and infrastructure development in the wider context of inter sectorial development also including sanitation improvement through the increase of the number of connections to the sewerage network. These programs are supported by similar projects implemented by international actors that we will be reviewed in the section of the actors mapping.

New Soums Project

The "New soums project" launched on 2014 is an ambitious urban development project. It envisages the development of 70 soum centres urban infrastructure (water, sewerage and heating network) in the next 10 years. The project aims at carrying out urban development through State Agency funds in a participatory approach, involving the citizens in the project activities, even though the mechanisms of participation are not clearly stated. One model Soum was redeveloped in summer 2014 and citizens were involved in neighborhood improvement, i.e. on realigning the fence of their Khashaas according to the newly built roads.

The first stage of the project in 2014 foresees the redevelopment of 16 Soums. At the same time other agencies (ADB and UNDP) are funding the redevelopment of additional Soums. It is planned that the first stage involves 18 soums redeveloped by MCUD, 4 Soums funded by UNDP in the framework of its activities and 2 sums in the framework of ADBs activities[26]. The recent country economic recession might decrease the availability of State Budget for 2015 and the following years.

The mechanism of improvement/construction/ extension of utilities networks focuses on extending the network for public services buildings. The project is based on the potential of extending the capacities of the systems in future, both to allow citizens to connect their houses to the system but also foreseeing at the city development. No study on affordability of the connections or willingness to carry out private connections accompanies the project.

The housing sector is fostered also through financial policies from the government allowing all the citizens willing to take part to the housing campaign to access loan schemes with favorable interests (generally 8% against the market interest of 16%[27]). At the same time construction companies had favorable conditions in order to take part to the redevelopment program and construction material producers as well in order to foster the housing market.

The case of Tamir and Khutul area housing towns is reported[28] as a pilot experience of water and sewerage connection at household level funded by MCUD and implemented by the company "Mongol Daivan" in 2014. Out of 215 households (150 in Khutul and 65 in Tamir) taking part to the project 35-40 accepted to carry out private connections to water and sewerage system. The "softline" technology used foresees the use of a pipe with a built in heating cable, insulation and a vacuum space. The pipe was buried 50 cm below the ground and connecting from the house to a manhole serving 4 connections. The investment cost, covered by the project (MCUD) was very high (around 40 million MNT per each household connection[29]) as well as the maintaining and operation cost, mainly linked to the use of the heating cable, that was around 270.000 MNT[30] every 3 months and unaffordable for the household (as well as the initial capital cost would have been unaffordable). Many beneficiaries withdrew from taking part to the pilot connection. The household connections were connected to the main infrastructure provided by ADB in the framework of one of its programs.

Ulaanbaatar: plans for the city

Dealing with the policies and programs to improve the sanitation access to residents of Ulaanbaatar the master plan and the action plan are the only 2 programs where, even if not directly, the theme of sanitation is included. Again, in both tools sanitation is part of service provision or utilities provision and the urban planning tools foreseen to improve the sanitation conditions of non-connected area are conventional tools suitable for planned cities, and mainly focusing on infrastructure expansion.

26 *Donati, Pier Francesco (03/11/2014a)*

27 *Donati, Pier Francesco (10/11/2014 c):*
28 *CDIA, MCUD, Darkhan Uul Aimag (2014a): Appendix F pag.5*
29 *Ibid.*
30 *CDIA, MCUD, Darkhan Uul Aimag (2014a): Appendix D pag.10*

Action plan 2013-2016

The action plan 2013-2016, launched on 15th November 2012, corresponds to the agenda of the capital city Government and aims at disseminating the roadmap to develop the city. The main focus is again on infrastructure development: the expansion of the central wastewater treatment is mentioned as well as the expansion of water and sewerage infrastructures. It also mentions vaguely the will of providing satellite areas of the city with small scale decentralized waste treatment plants[31]. The action plan also focuses on the ger area redevelopment and its mechanisms, in particular it is said that a "segmented general plan for developing ger areas into private housing micro districts with green areas and infrastructure shall be formulated per each districts and khoroos" within 6 years[32]. Furthermore new waste water treatment for the areas of Sharkhad, Amgalan, Orbit, Tolgoit, Khailaast and Doloonbuudal and "the ger districts which had been re-planned" is mentioned[33]. The plan also mentions financial tools that should support the process but no details are given.

Ulaanbaatar Master plan 2030

At Ulaanbaatar government level the Ulaanbaatar City Urban Development Master plan 2030, a document revising the previous Master plan for Ulaanbaatar city 2020 introduced in 2001, marks a clear policy for the ger area with a strong statement of integrating the area to the urban Centre mainly through the expansion/ development of the infrastructures networks. The Study on City Master Plan and Urban development Program of UB city developed in 2009 by Jica was the base to set the adjustment for the 2030 plan.

Among the main objects of the master plan is stopping the unplanned expansion of the city and regulate the growth management.

The Study foresees the realization of the rehabilitation of the waste water treatment plan and the realization of a new industrial waste water treatment plant (for the estimated amount of 320 million USD and 120 million USD)[34].

The master plan analysis states that the Ger District areas are not connected to water networks and sewerage systems and the use of pit latrines is causing soil pollution. The need of re-planning and introducing innovative technologies for waste water treatment and reuse is mentioned together with the need to expand the central WWCTP.

It also states the overload and the obsolescence of the WWCTP that is not performing in terms of effluents quality.

In terms of sewerage network expansion of WWCTP the master plan foresees the identification of 5 zones starting from the city Centre. The first two zones will be connected to the existing wastewater treatment plan through the expansion of the network. For the remaining 3 zones (distant ger areas, new towns and camp zone), the provision of "independent systems"[35] is foreseen but no further details are given.

Analyzing the Ger area, where 97,3% of the population is not connected to the centralized network, concern is expressed about the fact that 61,2% of Ulaanbaatar residents are using nonstandard sanitation solutions that are heavily infiltrating the soil with pollutants, and potentially strongly polluting the ground and surface. It is also highlighted that no consistent studies on these topics are available[36].

In order to minimize the negative impacts on the city as a whole of the dysfunctional aspects of the Ger area due to its unplanned and spontaneous growth the master plan strategically states that "the economically beneficial ger district in downtown area is to be re-planned to have tall and medium tall apartment blocks with central infrastructure, and by taking under control the issue of expansion in suburban area ger districts, organizing the land and creating partial and independent infrastructures and by means of improving the living condition it is necessary to create possibilities to have apartments and workplaces. Since the ger districts are privatized, there should be a solid partnership to implement the city planning with the land owners. The state should concern to support the private sectors and in particular the low income poor people"[37].

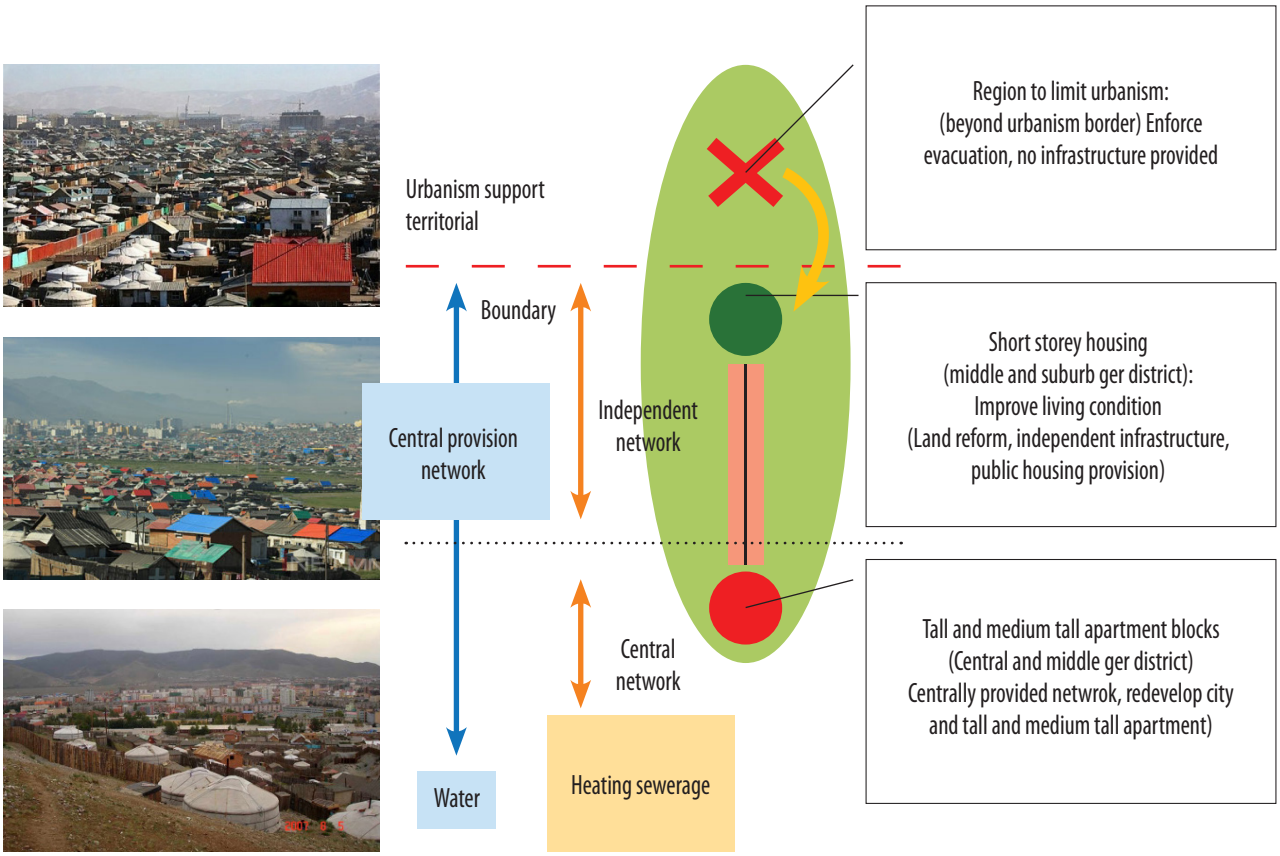
31 *Governor and mayor of Capital city (2012), 1.4.3*
32 *Ibid. 2.2.1*
33 *Ibid. 2.2.4*
34 *Bock, Franzisk (2014), pag. 13*
35 *MCUD, City Governor's Administrative Office, Urban Planning and Design Institute (2013)*
36 *Ibid., chapter 2.1.8*
37 *Ibid., chapter 2.1.8*

Again among the objects of the plan: "Provide necessary infrastructure to the firmly located ger districts, improve living condition and constitute a possibility of changing into private housing gradually", and "Improve the current ger district condition, adjust and make it a firmly settled private housing district, redevelop and make it an apartment blocks" [38].

Regarding the redevelopment of the Ger area in stages, 3 areas are identified: central, middle and peri urban ger area: "The (central) ger districts that are able to connect to central engineering network is to be re-planned and constructed with tall and medium tall buildings, the middle part ger districts are to be constructed with shorter and medium taller buildings and connected with partial engineering network and the suburban ger districts are planned to reform the land with independent network step by step" [39].

The figure below shows in a graph the strategy imagined for the Ger area redevelopment:

Figure 3: Main strategies to Improve Ger Districts



Source: Adjunct to the master plan to develop Ulaanbaatar city till 2020, development trend till 2030

38 *Ibid., chapter 2.3.1*
39 *Ibid., chapter 3.3.8*

Figure 4. Three directions for ger area development

Source: Adjunct to the master plan to develop Ulaanbaatar city till 2020, Development trend till 2030

Waste water treatment plant expansion

In 2013 a further study on the strategic planning for water supply and sewerage has been carried out by Jica. The expansion of the waste water treatment plan in fact keeps in consideration the future scenarios of expansion of the waste water treatment plant in the Ger area as per master plan. The timeframe for the completion of the City Waste water treatment plant improvement and operational start is estimated in 2021[40].

Ger area redevelopment

The Ger area of Ulaanbaatar is the widest urban area in Mongolia not provided with water and sewerage infrastructure and counting 184.200 households in 2012[41].

The Municipality of Ulaanbaatar has established the project steering committee for the Ger area Development. The composition of the PSC was approved on March 1st 2013. The Ger Area Development Agency is leading the Ger area Development Project. The agency absorbs the "Ger Area Housing Project" established in 2011 and witness a policy change: the top down planning approach previously adopted is now being replaced with schemes that encourage community ownership [42]. Areal master plans for 7 sub centers have been produced as well as redevelopment schemes[43].

GADA is responsible for the overall management of the program, the coordination of municipal agencies involved in the Ger area redevelopment as well as relationships with Donor or programs with the same aim. GADA is also in charge for revisions, modification to the program policies and submission to the Council for the revision.

40 *Jica (2013)*
41 *Ch. Bayanchimeg, B. Batbayar (2013)*
42 *ADB (2013), Volume II , Appendix 22,3.2*
43 *Ibid.*

In terms of operational activities GADA is in charge for:

- Relationships with investors or developers involved in land redevelopment and re-planning

- Implementation of community based processes in all the ger area on land readjustment and re-planning

The Ger Area Housing Project is the city owned enterprise in charge for the implementation of the development of 24 locations[44] (initially 7 locations were identified[45]).

The process foresees the reception of bids from developers/private investors for the areas identified. The companies are in charge for submitting, together with the bid documents, the signed agreement of at least 75% of the land owners expressing their will to take part to the process. In fact the construction companies/ private investors are responsible for engaging with citizens and find an agreement on land acquisition. The technical working group lead by the vice mayor and composed of members from different government organizations is in charge for receiving and evaluating the projects.

The municipality is in charge for the construction of the social and physical infrastructure from the city budget.

At the same time the GAHP main field work is engaging with citizens in the redevelopment process: this process envisages different patterns of development and land readjustment, through densification processes and interesting urban planning techniques foreseeing the involvement of private sector in engaging with residents willing to redevelop their areas. Ideally citizens can group together and engage in the redevelopment of an area with the support from city budget for infrastructure expansion and the engagement of private sector acquiring part of the land making funds available to citizens for the area improvement. Even though six groups of residents[46] who expressed their interesting in grouping together to redevelop their areas in private housing after a process of densification of the area were identified, residents are facing problems in terms of engaging with the private sector interested in buying part of the land, and finding capital for the works (from private houses improvement to single connections to the utilities networks). The need is felt for new technologies in terms of heating systems and waste water treatment/sanitation systems that could be suitable for the neighborhood development[47].

The Administration of GADA is not interested in standalone, low tech sanitation solutions as they are working at a different and larger urban scale and are focused on the collaboration with private companies and foresee a rapid development of the housing projects with apartment blocks connected to the public utilities (water and sewerage). Furthermore low tech, onsite or standalone solutions from the initiative of single households are considered not in line with the current vision for the city development[48].

