

Resource Oriented Sanitation Services in Adama

Draft Mission Report

(November 25, 2012 – December 2, 2012)



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List of abbreviations and acronyms

ATWSSE	Adama Town Water Supply and Sewerage Enterprise
ATHO	Adama Town Health Office
AU	Adama University
ACA	Adama City Administration
BCSS	Beza Cleaning and Sanitary Service
E.C	Ethiopian Calander
Eth	Ethiopian
ha	hectar
HH	House Hold
MoU	Memorandum of Understanding
No.	Number
SME	Small and Micro Enterprise
WWTP	Waste Water Treatment Plant
WSZZ	Waterschap Zuiderzeeland
WSHA	Waterschap Hunze en Aa's
WSHD	Waterschap Hollandse Delta

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1 Background

1.1 The development of project ROSSA

In the period of 15-24 April 2012, a delegation of the Dutch project team consisting of Henock Belete, Hans Kuipers and Gert de Bruijne conducted an identification mission in the framework of the above mentioned project. One of the products of this mission was a mission report, which proved that the journey had been successful. Many facts regarding the project area and the (sanitation-related) organisations working in it had been discovered and fruitful meetings had taken place with many relevant partners: Adama City Administration (ACA), Adama University (AU), Adama Town Water Supply and Sewerage Enterprise (ATWSSE), Adama Town Health Bureau (ATHB), Adama Micro Finance and three private sanitation organisations already active in Adama: BEZA Cleaning and Sanitary Service (BCSS), Biniam Seyoum Sewage Removal and Nazareth Sanitary Service.

From the April mission on, a project proposal for improved sanitation services in Adama was gradually shaped and after elaborate discussion with Aqua for All and NWB Fund, the project proposal received approval by both institutions after a skype discussion on the 9th of August 2012. The project became known as ‘Resource Oriented Sanitation Services in Adama’, ROSSA.

After a relatively quiet period, on 9 November a Project Start-Up (PSU) was organised by Waterschap Hollandse Delta for all Dutch parties to the project to discuss once more all project goals, results and activities. It was decided that swift action, before the end of 2012, was needed to keep the project going and to effectively include all of the Ethiopian partners in it.

A mission was planned for the period from 25 November to 2 December. The dates were confirmed by the main coordinator and contact person for the Dutch team, Dr. Asefa Abahumna Woldetsadik from Adama University. The activities of the upcoming mission were planned to be in line with the main activities established in the project plan that were slightly revised during the PSU on 9 November (see for more details the project plan and the notes of the PSU meeting).

1.2 Objectives of the mission

For the new mission it was planned that *considerable progress* should be made on the following issues:

- 1) More insight into the sanitation and general living conditions (and the expectations of the inhabitants in this respect) in kebeles 05, 06, 07 and 08 and public places such as bus terminals;
- 2) Establishment of the structure for local management and ownership for improved sanitation services (to which organisation should the responsibility be given);
- 3) Appointment of the resident project manager in Adama;
- 4) Choice of the most suitable and desired sanitation technology(-ies);

- 5) Discussion on responsibilities between Ethiopian and Dutch parties including actions for follow-up. The discussion should be based on the draft MoU between the Ethiopian parties and on the NWB Fund/Aqua for All project plan.

In the next chapters of this report, all of the objectives and the extent to which they have been fulfilled will be taken into account.

1.3 Structure of the report

This report contains 5 chapters and several annexes. In chapter 2, the current sanitation conditions, opportunities and limiting factors in kebeles 05, 06, 07 and 08 that were revealed during the mission are reported. The chapter includes a rough assessment of possible and likely impossible sanitation technology options for these areas. In chapter 3, details of the draft MoU that has been developed and thoroughly discussed with our partners in Adama are given. The progress made in the search for a resident project manager is reviewed in chapter 4. Finally, chapter 5 provides a summary of the visits to the WWTP at the campus of Adama University, the composting site of Beza and the liquid and solid waste disposal sites.

2 Kebele 05, 06, 07 and 08

2.1 General

There are 14 Kebeles ((neighbourhoods, sub parts of a city or town) in the city of Adama. All kebeles have offices. The Kebele offices are the lowest governmental administration system in Ethiopia. Kebeles are accountable to the city Municipality. In Adama, Kebeles are divided in zones of 20 households, which in turn are divided in groups of 5 households. In each Kebele there is a cabinet of 5 members assigned by the government (or municipality).

It is the Kebele who makes a contract with the micro-enterprise via a tendering procedure. The municipality is not needed for this, although they can finance the Kebele. As such the municipality is needed for financial support. The Kebeles do what they want to do and ask for this support if needed.

About 5 years ago there was a transformation from centralized to decentralized governments. Kebeles got the right to mobilize people, collect money and decide on land use. Furthermore, the surveyors¹ moved from Municipality level to Kebele level. Regulation on this can be found in the internet.

During the mission, visits to the kebeles and discussion with the Kebele chair persons, except for kebele 05, took place. Mobilizing the community and giving awareness trainings on several activities and programmes are some of the responsibilities of the kebele's. The awareness programmes are mainly executed with close cooperation with Adama Town Health Office (ATHO). Health professionals are assigned to each kebele by ATHO. The number of health professionals are assigned depends on the population size of the Kebeles. Currently the ATHO together with the Kebeles are working on 16 awareness packages including sanitation and hygiene. Once every week, there is a community campaign for collection of solid waste in kebeles 06, 07 and 08.

The salient features and results of preliminary sanitation assessment mainly focusing on user interface/toilet section of the sanitation chain are presented in Table 2-1 and 2-2 respectively. In addition, year plans for the above mentioned kebeles and technology options for the various parts of the areas are presented in this chapter.

2.2 Salient Features

Table 2-1 presents the salient features of Kebeles 05, 06, 07 and 08. The information was gathered from field visits, interviews with inhabitants and conversation with Kebele chair persons were used

¹ This resulted in confusion as the Kebele managers referred to the surveyors as engineers. However, the actual engineers (designers etc) are still at municipal level.

Parametre	Measured in	Kebele			
		05	06	07	08
Area coverage	ha	494.87	30.68	49.72	51.04
Popollation	No.	21813	8038	13259	12519
No of House Holds	No.	4544	1675	2762	2608
Active SME for collection of Solid Waste	No.		1	2	2
HH payment to SMEs	Birr/month/HH	10			
Daily production of solid waste	No. Trucks/day (volume of 1 truck is ??)				10
No of health professional working with kebele	No.				5
NGOs supporting kebeles		Bole Baptist			
Unique features		Scattered, partly flood prone	Owens meeting hall which can serve 1000 people, high percentage of low income people		Market Place, Bus station, constructed UDDT (not functioning)

2.3 Year Plans

During the mission Kebele chair persons were invited to present their yearly plans. The reason for this is to find a way to link the ROSSA plans to those of the Kebeles. Except the chair person of kebele 05, who was absent, the others listed down their year plans. Hence, the year plans for Kebele 05 are not known.

2005 (EC) Sanitation plan of Kebele 06

- Construction of 10 shared toilets: The total cost of the toilets are expected to be 250000 Eth Birr (roughly €10.362)
- Look for financial sources for construction of the above 10 shared toilets. The community will be involved in raising the funds. This mainly goes via public collection of money from businesses and rich people
- Support and cooperate the execution of awareness programmes on 16 packages which are performed by health professional of ATHO.

2005 (EC) Sanitation plan of Kebele 07

- Construction of 12 shared toilets: The cost of a toilet is expected to be 25000 Eth Birr (roughly €1036)
- Look for financial sources for construction of the above 12 shared toilets. The community will be involved in raising the funds. This mainly goes via public collection of money from businesses and rich people.
- Solid waste collection/cleaning campaign once in each week for three hours. In this 1,237 residents participate voluntarily for 3 hours to assist with removing

solid waste from the kebele. This accounts to a saving of 12,988,5 birr as no wages are paid. The plan is to do this 48 times per year, resulting in an annual investment of 623,448 birr/year (25.844) that the municipality does not need to pay. It's inkind contribution is estimated to be 623488 Eth Birr per year.

- Support and cooperate the execution of awareness programmes on 16 packages which are done by health professional of ATHO.

2005 (EC) Sanitation plan of Kebele 08

- Construction of 21 toilets (10 shared, 5 public and 6 MobiSan at market place toilets). The cost of a toilet is expected to be 25000 Eth Birr (roughly €1036).
- Look for financial sources for construction of the above 21 shared toilets. The community will be involved in raising the funds. This mainly goes via public collection of money from businesses and rich people
- Solid waste collection/cleaning campaign once in each week for three hours. The plan is to involve 2439 residents per week.
- Support and cooperate the execution of awareness programmes on 16 packages which are performed by health professional of ATHO for 2655 households. 5 health professionals are working in this Kebele.
- Develop 2 more micro-enterprises as the current 2 are not enough to clean all wastes. Here 10 people work in each micro-enterprise

In addition to the presentation by Kebele chair persons, a representative from the Municipality gave a presentation about their yearly plans. These are:

- Collection of 600,000 m³ solid waste from the city of Adama. Collection is done by SMEs. From previous experiences, the efficiency ranges from 50 till 60%
- Plan to construct transfer stations for solid waste
- Construction of lagoons
- Segregation of organic and inorganic parts of solid waste
- Construction of four public toilets.



2.4 Assessment/Survey

As mentioned above field visits to the kebeles have been taken place. A preliminary sanitation assessment/survey mainly focusing on user interface/toilet section has been performed in a participatory way where the Kebele chair persons as well as a considerable number of Kebele

residents have given feedback on various aspects of sanitation. The results of both are summarised in the Table 2-2.

A start was made with a table to determine the activities of the project and what phase in the sanitation chain they relate to. This will show the (close) interaction between the activities. In this table we can also fill in the information that we already have, or that is still lacking in order to properly conduct the activity. This information is grouped per phase of the sanitation chain. This structure will also result in boundary conditions for the narrowing down of suitable technologies.

