

Progress report waste management projects in South Africa of the Wamasa Foundation

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1. History and cause

In 2006 Frits van Aggelen and Bernadette Jansen at Dieren, the Netherlands, launched an explorative study at several concrete locations in South Africa in order to investigate to what extent South Africa's socio-economic development could benefit from Dutch support to the improvement of this country's chain of waste management. In 2006 and 2007 they developed a network with relations in the Netherlands and in South Africa in the field of waste experts, waste enterprises, NGO's, universities, financial funds and municipal, provincial and national authorities. In 2007 the first delegations of Dutch students and post graduates were detached in several South African municipalities with the intention to prepare a pre-research at the current waste situation.

By mid 2007, the project had come at a stage, it was necessary to set up a formalized structure. Therefore an independent foundation was established under the name of 'Waste Management South Africa' (**Wamasa**). The board of the Wamasa Foundation was formed by its initiators Frits van Aggelen and Bernadette Jansen, Jur Jonges (teacher/internship coordinator at the Faculty of Architecture and Living of the Utrecht University of Applied Sciences), and Frits Steenhuisen, (executive director of C.R.E.M. Amsterdam, a consultancy agency specialized in sustainable development). Advisors to the foundation became Ellen Geurts and Joop van Tubergen. Mrs. Geurts is a housing consultant at the Institute for Housing and Urban Development Studies of Erasmus University Rotterdam; she lived and studied in South Africa for a couple of years. Mr. van Tubergen is a previous waste specialist; he was active as a technical expert at a lot of waste companies.

Wamasa's statutory goal is to provide support to development projects in South Africa in general, and to waste management projects in this country in particular. The Wamasa Foundation has explicitly no commercial intentions. We only work with local assigners.

Wamasa can be reached by email via info@wamasa.org. A dedicated website is currently under construction and foreseen in the coming months. Its network is periodically informed about its proceedings.

2. Waste management in South Africa

A waste management process is to be divided in the following steps: public awareness, (separate or non-separate) waste collection, transport of collected waste to transfer stations and/or dumpsites, selection of waste components, temporary storage, transport of selected waste for reuse/recycling, preparations for reuse / recycling of selected waste, final dump

Improving the different links in the chain of waste management contributes to:

- improvement / preservation living environment
- improvement public health standards
- improvement / preservation natural environment
- creation of employment and commercial activity

Why South Africa?:

- relatively good quality of waste (compared to other developing countries)
- as an, at least partly, industrialized nation South Africa has the disposal of a potential market for recycling and reuse of waste
- although many housing and construction programs have been enrolled in the past few years, many of these are carried out in existing townships, which are often located far away from employment and other facilities. Moreover, as preservation of the living environment is not (yet) given any priority, in the medium to the long run renewed / further decline is a significant threat.
- recycling/ reuse of waste in South Africa is still in its infancy
- discussion is coming up about the immense surface needed for landfills

3. General project outline

Wamasa has developed a general project outline, which can be easily adapted to meet specific project requirements.

Our approach roughly contains:

- preliminary research on location
 - current way of collection of household waste, business waste, green waste etc.
 - waste composition
 - commercial potential of different elements of waste
 - stakeholder analysis initial situation (private collectors, hand pickers)
- design of a future system of waste collection
 - selection at source or later in the collection process
 - fixing of the required degree of separation
 - transfer stations, drop-off points, buy back centers, temporary storage of waste components
 - organization of waste-transport
- preparation of a business case
- determination target group for setting up new commercial enterprises
- preparation training and education programme
 - preliminary training
 - advanced education program
- preparation of a public awareness campaign
- preparatory assistance to foster the set up of new enterprises
 - training
 - preparation business plans
 - cooperative ownership structure with respect to equipment
 - investigation of financial requirements
 - subsidy applications, credit facilities
- foundation of new enterprises and co-operative entities
- organization of a public awareness campaign

This general approach can be extended in order to e.g. investigate potential improvements of compost preparation, expansion of compost production and the development of bio-fuels. If possible the relation with sanitary waste can be researched. All is directed to the stimulation of new activities and new employment. Sometimes it's not the point to create completely new enterprises, but to assist existing initiatives.