Instead of simple onsite sanitation improvement solution all these programs aim at an aerial redevelopment, (i.e. ger area redevelopment as a whole), so projects providing improvement of living conditions influencing the value of the single land plot might not be welcomed by the Government because they mine at the sustainability of area development since the government/municipality can potentially face a cost increase of land acquisition. In fact due to the improvement of the assets on the land the land cost increases. Government policies and other stakeholders' policies might then be conflicting in terms of intents[49].

Anyway the Ger area redevelopment process has faced a long initial delay as the process of citizens' engagement was slow. The compensation process was not clear to citizens and conditions were not always accepted. The private sectors willing to submit bids had to spend long time in negotiations. Also the temporary relocation process of the families that gave back their land for the apartment blocks development was time consuming.

It is generally perceived that the timeframe for the ger area redevelopment will be much longer than expected. Out of the 6 areas planned to start in Songino Khairkhan District, none of them are completed by the end of 2014[50]. The process appears to be very long.

Khilchin Town and Bayanzurkh project

The "Khilchin Town" MCUD redevelopment project (part of the "New District" project[51]) as well as the project in

44 *GADA (2014)*
45 *ADB (2013), Volume II Appendix 22 3.3*
46 *Donati, Pier Francesco (3/11/2014c)*
47 *Donati, Pier Francesco (3/11/2014c)*
48 *Donati, Pier Francesco (10/11/2014b)*
49 *Donati, Pier Francesco (10/11/2014a)*
50 *Donati, Pier Francesco (11/11/2014)*
51 *CDIA, MCUD, Darkhan Uul Aimag (2014a), Appendix d, pag.7*

Bayanzurk 9th and 17th Khoroo Sharkhad area represents alternative pilot experiences of urban development.

The "khilchin Town" project implemented in 2013-2014 by MCDU among 168 households living in Ulaanbaatar 30th Khoroo of Songino Khairkhan District foresees the redevelopment of the areas in terms of urban services. "168 households living on the terrace behind the 1st residential district could create their own unified electric, heating and sewage system, lightning, green belt, road and square of common usage inside their 'Khilchin' town as a result of joining their enthusiasm and privatized lands. It was a model of private house districts"[52] . Regarding the improvement of sanitation access, out of 168 households, 10 are reported to be connected to the central sewerage system (and to the water network). Also in this case the technology used called "softline" foresees the use of a pipe with a built in heating cable, insulation and a vacuum space. The heating cable was used for main and secondary branches of water network and for household branches (with depth of pipes from 0.8 mt to 2 mt until connection to main sewer pipe). Freezing were reported during the winter due to low electrical power voltage. Significant doubts are expressed on the financial sustainability of the system. The average operation maintaining cost per household is said to be equal to the one of a "3 bedrooms apartment" [53].

MCUD and MUBC in collaboration with UN-Habitat "Community led Ger area Upgrading in Ulaanbataar - City project" have identified 5 areas where based on needs assessment conducted at community level an improvement of service provision will be carried out. Bayanzurkh Sharkhad area is one of the area where the project is ongoing. The peculiarity of the project is to use the community organizational structures set up by UN-Habitat in particular community development councils established at Khoroo and Kheseg level. In terms of sanitation improvement though the project did not take any steps yet and the project management is said to be looking for suitable solutions that could be alternative to VIP toilets[54].

Conclusions

The analysis of the legal framework as well as the programs carried out at national level or UB municipal level shows how sanitation for areas not connected to the sewerage system is currently out of focus both in terms of responsibilities and on how it is addressed. A gap in the sanitation law doesn't allocate responsibilities on any level of the government for sanitation for areas not connected to the sewerage system. Citizens are expected to provide for their own sanitation in those areas: sanitation facilities are considered private goods and there's not a comprehensive insight of the impact of poor sanitation in areas not served by sewerage network as a whole for example in terms of public health or environmental pollution.

Sanitation is always included in the wider sector of infrastructure provision. No specific programs on sanitation are carried out both in terms of software activities and hardware activities.

We will see better in the next section that the lack of focus can be identified also in the wider context of a lack of strategy shared by all the actors working on sanitation in Mongolia.

52 *Mongol Messenger (2014), pag. 5*
53 *CDIA, MCUD, Darkhan Uul Aimag (2014a), Appendix F, pag. 4*
54 *Donati, Pier Francesco (28/10/2014a)*

3. Actors mapping

The following chapter focuses on the different actors that work in Mongolia in the sanitation sector. Government actors as well as INGOs, international donors, international cooperation agencies and research projects or entities funded by international donors are mentioned. The description of the activities carried out by all the actors identified as active contributors to the sanitation debate in Mongolia aims at drawing lessons learned and best practices. Experiences not directly focused on sanitation but whose methodologies could be applied and highly contribute to the improvement of sanitation in areas not served by sewer services are also mentioned.

a. On government actors

As mentioned in the section above, the water law identifies the MCDU as the body responsible for infrastructure provision, including treatment and disposal of water.

The sanitation law does identify local governments as direct responsible for the preparation of plan in the area of sanitation: Aimag government, Soum government, capital city Government, and District Government are in charge for preparation of plans and budget allocation is approved by the respective citizens' Khurals.

Again according to the law khoroo level authorities are in charge for community mobilization for improving sanitary conditions.

In reality at Municipal, District and Khoroo level all the activities promoted in the area of sanitation refers to solid waste management. There are no other programs or activities carried out in the area of sanitation, neither in terms of hardware construction nor in terms of awareness activity[55].

In Ulaanbaatar at District and Municipal level the dichotomy between decentralized sanitation and infrastructure is highlighted by the fact that no department is in charge or can be accounted responsible for onsite sanitation or problems related to sanitation. The "closest" departments are the one in charge of infrastructure or the one in charge of environmental protection. None of them carries out activities in the area of sanitation.

This is very unfortunate because the structure of the District and Khoroo administration has a deep knowledge of the context and can take advantage of staff appointed to carry out social and awareness activities in specific areas.

Recently the municipality has launched programs to promote city life style addressing population of the Ger area and in particular newcomers. These programs are not focusing on sanitation but on social norms to preserve the environment and to push a behavior change to stimulate a good coexistence of citizens in the areas.

In Songino Khairkhan District of Ulaanbaatar recently a solid waste management system has been set up on a fortnightly base. Households collect the garbage in green bags provided by the District and store them inside the Khasha until the periodical collection is carried out. The service is charged monthly on the electricity bill, the fee is 2500 MNT per month. The service is carried out by semipublic companies[56].

It has to be mentioned that in 2010 a subsidized campaign was carried out in Songino Khairkhan District with distribution of substances aiming at reducing the volume of the content of pit latrines. The activity was carried out for some months with free distribution of treatment bags directly to the household.

Khoroo governments have no direct management on the budget for the activities to be carried out in their areas. Nevertheless since 2013 State Budget laws number 59 and number 60 allows the allocation of "local development funds". Upon the decision of citizens working groups local development funds can be allocated to Khoroo for the development of specific projects identified by citizens.

Two actors might assume certain relevance in the future in the area of sanitation: the Water Service Regulatory Commission (WSRC) and the Authority for Partial Engineering Supply[57].

55 *Donati, Pier Francesco (11/11/2014)*

56 *Donati, Pier Francesco (11/11/2014)*

57 *See http://www.hzazg.ub.gov.mn*

WSRC was established in the light of the 2012 Law on Utilization of Urban Settlement's Water supply and Sewerage. WSRC is in charge for regulating all those services in the area of water and wastewater. Regarding waste water management the commission is in charge for licensing all those companies providing services in the area of waste water and operating sewerage services/facilities (as indicated in the above mentioned 2012 law). In the area of sanitation and waste water WRSC is willing to increase the fee for wastewater treatment in order to create funds for ensuring maintenance operation of the waste water treatment plants. In the area of onsite sanitation WRSC is the body responsible to issue licenses to those companies operating emptying services of pits or holding tanks. In the framework of the new development of the Ger area and the planned construction of high rise housing development in the Ger area that will not be connected to the central sewerage system but provided with holding tanks the Authority for Partial Engineering Supply was appointed for carrying out these operations in housing developments in the framework of the Ger area development project. The Agency, appointed for the emptying service in July 2014[58] is also responsible for the maintenance operation of the Ulaanbaatar centralized heating system.

CITY TOILET

City Toilet is an Ulaanbaatar municipal company established in 2011[59] and appointed for the construction and management of public toilets in Ulaanbaatar. Currently 11 city toilets have been built and 20 more are planned to be built starting in 2014. The sustainability of the toilets is very low. Running costs are reported to be very high and the 200 MNT fee for each user is very low and not supporting cost recovery. The staff is directly appointed by City Toilet in 5 of the 11 toilets, the other toilets are rented out to small entrepreneur that are also selling cleaning products or other goods to cover the running costs. City Toilets are mainly in city centre because they are mostly connected to the central network. One city toilet construction average cost is 180 million MNT[60] (if connected to the central network). The decisional process for building and locating new city toilets comes from city councils expressing the requests from the ground level.

58 *Donati, Pier Francesco (27/10/2014)*
59 *Donati, Pier Francesco (03/11/2014b)*
60 *Ibid.*

b. INGOS, International development agencies and international research

ACF

Action contre la Faim (ACF) is an international non-government organization working in Mongolia since 2001. Based on the organization mandate identifying a poor access to WaSH as underlying causes to malnutrition, ACF started to work in Mongolia in the area of Water, Sanitation and Hygiene promotion in 2008.

Since that time ACF started to work on onsite sanitation, and piloting different options starting from improved pit latrines and moving on to onsite solutions aiming at preventing soil contamination due to feces percolation in the ground. The propositin of closing the sanitation loop was initially intended as a way to support the improvement of food security at household level through the production of compost as fertilizer for homegardening. During 2008/2009 ACF piloted different options including composting latrines and dehydrating double vault latrines. Because of the specific climate conditions in Mongolia and the impossibility of carrying out onsite composting process, since 2009 ACF has piloted models of ecosan toilets based on the principle of urine diversion, infiltration of urine in a dedicated pit and collection of feces in a bucket. As mentioned, because of the weather conditions in Mongolia (extremely severe winter) ACF started to work on production of compost in a centralized plant using closed vessels. Thanks to a preliminary study on the activity feasibility and the consultancies of several international experts what has been called "ecosan cycle" has been set up in the attempt of closing the sanitation loop. Since 2010 ACF has set up an emptying service carried out by trained staff of ACF and the pilot production of indoor compost during the winter. The activity has been developed as a research as long as the feasibility of all the phases of cycle were validated.

During this time not only ACF has technically achieved the production of compost during the winter, ensuring in its indoor facility the maintenance of suitable temperatures (above 10 degree Celsius) using energy saving devices and technologies, but has also developed 2 model of ecosan toilet based on the principle of bucket shifting.

The 2 models are suitable for different users and soils, in fact the raised model is suitable for areas with high ground water level or rocky soils, the one with the sliding cabin and an underground area hosting the collecting bucket is suitable for users with reduced mobility.

From 2012 on the project has tried to scale up the pilot ecosan cycle set up and, in particular, tailor it in way to address economic and technical sustainability. The toilet model has undergone a significant simplification aiming at decreasing the production cost and ensuring a sound functioning. The production of compost has abandoned the winter closed vessel model to focus on summer composting both in green houses or open air in order to reduce the production cost of the compost and disengage it from the use of any heating source. After 2012 a big work has been carried out in the attempt to comply with the Mongolian legal framework that has a gap when it comes to production of human feces compost. ACF has then engaged with some government agencies to work on two levels. The first priority is to ensure the safety working procedures and conditions for the workers during the emptying cycle as well as during the production of compost. Secondly ACF is collaborating with Mongolian stakeholders of the sector to prepare and have approved a national standard on compost produced using human feces.

During the 2013 construction campaign ACF has carried out the subsided construction of 250 latrines setting up mechanisms of sanitation marketing, training the local sector (3 local companies) in building up the technical knowhow to produce ecosan toilets and identifying financial mechanisms to allow the beneficiary to cover the non-subsidized part of the latrine through direct construction, direct purchase or accessing a loan scheme in collaboration with Khas bank.

ACF has accompanied the hardware component of the project with software activities. The beneficiaries taking part to ACF sanitation activities are trained on proper use and maintenance of the ecosan toilet. The training is supported by a user manual and awareness material aiming at assisting the users in the correct use of the ecosan toilet.

In terms of cultural acceptability of this solution, a big work on behavior change has accompanied the introduction of the ecosan toilet. The beneficiaries have not expressed particular issues in using the urine diverter.

The concept of compost production and use of compost by the beneficiaries, as stated in the initial project intention envisioning compost as one element to be used for food production (home gardening at household level) aiming at strengthening the food security of households living in the Ger area has been modified in the light of the legal framework gap on compost. In fact it is planned to use compost, once the standard will be introduced in Mongolia for non - edible plants, land rehabilitation, urban green areas.

Since June 2014 ACF started the handover of its sanitation activities in the attempt of building up a Mongolian ownership of the process. MonESIC, a Mongolian NGO is partnering with ACF and has started the direct management of the operation of compost production and emptying service. ACF is financially supporting MonESIC until June 2015.

ACF has also started ambitious activities of social marketing aiming at connecting potential clients, through awareness and advertisement, to the companies trained to produce the ecosan toilet and trigger their interest in improving their latrine using the ecosan model.

In terms of investment cost and operational cost since 2009 ACF has worked to decrease the subsidy on ecosan toilets from 100% to 60%, corresponding to 500,000 MNT (base of the ecosan toilet including the urine diverter and two buckets). From 2013 ACF is trying to introduce a fee of 10,000 MNT for each emptying service at household level (3/4 emptying services per year). According to a simplified business plan produced by ACF this amount is enough to ensure the sustainability of the ecosan cycle. The current payment rate is still very low and the financial sustainability still has to be fully proved.

Throughout the process ACF has put in place M&E mechanisms aiming at ensuring a continuous improvement of the option developed. Under the technical point of view the two latrines models are constantly under revision and can still be improved. Improvements and modifications of the models are carried out in the light of the users' monitoring. The monitoring process is also focusing on the usage aspect and on assessing the training process on beneficiaries.

In the framework of its sanitation activities ACF has carried out some basic surveys on households'

willingness in purchasing ecosan toilets and paying for the emptying service as well as identifying the interest of Mongolian market on compost.

ACF has piloted its sanitation activities in 2 Districts in Ulaanbaatar: Songino Khairkhan and Bayanzurkh.

The work of definition of the ecosan cycle has been sided by a PHD research on the theme of the "Eco city". In the framework of the PHD program a pool of master students worked on researches in the area of grey water, compost applications, sanitation marketing. The main concept of the PHD program was to have the field program feeding the PHD activities and the research activities from the PHD feeding the technical needs of the program.

ACF has worked also on rehabilitation of school latrines in areas not served by sewer network and has piloted a model of indoor emptyable VIP public toilet for school children.

ACF has also carried out a big work in the area of Hygiene promotion covering awareness on topics of proper improved sanitation through different channels (community/school/health clinic/public audience) through different awareness tools and techniques.