Limiting factors	General comments	Systems not possible	Kebele (toilets programme)			
			5	6	7	8
Watersupply	jerry cans/watertrucks/piped/ind tap: 25-75 l/hh; no boreholes	flush toilets, cistem toilet, sewer lines	Ind. taps, piped	Ind. taps, piped/jerry cans	Ind. taps, piped/jerry cans	Ind. taps, piped/jerry cans
Flood prone	some areas #5 & 8, needs check	leveled pits, sewer lines, septic tanks,	considerable areas	no	no	some areas
Available space for toilet construction	limited, along the main roads space available, inner areas not much space	Depends on specific locations of the kebeles	limited to spacy	limited some time no	limited some time no	limited some time no
Ground water table	>100m, Needs to be checked!!!	No issue	>100	>100	>100	>100
Soil type	In generally alluvial deposits and weathered volcanic rocky soils, assumed permeable	Not issue	Permeable	Permeable	Permeable	Permeable
Accessibility for collection & transport	Main road network is good accesible, inside the roadnetwork is inaccesible, small alleys	All big tanks which accumulate (waste)water at high density areas like aqua privy's, septic tanks etc.	accessible	main network accessible, inside inaccessible for trucks	main network accessible, inside inaccessible for trucks	main network accessible, inside inaccessible for trucks
Energy availability	Electricity is present. Fuel and energy price?	No issue				
Anal Cleansing	Muslims use water, rest water/paper; size of groups unknown; needs survey	No issue, except if uddt if anal cleansing with water				
Social Acceptance	Present toilets observed: open defecation (vestal) open pits/latrines, shared toilets, pour flush, flush ; fruit from trees fertised with human fertiliser not eaten; some awareness about reuse; open defecation is not accepted	Open defication, ecosan?	open def not accepted, the rest possible; ecosan maybe not; flush toilets	open def not accepted, the rest possible; ecosan maybe not	open def not accepted, the rest possible; ecosan maybe not	open def not accepted, the rest possible; ecosan maybe not

Limiting factors	General comments	Systems not possible	Kebele (toilets programme)			
			5	6	7	8
Affordability	In all areas low (sm??); needs verification	flush toilets, cistem toilet, sewage, imported parts/technologies	low	low	low	low
Local available technologies	Open pits, latrines, VIPs, pour flush (bus station), flush; open drains	Open defecation with plastic bag	open def not accepted, the rest possible; ecosan maybe not; flush toilets	open def not accepted, the rest possible; ecosan maybe not	open def not accepted, the rest possible; ecosan maybe not	open def not accepted, the rest possible; ecosan maybe not
Institutional capacity	Kebele: surveyers, no extended knowledge, manpower available, possibility to mobilise; LA: needs assessment, but no visible experience with sewer technology	Sewage systems				
Reuse possibility	fruit from trees fertised with human fertiliser not eaten; some awareness about reuse	flush toilets, cistem toilet, sewer lines				
Place for neighbourhood treatment	limited, along the main roads space available, inner areas not much space	Centralised WWTP; this really needs to be research. Is there space and knowledge about centralised wwtp? Cost-benefit				
Operation and maintainance	limited skills and resources	Imported/expensive technologies/materials				

2.5 Sanitation Technology Options

In order to assess possible sanitation technologies in Kebeles 05, 06, 07 and 08, field visits and interviews with the communities and Kebele managers have been take place. In addition, during the mission there was intensive discussion by the Dutch consortium on various sanitation technologies which could be implemented in different parts of those kebeles. The Kebeles bear resemblance to slums and are densely populated. Kebele 08, furthermore, is striking because of its bus station (which is the major hub in the public transport of the city) and its large commercial area/numerous markets that capture almost the entire Kebele Hence the sanitation technology options are classified into three categories: households, market places and bus station. In Kebele 07, finally, some opportunities for sanitary improvements at a nursery and primary school with approximately 500 children were identified. These findings have not been incorporated yet.

In all of the areas simplified sewerage systems are not recommended due to low water consumption (low waste water production for transportation), limited space availability, possible high cost and challenges to cover payments, and low resource recovery possibilities.

It was also decided at first not to focus on which technologies are suitable for Adama, but rather on which technologies are not suitable and this way can be ruled out.

2.5.1 For Households

The following user interface, collection and storage technologies and reuse and disposal types are possible depending on the preference of households, social acceptance, status, safety etc. The options presented can be applied on either individual or shared levels. Whenever there is a possibility, individual option is preferred. The sanitation technology options are:

1 Possible User interface Technologies:

- Dry Toilet
- Urine Diversion Dry Toilet
- Pour Flush Toilet

2 Possible Collection and Storage/treatment Technologies:

- Single Pit latrines
- Double Dehydration Vaults
- Ventilated Improved Pit latrine (VIP)
- Urine Storage tank
- Septic tank (small collection tanks)

3 Possible Conveyance Technologies:

- Human powered emptying and transport
- Motorized and Emptying and transport (E.g. vacuum trucks)
- Transfer stations

4 Possible Reuse and Disposal:

- Co-Composting (E.g. BEZA composting site)
- Application of urine

2.5.2 For Bus Station

In this section the toilet (user interface, collection and storage) means a public toilet.

1 Possible User interface Technologies:

- Dry Toilet
- Urine Diversion Dry Toilet
- Pour Flush Toilet
- Waterless/lowflush Urinals

2 Possible Collection and Storage/treatment Technologies:

- Anaerobic digester
- Double Dehydration Vaults
- Ventilated Improved Pit latrine (VIP)
- Urine Storage tanks
- Aqua Privy
- Septic tank

3 Possible Conveyance Technologies:

- Human powered emptying and transport
- Motorized and Emptying and transport (E.g. vacuum trucks)
- Transfer stations

4 Possible Reuse and Disposal:

- Application of Biogas for cooking and lighting.
- Co-Composting (E.g. BEZA composting site)
- Application of urine

2.5.3 For Market Place

In this section the toilet (user interface, collection and storage) means a public toilet. The sanitation system for this section can be the same as for the bus station except that in the market place collection of organic waste is attractive either for higher biogas or compost product.

2.6 Follow Up

For the follow up of the project, assignment is given to kebele chair persons mainly focused on the assessment and survey programme of the project. The assignments include:

- Explain the project to the staff the project content that we have discussed during the 5 days mission.
- Survey of assets (people, households with and without toilet facilities, markets, visitors)
- Share information about Kebele finances or financial overview of their organizations
- Kebele's engineers' toilet designs and prices
- Income-expenditure for households including annual health cost
- Market Scan Demand: Scan the construction market and number of households that are in need of a toilet.

The Kebele chair persons promised to send their findings within one month period.

3 Concept MoU

In order to collaborate and jointly work on the objectives of the ROSSA project, a Memorandum of Understanding (MoU) is drafted during the mission. The MoU is also partially revised during the mission with the representative of the Adama City Administration (ACA), representative of Adama University (AU), representative of Adama Health Office and Kebele Chair Persons. The details of the Draft MoU can be found in Annex 1 of this report.

The draft MoU is revised with the Kebele chair persons, representative from Municipality and the vice mayor. Concerning the construction of toilets it now became clear in a lively discussion that there are no (technical) engineers at Kebele level. All construction works are designed and supervised by the municipalities. This also happened last year when Kebele's asked professionals from the municipality to help them with construction works.

At the moment the Municipality is responsible for the quality of the construction works. As such she supervises the construction works. However, the construction works are paid for by the Kebele. If the quality of the construction is poor, the kebele will tell the municipality who in turn has to take action.

There also was a lively discussion about where the responsibilities and tasks of the municipality and Kebele's lie. It thus seemed that this is not yet clear for all parties. Furthermore it became clear that the institutional organization, responsibilities and decision making powers could be organized more effectively. However, this will result in power shifts as Kebele's can become more independent.² The kebele's might want this (more decentralization and power for them), but it is likely that the municipality will oppose this.

In order to manage the program and ensure local ownership all signatories of the MoU agree to form a steering committee and a project team.

3.1 Steering Committee

During the meeting with the Mayor of ACA, it is proposed to include a representative from the following organisations in the Steering Committee:

- The Vice Mayor of Adama City Administration (Chair Person)
- The manager of Adama City Municipality,
- A representative of Adama City Municipality: Sanitation and Greenery sub owner
- A representative of Adama University
- A representative of Adama Town Health Bureau
- A representative of Adama Town Water Supply and Sewerage Enterprise
- A representative of Adama City Environmental Protection Office
- The resident project manager (Secretary)

² This can be elaborated upon by the project team.

- A representative of the kebele chair person

The mayor appointed the vice mayor as chair person of the Steering Committee. The vice mayor agreed to this and stated that the involvement of the project beneficiaries is crucial, that water and sanitation is crucial and that he, with his administration, will assist the project.

The steering committee's main aim is to provide guidance and advice to the project team members. The Steering committee provides advice about (annual) plans to the final responsible (Waterschap Hollandse Delta).

3.2 Letter of commitment

The mayor has also requested Dr. Asefa to draft a letter of commitment for him, stating that these representatives are appointed into the Project steering committee by the mayor. The Mayor can sign then it to make it official.

Dr. Asefa had started drafting a letter for the mayor. This was letter revised by the Dutch consortium. The Draft letter of commitment is presented in Annex 3 part of this report.

3.3 Project Team

The members of the Project team in Adama will be appointed in the later stages in consultation with the steering committee. The aim of this team is for planning and implementing of sanitation activities of the ROSSA Project.

4 Resident Project Manager Position

From the start of project ROSSA on it was agreed to appoint a resident project manager in Adama who will be responsible for overall management and actual implementation of the ROSSA project. The resident project manager should be also the secretary of the project steering committee and the first contact person for the Dutch project manager. The resident project manager should have an office in the city and should be accountable to the project, and not to the municipality. The tasks and responsibilities of the resident project manager is drafted and presented in the Annex 2 of this report.

It is believed that this person should be a person who can push, convince, compromise and stimulate different people. In addition, he/she should be able to cope with, and make use of, political motives of people. He should be able to manage power shifts and hidden agendas as well as work with elder and more powerful people.

For this position three persons; one works at Ministry of Water and Energy, the second works at Rift Valley College and the third person is a freelancer, were interviewed by the Dutch team. After the interviews it was decided that two of the three candidates are not suitable for the position while the other candidate divides the Dutch team in to two parts. Andre and Henock believed that this person is capable to do the job, in the contrary Stan, Suzanne and Tiemen have doubts if this person has the skills and authority to convince higher or powerful politicians. Hence, it is decided to interview more persons for this position.

5 Visit to Waste Disposal and Processing Sites

5.1 BEZA composting site

Beza Cleaning and Sanitary Service (BCSS) is a private micro small enterprise owned by four people equally shared. In this enterprise 70 people are employed in the business, covering composting, solid waste collection and liquid waste disposal. BCSS is engaged in activities such as: door-to-door solid waste collection, house hold pit sludge emptying by vacuum trucks, emptying septic sludge by vacuum trucks, transportation and disposal of solid and liquid waste, street sweeping, greening and composting.

Beza Cleaning and Sanitary Service took 15 awards. among them are the Green Award from the Federal government given by the president of Ethiopia, Ato Girma Welde Giorgis and the Oromia Regional State Award.