Practice has shown aspects of organization of logistics and the capability of commercial handling of recycles in a turbulent market are crucial.

4. Partnerships relations in South Africa

Buyisa e bag is a South African section 21 company, which professionally supports community initiatives aimed at establishing organized waste collection systems. Her support can contain recruiting, training and coaching of future personnel, the facilitating of obtaining licenses, helping setting up new enterprises by putting available the collecting equipment, assisting at a local awareness campaign and public space cleaning actions and the organizing of the marketing of the useful waste components. After a couple of years of free support from Buyisa e Bag, local organizations are supposed to have learned how to function independently. Because of the communality in focus, Wamasa approached Buyisa e bag to come to mutual assistance.

Wamasa developed relationships with the Royal Netherlands Embassy at Pretoria, the South African Netherlands Chamber of Commerce (SANEC) at Johannesburg, the local representatives of the

Netherlands Association of Local Governments (VNG) at Tshwane and some regional representatives of the SALGA (the South African union of municipalities). Moreover, contacts have been established with the waste departments of the Western Cape Province and of the national government, the C.S.I.R., the I.W.M.S.A., the Universities of Stellenbosch and Pretoria, some private companies, which are active in South Africa in the field of waste engineering, waste-advisory bureaus, an innovative compost-producing firm, some smaller waste management organizations and NGO's, that carry out development projects from a more general perspective.

5. Network in the Netherlands

Representatives of large waste management companies in the Netherlands have expressed their willingness to assist in the further implementation of Wamasa's projects, e.g. by providing equipment and / or expertise. Several manufacturers of transfer stations and waste processing equipment are interested in setting up licensed activities in South Africa. A well-known Dutch networking organization of senior experts, PUM, is willing to provide professional assistance to Wamasa on location at a limited price. Wamasa came also to good contacts with some advisory bureaus in the field of waste processing.

For reasons of knowledge sharing, Wamasa has built up a working relationship with several Dutch and Belgian municipalities that are actively involved in South African waste management projects as a part of their twinning relationships with South African municipalities. Wamasa also made contacts with the coordinating office of VNG-International's LOGO South Waste program. At some locations Wamasa is functioning in narrow relation with Dutch municipalities, active at the same location.

To be able to assist in case of research capacity at location Wamasa developed relations with the Utrecht University of Applied Sciences, the Saxion University of Applied Sciences (Enschede/Deventer), the HAN University of Applied Sciences (Arnhem and Nijmegen) and the Wageningen University and Research Centre. Contacts are also made with the UNESCO-IHE Institute for Water Education at Delft, the Larenstein University of Professional Education at Velp and the Windesheim University of Applied Sciences at Zwolle. Especially the Utrecht University of Applied Sciences is a prominent "supplier" of detached students.

Some Dutch financial institutions declared in principle to be willing to support with financial means in projects of Wamasa, of course under conditions. Mostly this support can only be given to new private sustainable employment initiatives. The same support can be possible by some Dutch N.G.O.'s and social-economic funds.

Wamasa can in the mean time be said to be good informed about the possibilities of incidentally financial support of waste projects in South Africa by means of Dutch governmental funds.

6. Project Langeberg Municipality (former Breede River Winelands Municipality)

The Municipality of Langeberg, situated in the heart of the Western Cape Winelands with over 100.000 inhabitants, is confronted with a shortage of dump capacity and is thus reconsidering the efficacy of its waste policies. Moreover, local authorities are actively seeking ways to stimulate new entrepreneurship in the field of recycling and reuse of waste.

In 2007, based on a draft M.O.U. between Wamasa and the Langeberg Municipality, Wamasa began sending delegations of Dutch students to Langeberg to prepare reports about the current waste situation and the development of a new waste policy. This new waste policy has separated collection and the maximizing of the part of recycles in the waste stream as starting points.

Also since 2007 the Municipality of Rheden, the Netherlands, supported Langeberg Municipality with help of funds from the LOGO SOUTH Program's Waste Chapter of the Dutch government. Wamasa and the Municipality of Rheden tuned their activities in Langeberg. In the process also the SALGA Western Cape and representatives of the Western Cape Province were involved.