GIZ

The German Technical Cooperation (GIZ) has actively taken part to the recent debate of sanitation in Mongolia working on piloting innovative solutions. From 2006 to 2008 ecosan toilets have been piloted in the framework of The Urban Development, Construction Sector and VET Promotion Program (UDCP). The program implemented in cooperation with Mongolian partners, the Ministry of Construction and Urban Development (MCUD), with the Ministry of Education, Culture and Science (MECS) and with the Ulaanbaatar City Government (UBCG) was carried out by GIZ[61].

The piloting involved the construction of 40 dehydrating toilets using the technology of urine diversion: urine was collected in a tank and the feces were dried on a concrete slab in the toilet slab.

The toilets were piloted in ger area, tourist camps, schools, summer houses. During the piloting GIZ developed 3 different models improving the technical performance of the toilet under the aspect of materials, diversion mechanisms and access to the vault.

Nevertheless in the light of the monitoring carried out in summer 2008 GIZ decided to interrupt the piloting as ecosan was not considered a viable option for Mongolia.

Due to context elements it was not possible to close the sanitation loop. It was not possible in fact for household to properly manage or dispose of the dried feces and urine. Most of the residents in fact do not carry out gardening activities in the premises of their Khasha hence they were simply disposing the dried feces and urine in the former soak pit.

Households also expressed resistances in using dried human feces for agriculture, being afraid of the harmfulness of human feces. Furthermore even if the users were appreciating the comfort increase compared to the old latrine, the toilet had some issues in terms of smell from the vault during the summer or freezing problems of urine in the urinal duct during the winter that made the latrine not fully usable all year round.

The cost of latrine, 690.000 MNT in 2006, was considered too high for households and a scale up would have called for the identification of financial tools or subsidies to make the toilet financially viable.

The experience of GIZ in ecosan focused mainly on piloting the sanitation facility more than on the all process of the sanitation loop that envisions the use of ecological sanitation as the starting point for waste management as resource recovery. The experience of GIZ confirmed that in Mongolia there are not the conditions to carry out a fully onsite ecosan process at household level.

In 2013 GIZ, in the framework of the USAID funded project Ulaanbaatar School Buildings Thermo-technical Retrofitting Project worked on piloting wastewater systems based on septic tank and infiltration technology. The waste water system was provided to school number 63 in Khan Uul District[62] whose holding tank was facing constant problems. The use of a deep buried (under the freezing level) 3 chambers septic tank, percolating in a leech field is an innovation in Mongolia as this kind of waste water treatment are normally not used due to weather constraints. In not connected areas in fact

61 *GIZ (2008)*

62 *Bratz, Barbara V.; Tingley, Clement (2013)*

holding tanks are usually the most common solutions but they have a very high maintenance cost due to the need of periodical emptying. The system is currently used and the school staffs express high appreciation for the new septic tank[63].

MoMo project

The Integrated Water Resources Management for Central Asia: Model Region Mongolia (MoMo), is a research project in the framework of Integrated water resource management (IWRM) funded by the German Federal ministry of Education and Research articulated in different areas[64] and implemented in two phases. Several German and Mongolian partners have contributed to the project implementation. A multidisciplinary team has researched the various aspects of integrated water resources from 2006 to 2013. One of the components of the project focused from 2010 to 2013 to pilot ecosan toilets for residents of Darkhan. Starting from one of the ecosan models developed by ACF, the team of MoMo developed a patent called "Ipit". The Ipit is an ecosan toilet based on the urine diversion technology that collects both urine and feces in separate containers.

The Ipit latrine is characterized by an access to the vault directly from the Khashaa fence (the toilet is built adjacent to the fence) and the collection buckets are provided with wheels on rails to ease the access and removal during the emptying service.

The project constructed with full subsidy 12 private Ipit latrines for residents of 7th Baiga in Darkhan. The estimated cost of the toilet is about 700.000/800.000 MNT[65] (toilets were built in 2009).The project subsidized a weekly emptying service for urine and feces. The feces and urine collected were disposed at the Darkhan central waste water treatment plant. The piloting of a bio gas digester was also part of the research: the effluents from the toilets were also feeding the bio gas plant (together with excess sludge from Central Waste Water Treatment plant[66]).

The biogas plant was working on a seasonal base and the project provided a long distance monitoring and collaborated with Darkhan local authorities to carry out an onsite monitoring.

It is interesting to mention that the selection of the latrine typology occurred through a participatory approach. MoMo team conducted community meetings introducing to the participants potential technologies and the dry urine diversion toilet was selected by the community.

The sustainability of the system was not proved due to the limited dimension of the piloting and the full subsidy from the project side.

It has to be mentioned that Darkhan Local Authorities were very proactive during the whole project and their active involvement was highly contributing to the research activities implementation. The local level received very well the introduction of a new system such as ecological sanitation.

In the area of wastewater treatment MoMo project activities produced also further outputs in 2011 mainly adopting patented waste water treatment technologies developed for cold climate conditions such as a pilot Biofilm waste water treatment system "WSBR clean" in a Kindergarten in Orkhun soum[67] . A Sequencing Batch Reactor (SBR)[68] pilot plant was installed and piloted at Darkhan Central Waste Water Treatment plant. A constructed wetland was created next to the Mongolian University of Science and Technology in Darkhan and entered the testing phase in 2012.

MoMo project was an important initiative for Darkhan and its support triggered the commitment of Darkhan Municipality in engaging with CDIA (Cities Development Initiative for Asia) in the planning process for "Water Supply and Sanitation Infrastructure Improvement Project (WSSIIP) for the City of Darkhan, Mongolia"aiming at improving the WaSH services provision to the Aimag city residents[69].

World Vision

World Vision, an international NGO working in Mongolia since 1993, focuses on wellbeing of children and on all of the surrounding conditions that impact children's lives. World Vision bases its intervention on

63 *Donati, Pier Francesco (12/12/2014)*
64 *UFZ (2013)*
65 *CDIA, MCUD, Darkhan Uul Aimag (2014a), appendix L, pag 16*
66 *UFZ (2013), pag 14*
67 *Ibid.*
68 *Ibid.*
69 *Ibid., pag. 17*

a community based development called ADP (Area development program).

The area development program is a distinct geographical area where WV partners with local stakeholders to improve the well-being of children through multiple sector projects aimed at root causes of issues that negatively impact children. These geographic areas can vary in size, context, and population. Each ADP has its own staff and design; the plan of action of each ADP is based on the community's vision for the area and linked to WV country strategy. ADP has a sort of life cycle and after some years WV may phase out and handover the activity to community stakeholders[70]. This mechanism aims at improving long term sustainability of the intervention.

Currently WV is working in 32 ADPs in Mongolia, corresponding to 32 areas countrywide. 9 ADPs are in rural contexts and the remaining 23 are in rural areas.

In the area of sanitation World Vision has worked on projects based on community mobilization. The projects are slightly different from one ADP to the other, adjusted to the local needs.

Since 2012 WV ADPs worked on small scale projects based on VIP latrine improvement through community mobilization. WV provided through the ADPs construction material and the mobilized communities provided labor to improve their sanitation facilities. In some cases community mobilization and the involvement of local authorities sourced out financial support for the project. As an example Tolgoit WV ADP, the World vision branch working in 8 khoroos of Tolgoit area has started in 2014 to implement this project aiming at improving around 350 latrines during 3 years through subsidies/provision of material as well as training and establishment of community engagement mechanisms[71].

In 2013 in 8 rural ADPs 804 household levels sanitation facilities are reported to be improved through the WaSH project supporting sanitation facilities improvement[72].

World Vision has also worked in some of its ADPs in sanitation improvement at school level through the rehabilitation of school indoor facilities or construction of detached sanitation modules. The hardware activities are normally accompanied by hygiene promotion activities at school level and the involvement of teachers in piloting household level sanitation facilities improvement[73].

At the same time, since 2011 WV has tried to introduce in Mongolia the Community Led Total Sanitation (CLTS) methodology. CLTS develops from the statement that subsidized sanitation projects do not ensure long term sustainability and are not efficient in terms of financial investment/results. CLTS has been tailored for rural context but has lately been tested also in urban contexts.

WV in Mongolia has started to use CLTS both in rural and urban context. 2 trainings were carried out for facilitators and a total of 15 facilitators were trained and 10 cluster groups were piloted in ten communities. Five facilitators were initially reported to be active[74]; currently 1 facilitator is reported to be very active[75]. In 2013 8 ADPs implemented training for 2792 households and 154 households are reported to have built or improved their sanitation facility. 266 households declared themselves to be open defecation free[76]. In 2014 CLTS was carried out in 5 rural ADPs[77].

In 2014 WV has also set up a mechanism called "Citizen Voice and Action", an advocacy methodology aiming at driving interaction between local communities and local government with the final goal to improve, among the other sectors, also access to sanitation. 2 ADPs have been piloted the use of "Citizen Voice and Action"[78] methodology.

CLTS is still at a very early stage and its efficiency and impact cannot be evaluated yet. For the moment CLTS has been used in rural areas in Mongolia, it has not been tested in urban context (except for facilitator trainings carried out by Mongolia Red Cross Society). It has also to be said that in Mongolia, open defecation intended as "defecation in fields, forests, bushes, bodies of water or other open spaces"[79] is not traditionally carried out. In fact, according to the social norms on sanitation, as it will be widely discussed later, defecation is carried out

70 *http://blog.worldvision.org/conversations/world-visions-approach-to-community-development*
71 *Donati, Pier Francesco (13/11/2014 a)*
72 *World Vision Mongolia (2013), pag. 21*
73 *Donati, Pier Francesco (27/10/2014)*
74 *UNICEF East Asia and Pacific regional Office (2013), pag. 77*
75 *World Vision Mongolia(2014), WaSHup! Forum presentation*
76 *Ibid, pag. 20*
77 *World Vision Mongolia (2014), slide n 10*
78 *World Vision Mongolia (2013), pag. 20*
79 *http://sanitationdrive2015.org/faqs/what-do-we-mean-by-open-defecation/*

in a areas separated from the ger camp or house in an open pit or in an unimproved pit latrine.

Hence it has to be stressed that in Mongolia the starting point for CLTS is not real open defecation, as normally households living in human settlements[80] in Mongolia use unimproved sanitation facilities. Hence it has to be proven whether, given the different context, CLTS is able to trigger a visible improvement from the normal Mongolian unimproved pit latrine to improved solutions.

Nevertheless CLTS can be the starting point to promote sanitation marketing of specific sanitation products suitable for different contexts in unconnected areas.

The Asia Foundation

The Asia Foundation is a nonprofit international development organization that has been working in Mongolia for the last 20 years. Asia foundation mission is "improving lives across a dynamic and developing Asia"[81]. The Asia Foundation's programs are mainly addressing governance and law, economic development, women's empowerment, environment, and regional cooperation. The Asia foundation is mentioned in this study mainly because of its commitment in the area of urban governance in Mongolia and the tools and mechanism of engagement with local authorities that has developed. These tools and mechanisms of participation in fact could be beneficial for the development of national programs of sanitation improvement for areas not connected to the central water and sewerage network.

Since 2012 Asia Foundation has been implementing the project "Urban Services in the Ger Districts of Ulaanbaatar". The aim of the project is to work closely with the Ulaanbaatar City Municipality to support efforts to improve the quality of services to the ger districts, and to introduce a more inclusive style of urban governance. A community map has been carried out in 87 khoroos located in ger areas of Ulaanbaatar taking into consideration indicators measuring the level of access to urban services such as: water, health, education, public transport, solid waste management, and vulnerability and safety. The mapping has resulted in the launch of a website[82] where citizens can find information on service provisions in the Ger Area. The community mapping exercise works as an advocacy tool enabling communities to prioritize their needs in terms of access to services and to highlight gaps. The map is also a tool for the city administration to optimize the prioritization of resources and monitoring the level of access to services.

Save the Children

Save the children, active in the area of child protection, has been working in Mongolia for 20 years. From 2011 to 2014 Save the Children has been active in the "Child friendly kindergarten project" focused on good governance and management in Mongolian Kindergartens. Among the activities proposed, Save the Children has worked at the rehabilitation of Kindergarten sanitation facilities: 18 indoor sanitation facilities have been rehabilitated in Ulaanbaatar. The rehabilitation focused on setting up child friendly facilities easily accessible by kids, kindergarten staffs and ensuring hygiene and safety conditions (in terms of sanitation appliances and space distribution). The project, implemented in collaboration with MES produced guidelines for friendly toilets in kindergartens. The guidelines, first of this kind in Mongolia, aim to be a tool to support the rehabilitation of toilets in kindergarten with clear technical indications targeting decision makers (to have them applied at national level), school administration and WaSH actors.

80 *According to the 1976 Vancouver Declaration (Habitat: United Nations Conference on Human Settlements) human settlements means the totality of the human community - whether city, town or village - with all the social, material, organizational, spiritual and cultural elements that sustain it. A more structured definition can be found in the Glossary of Environment Statistics, Studies in Methods, Series F, No. 67, United Nations, New York, 1997, where "human settlements is an integrative concept that comprises: (a) physical components of shelter and infrastructure; and (b) services to which the physical elements provide support, that is to say, community services such as education, health, culture, welfare, recreation and nutrition"*

81 *http://asiafoundation.org/about/*

82 *http://manaikhoroo.ub.gov.mn*

c. International Organizations and Assistance

UNICEF

UNICEF is carrying out sanitation activities within the mandate of ensuring that all children have equal opportunities to reach their full potential.

UNICEF is mainly working in the area of "WASH in school" supporting the government (mainly ministry of Health and Ministry of Education) in terms of building capacities and adopting policies and standards for sanitation (related to minimum standards in school sanitation).

School is a very important social aggregator in Mongolia, both in urban and rural areas. UNICEF really believes that creating good conditions in terms of school sanitation and promoting models of improved sanitation in school can highly impact on behavior change of families and on supporting the adoption/ improvement of sanitation facilities also at household level[83]. Teachers are also believed to be informal leaders having a big impact in behavior change not only at school but in the soum centre social life.

In rural areas where schools are characterized by very obsolete buildings or in context where there's no centrally connected water and sewerage system, sanitation provision is left to the knowledge defined by accepted social norms, resolving usually in outdoor unimproved schools latrines characterized by an extremely poor construction and safety[84].

The process adopted in the area of WaSH by UNICEF, and specifically in school sanitation is the one of partnering with other stakeholders, identifying best practices, piloting models and promoting replicable options. UNICEF is then accompanying the government actors to adopt these options in the improvement of the sanitation conditions of schools under a technical and policy making point of view. UNICEF is also very much involved in supporting the definition of the hygiene curriculum for schools and together with ACF has started the process to have the Ministry of Education approving and adopting at national level the hygiene promotion kit initially piloted by ACF in Mongolia.