BCSS owns 2 trucks with a volumes of 10m³ each for solid waste transportation and disposal purposes and one vacuum truck with a volume of 6.6m³for liquid waste. BEZA charges 500 birr per truck when emptying pits/septic tanks, which is cheaper than the 700-800 birr that the other companies charge. The collection of liquid waste is done directly for the customer. One of the vacuum trucks from BEZA is now used to collect and transport clean water for domestic use.

BEEZA has a service contract with the municipality for transporting and disposing solid waste. When local waste collectors have collected their solid waste they call the municipality, who in turn calls BEZA to collect and dispose the solid waste. The municipality pays BEZA per m³ of solid waste transported.³

Based up on the discussion with BEZA, the investment needed for one vacuum truck is generally 400,000-700,000 Birr. Also, in order to set up a composting plant high investments are needed and the nutrient content of the compost is not known. Also, this is not checked. US experts have indicated that an application load of 15,000-20,000 kg/ha is suitable (150-200 bag of 100 kg [local measurement: quintiles?]). In high temperature regions this should be 2,500-10,000 kg/ha (25-100 bags). This will be enough nutrients to last for 5-7 years, the owner from BEZA and municipality was told. The national government in Addis Ababa should have information on the application loads and regulations.

The composting process at BEEZA is as follows: it takes 21 days to produce compost. The heaps are turned over and water is applied during the process. During this process the non-organic solid wastes are removed from the piles.

In the visit to the composting site of BEEZA it is seen that this was not much more that a corrugated iron-fenced yard with a few concrete slabs. The roof covering the slabs was blown away by the wind; the sheets were recollected and lay stored in a shed. The composting process

³ With this information and the average amount of solid waste collected per HH the cost of collecting, transporting and disposing 1m³ of solid waste from the Kebele can be calculated.

had been stopped as there was no roof and no market yet for the product. Also, the fence had partly fallen down as termites had eaten the blue gum poles and high wind force destroys the fence. This fence is necessary as the composting process produces unpleasant smells for the people living down-wind of the property.

The piles that were still on the slabs were full of large inorganic solid waste pieces (glass, shoes, etc). Furthermore, the compost in bags was quite dry; Stan took a sample for analysis in the Netherlands.



5.2 Adama University WWTP

The wastewater treatment plant at Adama University is being constructed by GIZ (www.giz.de/ucbp), who also partially fund it (and other buildings at the university).

The wastewater from the university (calculated to be from 25,000 PE), will flow via a sand trap to the pumphouse. From here it is pumped into two 15 m high Imhoff tanks (under construction) (parallel) for primary sedimentation and biogas production. The biogas is recovered for cooking purposes. The wastewater next flows by gravity from the Imhoff tanks to two aeration tanks (not yet constructed). The sludge will be recirculated to the Imhoff tank for further digestion. From the aeration tank the water flows to two Dortmund tanks, which serve as the final settler. From here the wastewater flows to the ditch outside the university where it is discharged into the environment. Sludge from the Dortmund tank will flow back to the Imhoff tank.

The sludge from the Imhoff tanks is pumped to 14 drying beds for drying on geo-membranes. After this it can be co-composted with reeds. The liquid collected from the sludge drying beds is pumped back to the influent of the wastewater treatment plant for treatment. Two large emergency retention tanks ($60 \times 120 \times 3 = 2160 \text{m}^3$ each) are being constructed to provide a buffer if influent volumes are too much (due to surface runoff after rains) or if pumps etc don't work/need maintenance.

The system was said to be designed by MH engineering P.L.C. from Addis and De Cocks consultants from Germany.

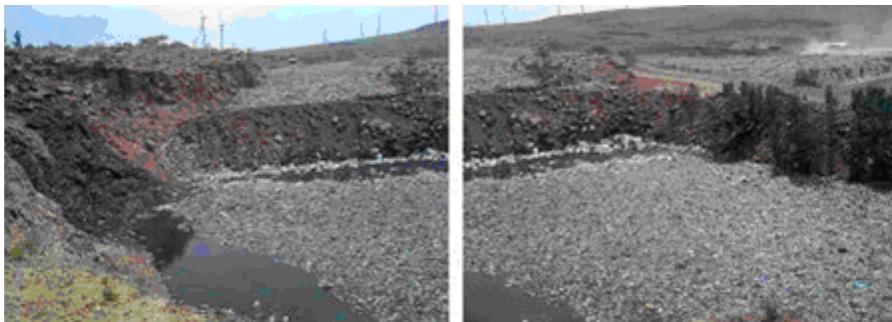
Some potential problems identified include:

- The recirculation of aerated sludge from the aeration and Dortmund tanks to the Imhoff tanks could result in poor functioning of the Imhoff tanks as this is an anaerobic system. It is possible, depending on the volumes of sludge recirculated.
- The current set-up of the system is focused on removal of organic pollution. Hence N concentrations will most likely be too high (compared to which legislation?) in the effluent.
- P can be removed chemically, although this was not mentioned in the introduction of Solomon.
- The liquid from the drying beds is recirculated. As this will contain high levels of N (and P?), this is brought back into the system which in the first place is not designed for N-removal. Hence N concentrations can build up in the system.
- There are a few people who pay for the solid waste collection services. These people get served; others simply dump their wastes on the streets. Hence the polluter does not pay.
- The users of existing toilets clean and maintain the toilets themselves.

5.3 Solid and Liquid (Faecal Sludge) disposal site

Both liquid and solid waste disposal sites are located 9.2 km far from the center of the city of Adama. The sludge disposal site is downwind of the solid waste disposal site, resulting in a pollution of plastic bags. The vacuum trucks empty their tanks in a designated area next to the road. From there the sludge flows (or sprays, depending on emptying practice) downhill into the sludge collection pond. Here the liquid evaporates or infiltrates.

Very poorly constructed sludge disposal site. Apparently designed and constructed by a dutch company. The name is unknown. Liquid leaks from the bottom and flows away via de drain next to the road. Lots of plastic bags flying around. (disposal site upwind of sludge disposal pond).





Annexure

Annex 1: Concept MoU

Memorandum of Understanding between Ethiopian Parties

Resource Oriented Sanitation Services for Adama City (ROSSA)

Draft

Purpose of the Memorandum of Understanding

The undersigned agree to collaborate and jointly work on the objectives of the ROSSA project. As such they agree to:

Establish a sustainable sanitation system by mobilizing, strengthening and establishing private enterprises and generating income from sanitation services and products. This is done by cooperation of directly and indirectly involving stakeholders.

- Provision of improved toilets, thereby increasing the sanitation coverage of Adama
- Increasing awareness on the importance of sanitation and hygiene
- Provision of hygienic, ecological and economical collection and treatment of human excreta
- Generation of income by reusing certified human excreta products
- Accelerating and establishing enterprise based sanitation services

To manage the program and ensure local ownership all signatories of this memorandum agree to form a steering committee and a program unit.

a) The Steering Committee:

The steering committee's main aim is to provide guidance and advice to the project team members. The Steering committee provides advice about (annual) plans to the final responsible (Waterschap Hollandse Delta).

- The steering committee ensures that the program is executed according to the policies of Ethiopia,
- The Steering committee checks the quality
- The steering committee provides content advise to the resident project manager
- The steering committee meets 4 times a year and will discuss and report on the following:
 - Progress of the ROSSA project
 - Check whether the projects is implemented according the policy outlines of Ethiopia
 - Provides wherever necessary technical, contextual and managerial advise to the resident project manager
- The Vice Mayor is assigned as the chairman of the Steering Committee
- The resident program manager is assigned as Steering Committee secretary. He/She should not have any voting or advisory power
- In case of mis-understanding the steering committee will take up the role as a mediator

Members (proposed)

Note wonder whether we should include names: if we include names than every time a members is replaced e need to redo the whole thing

- The Vice Mayor of Adama City Administration (Chair Person)
- The manager of Adama City Municipality,

- A representative of Adama City Municipality: Sanitation and Greenery sub owner
- A representative of Adama University
- A representative of Adama Town Health Bureau
- A representative of Adama Town Water Supply and Sewerage Enterprise
- A representative of Adama City Environmental Protection Office
- The resident project manager (Secretary)
- A representative of the kebele chair person

Project Team

Planning and implementing body of sanitation activities of the ROSSA Project

- Prepare a comprehensive and applicable sanitation year plan that goes hand to hand with the WASH implementation framework of the country by cooperating with and involving kebele chair persons
- Implement the Annual Plans once approved, which might contain:
 - Identifying sanitation problems and plan activities that can be implemented
 - Mapping the existing sanitation environment
 - Making assessment survey on business, finance, marketing etc
 - Organising/facilitating training, managing, building capacity and mobilizing of private sanitation small micro enterprises (SMEs)
 - Select appropriate sanitation technologies in cooperation with kebele chair persons, other stakeholders and the Dutch support experts.
 - Organising and overseeing the task groups that perform the individual (sub-) activities to ensure that project objectives are met.
 - Assisting Kebele's with designing toilets, preparing construction contract and tendering documents
 - Establishing and implementing sludge/wastewater collection and transport mechanisms together with private enterprises
 - Implementing reuse of sanitation products with private enterprises
 - Facilitating financing mechanism of the sanitation service provision
- Administer, manage and report the finance system of the project
- Keep in close contact to the local participating organisations
- Keep in close contact to the Dutch program partners and in particular to the Dutch Project Manager
- Establish and maintain the project monitoring system

The members of the Program Unit will be appointed by the program in consultation with the steering committee

Municipality of Adama

Monitoring, supervision, regulatory framework and licensing

- arrange enabling regulatory framework
- arrange land areas for construction of new toilets
- licensing private micro and small enterprises
- design/regulation of design of sanitary facilities
- supervise the construction of toilets
- report to Adama city administration and to kebeles
- make contractual agreement with the private micro and small enterprises
- monitoring the performance of private micro and small enterprises

- create a financial-favourable environment
 - assist with loans (deposit money in banks, for instance)
 - Pay kebele's and micro and small enterprises for their services
 - Support kebeles to achieve financial needs
- facilitate discussion with stakeholders if there is necessary regulatory change, necessary infrastructure: roads, electricity, water, telecom

Adama Town Health Office

Promotion of Hygiene and public health practice of citizens and institutions of Adama

- Collect and analyse health, environment and sanitary data at Kebele and city level
- Allocate health extension professionals to each kebele for the ROSSA Project
- Mobilization and training health, environment and social issues to the residents of the kebele's
- Provide advice to the resident project manager

Adama University

Training, education and research on sustainable sanitation management

- Conduct and supervise assessments on finance, business development, public administration, environmental protection, appropriate sanitation technologies, waste-to-resource economics, logistics and urban agriculture (UA)
- Conduct training in the above
- Prepare training manuals and materials
- Provide advice to the resident project manager

Adama Town Water Supply and Sewerage Enterprise

Operation and maintenance of sewerage systems and wastewater treatment facilities whenever they exist

- Provision of water supply at sanitation facilities where needed. E.g.at the public toilets with shower and washing facilities
- Operation and maintenance of sewerage network and treatment when ever those facilities do exist
- Assistance with sludge treatment/disposal practices
- Provide advice to the resident project manager

Private Sanitation Enterprises

Giving proper and efficient sanitation services to the citizens of Adama

- Accountable to Adama City Municipality/kebele admin
- Construction of sanitary facilities
- Door-to-door waste collection
- Waste collection and transportation to treatment/disposal site
- Sanitizing wastes and production of agricultural input products (nutrients, organic matter, water) if needed
- Delivery of resources to farmers

Kebele

Voice the situation in the Kebele's and actively assists with implementing toilet construction

- Accountable to Adama City Municipality and residents of Kebele
- arrange land areas for construction of new toilets
- licensing private sanitation enterprises
- Development of capacity to enable the supervision of toilets
- Development of toilet-implementation plans
- Assist local enterprises to collect, transport and treat wastes
- Mobilize communities for programmes
- Organising financing to construct toilets (loans, subsidy for very poor)
- Development of organisations to operate and maintain the toilets
- Ensure proper functioning of private sanitation enterprises.