Since September 2007 four delegations of in total 15 students, mainly from the University of Applied Sciences of Utrecht, carried out a preliminary investigation on location. Each group worked in Langeberg for 5 months under supervision of the waste department of Langeberg Municipality. A meeting was held each time at the end of the delegation's stay, to discuss the results and the coming research content. In addition, a recent Dutch communications graduate/expert was assigned in 2008 tasked to set-up the principles of an awareness campaign.

The last student delegation was appointed to arrive in 2009 at results to form the prelude to principal decisions by the municipality about their future waste policy. With the knowledge accumulated in all the reports the municipality should have enough understanding of:

- the volumes and composition of household and business waste
- the current practice of handling business waste
- the current practice of private collection of valuable waste components
- the profitability of separated collection in combination with the sale of valuable waste components

In the last period of the formulation of final conclusions, the Langeberg Municipality received the national award for its municipal waste policy, including a big grant directed to support the future implementation of the policy.

In 2008 Wamasa organized an assessment of the current way of compostproduction and -trade. This document contained a lot of recommendations, including the possibility of enlarging the volumes, the quality of the compost produced, as well as the possibilities to create more outlets. The agricultural activities in the municipality shows good prospects for the use of compost instead of artificial fertilizer

It was clear, that both the grey waste and the green waste, considering the possibilities of professionalization and the prospects of more commercial handling, needed the intervention of involving private commercial initiative. During these years, the municipality built a Materials Recovery Facility at its current landfill, at first as a dirty one.

In November 2009 in a meeting at location the municipality informed Wamasa about her conclusions. A final decision had been taken, concerning the introduction of a two bag system in the collection of waste, starting in 2 pilot areas. They had further concluded to prepare two tenders, one concerning the exploitation of the MRF, and another one concerning the exploitation of their compost production. Also a final document has been formulated to get consent of the municipal council about the principles and the financial means. Last months the municipality decided to finish the chosen way of tendering and to bargain with Buyisa e bag about the exploitation of the MRF and the compost production.

The municipality has realized the fact, that the introduction of a two bag system with drop off points and buy back centers needs a long term strategy for an awareness campaign. The planning and programming of such a campaign was a facet, support was needed. Wamasa intermediated therefore in the sending of a Dutch specialist by the PUM organization.

The municipality is nowadays, strengthened by the means of the national award, preparing the building of decentralized transfer stations, buy back centers and drop off points. The size of the newly created employment will soon appear. Consultation is the way Wamasa can, if necessary, support in the next steps.

Because it is preferable to start the system of separated collection in combination of the opening of a new landfill, the procedure of approval of this landfill needed attention. The Western Cape Province,

responded to a request by Wamasa, and came to a decision; however formal objections are still possible and are likely to arise. Because of the stiff progress of the process, Wamasa has once again pled with the provincial authorities. It's still unsure when the creation of the new landfill can start. The municipality wanted not wait till this moment and built the MRF in a way that it can be transported to a potential new location.

Evaluating the cooperation between Wamasa and the municipality, the Municipality of Langeberg concluded without the support of Wamasa, it wouldn't have been possible to get waste problems so high at the political agenda and to take so many steps in implementation. Of course Wamasa is very interested in the size of the newly created employment as soon will be shown, because that was Wamasa's most important objective.

7. Project Metropolitan Municipality Tshwane (Mamelodi)

Mamelodi is a township with a population of more than a million inhabitants as a part of Tshwane/Pretoria. It has a much differentiated character compared the situation in Langeberg. You can find areas with big villas, but also parts with numerous RDP houses. Besides that, whole areas are formed by only shacks. The municipal waste collection and care of the public space is restricted to the planned part of the township. And even in this part, just a few hours after the municipal tour, the public space is as polluted as before.

The situation in Mamelodi is so different in scale and composition, which means an overall change of the waste regime in whole Mamelodi, is a bridge to far. Also is relevant that the possibilities to come to an agreement with the political authorities of the Metropolitan Municipality are much less than with municipalities of a more limited dimension. Besides that, metropolitan areas are more frequent confronted with turbulent labour relations, which is an extra problem in changing

In 2007 the first deliberations started between representatives of the municipal waste department and representatives of Wamasa. The municipal representatives showed directly a lot of leads to pick and offered a lot of cooperation. They suggested certainly to engage with current initiatives in the township.