After having assessed the rehabilitations of indoor toilets in old school building, the high maintaining costs and little sustainability of these interventions UNICEF shifted to piloting indoor detached solutions.

UNICEF has piloted 2 options of indoor sanitation facilities for schools in rural areas. One option was inspired by ACF detached indoor VIP school toilet (as built in school 74 of Ulaanbaatar Songino Khairkhan District) and is emptyable. The second option is provided with flush toilets and uses a septic tank and infiltration technology for the treatment of waste water. Both models include options for kindergarten, disabled kids and school students.

In the area of policy making UNICEF has supported the Ministry of Health and has taken part to updating the already mentioned standard on onsite sanitation taking into account international practices focusing on providing households with tools to improve their sanitation facilities.

UNICEF is also active in community awareness. In 2013 UNICEF together with the Prime Minister of Mongolia, launched a sanitation exhibition aiming at having together the WasSH actors working on sanitation in Mongolia and rising awareness for general public on sanitation improvement options and technologies.

The Mongolian Red Cross Society collaborated with UNICEF on community HP activities promoting CLTS. There are no concrete results at the moment on CLTS. In the framework of the collaboration with UNICEF, CLTS was implemented in 3 rural soums of Khovsgol Aimag. At this stage of the project only the facilitator trainings were carried out.

In 2011 UNICEF has produced a "Country study under the economics of sanitation initiatives" highlighting the cost of unimproved sanitation. The study takes in consideration how unimproved sanitation is affecting and has an impact on the cost of normal day by day activities; in particular the study estimates how unimproved sanitation has repercussions on health costs both for the private citizen and for the Governement of Mongolia. The study is a thorough advocacy tool that can be adopted both at community and government level to raise awareness on the consequences of a limited access to sanitation.

83 *Donati, Pier Francesco (05/11/14)*
84 *Ibid.*

UNDP

UNDP is working in the wider context of Urban Development and governance in Mongolia. In the area of sanitation UNDP was active through the UN joint program (2008/2013) and the GOAL WaSH project. Through these two main interventions not only hardware activities have been carried but also activities in the area of governance were implemented. A national standard on small scale waste water systems has been introduced as well as many EN and ISO standards. Catalogues on onsite sanitation facilities as well as monotype waste water treatments were published aiming at raising awareness among the general public on possible options for the improvement of sanitation facilities.

As mentioned above UNDP through its action is also monitoring the implementation of MDG including goal 7 target 16 on water and sanitation. In particular a road map on the goal for water and sanitation has been prepared by UNDP.

Started in 2014 and completed at the beginning of 2015 the "Rural Water and Sanitation Project" was carried out aiming at the improvement of public utilities in 8 Soum centers in 4 Aimags in Mongolia. The program was side by side with the "New Soum" project implemented by the MCUD.

Following the scheme of the New Soum project the rural and sanitation project implemented by UNDP has worked on setting up connection of public utilities (water, heating and sewerage network) connecting public buildings and services to the network and giving the possibilities to private citizens to connect their properties to the public utilities. The intervention aimed at urban development as an holistic process, including road developments, public lightning as well as involving the citizens in actively taking part to the general upgrading (i.16e. planting trees and renovating their kashas' fences).

The project did not foresee the realization of private connections for household funded by the project.

One of the component of the rural water and sanitation project aimed at establishing new management systems using the project as a piloting platform. In particular when it comes to investments models the project worked with a "co-investement model", where the project funds were mobilized from different sources: not only from UNDP and its donors but also from Soum and aimag level government and finally from the community level, mainly through the direct involvement of the community in specific project activities. It is said that the project so designed had a better ownership at local level[85].

Following the standard framework set up for small scale wastewater treatment plants, small waste water systems were adopted within the rural sanitation project (with an attention to water saving technologies and adopting German, Turkish and Czech technologies)[86]. The process of working at soum level with a strong participation of the local authorities aimed at improving both capacities of MCUD in terms of rural sanitation and of the Soum authorities. At Soum level UNDP has opened information centers providing information on sanitation technologies available for the households[87].

Within the project a capacity building component also aimed at training 2 technicians at Soum level in charge, at the end of the project, for the basic and emergency maintenance of the infrastructures built in the framework of the project. This component was part of an innovative tripartite mechanism for service provision developed by UNDP where Aimag authorities, Soum authorities and central government authorities were part of an agreement for the operational implementation of the Soum development activities[88]. In 2015, activities in the area of capacity building of the new infrastructure operators are continuing funded by the rural water and sanitation project.

Cities Development Initiatives for Asia

Cities Development Initiative for Asia (CDIA) is a regional initiative established in 2007 by the ADB, The German government (Through GIZ and KFW) and other donors as national governments and capital cities governments. The role of CDIA is to help the cities to bridge the gap between planning and financing[89]. Through pre-project preparation CDIA tries to link the cities with financial institutions. CDIA finds its justification from the consideration that one

85 *Donati, Pier Francesco (10/11/2014 a)*
86 *Donati, Pier Francesco (28/10/2014)*
87 *Donati, Pier Francesco (10/11/2014 a)*
88 *Ibid.*
89 *Donati, pier Francesco (8/11/2014)*

of the main problems of cities administration is a lack of capacity in terms of project preparation at least in the area of infrastructure projects; feasibility studies are generally poor in terms of technical and financial set up[90]. By preparing sound technical and financial documents CDIA tries to raise the interest of financial institutions in funding these projects. CDIA works as a grant provided to cities in terms of technical support. CDIA first supports the city administration in carrying out a prioritization exercise (using a participatory tool matrix) on the needs expressed by the city and then engages with the city administration for the preparation of a prefeasibility study.

CDIA provides consultants (national and international) for preparation of prefeasibility studies (PFS) of the cost of around 300.000 USD. PFS is the main product of CDIA. It is important for CDIA at the very early stage of the project to identify financing institutions that can be potential donors. CDIA has collaborated with 65 cities in Asia and has produced around 100 PFSs, 40 of which have been linked to Finance (ADB, WB, local banks). ADB is the main recipient of the initiative (15-20 projects have been financed by ADB in terms of loans or technical assistance)[91]. In Mongolia CDIA engaged with several cities: Darkhan, Erdenet, Ulaanbaatar. In Darkhan the prefeasibility study on water supply and sanitation was completed. In Ulaanbaatar the support of CDIA is expected in the area of energy efficient buildings. A negotiation is ongoing with the Municipality of Ulaanbaatar for an engagement in the Ger Area improvement, in terms of housing and basic infrastructure[92]. The project might link to ADB "Ulaanbaatar Urban Services and Ger Areas Development Investment Program". CDIA is now working with Erdenet municipality that expressed the interest to collaborate with CDIA[93]. Ownership of the process is in fact an important factor: the willingness of the municipal government to take part to the initiative implies that the municipality is fully involved in the preparation of the technical proposal. CDIA then advocates with the Central government expressing the interest and need expressed by cities.

CDIA represents also a kind of link between ADB and municipalities, because, even though CDIA is totally autonomous it works as a technical catalyzer, and represents a kind of trademark giving a warranty to donors regarding the sound technical and financial preparation of the project that those cities are submitting for a loan or a grant[94].

The case of Darkhan is very interesting. The PFS for Darkhan is an overall investing strategy for the next 15 years in both Ger and Core areas of the town. One of the components, carried out together with ADB technical assistance, is the waste water treatment rehabilitation. This component will be most probably included in an existing loan. The future perspective is to get the other components financed (100 million USD as a whole, of which around 12/13 million for the waste water treatment plan). As part of the PFS an institutional/ financial screening on the water provider and the local government capacity was carried out.

The overall strategy for Darkhan aims at the improvement of the water and sanitation infrastructure of the city through different means. Regarding sanitation, there's a full integration of the sector of onsite sanitation with the expansion/improvement of the sewerage infrastructure. Taking into account financial affordability issues the PFS foresees a gradual improvement of the sanitation services tailored on the different cities areas and according to a given timeframe[95]. For the first 5 years of implementation of the plan the PFS foresees a first stage of sanitation improvement (from unimproved to improved onsite solutions). The final goal foresees that in 15 years approximately 70% of HH will be able to connect to the upgraded sewerage network[96]. As a temporary solution onsite sanitation facility improvement is foreseen. This holistic approach is completely new to Mongolia and for the first time it matches together the use of onsite sanitation with infrastructure improvement/extension finally integrating the sanitation sector.

In the framework of the project, providing and interim and gradual improvement of the sanitation facilities, a study on potential onsite sanitation facilities was carried out, and based on the previous experience of MoMo project in Darkhan, has selected ACF ecosan latrine and ecosan cycle as a viable interim solutions for those area that cannot be connected because of orography issues or as temporary solutions where the development of infrastructures is foreseen in a long period of time. The

90 *Ibid.*
91 *Ibid.*
92 *Ibid.*
93 *Ibid.*
94 *Ibid.*
95 *CDIA, MCUD, Darkhan Uul Aimag (2014a), appendix L,*
96 *Ibid, pag.5*

household level is very much kept in consideration and even though subsidizing mechanisms are not defined at the PFS stage nevertheless the document shows how the planning process focuses on household level overcoming the definition of connected or not connected areas, unlike other urban development projects that focus exclusively on infrastructure development (and connection to public buildings) that in the short period cannot improve the access to sanitation services at household level. The PFS for Darkhan represents an innovative approach to address the issue of improving sanitation services taking into consideration the different nature of the core and the ger area urban sectors that characterize most of Mongolian cities.

Asian Development Banks

ADB is one the biggest donor in Mongolia in the area of water supply and sanitation[97]. Since mid-1990' ADB is providing support through different sources. ADB has covered more than 17 provinces with activities on water supply and water treatment plants in Ger area and core urban areas (through the "Integrated Development of Basic Urban Services in Provincial Towns Project"). The main support has been given in rehabilitating waste treatment plants whose construction dated back to 30, 40 years ago, replacing sectors of sewage pipes, pumps stations etc…

From 2007-2011 ADB through its "Community-driven development for urban poor in Ger areas" set up interesting mechanisms aiming at empowering local communities and having them directly involved with local authorities in the decisional process of allocating local funds made available by the project for improvements in the area of water and sanitation services. The project is reported to have provided around 150 unsealed VIP toilets in Erdenet, with the direct involvement of the community in supporting the payment for construction exceeding the 270.000 MNT allocated by the project for the basic version of the toilet[98].

A couple of ongoing projects are focusing on sanitation/ infrastructure provision: the "Urban Development Sector Project" (about to be completed) and a project in 5 Aimag centres upon the request of the Prime Minister. In 2014 in fact MCUD has identified 19 new projects to improve public utilities services in Aimag centres. At least 7 projects include rehabilitation of sewerage supply systems. These projects are in the framework of the government effort to build approximately 1000 housings per year in each Aimag centre in the framework of 100.000 housing program (in UB and Aimag centre), part of the "New Development". ADB is supporting the program through the expansion and improvement of the infrastructures (sewerage, heating and water supply). The housing program will then then start in those areas newly provided with infrastructures: the private sector is ready to take part to the construction process[99].

In addition to this project another ongoing project is the "Southeast Gobi Urban and Border Town Development Project": foreseeing the development of border cities involved in the mining industry and transport trade. In the framework of the project (a 15 million USD grant) central waste water treatment plans will be built in 3 soum centres.

In Darkhan ADB is planning the construction of a new waste water treatment (through the "Darkhan Wastewater Management Project" as mentioned above in the CDIA section) including the replacement of 4.8 km sewerage pipe.

The Water operators partnership project (Waterlink) is also an intervention aiming at building the management capacity of water operators through the partnership and acquisition of best practices through the exchange of experiences of water operators from different countries. In Mongolia the Alaskan Fairbank water operator has been selected to partner with the city of Darkhan. The Fairbank operator will work as a mentor for Darkhan operator and the 2 companies will work together in order to strengthen Darkhan water operator capacity, in terms of financial sustainability of the service provisions and sound technical capacity of the staff. The collaboration has been fostered in the light of the need for Darkhan water operator to manage new facilities in the near future.

In general all ADB urban projects have a component on institutional restructuring[100], normally these interventions are under technical assistance (not loans)

97 *Donati, Pier Francesco (05/11/2014a)*
98 *CDIA, MCUD, Darkhan Uul Aimag (2014a): appendix F, page 3*
99 *Ibid.*
100 *Ibid.*

and do not represent a burden for the government. The aim of this software activities relates to support the government in restructuring the water sector in applying international standards and accounting systems, restructuring existing public utilities service utilities organizations and help them to become profitable private joint stock company. In Bayankhongor Aimag very good results were achieved with an innovative structure of the public utilities: under a Aimag Khural decree all assets and facilities were turned into stocks and all piping and infrastructure were valued at 51% and 49% of the assets were privatized. 20% was given to a private company and 29% was given to local citizens interested in purchasing stocks of the company. The public utility was converted in a joint stock utility leasing the infrastructure from the local government. It is an interesting structure for the first time implemented in Mongolia. After 1 year of operation the company has a profit. The project also provided equipment that the stock company is leasing or using as a contractor for construction works, i.e. performing private connections to companies.

Within the "Urban Development Sector Project" started in 2008 ADB is also allocating under the grant subsidies loans (3 million USD in total) to local bank that will release sub loans with favorable interests to residents willing to perform private connections or to carry out on plot improvements. Local governments will identify priority areas/locations were the residents will have access to these loans. Initially the households not far from the main pipes will be encouraged. An initial study in Erdenet in the early stages of the project (2009) showed no willingness from households to invest in their private connection also in the light of similar experiences of subsidized projects. Nevertheless the attitude of money borrowing has changed notably during the last years and in the light of a study carried out by ADB in 2013[101] there's a high willingness from households to perform their connection (over 80% demonstrated willingness to improve their housing conditions as a whole, from pipe connections to general housing improvement). Right now ADB is in the stage of selecting financial institutions. The project will start in 2015, the loans will be provided in 4 Aimag centres: Erdenet, Arvaikheer, Bayankhongoor and Altai.

Under the technical point of view, in the light of a survey on availability of construction materials, the 4 Aimags have availability of construction materials necessary to perform the connections. All the private connection performed will have to be technically approved by the local water operator. Local governments will encourage households to use water operator contractors to perform the connections.

In Ulaanbaatar ADB's is conducting a project approved in December 2013 (163 million USD), the "Ulaanbaatar Urban Services and Ger Areas Development Investment Program". The project aims at the identification of different solutions for the Ger area redevelopment. The development of sub centers is the project key strategy. The identification of hubs serviced with public services (community and education services) as well as infrastructures will become focal point for urban development. At strategic level it is a very interesting process because on the layer of infrastructure and public services different urban development patterns can be overlapped. Even if this is not the classic "sites and services" project, it represents an excellent strategy to provide an existing urban fabric with infrastructures.