Organisation:

The following scheme shows the organizational structure:



Annex 2: Resident Project Manager Tasks and Responsibilities

DRAFT

General:

Resident Project Manager is responsible for overall management of the ROSSA project. The resident project manager will be contracted by and accountable to (to be filled in).

Specific

- Have the total overview on the planning of sanitation and solid waste management (as far as the last subject is included)
- Financial management and mobilizing of local private finance e.g. loans for communities at household level. This is done in cooperation with Oromia Credit and Saving s/c Adama Micro Finance
- Provide quality control of construction, operation and maintenance of the sanitation infrastructures and sustainable aspects (FIETS) of the sanitation management system
- Data management
- Arranging and facilitating training and supervisions for operating sanitation organisations for sanitation products: such as compost product
- Facilitate missions to and from Ethiopia
- Manage the contracts with all public and private service providers throughout the waste system (construction, collection and treatment)
- Reporting progress of the project
- Close cooperation with Dutch Project Manager and spokesman on behalf of the Ethiopian parties (in cooperation with Dr. Asefa Abahumna Woldetsadik)
- Close cooperation with managing partner and all other Ethiopian parties
- Communication and dissemination of project results

Annex 3: Draft Letter of Commitment from Adama Mayor

To: Suzanne Vennix
Project Manager
ROSSA Project
Waterschap Hollandse Delta
Ridderkerk, The Netherlands

Subject: Commitment to project ROSSA in Steering Committee

Dear Madam Vennix,

As communicated to you during our meeting on 27 November 2012, in which you introduced the objectives and activities of the ROSSA project, I hereby delegate Ahmed Yesuf, vice mayor of Adama City Administration as part of the Project Steering Committee. He will act on behalf of the city council, chair the Project Steering Committee and report the progress regularly to me, the Mayor of Adama. This in order to ensure that the Project Activities and results are in full support of Adama's sanitation plans and programmes and in line with the rules and directions of our government that are made public for any kind of humanitarian organisation.

Realising the importance of the ROSSA project for our urban population, I also appoint Mr. Mengistu(Manager of the City Municipality), Mr. Abera(Manager of the Adama Town Health Bureau) or his representative Mr. Lemma Tulu (Urban Health Extension program coordinator), Mr. Mohammed (Head of Adama Sanitation and Greenery Department) and Mr. Yasin Umer (General Manager of the Adama Town Water Supply and SewerageEnterprise) to be part of the same Project Steering Committee. The roles and responsibilities of the Project Steering Committee will be elaborated and agreed upon in the Memorandum of Understanding between the ROSSA Project and relevant local project organisations.

Looking forward to a fruitful cooperation, yours faithfully,

Mr.

Mayor of Adama City.

Annex 4: Meeting Minutes

Day report
26-11-2012

ROSSA Project
1st Mission
Adama, Ethiopia

Journey to Adama

Discussion in car on way to Adama: Stan explains how they setup a viable sanitation programme. By involving both low, middle and high-income groups it can become economically feasible: high-income groups can invest and pay for the sanitation, middle income can pay for the sanitation and invest with a loan from micro-finance organizations, and low-income can be subsidized by the government and income from the other two groups. In case the bank does not want to give a loan, waste arranges that it puts a sum of money in the bank as guarantee for the riskier lenders. This is done with the down payment-50% comes from WASTE (1st year) and 50% from the municipality (2nd year).

Meeting in Dr. Asefa's office

Location: Dr. Asefa's office, Adama University, Adama

Present: Dr. Asefa Abahumna (Adama University-prof and dean); Mr. Tyla Aduyna (ATWSSE-accountant); Mr. Zemenu (BEEZA-manager); Mr.....(ATHB-Head of Health Office); Suzanne Vennix (WSNZ); André Hammenga (WSHA); Henck Belete (WSHD); Stan Maessen (WASTE); Tiemen Nanninga (LeAF).

Discussion about Project Proposal

After a short introduction of those present the project proposal was discussed. Dr. Asefa mentioned that **solid waste is the major problem and that liquid waste is not**. Liquid waste is only a problem at the university and at hotels. It is not relevant in Kebele's. Hence solid waste should be the focal point of the project. Stan explained that sanitation is more complex, and that if this is tackled, **solid waste is almost automatically included/covered** as technologies are similar and the costs are much less. Furthermore, it can't be that there is only a solid waste problem and no liquid waste problem.⁴ The current budget is for the collection, treatment, disposal or reuse of liquid waste.

Sustainability of the project is something that came up often from Dr. Asefa. The project should initiate change that will last beyond the project duration. **Self-help/self-improvement is needed**. Understanding about how to organize and run the services is needed (capacity building). The project also has the potential to create new jobs and to solve the issue of lacking toilets in the Kebele's and the high costs of constructing these. Due to the size of Adama the volumes of liquid and solid waste are thought to be large by Dr. Asefa.⁵ He also expressed **doubts about the budget**, and if it was enough to provide the 500 households with toilets. The idea is to conduct

⁴ Note that due to the use of flying toilets, which is probably categorised under solid waste by the Ethiopian counterparts, sanitation is indeed a/the major problem. Perhaps the term liquid waste should be replaced by sanitation or human waste?

⁵ Note: actual figures were not mentioned. It is a perception.

the project in a few areas and then expand it later to the other areas in Adama. Also, as **Kebele 05** was too large and less densely populated, **Dr. Asefa proposed to leave it out** of the project. Dr. Asefa proposed to divide the four Kebele's into two. Thus eight regions are created where in each an **association of the local inhabitants** can be formed. These can then organize and maintain the toilets and the waste collection programmes. This could, for instance, be organized by the Health office or environmental protection office

Local politics

Since the April 2012 fact finding mission the **Kebele's have been changed**. The number of Kebele's has been reduced from 21 to 14. Kebele's 5, 6, 7 and 8 are still present, although they have increased in size. New maps are available.⁶ Furthermore, the **mayor/vice mayor and probably other civil servants have been replaced** yesterday. Hence the project will need to be reintroduced to the new mayor and he will need to appoint a new representative for the Project Steering Committee. There also seemed to be some **uncertainty about the departments/offices in the municipality**. For instance, the Environmental Protection and Greenery office was first part of the municipality. Dr. Asefa thought that it was no longer part of the municipality but rather an independent office part of the National government. However, later it became clear that it still is part of the Adama municipality. On a side note: The city of Adama has its own parliament (not known if this is the same as the council or not). This it has started on its own initiative and it is the only town in Ethiopia to have one. **Decisions in Adama are made by the mayor and the cabinet**.

The **role of the government of Adama** is to supervise only, although it should be involved closely as it is responsible for setting the rules and regulations concerning sanitation. The Kebele's are responsible for the quality assurance.

Local conditions in Kebele's

The Kebele's are densely populated with mainly (very) poor people and Adama is the fastest growing town in Ethiopia.⁷ According to Dr. Asefa there is not even space for communal pit latrines.⁸ The soils in the areas are mentioned to be 'Rift Valley Soils', which do not hold liquid (ie there is a high infiltration rate-> sandy soils). The flood protection (pits and dykes) built to protect Adama from floods is now used as a dump for wastes.

Each household currently pays 10-15 Birr per month for their solid waste collection.

Public health sector

A lot of initiatives have been undertaken to promote public health awareness. There are currently **96 health extension workers** in Adama, who also promote safe sanitation. Each household is visited by these health extension workers.

Project Steering Committee and Resident Project Manager

⁶ Hard copies were given. Soft copies still need to be arranged.

⁷ Again, no figures were mentioned/given.

⁸ Not according to the masterplan from DHV and the field visit later on in the week.

It is proposed to include a representative from the following organisations in the **Project Steering Committee**: Environmental Protection and Greenery office, the Municipality, the Health Bureau, Adama Town Water Supply and Sewerage Enterprise, Adama University. The **resident project manager** should be the secretary of the project steering committee and the first contact person for the Dutch project manager. An office for the resident project manager should have an office in the city and should be accountable to the project, and not the municipality.

Dr. Asefa has found a potential candidate for the position of Resident Project Manager. His name is Endale Mitiku Dinka, with an MSc in Urban Environmental Technology Management from the WUR in 2011. **Tiemen** will contact the WUR about this as a reference.⁹ Endale wants to setup a local paper recycling business.

Local survey/assessment

It is also an idea to **conduct a local survey** to determine the current situation (aspects included should be people (socio-economic status and capacities [eg income and expenditures, level of education, sickness]), problems and informal service providers). At the moment there probably are **local and informal (solid) waste handling companies**. These should be identified and used in the project and beyond. Furthermore, detailed **maps of the Kebele's** and their new structures need to be made.

Day report 27-11-2012	ROSSA Project 1 st Mission Adama, Ethiopia
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Meeting at Municipality

Location: Mayor's office, Adama municipality, Adama

Present: Mr. Bakar (Mayor); Mr. Usef (or Achmed??), (Vice Mayor); Mr. (member of the council); Dr. Asefa Abahumna (Adama University-prof and dean); Mr. Tyla Aduyna (ATWSSE-accountant); Mr. Zemenu (BEEZA-manager); Suzanne Vennix (WSNZ); André Hammenga (WSHA); Henck Belete (WSHD); Stan Maessen (WASTE); Tiemen Nanninga (LeAF).