The Municipality of Tshwane has a formal partnership agreement with the Dutch Municipality of Delft with respect to the development of the township of Mamelodi. During more than ten years a lot of development projects in Mamelodi have been supported. During their project evaluation in 2008, the board of the Delft-Mamelodi Foundation formally expressed its willingness to put the theme of waste management on its agenda. Representatives from the local community (gathered in the EXCO Mamelodi) responded very enthusiastically to this announcement. The local project manager started an inventory of the current waste initiatives, which was completed by a Dutch graduated student in development economics in 2009.

In 2010 the successor of the local project manager of the Delft-Mamelodi foundation guided some private initiatives of selected collection and a student delegation is nowadays preparing a more definitive project approach based on an actualized inventory, besides the development of a local network to handle this project approach. In 2011 a new student delegation will prepare the first implementation steps. Also will be researched, if it's possible to link in a way with the waste activities of the Delft-Mamelodi foundation to organize a better support to these initiatives.

Another student delegation is at the moment preparing a report about the possibilities to come in an older industrial area (Rosslyn) to a cooperation between the settled enterprises in handling their business waste. Also in this case a new delegation will work out in 2011 their recommendations.

Recently, during a visit of a Wamasa delegation to Tshwane, the management of the municipal department committed herself to a more year cooperation with Wamasa, because of the interesting

results of the first student delegations. The Utrecht University of Applied Sciences developed during this visit a working relationship with the Technical University of Tshwane to organize intrinsic support for the student delegations in Tshwane.

8. Project Theewaterskloof Municipality

The Municipality of Theewaterskloof, comprising more than 100.000 inhabitants and an area as large as the combined area of the Dutch provinces of Overijssel and Gelderland, in the Western Cape Province, is one of the poorest regions in South Africa. Since 2004, HAN University of Applied Sciences at Arnhem/Nijmegen is involved in the municipality's Community Development Program. Other partners involved are the University of Western Cape at Cape Town, the Cape Peninsula University of Technology at Cape Town and the Elgin Learning Foundation at Grabauw. In 2008 Wamasa Foundation, the HAN University of Applied Sciences and representatives of the Municipality of Theewaterskloof agreed to launch a joint waste management project in Theewaterskloof.

Since a few delegations of students made a start with making of an inventory of the local waste situation in Grabauw, one of the greater villages in the municipality. But it proved not to be easy to create new initiatives based at their recommendations. The last delegation is at the moment preparing a type of a buy back centre, their report isn't finished yet. Evaluation has shown a greater involvement of the municipal organization is needed and the Municipal Manager of Theewaterskloof recently promised enthusiastic his cooperation. In 2011, embedded in a more professional structure, new student delegations of the HAN University will organize a restart of the project. Attractive in the situation of Grabauw is the presence of some great fruit factories with a lot of interests in the process of recycling. Because of that, also a more professional way of practicing the production of compost is an important issue.

9. Other leads and developments in South Africa

In October 2010 a delegation of Wamasa was invited by the council of Tlokwe City to make a first acquaintance, directed to the possibilities of future cooperation. Also contacts have been led during this visit with the University of Potchefstroom. At the moment a consideration is going about the eventual start of detaching student delegations in the second half of 2011.

Other municipalities searched for contacts with Wamasa, to name the Dr. Ruth Segomotso Mompoti District Municipality and the Chris Hani Districts Municipality in the Eastern Cape.

In the beginning of 2010 contacts have been led with the Dutch Municipality of Winterswijk, which is twinning with the Camdeboo Municipality in the field of social housing. Discussions should follow about the possibilities to extend the field of support to waste items, but first is a discussion in Winterswijk about the future prospects of their twinning relation in the new political circumstances.

Still more South African municipalities did have shown interest in further cooperation, but Wamasa has chosen to restrict his efforts at this moment to a limited number of locations.

It proves that the further development of legislation in South Africa in the field of waste motivates a lot of local authorities to pick waste themes as an important part of their responsibility.

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