The project will be implemented over 10 years in 3 phases. During the first tranche of the project (up to 2017) 2 sub centers will be established while during the second and third tranches 6 more sub centers will be set up. For example the establishment of the first sub center in Bayan khoshuu foresees the extension of 6.7 km of sewerage from the central sewerage system with some pumping stations to ensure the wastewater flow and the connection of the public services (family hospitals, kindergartens etc…). From the hub it will be up to the local area master plan done by the municipality: If proposals for apartment's buildings are approved, these apartments will be connected to the hub by the investing contractors or by the municipality. Households who associate together in neighborhood and express their capacity and willingness to upgrade their khashas will also be allowed to do so[102]. ADB actually received an expression of interest from a group of residents to take part to this kind of neighborhood upgrade[103].

To ensure accountability and technical compliance of the work the project implementation unit is the water operator itself that is leading the supervision and monitors the works carried out by the contractor.

101 S. Bat-Oyun (2013)

102 Donati, Pier Francesco (05/11/2014a)
103 Ibid.

World Bank

Since 2001 the World Bank is implementing in Mongolia projects aiming at improving the access of Mongolian citizens to public services such as those in the area of water and sanitation. Furthermore the World Bank is one of the actors that mostly worked at investigating the wider topic of Ulaanbaatar's ger area redevelopment and produced studies and documents in the urban development sector.

The Ulaanbaatar Services Improvement project (USIP) was the first systematic investment focused on extending water connections in the Ger area of Ulaanbaatar and dramatically improving the access of Ger area residents to water in terms of water quality and constant availability[104].

The Second Ulaanbaatar Services Improvement project (USIP2) moved also in the direction of identifying solutions for improving access to proper sanitation in areas not connected to the central water and sewerage network. In particular, for the first time in Mongolia, USIP2 piloted a project of private connections and decentralized small scale wastewater treatment.

USIP2 as a whole continued to focus on expanding the water network in the Ger area and further improve the water access for Ger area residents, ensuring a more consistent water provision through connection and construction of water kiosks connected to the city water network, pumping stations, reservoir and labs equipment to support water safety monitoring. The whole investment for USIP2 was about $18 million USD. Around 899 000 USD, approximately 4% of the project investment targeted the pilot construction of a small scale waste water treatment and the private connections of 96 households and 8 institutions in Dambadarja.

The project fully covered the connections costs (realization and connection to water mains as well as realization and connection to the small scale water treatment system). The average cost per HH connection was estimated below 10.000 USD including the cost of taps and flush toilets[105]. As a comparison, as mentioned earlier in the report [106] the connection cost in the framework of Tamir and Khutul area housing towns carried out by MCUD and using a different technology, was around 40 million per HH[107] (over 20.000 USD).

The project was concluded in 2011 and operations activity started on September 2011. The system faced some technical problems during the first winter. Out of 96 connections carried out only 43 were operational because many households were not permanently living in the area (that is also hosting summer houses) and some households cancelled the contract.

The decentralized wastewater treatment, initially designed for an inflow of 90 mc, when in function was receiving an average inflow of 8 mc. Technical problems due to the works realizations also caused a malfunction of an infiltration field after the treatment, causing an inadequate flow into the ground. It is reported that lack of awareness and ownership of the project from the households caused problems of lack of maintenance of the private connections[108].

Through its UBCAP (Ulaanbaatar Clean Air Project) World Bank is doing a follow up of the pilot connections in Dambardaja[109].

USIP2 represents a concrete (the first and almost only) fully documented pilot experience to upgrade sanitation access in an existing spontaneous urban fabric proposing an alternative to centralized sewerage systems and this experience has drawn interesting lessons learnt giving also general directions for technical options on sewerage connections in ger area contexts. In fact it has to be stressed also that the pilot experience of Dambadarja has been fully evaluated by the project management structure and has made clear what the technical constraints are in planning and designing decentralized small scale water treatment and households' connections in a peculiar environment such as the Ulaanbaatar Ger areas. Population density, per capita water consumption of households in Ger area and the severe winter climate conditions are in fact the biggest constraints when planning and providing these neighborhoods with sound decentralized waste water treatment technologies.

104 *The USIP1 and 2 did an extensive work in constructing and rehabilitating Water kiosks in the Ger area of Ulaanbaatar and connecting them to the mains. Water kiosks fed by water trucks in fact are characterized by a poor water quality due to the high contamination risk along the water suplly chain and problems of availability of water when the tank is empty due to the time gap for having the water kiosk tank refill done.*

105 *World Bank (2012): pag 6*
106 *See page 16 of this report*
107 *CDIA, MCUD, Darkhan Uul Aimag (2014a): Appendix F pag.5*
108 *Ibd: pag. 7*
109 *Donati, Pier Francesco (05/11/2014a)*

The World Bank is currently carrying out a study on sanitation in cold climate with a case study from Mongolia. The study was motivated by the fact that no visible improvement has been noticed in sanitation during the last years in Mongolia. The research includes also technical guidelines and a catalogue of possible onsite sanitation solutions suitable for Mongolia[110].

The study conducted by World Bank not only has the potential to provide crucial technical inputs to feed the sector of sanitation with technical feasible solutions but has a very strong political meaning.

In fact it shows how the actor that most contributed to the development of water facilities in the Ger area of Ulaanbaatar considers relevant to adopt an approach of gradual development from unimproved pit latrines to sewerage connection for the not connected areas in Mongolia.

It is interesting to mention that World Bank is very active in the debate of Ulaanbaatar Ger area upgrading in a holistic way and has carried out studies and researches on identifying proper urban planning tools suitable for the development of urban services in spontaneous/ consolidated urban areas.

Even if not specifically in the area of sanitation WB is active on projects promoting local area development with the active participation of residing communities and local Authorities. The "Community-led Infrastructure Development for the Urban Poor in Ulaanbaatar", closed in 2011 and the "Community-led Infrastructure Development for the Urban Poor in Ulaanbaatar Phase 2", still on going, in fact proposed local area development through the direct involvement of residents. The projects actually worked on the development of community structures directly involved in the decision making process for ger area improvement actions and in the direct implementation of those actions

In terms of sanitation facilities during the first phase of the project the facilities built through community participation were mainly public toilets: the project contributed to the construction of 20 VIP sealed individual and public toilets.

The outputs from the second phase of the project for the moment are "the construction of 4,500m of pathways, two foot bridges, 1.3km of drainage channel, 1.25 km of new auto road, one bore hole, one public toilet, one mineral water protection site, one youth center, and procurement of equipment for six community halls, which together are benefiting more than 33,000 people in ger areas every day"[111]. The project in fact through construction of community facilities supports low-income households to generate additional income by scaling up community-led infrastructure development activities. These kinds of mechanisms should be encouraged also in the framework of improvement of access to sanitation services at household level in areas not connected to the central water and sewerage network.

In the framework of UBCAP, WB is collaborating with the Municipality of UB to respond to the urgent environmental hazard of air pollution mainly due to the common use of unimproved stoves in the Ger area of Ulaanbaatar[112]. The project through a 15 million loan is supporting the subsidized sale of efficient combustion stoves together with awareness campaigns on the danger of poor air quality due to stove emissions targeting residents of the Ger area. It is worth to mention the UBCAP project because this kind of mechanism could be also adopted for the launch of national programs on improvement of household sanitation facilities. In fact it will be further discussed in the recommendation section of this report on how this kind of model might be suitable for improvement of onsite sanitation facilities in areas not connected to the central water and sewerage network.

Mongolian Red Cross

Mongolian Red Cross has completed in August 2014 a ten years WaSH project[113]. The last 4 years phase of the project articulated in 3 phases focusing on 4 districts in Ulaanbaatar (Chingeltei, Songino Khairkhan, Bayanzurkh and Khan Hul) and in Govisumber province was funded by the Dutch Postcode Lottery and technically supported by The Netherlands Red Cross[114]. The project included components of sanitation at household and school level, awareness rising on sanitation. In terms of school sanitation, indoor toilet

110 *Donati, Pier Francesco (04/11/14)*

111 *World Bank (2014), pag. 2*
112 *http://www.usip.mn/en/projects/380-ulaanbaatar-clean-air-project*
113 *Donati, Pier Francesco (25/11/14)*
114 *Mongolian Red Cross Society (2014), pag. 11*

rehabilitations have been carried out in 4 schools as well as a pilot experience with Ger kindergarten sanitation with indoor toilets set up with the use of chemical toilets. The main reason of piloting indoor latrines at kindergarten level was motivated by the need to offer a protected environment for small kids using the toilet and preventing them from going out during the cold season. The chemical toilets have to be emptied and the chemical has to be replaced periodically.

In terms of household level sanitation the Mongolian Red Cross focused on distributing VIP in the 5 targeted areas. In 2013 the first 50 VIP latrines were piloted. The model, designed by Mongolian University of Science and technology, adheres to the 2008 Mongolian standard on VIP latrine. The pit's walls are lined with concrete hence the latrines are empty able. After having piloted the first 50 latrines in 2013, the Mongolian Red Cross has distributed 150 more latrines in 2014. The distribution was fully subsidized. The household, when possible, were asked to support the pit digging. Those families unable to carry out the excavation by themselves were supported by Red Cross volunteers from the local branches.

It has to be noted that, the structure of the Mongolian Red Cross, present in Mongolia with 33 small branches of which 30 active, allows a national coverage and a capillary presence at Aimag Level.

The software components of the project in particular took full advantage of the structure of Mongolian Red Cross. Facilitators were trained on the PHAST methodology, introduced and translated in Mongolian by the Mongolian Red Cross and used at community level and school level. Red Cross followed ACF model at school level, establishing WaSH clubs within the youth societies and adopting the HP kit.

Mongolian Red Cross also uses water kiosks as hubs were distributing awareness material or carrying out hygiene campaigns to households.

The Mongolian Red Cross has also collaborated with UNICEF in Nailakh and Khusvgul Province introducing CLTS at community level. As mentioned in previous chapters no monitoring has been carried out and no results have been assessed for the moment.

Other international organizations

WHO, taking part to the UN joint monitoring program, worked in the area of promoting good sanitation practices developing communication material on Hygiene promotion. A series of booklets on Hygiene promotion targeting households also includes proper hygiene practices on sanitation. Recently WHO has launched in SKH District of Ulaanbaatar a "Strategy of health System Strengthening in Songino Khairkhan District 2014-2016"[115] where indicators on onsite sanitation and targets are set for 2016. The plan should enable the District to be actively involved, among the other sectors also in the area of sanitation and hygiene good practices at household level. Awareness on safe sanitation practices is also indirectly part of the "Water safety plan", a global initiative, that WHO piloted in Mongolia in Zuunkharaa in September 2011 and launched at national level in 2012 [116].

UN-Habitat works in Mongolia since 2006 addressing the issue of human settlements in particular focusing on the Ger area of Ulaanbaatar. UN-Habitat has not directly worked in the area of onsite sanitation improvement but its projects propose interesting experiences of community participation and community involvement addressing issues of urban development at local level. Both the project "Community-Led Ger Area Upgrading in Ulaanbaatar City Project" (already mentioned) and the project Citywide Pro-poor "Ger Area Upgrading Strategy and Investment Plan" (GUSIP) carried out in collaboration with Cities Alliance set up strong community groups at Khoroo level.

Through a social mobilization process in fact community organization structures such as the already mentioned Community Development Councils at Kheseg and Khoroo level are established and work as active doers of the project. It has also to be mentioned the experience of the "Unur area community action Plan"[117] in the framework of GUSIP that proposed urban design solutions for the area of Unur in terms of disaster risk reduction. The innovative methodology of community participation and community action planning used in the framework of GUSIP could highly contribute to trigger households' commitment in sanitation improvement programs.

115 *Cfr. WHO (2015) "Strategy of health System Strengthening in Songino Khairkhan District 2014-2016" - 2015*
116 *Cfr. http://www.wsportal.org/templates/ld_templates/layout_1367.aspx?ObjectId=33284&lang=eng*
117 *Ub Municipality, UN HABITAT, City Alliance (2010)*

a. Private sector

Dealing with the offer from the private sector in the area of water and sanitation it is noticeable that it is deeply linked to the demand of the sector. It is interesting to note that also technological innovation is always linked to the sector demand. Entities such as the Mongolian Chamber of Commerce are active in involving stakeholders from the private sector in fairs or exhibition focusing on water and sanitation technologies but these events are mainly showing advanced technologies functional to the mining sector. Very few private actors are developing sanitation solutions that are financially viable for households living in areas not served by water and sewerage infrasructures.

Very recently technologies for onsite waste water systems suitable for small scale settlements have been introduced in Mongolia such as waste water treatment based on an active treatment of the sludge and disposal through infiltration in the soil. Nevertheless the demand for these kinds of technologies is still low and the prices of the current solutions available relatively high. Furthermore these solutions are not always suitable for densely populated areas as they require wide areas for infiltration that are not matching with standards for safety distances from other households or water sources. It has to be said that the demand for such technologies from ger area residents is still very low and currently the potential customers that this solutions are targeting are owners of vacation summer houses in certain fringe areas of Ulaanbaatar.

b. Sector coordination

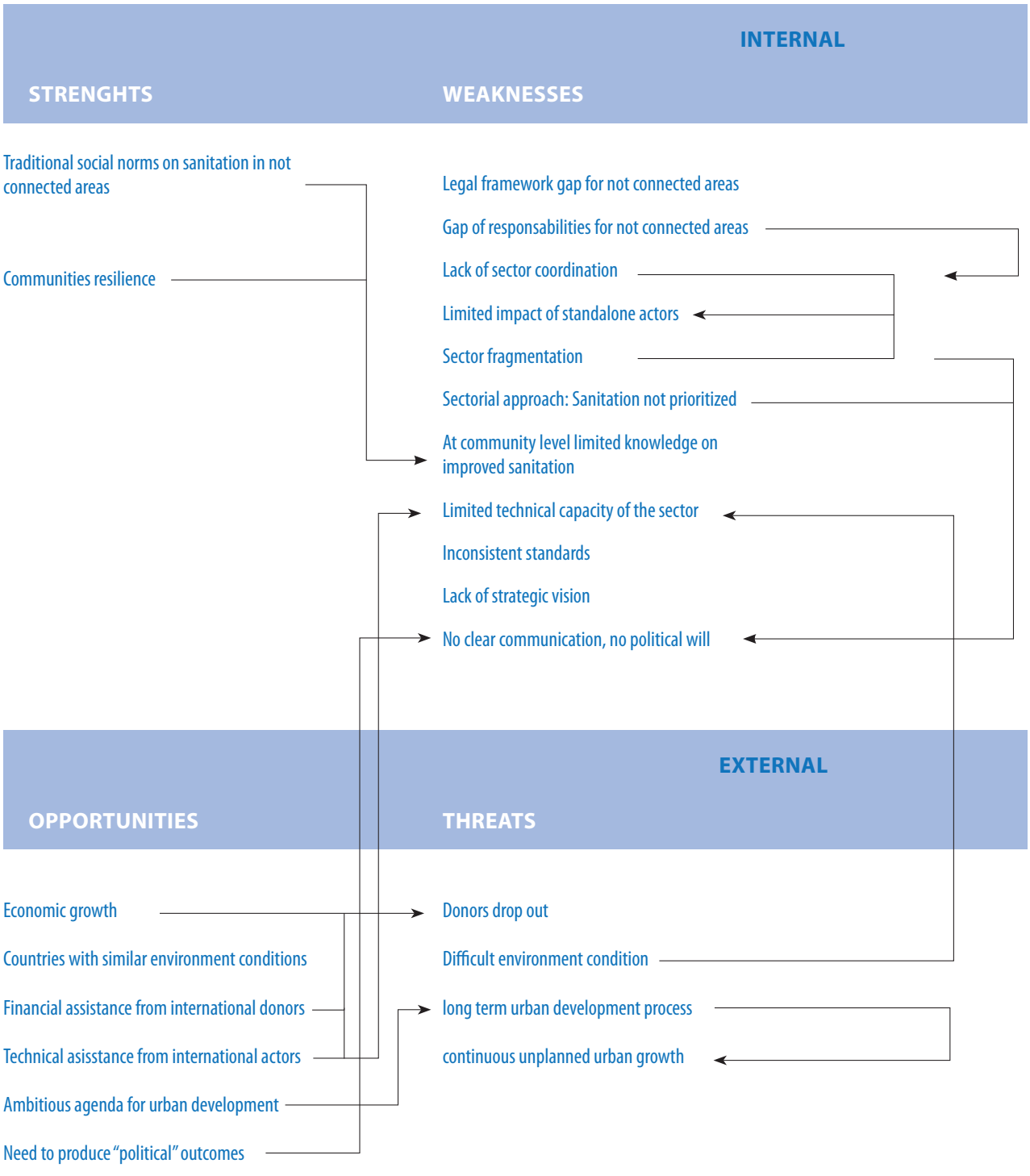
The National water committee is in charge for leading the national level working group on water and sanitation. Not all the stakeholders are integrated in the working group and it is said that the working group is mainly focusing on water resources and water management. Very little attention is given to sanitation and specifically to sanitation improvement in areas not connected to water and sewerage networks.