Presentation of Project Proposal

After a short introduction of those present the project was introduced to the mayor by Dr. Asefa (he only mentioned Kebele 06, 07 and 08) and Suzanne. This was the second day that Mr. Bakar was mayor and he had heard a little bit about the project from his predecessor. He was given a copy of the proposal. Dr. Asefa asked the mayor to appoint someone from the municipality to represent the mayor at meetings and update him about developments. The mayor replied with two questions: what is your demand, and have stakeholders signed an MoU. The reply to the first was that we seek his support and approval for and of the project (Suzanne) and that he may serve as a bridge to other organisations and help organize, for instance, tax-free import of items (Dr. Asefa). The reply to the second was that the MoU is not yet signed, but that a MoU had been drafted and that this will be updated during the current mission.

⁹ It turned out that he did not complete his MSc at Wageningen.

Appointment of vice mayor as representative

The mayor appointed the vice mayor as chair of the Project Steering Committee. The vice mayor agreed to this and stated that the involvement of the project beneficiaries is crucial, that water and sanitation is crucial and that he, with his administration, will assist the project.

Drafting of Letter of Commitment from Mayor

The mayor gave several recommendations: These were to make the project well organized as the current IDA (???) is poorly organized, and to involve representatives from the Health Bureau, Sanitation Department, Water Bureau (ATWSSE), and Environmental Protection and Greenery department. Furthermore, Mr. Mangustu (manager of the municipality) should also be part of the Project steering committee. The mayor then requested Dr. Asefa to draft a letter of commitment for him, stating that these representatives are appointed into the Project steering committee by the mayor. The Mayor can sign then it to make it official.

Field visit in Kebele 06 and 07

After the meeting with the mayor some hard copies of the new Kebele map were arranged. These showed the location of the different Kebele's with their surface areas. Next a field visit, in order to talk to inhabitants of the Kebele's, was conducted by foot. For this a list of possible questions was prepared during the previous night. This included questions on Sanitation Practices, Solid Waste, Drivers for sanitation/solid waste, environmental factors and women/gender. These topics/questions could be covered/asked during informal and unstructured interviews.

Conversation with inhabitant

A man (46), who was carrying a jerry can (20-25liters) of water with his wife (29) told that he paid 50 cents for the jerry can of water that was collected at a communal tap some distance from his house. He and his household (5 children; 2 in school, 2 finished secondary school, 1 unknown) used one jerry can of water per day. He furthermore mentioned that he wanted to find a(nother) younger wife...

Shared toilet

A shared toilet was visited (Stan, André, Tiemen, Dr. Asefa and Mr. Zemenu). This was constructed by the Christian Childrens Fund from Canada and served, with three holes, approximately 30 families (10 HH per toilet). The toilet could use improvements such as a darker (black) ventilation pipe and ceramic or porcelain elements for the hole as the cement was corroded by the urine.

Each household has a key for a door to the toilet to prevent other families from using the toilet. However, there are people who forget to lock the doors when they leave the toilet. Hence non-paying people make use of the toilet and make the toilet very dirty. The woman we talked to became irritated and frustrated about the situation and it seemed that she was willing, but unable, to change the situation.

Each households pay 60 Birr when the toilet needs emptying. This is paid to a man who organizes this, although it is not known what he does with the money. The emptying of the toilets costs 500 birr/truck, although it this had not yet occurred as the toilet was less than a year old. The women interviewed also stated that men do not listen to women.

Different conversations with inhabitants

Charcoals is sold in the kebele's in large bags. The users pay a small deposit for the bags that they get back when they return the bag.

The houses in the Kebele's are owned by the government. The inhabitants pay between 5-8 birr/month for rent.

It is possible for inhabitants to get a potable water tap with meter in their yard (if they have one). They can apply for a tap at the municipality and if there is a pipeline near the house this will be organized.¹⁰ The municipality has closed all local wells due to high fluoride concentrations. In Kebele 07 a garden was visited in which people can defecate in an open hole. Next to the hole was a tire with plastic bags. These were used for defecating in, after which they were deposited in the hole. One hole was already full and another was started next to it. The person talked to was extremely hesitant towards and did not want to discuss the topic of planting a fruit tree on the full hole.

The income of households was discussed with several inhabitants. Income levels of 15-20 birr/person/ day were mentioned. House rent from the government was said to be 5-10 birr/month. When constructing toilets inhabitants said that they would be willing to contribute labour.

Inhabitants of the area of Kebele 07 that we visited seemed more aggressive to us than inhabitants of Kebele 06. Several men came and asked for new toilets (repeatedly). And we were followed by a large group of people.

Overall impressions were that open defecation or the discarding of plastic bags containing feces is publically not accepted. However, it is common to do so if no one else is present. Furthermore, there is quite some space along roads and near houses where toilets can be constructed, although there are also (some) households and areas in the Kebeles with narrow alleys and little space. We visited some households with a private toilet and/or private water tap. These are usually behind a wall or fence and cannot be seen from the street so a survey is needed to find these and determine their state as well as identify areas where toilets can be constructed. Google maps could play a role in this. The land in the Kebele's is owned by the government (municipality).

Meeting with Manager of Kebele 08

Location: Office of Kebele 08 manager.

Present: Mr. Zerohu Iafera (Kebele 08 manager), Dr. Asefa, Mr. Kokab (Environmental Protection and Greenery office from the Municipality); Suzanne Vennix; André Hammenga; Henck Belete; Stan Maessen; Tiemen Nanninga.

¹⁰ It is unclear if the construction work is done by the municipality or the ATWSSE. Also, potential costs for this were not mentioned.

Presentation of project

The project proposal was briefly presented to the Kebele manager by Suzanne and Dr. Asefa.

Different Kebele

Kebele 08 is different from the other Kebele's as it has the bus station for Adama and a large market. Hence there are a large number of transit passengers (+/- 25.000/day) and a lot of (organic) solid waste is dumped in the Kebele. More than 10 trucks of solid waste is removed from the Kebele per day.

Local Problems

In general there are 3 problems in the Kebele. These are the lack of toilets, the land issue (space) and the solid waste produced (including plastic bags with feces). Also, collection, transportation and treatment of wastes is mentioned as an issue.

The Kebele is working with the community as well as the city administration.

Current Activities

There are 5 health extension workers working in the Kebele.

The ke

bele has started several activities. It has established (with the environmental protection and greenery office¹¹) two micro-enterprises (companies) that collect solid wastes. Here female workers are involved as well. This is not enough and 2 more micro-enterprises are planned. Furthermore, a cleaning campaign is planned once a week, when inhabitants are mobilised to help gather and remove solid waste. Health extension workers give training to each households on hand washing and hygiene.

Several NGO's have come to construct and give new pit latrines in the Kebele. These were shared toilets for the very poor people.

Sanitation plans

There are three toilets that the Kabele Manager wants to construct. Household toilets, Shared toilets and public toilets for the transit passengers.

The kebele is currently revising its sanitation plans based on the input from different committees so that they match those of the municipality. This is an opportunity for the project to include ideas and project concepts into these plans if we are allowed to assist with the revisions.

The 5 year plans of the county will be completed in 3 years. This plan will be used by the regional city and kebele governments as a reference. Based on that (action) plans will be made.

The kebele manager mentioned that he wants to become more independent from the municipality. It is the plan of the kebele manager to ask high and middle income households and businesses to donate money in order to construct toilets for poor people who cannot afford to do so. This way he wants to construct 5 new toilets every 3 months. He wants to do this with community help and our (financial) aid.

¹¹ Probably financial input

ATWSSE is not involved here. He works with the Environmental Protection and Greenery department (or the Sanitation department- these two departments were mixed). The Kebele manager did not know that the ATWSSE (can) work(s) on sewage.

Visit to market and bus station

After the meeting a field visit was made to the market and bus station. At the market we were told that, mainly women, do not urinate or defecate all day, but hold it up till it is dark. They then do this further uphill in the drains and ditches. The drains and ditches throughout the area were filled with plastic bags.

There seemed to be a lot of organic waste present, and space for a few public/shared toilets. One house was seen where the pit latrine and kitchen were in the same room. Ashes from cooking were also deposited in the pit latrine, of which the hole was covered with Enjera baskets. There was a urine stench at the bus station. Here we visited a public toilet, constructed by the municipality, that was run by 10 families. Visitors paid 50 cents (men to urinate) or 1 birr (women and men for defecation) per visit. The toilet was a pour-flush pit latrine that had to be emptied once a week by 3 vacuum trucks (5-7m³/truck@500-700 birr each). There was space for more toilets. All visits were recorded. It was estimated that the number of visitors per day is approximately 400.¹²

Day report
28-11-2012

ROSSA Project
1st Mission
Adama, Ethiopia

Meeting with Project team

Location: Restaurant of Ayu Hotel, Adama

Present: Suzanne Vennix; André Hammenga; Henck Belete; Stan Maessen; Tiemen Nanninga.

Project Steering Committee

Based on the meeting with the mayor, Dr. Asefa, the Kebele manager, the other institutions and what we have seen during the past days the **composition of the Project Steering Committee (PSC)** as well as project-set up was discussed. This will form the basis for the MoU and letter of commitment . Eventually it was decided that the PSC should consist of **the following people, or representative of the following organizations:**

Vice mayor of Adama (Chair)
Manager of the Municipality
Environmental Protection Office
Sanitation and Greenery Office
Adama Town and Health Bureau
Adama Town Water Supply and Sewerage Enterprise
Adama University

¹² Note that if one calculates the potential income minus expenditures on pit-emptying, it does not seem viable that 10 families are able to get an income from this public toilet. Hence the numbers need to be verified.