Thematic working groups are called by different actors for the discussion of specific topics or to develop specific activities but there's not an overall sector coordination mechanism defining the needs, identifying priorities and drawing a sanitation agenda shared by all the stakeholders.

UNICEF is leading the WaSH cluster in Mongolia.

4. SWOT analysis: Strengths, Weaknesses, Opportunities and Threats in the sanitation sector

The following SWOT analysis has been carried out in the light of the context analyses and actors mapping and was the base for the preparation of the recommendations. The arrows shows the interrelations: causes, effects between the factors taken in considerations as strengths, weaknesses, opportunities and threats on sanitation



5. Issues and bottlenecks

The previous chapters on the context analysis, the mapping of actors as well as the SWOT analysis have shown how the sanitation sector is suffering from a lack of efficiency in particular when it comes to providing solutions for those households living in areas not connected to the water and sewerage networks.

Issues and bottlenecks that are slowing down the process of improving access to sanitation in Mongolia were also identified in the light of the field interviews held and the literature review carried out. It is useful to try to go deeper into the constraints that are heavily affecting the performance of the sanitation sector as a whole. The following section is structured into single paragraphs that are focusing on single topics.

The first focus is in fact on the coping mechanisms that households living in areas not connected to the central water and sewerage network set up based on shared social norms and technologies allowing them to live in densely populated areas of urban settings with a minimum level of environmental sanitation. In fact, it can be stated that, for several reasons analyzed in the following paragraphs, households from areas not connected to the water and sewerage networks are left alone to cope with sanitation services. The negligence in implementing national programs focusing on the improvement of sanitation through onsite or decentralized solutions is caused by the unclear chain of responsibilities at government level and the fragmentation of the sector. It will be further discussed how sanitation plans on onsite sanitation are sometimes in contrast with urban development plans and as the legal framework in Mongolia does not provide a favorable environment for the involvement of government actors in supporting the improvement of sanitation access in areas not connected to the water and sewerage system through onsite solutions.

The sanitation sector in Mongolia also suffers of a chronical lack of coordination of the actors. The actors working in the area of sanitation often show a low capacity of capitalizing past experiences as well as show lack of capacity in providing a consistent piloting of the options proposed for onsite or decentralized sanitation.

Let's analyze one by one these issues.

Sanitation social norms in Mongolia: Resilience mechanisms or a constraint to improvement?

Part of the Mongolian millennial nomadic culture is also a set of health and environment safety social norms supporting herders' life in nomadic or seminomadic contexts in Mongolia[118]. Part of these social norms refers to health and safety practices aiming at preventing diseases. As already mentioned when open defecation in Mongolia rural area is mentioned it should be referred to very specific situations, such as to the context of nomadic families moving on a regular basis during specific periods of the year. In fact, apart from that, as a matter of fact, social norms developed together with the traditional nomadic life pattern impose that the defecation has to be achieved far from the ger settlement and far from wells, springs and water sources

Normally what can be called for the purpose of the Mongolian context "controlled" open defecation is achieved through the set-up of a hole dug in the ground and poorly sealed (an unimproved pit in fact) signaled with a basic screening (sometimes a cloth hang to four sticks around the pit with an open side) also having a basic privacy function[119].

Far from saying that this kind of traditional setup provides an improved sanitation environment it is undeniable that is very different from open defecation as performed in many rural contexts of different countries.

It is also interesting to note that the set of social norms on sanitation is the same common knowledge applied by residents in the Ger areas of urban contexts even though adapted to the urban texture density. The adapted set of traditional social norms made it possible to residents of Ger area in urban contexts, also thanks to the climatic conditions of Mongolia, to survive in often very dense neighborhoods characterized by a very high number of unimproved latrines or open pits. The use in the Ger area of unimproved, unlined pit latrines is a replication of sanitation techniques used in rural context and adapted to a denser context[120]. In

118 Donati, Pier Francesco (5/11/14)
119 Ibid.
120 Ibid.

Khashas in fact latrines are normally located far from the house and near the fence. Normally there's a mutual agreement between neighbors on how and where to position latrines to prevent bad odors in the neighbors kahsha. The communities are in a way applying coping mechanisms to face the lack of utilities provision and the traditional set of environment safety rules are contributing to the resilience of these communities. Again the resilience of these communities is also witnessed by the last ACF Knowledge, Attitude and practice (KAP) survey where amazingly 43.8%[121] of the respondents, when asked, declare they do not have any problem with their current latrine. At first glance it could be assumed that this resilience built up a sort of block to the improvement of sanitation: at the end of the day life is not so bad with the current sanitation arrangement! The point is that most often the traditional accepted norms on sanitation and environment pollutions are the only tools that these communities have when it comes to deal with sanitation.

At the same time, the urge of proper sanitation solutions is expressed, in fact when asked, "as to reasons for dissatisfaction with housing, residents in both the City Center Ger and the Mid-tier Ger ranked water supply, drainage and sanitation as the most immediate concerns. Fringe Ger residents ranked the size of rooms, lack of a proper kitchen and heating as reasons for dissatisfaction, in addition to water supply, drainage and sanitation"[122].

It is worth to mention that sometimes social norms can be an obstacle to improvement of sanitation facilities. The experience of ACF in the construction of detached indoor toilets in a school in a rural township of Songino Khairkhan District of Ulaanbaatar is exemplar. Unimproved/unsafe blocks of pit latrines were substituted with a block of detached indoor and heated emptyable pit latrines. The intervention was very welcome at school level, but was also accompanied by controversial opinions; in fact some of the residents of the surrounding areas considered that the investment done was too high for improving sanitation facilities: anyway the former unimproved pit latrines "were doing their job"[123].

121 *ACF (2014) - dowloadable at http://www.acfmongolia.mn/index.php/en/165-2014*

122 *Kamata T., Reichert J.A., Tsevegmid T., Kim Y., Sedgewick B. (2010), pag.20*

123 *Opinion reported by ACF officer when asked about the reaction of neighboring community members of school n74 in Songino Khairkhan District in Ulaanbaatar*

When it comes to children defecation for example the traditional use of bucket toilets and later disposal of feces in the family latrines[124] are very much close to open defecation as they do not ensure any kind of separation of the excreta from the surrounding environment

As a matter of fact additional information from ACF KAP survey show that even if a considerable improvement was noticed in area where hygiene promotion projects are carried out, knowledge on the risks of unimproved sanitation and mechanisms for sanitation facilities improvement do not still have a high impact at community level in areas that are not connected to the water and sewerage networks and rely on onsite sanitation.

Is Sanitation neglected?

According to the current Government policies and programs the only scenario for improving sanitation is expected to happen through the expansion of the connections to the central sewerage network in Ulaanbaatar and in urban areas such as Soums centers or Aimag centers. There is no plan or program for those areas that will not be incorporated in the new master plan in UB or no plan other than provision of utilities for public building at Soum center and Aimag center level. It is also said that standalone solutions are not welcome by authorities in those area that will undergo connections because they are potentially increasing land value and making the resettlement process more difficult. At legal framework level as well, the gap for solutions and responsibilities of areas not connected to the water and sewerage network is a fact. Responsibilities are identified in terms of actors in charge for allocating funds or making plans for public utilities service but when it comes to areas not served by infrastructures the law states that the responsibility falls on single households.

Even when national or municipal programs are carried out no gradual development is foreseen: the goal is infrastructure, and generally, public infrastructure provision. No attention is paid at setting up mechanisms that could make possible the gradual improvement of sanitation facilities in areas not connected to water and sewerage networks and future potential connections of households. Sanitation is considered only in the wider area of infrastructure provision.

124 *Pier Francesco Donati (5/11/2014)*

Households from not connected areas left alone to deal with sanitation

What said above supports the statement that households from not connected areas are left alone to cope with sanitation. In terms of legal framework and responsibilities the current legal set, as mentioned in the previous chapter, has a gap when dealing with sanitation for areas not served by water and sewerage infrastructures.

While in areas connected to the sewerage system citizens are serviced by the public utility providers, sanitation in areas not served by infrastructure is, by law, a burden of citizens. It is also interesting to note that, according to the interviews carried out, both at khoroo and District level there's not a department or officer in charge for sanitation: whether the focus is on solid waste management or on infrastructure. All the plans and programs analyzed in the previous sections show that sanitation is always and only considered as infrastructure provision.

The monitoring and awareness rising role of Khoroo level authorities is not carried out. Khoroo levels authorities feels they do not have the means, the knowledge or the tools to carry out systematically awareness rising campaigns or the enforcement of health standards[125]. They are aware of their crucial position at the ground level and they are aware of how beneficial their knowledge of the context would be for engagement of community, but no program or plan from the higher levels of authorities focus on hygiene or sanitation improvement.

Chronical lack of coordination of the sector,

This statement appears to be the leit motiv of the most recent sectors analyses (at institutional and sector stakeholders level) and it is undeniably true.

Lack of coordination among actors working in the sanitation area is very high: INGOs and international organizations are not coordinating in their interventions and there's still a very high dichotomy between interventions/actors working on onsite sanitation solutions and actors working at infrastructure improvement/expansion.

Out of the programs described in the actors mapping part, most of them, even if relevant, are carried out by the single actors with no connection with other stakeholders in terms of sharing strategies or optimizing the use of resources and expertise[126].

This is leading to a **very poor impact** on sanitation for households living in areas not connected to the central water and sewerage network.

Referring to Government policies and actions a **vertical fragmentation** is reported together with a centralized decision making process and a low involvement of local authorities (District level/Khoroo level authorities).

Fragmentation of responsibilities leads to **inconsistencies** in the sector: at the time of this report writing two different Ministries are reported to be working on 2 different standards on onsite sanitation without coordination.

Very demanding standards versus a poor practice

Focusing on onsite sanitation facilities, in the light of the standards review carried out the only approved standard on onsite sanitation is the 2008 "Pit latrine and soak pit standard". This standard identifies VIP latrine, emptyable latrines and holding tanks as improved sanitation facilities. Pit latrines with slab, listed as improved sanitation facilities by Joint Monitoring Program are indeed not listed in the Mongolian standard hence are to be considered unimproved. Hence the minimum standard of improved sanitation according to Mongolia's standard is actually a **very high standard**[127].

Besides that the standard **is not consistent** to the kind of urban/periurban context to which it refers and does not constitute a **guideline** to the improvement of sanitation.

Once stated that this fact is not really impacting on the MDG number 7 count as previously explained in this report, it is undeniable that there is a **gap between the standard and the common practice**.

125 *Pier Francesco Donati (13/11/2014)*

126 *The "New Soums project" is the only case documented of collaboration of different actors such as ADB, UNDP and MCUD to a infrastructure development plan, and nevertheless each one of these actors are following their on specific objectives and not a declared shared strategy.*

127 *Donati, Pier Francesco (10/11/2014a)*

In fact the **very demanding standard** has **no application** and **no enforcement** in reality. A very poor practice is indeed what can be found in not connected areas.

Lack of strategic vision: facing a long timeframe for Ulaanbaatar Ger area redevelopment

According to many of the interviews carried out and assessing the current stage of the activities related to the upgrading of ger areas in blocks apartment areas, as mentioned in the above paragraphs the development of the different housing projects in the pipeline is still at the initial stage. Since the span of the actual master plan is until 2030, and due to the initial implementation delay it is possible to foresee that the completion of the upgrading will not occur in the next 15-20 years. In the meantime no temporary plan or interim strategy has been developed to improve the current sanitation situation of Ulaanbaatar Ger area. Lack of strategic approach is demonstrated also by the fact that public infrastructure provision carried out by international agencies or government projects are normally detached by sanitation improvements carried out at household level.

The lack of shared vision and coordination on sanitation for not connected areas results in indipendent projects carried out by single actors with very limited piloting and monitoring capacities affecting not only the impact of these interventions but also the capitalization process.

Individual Khashas improvement are increasing land value and Ger area redevelopment is slowing down single households' willingness to improve sanitation

Confirming what has been introduced in the previous chapter, sometimes the two different scales of interventions (large scale public infrastructure provision and onsite household sanitation improvements) are perceived as **competing forces**. Interviews with NGOs and international organizations raised two issues that are in a way correlated and again show at the same time lack of coordination within the sector and lack of strategic view. The work carried out by actors working on improving the housing and sanitation conditions in the Ger area of Ulaanbaatar is sometimes not welcomed by the authorities. In fact these interventions might potentially increase the investment done on the Khasha and its increased market value might also slow down the process for land acquisition from construction companies redeveloping the Ger areas. At the same time actors working on the improvement of onsite sanitation facilities in the Ger area are facing difficulties in engaging with households in improving their latrine because households expect in a very short time to have their living environment connected to the water and sewerage network.

This is due to the lack of a vision strategically integrating the sector of service provision with onsite sanitation solutions.

Extreme weather conditions leading to technical constraints

It is notorious that the main constraint for the improvement of sanitation conditions in areas not connected to the water and sewerage centralized network in Mongolia is the extreme weather characterized by an average yearly temperature below -1 Celsius. Because of the problem related to freezing for a long period of the year many sanitation solutions easily adaptable in temperate weather countries are not applicable in Mongolia. The same can be said for urban planning models to be used in spontaneous human settlements not provided with infrastructure as the case of the ger areas.

Areas upgrading mechanisms are extremely challenging and onerous in particular when it comes to provision of urban utilities, centralized or decentralized.

In particular, dealing with provision of sanitation services and waste water treatment and disposal both centralized and decentralized systems pose severe challenges. Because of the orography of the Ger area not all the areas can be connected to the centralized system. Where it is possible it sometimes requires the use of pumping stations and other devices drastically affecting the investment cost.

On the other hand currently viable solutions for small scale decentralized waste water treatments suitable for the Mongolian conditions have not yet been fully identified or not systematically piloted. Some

experiences piloted have shown at the moment to be not cost effective and technically viable.

A further challenge for the technical performance of these systems is the need, under the Mongolian climatic conditions to densify the urban fabric in order to optimize the cost of delivering utilities to those areas.

Low tech onsite sanitation solutions as normally applied in not connected urban contexts in other countries are usually not applicable to Mongolian conditions (in example outdoor water seal squatting pan latrines). It also has to be said that very little consistent research was done in these area by all stakeholders working in onsite sanitation (except few actors as MoMo project, Giz and ACF that has piloted coherently for 6 years the ecosan option). It is worth to note that this sensitive aspect has been already mentioned in a WB report from 2010 where it is said that "While on-site sanitation is one of the critical issues for ger residents (…) credible solutions have not yet been developed. Many on-going experimental programs are so costly that they are not affordable for ger residents. Recommendations from numerous past studies have been deemed inappropriate because of the cold climate and thus have never been adopted in a sustainable manner"[128]. In terms of onsite sanitation many project did not ensure a consistent piloting: many actors that worked on onsite sanitation invested on short programs with no follow up or monitoring with the result that commonly VIP latrines are considered the only viable improved sanitation solution. Nevertheless the negative impact in terms of environmental pollution, soil and ground water pollution as well as public health hazard of the massive adoption of pit latrines in such a dense urban fabric as the Ger areas was raised by many actors[129]. The review of the projects focused on piloting private connection at household level to the central sewerage system or to small decentralized waste water treatments show that the optimal solution in terms of financial viability and sound technical arrangement has not been achieved yet.

When will households be able to connect to the sewerage system?

Most probably not in the nearby future. Most probably private companies will be able to perform the cost of the connection e.g. in the framework of the New Soum project, but in order to have private households being financially able to perform the connections will take a long time (also because of the technical constraints still existing). Particularly if not any financial tool (for example favorable loan mechanisms[130]) will be developed and promoted.

It is said that in terms of prioritization the Government will first invest at the finalization of the Soums project. 100 Soums should be fully developed by 2017, and maybe by 2020 the situation of infrastructures in sums as a whole will be most probably improved. By that time the Government might be able to shift its commitment toward the household connections and prioritize financial interventions for those interventions, but still the timeframe is very long.

There's no consistent study on capacity or willingness of households to pay for sanitation standalone solutions or private connections[131].

128 *Kamata T., Reichert J.A., Tsevegmid T., Kim Y., Sedgewick B. (2010), pag. 3*
129 *Ibid. pag. 27*
130 *S. Bat-Oyun (2013)*
131 *The only available studies are the consultancy work carried out by Bat-Oyun (2013) for ADB and ACF (2013) ecosan users monitoring report (refer to the bibliography)*

6. From lessons learned and best practices to recommendations

The following section is an attempt to contribute to the improvement of the sanitation sector performances; recommendations for the optimization of the legal framework on sanitation as well as coordination of the partners and integration of the sector are discussed. Recommendations are given on strategies aiming at the integration of sanitation at household level and onsite sanitation in sectors of urban development and services provision.

Optimization of legal framework and standards

Among the enabling factors to prioritize the sanitation agenda, a revision of the legal framework and standard is essential. This process in fact has to **fill the gap of responsibility in the area of sanitation for areas not connected to the water and sewerage infrastructures**, identifying **government actors enforcing minimum standards on sanitation** and **supporting local programs for sanitation improvement**.

In fact, as mentioned, State budget allocation covers only provision and improvement of infrastructure. Arguably this is creating a subsidy towards wealthier population in Mongolia.

Onsite sanitation facilities are not a private good as they constitute one of the layers of the urban system. **Onsite sanitation is indeed a community matter** and the local governments have to be appointed responsible for guiding in the selection and enforcing among the communities the adoption of proper onsite sanitation devices. The legal framework should allocate funds to support Local authorities in the enforcement of health and hygiene standards on sanitation and proper information through awareness rising at community level.

As mentioned a **strong political will** is at the base of these processes and as a result the **favorable legal environment** might encourage the engagement of international donors in supporting national programs on improvement of sanitation.

The current involvement of the Ministry of Health and Ministry of Construction and Urban Development in the area of standards for onsite sanitation facilities is a very good sign; nevertheless the process should be free of **inconsistencies** and **aiming at providing a roadmap of feasible solutions for households**. A clear understanding of **the vision** underlying the standard should be there together with a **clear communication**.

The standard has to be **consistent to the context** and can be a tool to fix the **minimum health and hygiene requirements as well as environment protection requirements**. In terms of proposition of technical options the standard has to promote **options that are technically viable in Mongolia** and should take advantage of the pilot experience of sanitation actors in Mongolia. **Mastering capacity and knowledge of onsite/decentralized low tech sanitation solutions** must be at the base of the standard preparation process.

At the same time the standard preparation process can be the occasion to **revise and pilot potential sound options** for Mongolian conditions. **Best practices from countries with same weather conditions** and context should be adopted.

Advocate on sound sanitation: triggers for behavior change aiming at improving residents' living standards.

The traditional set of common knowledge available for residents of not connected areas is a crucial starting point to work on behavior change on the need of improving sanitation facilities. Advocacy on the need of improved sanitation should start from identifying **sanitation as one of the components in the definition of multidimensional poverty**[132]. According to ACF mandate **poor access to sanitation is one of the underlying causes of malnutrition** and this is the reason why ACF is working in its missions

132 *World Bank (2014)*

in different countries to improve access to water and sanitation.

In a complex, dynamic and quickly changing environment as the one of Mongolia, a country going through an economic growth (even if stagnating in the recent years) the main reason for rural migration to cities fringes is motivated by the search for better life conditions. **Advocacy on a better access to sanitation** should be strongly promoted in the wider topic of **improvement of living standards**. A clear message should be addressed to residents of areas not connected to central water and sewerage systems that **life conditions improvement passes through the improvement of sanitation** and that sound investments on sanitation brings better life conditions.

Evidence based studies on environment degradation due to unimproved sanitation facilities in highly dense areas should be produced and used as tools **to advocate with authorities at different level** to take action in timely improvement of sanitation facilities.

Best practice

- Unicef 2011 study on economics of Sanitation shows how unimproved sanitation has an economic impact at different level and slows down the improvement of living conditions[133]. The study content, simplified for large audience divulgation can be a strong tool to show residents the burden of unimproved sanitation in improving their living standards

- The different Hygiene promotion activities carried out by WaSH actors must focus on a common strategy to promote the direct involvement of household in stepping in the process of sanitation facilities improvement. ACF activities of Hygiene promotion at different levels as well as sanitation marketing activities are a good starting point to promote behavior change mechanism and raise concern on sanitation facilities. CLTS recently introduced in Mongolia by World Vision and piloted by Mongolian Red Cross, WV and Unicef should focus on sanitation marketing for the onsite viable options developed.

Coordination of all the actors to identify the contribution each actor will give and providing sound technical solutions

Actors working on sanitation for not areas not connecte dto the water and sewerage network should improve the **coordination mechanism**, sharing **experiences on onsite sanitation in Mongolia** and work on **capitalization of lessons learned on onsite sanitation in Mongolia**. Actors should work on identification of **sound technical options for onsite sanitation.**

In those situations with lack of water connections at household level or scarce access to water, sanitation should be **decoupled from water** and onsite solutions **not based on the use of water** should be identified and adopted even just as temporary solutions. Furthermore in areas with high density of population, shallow ground water and high density of pit latrines, **alternatives solutions to pit latrines should be identified** and piloted. The sanitation stakeholders are responsible to establish **enabling factor to engage households** of areas not connected to water and sewerage networks in improving their access to sanitation.

International WaSH actors can link and inform the Government on best practices from countries with similar weather conditions. Experiences of partnership programs between public utilities from these countries and Mongolian public utilities have to be strongly encouraged.

Best practices

- The current work of World Bank on sanitation on cold climate has the potential to be a strong advocacy tool to focus the government and public opinion on having a renewed interest in technically and financially viable onsite sanitation options for areas not connected to water and sewerage networks in urban and periurban contexts.

- ADB Water link program is based on the capitalization of best practices of utilities providers from Fairbank who developed solutions that can be suitable for Mongolia. The mentoring process is an essential tool to build capacities of Mongolian Utilities providers

133 *Hutton Guy, Amarjagal Amartuvshin, UNICEF (2011)*

Feed the political will

The same political will that has fed interventions such as the New Soums project and the Ger area development has to be fed to promote a large scale improvement of sanitation facilities. In fact the impact of actors working in the sector of sanitation facilities at household level has been very limited up to now and the engagement of different levels of the Government is necessary to ensure a systematic improvement of sanitation facilities. **Strong advocacy mechanisms** should be set up by the WaSH actors in Mongolia to engage the government in taking action and consider sanitation a crucial issue for the development of the country as a whole.

Integration of the sector and strategic planning

The current perceived **dichotomy** between interventions aiming at sanitation facilities provided as low tech solutions and through provision of infrastructures expansion/provision has to come to an end. The **long term infrastructures provision goal** for all the non-connected sections of urban areas or spontaneous urban area has to be **strategically combined** with **short term achievable sanitation improvement solutions** for those same areas.

The dichotomy existing in terms of **scale of intervention** also has to be solved: household level sanitation improvements strategies have to be strategically **integrated** to public infrastructure provision projects.

Best practice

- The strategic view of the feasibility study of CDIA for Darkhan where a wide intervention on infrastructure improvement goes side by side with onsite sanitation solutions has to be valorized and replicated.

We can't wait! Strategic vision to prioritize the sanitation agenda

The motto chosen for the international celebration of World toilet day in 2014 is relevant for the current historical moment in Mongolia. The launch of several urban development projects as well as the increased interest shown in sanitation has to be encouraged and prioritization has to be given to the **country sanitation agenda.**

Sanitation improvement has to be faced through a **holistic approach**: **specific areal programs on sanitation** should be launched by the central and local governments partnering with the WaSH stakeholders.

Those programs should focus on setting up those **enabling factors** supporting the direct **involvement of the communities.**

Enabling factors such as **sound technical solutions** to be standardized into **sanitation products** launched through **social marketing mechanisms** using **promotional financial tools** are **the base** to create **ownership** and **participation** at **ground level**.

In the framework of a **strategic gradual sanitation improvement** high tech solutions used to set up sound sanitation infrastructures and public utilities have to be backed up **by low tech solutions for affordable onsite temporary sanitation improvements at household level**.

Again, the same mechanism used in the framework of the "clear air project", with a very strong promotion and subsidy tool can be also applied to the improvement of sanitation facilities in the timeframe needed for the infrastructure expansion and the capacity for household to pursuit private connections.

Best practice

- In terms of mechanism of implementation the World Bank Ulaanbaatar Clean Air Project, providing households of Ulaanbaatar Ger area with efficiency combustion stoves through a subsidy mechanism is a good reference with a strong involvement of Municipal government and local authorities at ground level.

- ACF ecosan cycle is a model that is suitable for replication and scale up and is currently the only piloted alternative option to VIP latrines in the Ger area.

Know your customer and customer care

Sanitation marketing has to be fed by baseline information on affordability and willingness to pay as well as social acceptability of the solutions chosen. A thorough study is needed to identify a product that can

be suitable under the technical point of view as well as under the financial point of view and match with the customers' purchase capacity. This is something often forgotten in sanitation. A sound study on willingness to pay and affordability is essential in the framework of a strategy aiming at launching sanitation products for areas not connected to the water and sewerage networks through subsidized mechanisms or favorable financial conditions.

Customer care is also important: the failure or malfunctioning of sanitation projects is often caused by focusing only on the "hardware" component and lack of accompanying "software" measures supporting households in the initial use phase. Valuable resources on the territory as khoroo offices, local NGOs , community based organizations have to be engaged in this capillary work at ground level.

Best practices

- ADB study on willingness to pay for private connections

- ACF monitoring and training mechanism

- All the mechanisms of community participation put in place by the projects mentioned in the report

Local authorities as well as households are crucial actors of the process

While the prioritization of the agenda has to happen at **national scale** with the full involvement of the **Central government, the Municipal/Aimag level governments** in particular for programming and mobilizing funds from international actors, **local authorities should be the main actors in engaging the communities in the improvement of sanitation facilities.** In fact the deep knowledge of the territories and the staff dedicated to mobilization (Ekhseg leaders in Ulaanbaatar i.e.) are a precious resource to implement behavior change campaigns.

Since 2013 as mentioned, local authorities have a financial tool as the local development funds to promote small scale local actions through the involvement of the communities. As first instance **Local communities as well as local authorities** should be made aware of the burden of improper sanitation by the WaSH actors working at ground level. LA and communities should be supported in proposing the **allocation of Local Development Funds** for improvement of the neighborhood sanitation conditions. Promotion of **model roads** and model **neighborhoods** launched by **Local Authorities** can set **best practices and motivate households** to improve their sanitation facilities **and engage and look for those financial tools,** like **loans with favorable interests,** made available for these purposes.

Best practices

- World Vision ADP mechanism as well as Red Cross Branch system can ensure a strong presence of WaSH actors at local level.