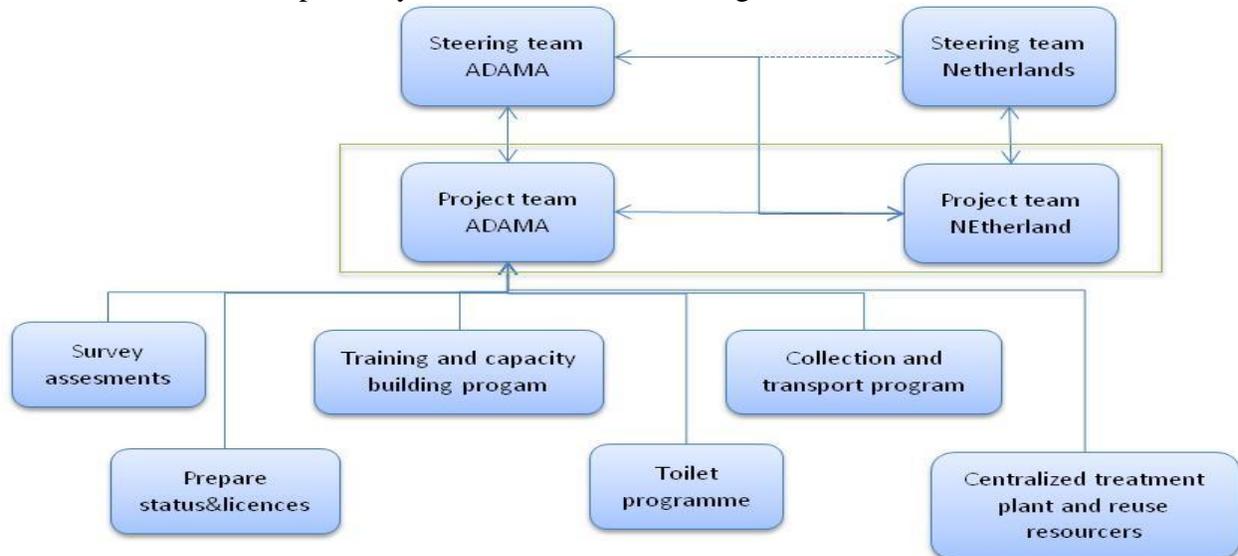
Representative of Kebele managers
Resident Project Manager (secretary, no voting power)

Resident Project Manager

This person should be a **people manager** who can push and stimulate different people. In addition, he/she should be able to cope with, and make use of, political motives of people. He should be able to **manage power shifts and hidden agendas** as well as work with elder and more powerful people.

Project Team

The schematic overview of **the project structure from the proposal was discussed extensively**. It seems that it is not optimal, nor is it clear why certain people are appointed to certain positions. It was decided that it is probably best to have the following structure:



In this structure the **main communication will be between the Dutch project manager and the resident project manager**. In both cases the **PSC in each country will oversee the project activities**. Although there is a communication line between them, they will mainly communicate via the project managers. The **project teams will be responsible for the implementation** of the activities. The project team in Adama will coordinate smaller teams that will, for instance, focus on one activity. Overall **the Dutch board (not depicted) is responsible** for the project as they are accountable to the donors.

Drafting of Letter of Commitment from Mayor

The letter drafted for the mayor should declare support of the 6 (?) members for the PSC that he can appoint.

Technology selection

A start was made with a **table to determine the activities of the project and what phase in the sanitation chain they relate to**. This will show the (close) interaction between the activities, which is not yet clear. In this table we can also **fill in the information that we already have, or that is still lacking** in order to properly conduct the activity. This information is grouped per phase of the sanitation chain. This structure **will also result in boundary conditions for the narrowing down of suitable technologies**. (document name: Activiteiten ROSSA planning v#.xlsx)

It was also decided **not to focus on which technologies are suitable** for Adama, but **rather on which technologies are not suitable**.

Meeting with Dr. Asefa

Location: Dr. Asefa's office, Adama University, Adama

Present: Dr. Asefa; Suzanne Vennix; André Hammenga; Henck Belete; Stan Maessen; Tiemen Nanninga.

Drafting of Letter of Commitment from Mayor

Dr. Asefa had started drafting a letter for the mayor. This was given to Suzanne for review and will be typed and emailed to Dr. Asefa at the end of the day.

Preparations for meeting with Kebele Managers

A **meeting with the managers from Kebele 05, 06, 07 and 08 is planned for tomorrow**. As the agenda and planning was not yet clear, Dr. Asefa took the lead in clarifying this. The **agenda** was determined to have the following points:

Present a general overview of the proposal

Presentation of sanitation plans from Kebele managers

Presentation of sanitation plans from municipality

Explanation of the activities

Discussion on how the plans and activities can be combined

Conclusions

From the discussion and earlier meetings/observations it seemed that there is a **potential area of tension between the municipality and Kebele's**. It is not yet clear where the different responsibilities lie. Furthermore, the statement of the Kebele 08 manager (wants to become more independent from the municipality) shows that there are hidden motives and power plays occurring or anticipated.

Kebele 05

Dr. Asefa raised the issue of including Kebele 05 again. According to him this Kebele is **very different** from the other Kebele's as it has a **prison, a river, more space, condominium blocks** and no organiser (check the latter, what does he mean?).

Hence the **objective of the project should be clear**. What do we want to achieve, and why do we want to focus on certain locations?¹³

Nice quotes:

You cannot build the country by having so many mayors (Dr. Asefa).

¹³ **Idea:** focus in each Kebele on a public body (Kebele 05: prison, Kebele 06: to find, Kebele 07: school, Kebele 08: bus station and market) to generate income for the Kebele. This can be used to subsidise toilet construction for the poor.

6 Visit to GIZ Wastewater Treatment Plant under construction at AU

While **Suzanne, Stan and Henock** conducted the interview with Endale Mitiku Dinka and Aby (someone whom Dr. Asefa had just met and who he had just sent to Ayu hotel), **André and Tiemen** went to visit the construction site for the wastewater treatment plant at Adama University to learn about what was going on.

6.1 Description of Proposed WWTP

The wastewater treatment plant at Adama University is being **constructed by GIZ** (www.giz.de/ucbp), who also partially fund it (and other buildings at the university). Here Solomon Kore (solomon.kore@giz.de; solehany@hotmail.com; +251911473450) is the Site Manager.

The wastewater from the university (calculated to be **from 25,000 PE**), will flow via a **sand trap** to the pumphouse. From here it is pumped into **two 15 m high Imhoff tanks** (under construction) (parallel) for primary sedimentation and **biogas production**. The biogas is recovered for cooking purposes. The wastewater next flows by gravity from the Imhoff tanks to **two aeration tanks** (not yet constructed). The sludge will be recirculated to the Imhoff tank for further digestion. From the aeration tank the water flows to **two Dortmund tanks**, which serve as the final settler. From here the wastewater flows to the ditch outside the university where it is **discharged into the environment**. Sludge from the Dortmund tank will flow back to the Imhoff tank.

The sludge from the Imhoff tanks is pumped to **14 drying beds** for drying on geo-membranes. After this it can be **co-composted with reeds**. The liquid collected from the sludge drying beds is pumped back to the influent of the wastewater treatment plant for treatment. Two large **emergency retention tanks** ($60 \times 120 \times 3 = 2160 \text{ m}^3$ each) are being constructed to provide a buffer if influent volumes are too much (due to surface runoff after rains) or if pumps etc don't work/need maintenance. Rainwater from roofs etc is not connected to the sewage system at the university, but the large number of manholes (was is 150 or 300?) on the campus can still collect surface runoff.

GIZ is constructing similar WWTP's at **15 sites in Ethiopia**. The site managers were **not involved in the designs** and don't know much about the processes. They are **trained to tell guests about the systems** and the construction works.

The system was said to be **designed by MH engineering P.L.C.** from Addis and De Cocks consultants (spelling??) from Germany. We were given some **PDF files containing the designs** of the different elements and site overview, but some of these could not be opened. Solomon had been emailed about this (12-12-2012), but no reply yet.

6.2 Potential problems?

André **identified some potential problems** that might arise:

- The **recirculation of aerated sludge** from the aeration and Dortmund tanks to the Imhoff tanks could result in **poor functioning of the Imhoff tanks** as this is an anaerobic system. It is possible, depending on the volumes of sludge recirculated.

- The current set-up of the system is focused on removal of organic pollution. Hence **N concentrations** will most likely be too high (compared to which legislation?) in the effluent.
- **P can be removed chemically**, although this was not mentioned in the introduction of Solomon.
- The liquid from the drying beds is recirculated. As this will contain high levels of N (and P?), this is brought back into the system which in the first place is not designed for N-removal. Hence **N concentrations can build up in the system**.

Quick calculations seemed to show that the designs were based on European parameters. However, water use is probably less in Ethiopia. Hence **influent volumes will probably be lower and more concentrated**.

Day report
29-11-2012

ROSSA Project
1st Mission
Adama, Ethiopia

Meeting with Kebele Managers

Location: Next to Dr. Asefa's office, Adama University, Adama

Present: Mr. Feleke Nigussie (Kebele 06 Manager); Mr. Mulugeta Edajo (Kebele 07 Manager); Mr. Zeroun Iafera (Kebele 08 Manager); Mr. Tyla Aduyna (ATWSSE-accountant); Mr. Zemenu (BEEZA enterprise), Mr. Kokeb and his colleague (Environmental protection office); Dr. Asefa; Suzanne Vennix; André Hammenga; Henck Belete; Stan Maessen; Tiemen Nanninga.

The manager from Kebele 05 was invited by Kokab but could not come due to another training (we were told).

Project Introduction

Suzanne explained the project with a PowerPoint.¹⁴ In short she presented the following items: The overall objective of the project is *to increase sanitation coverage by providing sanitation systems suitable for low-income households*. This is achieved through awareness raising, education and knowledge sharing. Activities include construction of new toilets, reinforcing small businesses, wastewater (sludge) collection, treatment, disposal and/or reuse. What is needed is a baseline assessment. This will not only give information about the current situation (income, existing practices and initiatives, perceptions, etc), but can also serve as a baseline measurement for Project Monitoring and Evaluation (PME). The baseline assessment should also assist in identifying the challenge areas (Institutional, Private, Environmental, Social, Technical, Economic). In the project, Public-Private cooperation is stimulated.¹⁵

Presentation from Municipality

Kokeb from the Environmental Protection and Greenery department presented the activities and plans of the municipality regarding sanitation and solid waste.

The municipality was said to have a **lot of activities** related to the topic and that they are performed in routine.

¹⁴ Get this from André

¹⁵ Note: this term was not explained. Do they know what it means (Dutch buzz word)?

- **Solid waste is collected and disposed by the municipality.**¹⁶ The plan is to upscale this to 600,000 m³/month¹⁷ in the future. At the moment they are probably collecting 50-60% of this number (estimate made on the spot).
- **Existing sewage lines are being cleaned** by laborers. They are able to clean approximately 16 km/year. It was not clear if these are sewage lines under the ground (as before this a sewage system was never mentioned-only septic tanks), or if he meant the open drains (which also serve as sewage lines).
- The solid waste at the **landfill is being managed** and compacted by the municipality.
- The communities of Adama are involved in **sanitation campaigns**. During these campaigns about 5600 people are involved with cleaning purposes.¹⁸
- There is **no proper liquid waste disposal site** at the moment. The current location is leaking and results in a lot of environmental pollution down-stream.
- **Health and hygiene activities are being monitored** at restaurants and industries.
- There are 3 communal ???? in town. These collect waste and dump it somewhere.
- There are a few people who pay for the solid waste collection services. These people get served; others simply dump their wastes on the streets. Hence **the polluter does not pay**.
- **The users of existing toilets clean and maintain the toilets themselves.**

The municipality also has the following plans/ideas:

- The municipality has **plans to construct 4 more public toilets** in Adama
- The municipality is planning to **construct transfer stations for solid wastes**. Here the solid waste from the Kebele's can be brought which in turn will be separated before transportation to the dumpsite or composting.
- There are **plans/ideas to construct a lagoon** for the liquid waste disposal.