7. Matrix of recommendations

Recommendation 1: revision of the legal framework	
ACTION 1.1: Revision and improvement of the sanitation law The legislator has to introduce a clear definition of Human settlement (instead of differentiating between areas not connected to water and sewerage networks and areas served by infrastructures). The gap between areas served and not served by infrastructures will then come to an end. The government actors currently responsible for maintaining infrastructures are responsible for supporting the provision of sanitation services in human settlements.	
VISION:	- Integration of the sector: sanitation and public utilities integrated by law - Households still in charge for the provision of their onsite sanitation, the Aimag/UB Capital government as well as Soum/District authorities are responsible for the sanitation services of their areas: funds have to be allocated and plans done to provide areas not served by water infrastructures (or support citizens) with minimum sanitation and Hygiene services as per standards.
SUPPORTING ACTORS:	International organizations, INGOs, Government agencies working in sanitation
TARGET GROUP:	MCUD, Aimag/Municipal Government, Soum/District Governments, Khoroo authorities
COMPLEXITY:	HIGH - the recent political development, the recent setup of a new government might mine at a short term revision of the legal framework
ACTION 1.2: A Consistent standard on minimum hygiene and environment protection requirements for household sanitation is prepared and enforced; a consistent standard on improved on site sanitation options is developed.	
Sub action 1.2.1:	A working group lead by the Ministry of Health produces a standard on minimum hygiene and environment protection requirements for household sanitation.
Sub action 1.2.2:	A working group lead by the Ministry of Construction and Urban development produces a standard on improved onsite sanitation solutions technically viable and consistent to the Mongolian context.
VISION:	The 2 standards constitute a strong roadmap and communication tool to prioritize the sanitation agenda.
ACTORS:	Ministry of Health, Ministry of Construction and Urban development, Standardization Agency
SUPPORTING ACTORS:	International organizations, INGOs, WaSH actors
COMPLEXITY:	MEDIUM – the process has already started, focus to be given on the quality and vision of the process
ACTION 1.3: Khoroo level authorities have funds allocated to monitor the sanitary situation of their administration areas and to carry out awareness campaign on proper sanitation.	
VISION:	Overcome fragmentation from Legal framework to enforcement
ACTORS:	Legislator, Khoroo authorities
SUPPORTING ACTORS:	International organizations, INGOs, WaSH actors
TARGET GROUP:	Household of urban contexts relying on onsite sanitation
COMPLEXITY:	MEDIUM

Recommendation 2: wash actors soundly coordinate and establish a sanitation coalition to promote solutions for onsite sanitation

ACTION 2.1: WaSH actors in Mongolia establish a coalition for sanitation as a permanent platform for experience sharing on onsite sanitations, identification of lessons learned and best practices.

A capitalization of resources (evidence based studies, awareness rising tools etc…) is carried out. A statement on the state of art of viable technical solutions suitable for the Mongolian context is prepared. The coalition defines themes and topics for national awareness and advocacy campaign on sanitation. In the light of its expertise and lead role in the WaSH cluster, UNICEF is appointed as coordinator of the coalition

VISION:	Maximize the impact of actors working in WaSH through capitalization and vision sharing
ACTORS:	International organizations and INGOs working in WaSH, Government Agencies working on sanitation, Local Mongolian NGOs active in WaSH, Mongolian education institutions (Universities etc…) active in WaSH related activities
COMPLEXITY:	LOW

Recommendation 3: advocate and campaign on sanitation as a mean to improve Mongolian citizens living standards

ACTION 3.1: Advocate at National Government level and UB Municipal Government level on identifying poor sanitation as a direct cause of poverty. Prepare and disseminate evidence based studies on the cost of poor sanitation. Set up consistency advocacy campaigns on poor sanitation as a constraint for the overall country development.

VISION:	Raise political will on sanitation improvement
ACTORS:	International donors, INGOs and WaSH actors sharing their expertise in a coalition for proper sanitation
TARGET GROUP:	National Government (Parliament, MCUD, MOH, MEGD, UB Municipality)
COMPLEXITY:	HIGH - contrasting interests from different government agencies, WaSH stakeholders
ACTION 3.2: Advocate and campaign at household level in human settlements not served by water and sewerage infrastructure on poor access on sanitation as a constraint for living standards improvement	
Sub action 3.2.1:	Wash actors in Mongolia support Local authorities at preparing an effective campaign to motivate households in taking a step for the improvement of their sanitation facilities as a mean to improve their living standards as a whole.
Sub action 3.2.2:	Local authorities deliver an effective long term campaign among their communities promoting the improvement of sanitation conditions
VISION:	Trigger household interest in sanitation improvement
ACTORS:	Wash actors and Local Government and local authorities: Soum level authorities, District authorities, Khoroo authorities.
TARGET GROUP:	Household from Human settlements not connected to water and sewerage infrastructure
SUPPORTING ACTORS:	International donors, INGOs and WaSH actors sharing their expertise in a coalition for proper sanitation
COMPLEXITY:	MEDIUM – Local Authorities are eager to engage in awareness activities but do have limited means

Recommendation 4: launch of national programs on improvement of sanitation in not connected human settlements

ACTION 4.1: The Government draws a country agenda for sanitation: improvement of sanitation conditions in areas not served by water and sewerage infrastructures is integrated in urban development projects. The agenda sets gradual improvements (goals) of sanitation at household level, from improved VIP to more complex systems and potential future connections to the infrastructure for residents of urban areas.

VISION:	Prioritization of the sanitation agenda
ACTORS:	Parliament, MOH, MCUD, MEGD
TARGET GROUP:	Local governments, Households
SUPPORTING ACTORS	International donors, International organizations, INGOs and WaSH actors sharing their expertise in a coalition for proper sanitation
COMPLEXITY:	VERY HIGH – a shift in policy and mindset is required at high political level regarding the concept of approaching the sanitation in not connected areas issue
ACTION 4.2: Adoption from local governments of the national sanitation agenda and launch of local programs on sanitation improvement linked to the current localized urban development projects.	
Sub action 4.2.1:	Sanitations products are developed and standardized at national level with the involvement of WaSH actors, MCUD, Construction Development Center and made available at local level
Sub action 4.2.2:	Sanitation marketing mechanisms are identified at national and local level. Private sector is engaged for having the selected sanitation products produced and available at national level in local markets.
Sub action 4.2.3:	Financial tools are identified to subsidize households in purchasing sanitation products. The Government engages with international donors and identifies financial tools such as tax deduction on purchase of sanitation products, loans at favorable low interests, agreements with health insurance companies to partially refund sanitation improvement expenses etc….
Sub action 4.2.4:	INGOS and other WaSH actors working on community mobilization train and support Local governments in engaging household in taking part to the sanitation programs
Sub action 4.2.5:	The sanitation coalition collaborates with different government levels to set up on the job M&E mechanisms to be adopted at and consequent readjustment measures, when needed, for the national sanitation program components
VISION:	To provide households with factors enabling them to undertake the improvement of their sanitation situation
ACTORS:	National Government, international Donors, Aimag/UB Municipality, local authorities, Wash Actors/sanitation coalition members, private sector, Financial Institutions
Target groups:	Households and residing communities of not connected areas
COMPLEXITY:	VERY HIGH – in order to ensure a holistic approach to the sanitation topic several aspects have to be taken in consideration and all the actors have to work in synergy

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10 ANNEX: Matrix of best practices and lesson learned

	Agency	typology	project	timeframe	objects	area	impact	constraints	lesson learned	best practice	social sustainability	financial sustainability	technical viability	institutional arrangement
1	ACF	onsite	Ger area wash services	2008-ongoing	set up of onsite sanitation options, selection of 2 ecosan models, set up of an ecosan cycle inlcuding a service for collecting feces and processing them in a centralized compost plant. Subsidized delivery of latrines	Bayanzurk, Songino Khairkhan UB -	370 ecosan toilet built	legal framework barriers	legal framework assessment as part of a feasibility study- strong financial sustainability to be achieved to make possible the full sanitation system (ecosan cycle)	comprehensive sanitation system piloted and consolidated, good integration of software and hardware activities, attempt to launch a sanitation product for the ger area	strong nitial difficulty in acceptance and use overcome with strong training activities	60% subsidy - service provison self sustainable	strong - integrated system	weak
2	RED CROSS	onsite	N/A	2004-2014	fully subsidized VIP latrine construction and awareness raising/ hygiene promotion campaigns	4 districts in UB, Gobi sum	200 VIP toilets	full y subsidized mechanism	it is necessary to think of strategies to engage HH and ensure ownership of the process	the branch system allows a strong presence at ground level	N/A	fully subsidized	VIP toilet designed by MUST and complying with 2008 Mongolian standard	full compliance with standard
3	Several partners, Project coordinator UFZ Germany	onsite	IWRM MoMo project	2009-2013	12 fully subsidized ecosan toilets built. Set up of subsidized emtying service	Darkhan	12 ecosan toilets	limited scale of the project foa a consistent piloting	The degree of technical complexity has to be consistent to the context - follow up and strategy plan necessary to scale a research project	comprehensive sanitation system piloted with a university research approach	even if at small scale good appreciation from LA and HH	fully subsidized: latrine and service provision	not fully integrated	N/A
4	World Vision	onsite	N/A	ongoing	subsidized VIP latrine construction and awareness raising/ hygiene promotion campaigns	selected ADPs areas nationwide	improvement of 850 sanitation facilities in 2013	N/A	N/A	The ADP system allows a strong presence at ground level, involvement of the community during the latrine construction	involvement of the communities to ensure ownership	full subsidy of the material	conventional VIP	N/A
5	GIZ	onsite	Integrated Urban Development Construction Sector and TVET Promotion Program	2006-2008	ecosan toilets piloted and onsite compost production	UB	40 UDT latrines built	It is not possible to close the sanitation loop at household level	It is necessary to focus on on the sanitation loop as a whole not only on the sanitation facility	piloting of a potential sanitation solution. Dehydration process is very suitable to Mongolian weather conditions	difficulty in acceptance	N/A	not fully technical viability under mongolian weather solutions	N/A
6	WB/USIP	decentralized infrastruture provision	USIP2	2006-2011	private water connection and small scale waste water system for 96 HH and 6 public institutions	UB - Dambardaja area	96 HH and 8 institutions	the system is only partially utilized and faces technical problems	thorough assessement studies on the area selection are essential, as well as developing mechanisms of ownership and engagement at HH level, technically accurate studies supported by consistent information are necessary for the achievement of the project	first attempt in Mongolia to work on a small scale wastewater system as alternative to infrastructure expansion	limited HH engagement	very high investement cost	technically not viable	In the framework of UB municipalities activities aiming at implementing UB masterplan

	Agency	typology	project	timeframe	objects	area	impact	constraints	lesson learned	best practice	social sustainability	financial sustainability	technical viability	institutional arrangement
7	MCUD	infrastructure provision	New Soum Project	2014-2017	infrastructure provision in soum centers, water connection and sewerage systems for public building, possibility for HH and private sector to get connections	national scale program	16 soums to be completed by end of 2014	N/A	N/A	potential gradual development	project is said to involve HH in environmental conditions improvement. HH are not directly benefitting of the infrastructure expansion	N/A	piloting of small scale water treatment for soum centers	in the framework of "New Development midterm program"
8	ADB	infrastructure provision	ger area redevelopment project	2013-2017 first phase	creation of 6 infrastructure Hubs in the ger area for public building	6 subcenters in UB	N/A	N/A	N/A	potential gradual development for HH, possibility to overlap different urban development models	N/A	in the framewok of its activities Study conducted on willingness to pay for private connections	infrastructure expansion in spontaneous urban centres	can interface with different urban design models
9	ADB	infrastructure provision	urban development sector project	2013-2017	infrastructure provision for 8 sums	8 soums	N/A	N/A	N/A	financial tools under development in the framework of the project to support HH connections. Potential gradual development for HH plots	N/A	financial tools to support HH in improving their Khashas	N/A	in the framework of "New Development midterm program"
10	CDIA	technical assistance	Water Supply and Sanitation Infrastructure Improvement Project (WSSIIP) for the City of Darkhan	2014 -ongoing	technical assistance to Darkhan municipality to provide them with an integrated water and sewearge system	Darkhan city	N/A	N/A	N/A	Integration of infrastructure provision with onsite sanitation solutions	N/A	N/A	N/A	good ownership from local governement

	Agency	typology	project	timeframe	objects	area	impact	constraints	lesson learned	best practice	social sustainability	financial sustainability	technical viability	institutional arrangement
11	MUBC	infrastructure expansion	Ger area development	2010-2030	Development of the Ger area District of Ulaanbaatar through private houses or high rise building development	24 ares in UB ger District identified	N/A	Slow relocation process and acquisition of private land	participatory decision making process and participatory design are essential for smooth implementation - good communictaion between different government levels and between LA and HH are necessary in every phase of the project.	N/A	initial resistances from residing communities have been registered	N/A	N/A	implemention of UB master-plan
12	UNDP	infrastructure provision	rural water and sanitation project	2014 - 2015	infrastructure provision in soum centers, water connection and sewarage systems for public building, possibility for HH and private sector to get connections	8 Soums center in Bulgan, Uvurkhangai, Tuv and Dundgobi Aimags	N/A	N/A	N/A	the project is said to adopt interesting co-investement mechanisms creating ownership at local government level and support partnerships of different levels of governement	N/A	N/A	N/A	Project is said to work on Tripartite agreement established between central government/ aimg/soum level authoritis
13	ADB	onsite	Community-driven development for urban poor in Ger areas	2009-2011	overall improvement of ger areas conditions	Erdenet	150 unsealed VIP toilets built	N/A	N/A	community driven initiative, community involved in the decision making process. Ownership of the process	community ownership	cost of 1 toilet 270.000 MNT - HH pay for the exceeding amount	conventional VIP latrine	N/A
14	WB	N/A	Community-led Infrastructure Development for the Urban Poor in Ulaanbaatar Phase 2	2001-ongoing	overall improvement of ger areas conditions	Ulaanbaatar ger area	community infrastructure among which public toilet	N/A	N/A	subsidized improvement of community infrastructure through active community involvement	community ownership	% subsidy	N/A	collaboration with LA
15	MCUD	infrastructure provision	Pilot new district Project	2013 - 21014	overall urban development of ger areas	Khilchin Town, 30th Khoroo Songino Khairkhan District	10 private connections executed out of 168 HH	technical issues, freezing problems, high electricity cost	currently in Mongolia it is very difficult to find technical and financial viable solutions for connections at HH level	a thorough cost estimation as well as OM cost estimation is necessary to ensure a sound solution	community participation	full subsidy - not affordable for OM costs and initial investement	"softline" technology not fully proved	MCUD project in the framework of UB ger area redevelopment
16	MCUD	infrastructure provision	New Soum Project	2013-2014	overall urban development of ger areas	Tamir and Khutul are in Tsetserleg soum, Arkhangai Aimag	40 households out of 215 connected to the sewearge system built by ADB	technical issues, freezing problems, high electricity cost	currently in Mongolia it is very difficult to find technical and financial viable solutions for connections at HH level	a thorough cost estimation as well as OM cost estimation is necessary to ensure a sound solution	community involvement	High manteinance cost:270.000 mnt every 3 months	"softline" technology not fully proved	MCUD project in the framework of New Development midterm Program
17	CITY TOILET	public service	Cityi Toilet	2011-ongoing	construction of public flush toilets in Ulaanbaatar area	UB - mainly urban centre and areas served by water and sewerage network	11 public toilets built/20 in the pipeline	low financial sustainability	N/A	N/A	public service	High running cost- low revenue: 200 mnt per user	flush toilets connected to the central network	city Toilet is a UB Municipal company