Presentation from Kebele 07

The sanitation plans as presented by the manager from Kebele 07 are to:

- The plan is to **construct 12 shared toilets** each year.
 - o **One toilet costs 25,000 Birr**. The community will be involved in raising the funds. This mainly goes via **public collection of money** from businesses and rich people.
- Every week a **cleaning campaign** is organized with the community. In this **1,237 people participate** voluntarily for 3 hours to assist with removing solid waste from the kebele. This accounts to a saving of 12,988,5 birr as no wages are paid. The plan is to do this 48 times per year, resulting in an annual investment of 623,448 birr/year that the municipality does not need to pay.

¹⁶ They also subcontract BEEZa to do so.

¹⁷ Should this not be per year?

¹⁸ I added the purpose of the campaign, this was not clear. Perhaps it was an awareness campaign?

- There is **1 micro-enterprise** (15 employees) in Kebele 07 that **collects solid waste**. The community pays **10 birr/hh/month** for their services. If a household produces a lot of solid waste this can be **15-20 birr/hh/month**.
- **2 other micro-enterprises with 15 employees each, are needed** to serve the whole Kebele.
- The **investment costs** for establishing the micro-enterprises are **shared between the Kebele and the municipality** (probably the environmental protection and greenery department, but I am not sure.).

The **municipality is not involved in actual implementation** of toilet construction or waste collection.

Presentation from Kebele 08

The manager from Kebele 08 mentioned that he appreciates the project team and their ideas. His sanitation plans have 6 parts:

- **Sanitation Problem.** The bus station and market result in a lot of waste being produced in the Kebele. There are **a total of 150,000 people** who make use of these locations¹⁹.
- There are in general **10-15 people per yard**. One toilet, serving 5-10 people, costs **15,000 birr²⁰ to construct**.
- To help **low-income households** the Kebele wants to **construct 10 toilets**. These cost **25,000 birr each** and serves 10 people.²¹ The costs for this will be generated from the communities.
- Mobile sanitation: Like the mobile toilet at the office, the Kebele wants to **construct 6** more to place at the **bus station and market**. These cost **25,000 Birr each**.
- There are **25,000 people who are on transit** through the Kebele. This results in lots of solid waste, which can be treated in 2 ways:
 - o **Motivate people** through explaining what the danger is
 - o **Develop 2 more micro-enterprises** as the current 2 are not enough to clean all wastes. Here 10 people work in each micro-enterprise.
- **Households pay 10 birr/month for the collection of solid waste.** This money is used to pay for transporting the wastes out of there.

There are **2,439 households** living in the Kebele, with a total of **17,000 inhabitants**. Here also **cleaning campaigns are held once a week** to clean the Kebele.

Presentation from Kebele 06

¹⁹ André mentions 300,000 people/year

²⁰ This part was unclear what he meant.

²¹ Is not how many households it will serve.

There are **11,000 inhabitants** in this Kebele. Sanitation is a problem here, especially for the low-income households. In this Kebele a **local Gin** is produced. A problem is the **lack of toilets**. In the **houses owned by the government there are no toilets**.

The following activities are proposed or being performed.

- **Create awareness**²²
- **Construct 10 toilets per year** (at 25,000 birr each). The required sum will be collected by asking all inhabitants to give 10 Birr, and asking a donation from the high-income inhabitants and businesses in the Kebele.
- **Solid waste is collected 4 times per month** from households in the Kebele. Furthermore, the area is cleaned once per week and the collected solid waste is transported away from the area.

There is **one micro-enterprise** active in the Kebele. This moves door to door to collect solid waste from the households. This costs **10 birr/household**, all of which is for the enterprise. However, this is **not enough** for the micro-enterprise; the Manager estimates that 30 birr/hh/month is needed instead.

In general the **Kebele gets no budget from the public or private sector**. Instead **income is collected from the inhabitants**.

Dr. Asefa mentioned that 10 birr/month is a lot of money. In **some cases elderly people** live together, and some of them **can't even afford to pay the contribution of 2 Birr/month**.

BEZA activities

BEZA has two small vacuum trucks (5 m³, compared to 7m³ available at other companies). He charges **500 birr per truck when emptying pits/septic tanks**, which is cheaper than the 700-800 birr that the other companies charge. **The collection of liquid waste is done directly for the customer**. One of the vacuum trucks from BEEZA is now used to collect and transport clean water for domestic use.

At the moment **BEEZA employs 70 people** in the business, covering composting, solid waste collection and liquid waste disposal.

BEEZA has a **service contract with the municipality** for transporting and disposing solid waste. When local **waste collectors** have collected their solid waste they **call the municipality**, who in turn **calls BEEZA** to collect and dispose the solid waste. The **municipality pays BEEZA per m³** of solid waste transported.²³

The **10-20 Birr that each household pays** for the collection of their solid waste (depending on the volumes), is **enough to keep the micro-enterprise running**. However, it is **not enough** to save **for investments**. Thus the managers have said that 10 birr/household is not enough.

The **investment needed for one vacuum truck is generally 400,000-700,000 Birr**. Also, in order to set up a composting plant high investments are needed and the **nutrient content of the compost is not known**. Also, this is not checked. US experts have indicated that an **application load of 15,000-20,000 kg/ha** is suitable (150-200 bag of 100 kg [local measurement: quintiles?]).

²² It is not clear what is meant by this.

²³ With this information and the average amount of solid waste collected per HH the cost of collecting, transporting and disposing 1m³ of solid waste from the Kebele can be calculated.

In high temperature regions this should be 2,500-10,000 kg/ha (25-100 bags). This will be **enough nutrients to last for 5-7 years**, the owner from BEEZA and municipality was told.

The national government in Addis Ababa should have information on the application loads and regulations.

The composting process at BEEZA is as follows: it takes **21 days** to produce compost. The heaps are turned over and water is applied during the process. During this process the **non-organic solid wastes are removed from the piles**.

Discussion on Cooperation Between Sanitation plans and Project Proposal

The discussion was **structured using the excel sheet** developed yesterday (Activiteiten Rossa planning v#.xlsx). Hence points below served as input for this file.

The session started off with the manager from Kebele 08 asking us about the **motivation** for supporting them. Stan replied by explaining that we can ask them the same: are they motivated as well? The **project should result in the Kebele's being able to finance organize and implement the construction of toilets themselves and to ensure that the (solid) waste is collected, treated and disposed or reused in a safe way**. Hence we have the commitment to enable te Kebele's to construct the proposed number of toilets each year, not by direct funding but rather through developing an enabling environment to do so (Financial, Institutional, etc). The **Kebele managers** stated that they **are committed to the project** as it is an interesting one.

Concerning the **construction of toilets the finances and space were the first two limiting factors** mentioned by the managers. Constructors were said to be plenty, although the quality of their work is not known.

Kebele 07 Manager mentioned that he got a petition from 40 households for a toilet. These households have not toilet, not even plastic bags. When constructing toilets for inhabitants his idea is to **ask 50 Birr** from the relevant households **to create a sense of ownership**, and generate the remaining funds from other sources. However, the Kebele has no money, all they can do is mobilize the community (hence he indirectly seems to ask us for money).

Information that is not known is how many toilets each Kebele needs. Users, contractors, constructors etc need to be prepared as not only toilets need to be constructed, but they will also require emptying and sludge treatment. There is an **existing licensing system for the constructors**; they need a license showing their quality in order to be able to work.

Health extension workers will also need training. The managers are satisfied about their current functioning but **through training their skills and the effects can be improved**. The health extension program of the government has been **established to prevent diseased**. The health extension workers **have been trained by the government in this**. Sanitation, the importance of toilets is part of it.²⁴ The heath extension workers operate in the community.

The Kebele's would like training on how to mobilize and organize people in the community. They would like to **enhance their communication skills** and learn how to **identify stakeholders**, and how to **get finances**.

Toilets generally have a concrete or wooden slab. **The mobile toilet** at the Kebele 08 office was **paid for by an NGO** and was meant for high-density areas. It is unclear how many were constructed. These mobile toilets can be **made by local micro-enterprises**. A mobile toilet with shower and urinal is also possible.

Awareness at household level is needed. Operation and maintenance is also a problem.

²⁴ Check this!!

It seems that **finances can be arranged**, but that often people don't know the problems. **The Kebele's expect the municipality to assist financially.**

Hotels are responsible for illegal discharges. If their septic tank is full they sometimes have an illegal overflow to a nearby drain or simply use a pump to empty the septic tank into the drain. If the municipality finds out they will warn and fine the hotel and break/close the pipe. If not adhered to the hotel will be closed.

Local farmers will need to be trained in the use of fertilizers and compost derived from waste.

Drive through Kebele 05

After the meeting a **drive through Kebele 05 was made.** Several impressions were that there seemed to be **more space between the buildings**, there were **condominium blocks**, there was a **river** present (probably resulting in **[partial] flooding**),²⁵ and that there was a **lot of space between the roads and the buildings.** From Google Earth it also seemed that there **industries** in this area.

Nice quote:

People here do not ask 'why' (Solomon Kore, referring to the dirt and dust in the Kebele's and houses)

Day report
30-11-2012

ROSSA Project
1st Mission
Adama, Ethiopia

2nd Meeting with Kebele Managers to Discuss Action Plan

Location: Next to Dr. Asefa's office, Adama University, Adama

Present: Mr. Feleke Nigussie (Kebele 06 Manager); Mr. Mulugeta Edajo (Kebele 07 Manager); Mr. Zeroun Iafera (Kebele 08 Manager); Dr. Asefa (partially); Suzanne Vennix; André Hammenga; Henck Belete; Stan Maessen; Tiemen Nanninga.

I can't remember if these were present: Mr. Tyla Aduyna (ATWSSE-accountant); Mr. Zemenu (BEEZA enterprise), Mr. Kokeb and his colleague (Environmental protection office);

The manager from Kebele 05 was invited by Kokeb but could not come due to another training (we were told).

Kebele Politics and Structure

The Kebele's are divided in zones of 20 households, which in turn are divided in **groups of 5 households.** In each Kebele there is a cabinet of 5 members assigned by the government (or municipality). There is **one manager in the Kebele.** He stays **in office without time limit**, based on the opinion of the local **inhabitants**; they can **'vote' him out.**

It is the Kebele who makes a **contract with the micro-enterprise via a tendering procedure.** The municipality is not needed for this, although they can finance the Kebele.

²⁵ It needs to be assessed which areas are prone to flooding.

As such **the municipality is needed for financial support.** The Kebele's do what they want to do and ask for this support if needed.

Opinion of Project Based on Yesterday

The kebele managers, based on yesterday, gave their opinion about the project. They think **that it is a good project.** Due to the scope of the issue the Kebele 07 manager **suggested to do a pilot** in one of the Kebele's after which the project can be up scaled.

The manager of Kebele 07 explained the project to his committee. They also liked it. They also discussed the objective of constructing 12 toilets this year. **Awareness as part of solid waste management is important,** both for the households as well as for the micro-enterprises.

Action plan for Kebele Managers

André presented a **possible action plan** for the Kebele managers. It **seemed that they agreed** to it.

- The Kebele managers should organize an assessment of the Kebele's. The Kebele managers stated that they could do this in one month time.
- The Kebele managers should make a financial overview of the organization.²⁶
- The Kebele managers should ask their engineers for the toilet designs and construction costs and requirements.

Phone numbers: 0913344363 (Kebele 06); 09104121257 (Kebele 07); 0911895094 (Kebele 08).

Steering Committee

The Kebele Managers think that the Project Steering Committee (PSC) is a good idea. They **assigned the Manager of Kebele 08 to be the representative** for the Kebele Managers in the PSC. The fact that the vice mayor is in the PSC is also nice as it allows them to **directly contact** him (and **the mayor**) about issues. For instance, the managers do not get the budget from the municipality for providing water and sanitation. They can now push for this.

Micro-Enterprises for solid waste collection

The kebele 06 manager explained that they do not get money from the micro-enterprises. **All income stays within the micro-enterprise.** The **Kebele's give licences** to the micro-enterprise. In order to get this license the micro-enterprise has to get some forms. They are charged a (small) fee in order to get the form stamped, but in general nothing is paid. **The micro-enterprises (should) use receipts** when they charge the households for their services.

The kebele managers agreed to put all this information on paper and send it to the project team.

²⁶ I'm not sure if I understood this point correctly.

Decentralization

About 5 years ago there was a transformation from centralized to decentralized governments. Kebele's got the right to mobilize people, collect money and decide on land use. Furthermore, **the surveyors²⁷ moved** from Municipality level **to Kebele level.**

There are some **'by-laws'** that stipulate the rules and laws of the kebele's. These can be found on the **internet** or can be retrieved from the mayor.

Meeting with Kebele and Municipality to discuss MoU

Location: Next to Dr. Asefa's office, Adama University, Adama

Present: Mr. Ahmed (vice-mayor); Mr. Feleke Nigussie (Kebele 06 Manager); Mr. Mulugeta Edajo (Kebele 07 Manager); Mr. Zeroun Iafera (Kebele 08 Manager); Mr. Kokeb and his colleague (Environmental protection office); Mr. Tyla Aduyna (ATWSSE-accountant); Mr. Zemenu (BEEZA enterprise); Dr. Asefa (partially); Suzanne Vennix; André Hammenga; Henck Belete; Stan Maessen; Tiemen Nanninga.

The manager from Kebele 05 was invited by Kokeb but could not come due to another training (we were told).

Briefing from Kebele Manager²⁸

The manager from Kebele 08 gave the mayor a short briefing on the meeting that was held yesterday and first half of the morning. He described that the Dutch team had visited the Kebele(s) and that we had met to discuss the problems in the kebele's and project for the past 2 days. He expressed **the interest of the Kebele managers in the project** as they have a (solid) waste and sanitation problem. As such the kebele managers have also presented their annual plans. The following questions were addressed as well in the past meeting:

- What is the problem in the Kebele's
- How many people are in the Kebele's
- What is the current situation?
- How much sanitation is needed?
- How do you get your money (collection from public)?

The **plan of the Kebele managers is to motivate people to give money** so that they can realize their annual plans. They will also **communicate with the Project Team** to help solve their problems. **Capacity building is very important.** Furthermore, the Kebele manager appreciates the Dutch team that came to visit.

Next, the Kebele manger told, **the problems in Adama town were discussed** and that the Kebele managers would like to learn how they can mobilize the community to solve the problems concerning sanitation and solid waste.

The Kebele manager concluded by saying that **they could do a lot of things** and that they would like to work with the vice mayor. Furthermore, he will be part of the Project Steering Committee as a representative for the Kebele's.

²⁷ This resulted in confusion as the Kebele managers referred to the surveyors as engineers. However, the actual engineers (designers etc) are still at municipal level.

²⁸ This is based on my notes from his speech.

Reaction of Vice Mayor²⁹

The vice mayor was appointed by the mayor as his representative in the Project Steering Committee. He has read the project proposal and **agrees with the focus on Kebele's 06, 07 and 08**. He thinks that it is very important **that specific stakeholders**, such as the beneficiaries, **should be directly involved** in the project. In this engineers from the municipality should be involved too.³⁰ Furthermore, the environment is very important.

The objective of the project relates to the critical problems of Adama town and they can help solve the problems of Adama, including flood disasters. In order to do so more detailed information is needed.

The mayor **did not understand if the proposal was at concept level or at proposal level**. Suzanne replied that the proposal has been accepted, but that the details still need to be filled in with local parties.

Remarks were made about that the **Kebeles are needed in the project** and that beneficiaries should be identified. The vice mayor also **asked if sewerage systems were part of the project**. This question was left unanswered.³¹

Discussion of MoU

It was, again, discussed that Kebele 08 should represent Kebele's 06 and 07 in the Project Steering Committee.³²

Concerning the construction of toilets **it now became clear in a lively discussion that there are no (technical) engineers at Kebele level**. All construction works are designed and supervised by the municipalities. This also happened last year when Kebele's asked professionals from the municipality to help them with construction works.

At the moment the **Municipality is responsible for the quality of the construction works**. As such she supervises the construction works. **However, the construction works are paid for by the Kebele**. IF the quality of the construction is poor, the **kebele will tell the municipality** who in turn has to take action.

There also was a **lively discussion about where the responsibilities and tasks of the municipality and Kebele's lie**. It thus seemed that **this is not yet clear for all parties**. Furthermore it became clear that the **institutional organization, responsibilities and decision making powers could be organized more effectively**. However, this **will result in power shifts** as Kebele's can become more independent.³³ The kebele's might want this (more decentralization and power for them), but it is likely that the municipality will oppose this.

An observation was that Kokeb played a role in this discussion, opposing movement of power to kebele's but wanting to keep it with his colleagues (**Stan can you add your observation to this?**)

²⁹ Based on my notes from his speech

³⁰ Check, as this part was vague. I might not have understood it properly.

³¹ Hence he might have the idea that a (centralised) sewerage system is part of the project.

³² Notice that Kebele 05 is no longer mentioned in the discussions

³³ **This can be elaborated upon by the project team.**

Field Visit to BEEZA Composting (not finished yet)

No composting. Lots of non-organic waste in existing piles, very dry. No roof, but why not use fence? Poor excuse for not composting.

Land is temporary. If business expands they will move to another area as this land is planned for graveyards.

Field Visit to Sludge and Solid Waste Disposal Area (not finished yet)

Very poorly constructed sludge disposal site. Apparently designed and constructed by a dutch company. The name is unknown. Liquid leaks from the bottom and flows away via de drain next to the road.

Lots of plastic bags flying around. (disposal site upwind of sludge disposal pond) No fires on the solid waste disposal site, although there is a methane collection system in the solid waste, according to Henock. He could also smell the biogas that was produced by the waste. Perhaps no fire/flame due to wind?

The depth of the pile was difficult to estimate. At some areas is seemed less than 0.5 m.

Day report
01-12-2012

ROSSA Project
1st Mission
Adama, Ethiopia

Tool for Technology Selection

Stan continued with an **excel spreadsheet** (Activiteiten Rossa planning v#.xlsx) that **showed different criteria needed to make a technology selection** (column) and the different steps in the **sanitation chain** (row). Based on this technologies could be selected that, based on the local context, **are not suitable for application in the project.**

This document still needs (a lot) of further development.

2nd Interview with Potential Resident Project Manager (Abiy)

Location: Restaurant of Ayu Hotel, Adama

Present: Suzanne, André, Henock, Stan, Tiemen, Abiy

This was a second meeting with Abiy so that Tiemen and André could meet him as well. His work experience and vision on working with elder, influential and powerful people were mainly discussed. His current occupation is writer for blogs etc. He get paid per word.

Based on the conversation there was a **discussion in the Dutch project team** about if Abiy is the **proper candidate** for the position of resident project manager. It seemed that André and Henock felt that **he was**, whereas Stan thought that **he does not have enough 'weight'** needed to cope with the complex power plays that will occur during the project. Suzanne and Tiemen were somewhat **in between the two opposites.**

It was decided to **wait for another interview** scheduled for the next day in Addis Ababa. Based on this we could **then decide to go for Abiy or to continue searching for more candidates.**

Day report
02-11-2012

ROSSA Project
1st Mission

Development of Technologies not suitable for Project

The Technology selection spreadsheet (Activiteiten ROSSA planning v#.xlsx) was further filled in. Based on the context a list was then made of technologies **are not suitable for application in the project**. At the same time **knowledge gaps are identified**, which can serve as input for the required **baseline survey**. The list and spreadsheet is not yet completed; this will require some time and input from the baseline survey.

Interview with Potential Project Manager (Girma Senbata)

Location: Toronto hotel, Addis Ababa

Present: Suzanne, André, Henock, Stan, Tiemen, Girma

An interview with **Girma Senbata** was held, who currently works for the Ministry of During the interview he explained that he worked at his current position for 6 months and that he **is willing to change jobs**. When asked how we would know that he will not change jobs halfway through the project, his answer was vague. Also, when asked about how he would deal with hidden motives and potential conflict, he stated that **he did not expect conflict**. The same statement was made after explaining the local situation and that there had already been some debates (on 30-11-2012).

Based on this all the **project team did not find Girma suitable** for the position of the Resident Project Manager.

The **discussion continued about Abiy**, and eventually it was decided to continue search for other candidates as the **stakes are too high**. If Abiy is employed and he then can't cope with the situation there is a high risk that this will have very bad consequences for the project. Henk Loijenga and others will go the Ethiopia in two weeks' time (14 Dec.). They might be able to **conduct some more interviews**.

Annex 5: Contact list of persons contacted during the mission

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