Young Expert Programme Water

Team Project Report - Trends

What’s YEPpening in the World

Auteur : YEP group 1
Datum : September 30, 2014
<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>3</td>
</tr>
<tr>
<td>Trend Assignment Team Ethiopia</td>
<td>4</td>
</tr>
<tr>
<td>Trend Assignment Team Kenya</td>
<td>7</td>
</tr>
<tr>
<td>Trend Assignment Team Indonesia</td>
<td>10</td>
</tr>
<tr>
<td>Trend Assignment Team Ghana</td>
<td>13</td>
</tr>
</tbody>
</table>
INTRODUCTION

Before you lies the report of the first group of the Young Expert Programme. We have identified a range of trends which can lead to opportunities for the Dutch Water Sector. We were based in four different countries; Ethiopia, Kenya, Indonesia and Ghana.

The trend identification process was country based. Every country worked with his own team on identifying his most promising trend. After that the trend had to be analysed and checked.

On the second week of September 2014 we had the chance to work as a group together on our presentation. We combined all the trends into a programme and presented the trends in The Hague on the 12th of September.

In this report you can find a summary of those trends, their infographics and other trends which have not been presented, but can also be of interest. The presented trends will be worked out in business cases, which will be ready in the third quarter of next week.

We challenge people who think these trends can give opportunities/can lead to a solid business case to contact us.

The YEP 1 team
1. Introduction
Young Expert water programme water is a joint program of the Ministry of Foreign Affairs and the Netherlands Water Partnership (NWP). The last one year this training programme provide us to develop personal development plan, Planning, Monitoring and evaluation of project, intervention and change management and helping us to expand water expert network.

Ethiopian YEPers are Mukrab Kassahun, Selamawit Zewdu and Sara Gorenjjik. We have been worked to identify different trends in Ethiopia last year. Finally we presented **Shifting from Small Scale to Medium & Large scale Irrigation** to NWP and Ministry of Foreign Affairs on September 2014.

The Ethiopian Agricultural sector has been a priority in the development agenda for the government over the last 15 years. The fundamentals of agricultural development are preserved in the country’s overall economic development policy known as Agricultural Development Led Industrialization (ADLI). Ethiopian trend mainly focus on irrigation progress in Ethiopia.

2. Trend Analysis
Ethiopian team were identified three trends by collecting data from internet, Newspaper, field visit and interview of Agricultural organizations such as,

- **Shifting from Small to Medium & Large scale irrigation.** This trend mainly focuses progress of irrigation practices is slow compared to the potential of the country. Farming is still largely rainfall dependent. Recently there is new strategy designed on agricultural development and transformation. The strategy is aimed at promoting public and private investments on medium and large scale mechanized irrigation agriculture. Also potential irrigation area and availability of water were identified. This strategy and potential offers many opportunities for Investors.

- **Water harvesting in Abrha We’atsbeha, Tigray, Ethiopia.** This trend show as inspiring experience on water harvesting. The landscape restoration effort that has been put in this area is enormous but it paid after 10 years of community led intensive natural resource and water shed management work. The most interesting part is that all the work is done by the community. When it started some 15 years ago the area was severely degraded and highly water stressed. Now after 15 years of hard work the place has changed beyond expectations. The valley is filled with more than 300 shallow wells where by the farmers in the community used them for irrigation. They produce cash fruits such as guava, papaya, orange, avocado and mangos. They have secured their nutrition needs and most farmers also have small business. Most interestingly the landscape had change from bare to green and from gully to productive valley. New policy strategies have been emplaced to promote its acceptance and implementation. This conservation strategy is particularly benefiting the lower catchment by reducing flooding, and sediment accumulation.

- **Water-centered development’** is explicitly seen as the entry point for growth and improved livelihoods in Ethiopia. Increasingly water resource development is integrated with economic development and land use planning. In the last five years the large potential role and contribution of groundwater in water-centered development is recognized. In a number of areas with shallow groundwater farmer-
driven groundwater development are taking off. Along with the increasing groundwater development there is growing awareness that management is needed to ensure the sustainability of investments in groundwater development, to optimize the opportunities for groundwater recharge and reuse and to regulate the long term equitable use of the resource.

**Trend of Shifting from Small to Medium & Large scale irrigation was selected by Ethiopian team** because irrigation sector in Ethiopia significantly expand to reach the full irrigable potential of over 5 Mha. Medium- and large-scale schemes will be an important strategy to achieve this aspiration, in combination with exploring and developing groundwater potential, especially given that an estimated 85 percent of Ethiopia’s total surface water irrigation potential is estimated to be in large-scale schemes. Moreover, large-scale schemes will play a critical role in helping Ethiopia overcome the correlation between rainfall and agricultural growth – a goal no country has achieved without large-scale irrigation interventions.

3. **Opportunities for Dutch water Sector**
   - Investment in Agriculture and Agro-processing
   - Investment opportunities for introducing modern commercial livestock breeding and processing.
   - Opportunities for production and processing of cotton in Ethiopia, as well as producing and finishing textile fabrics and garment production.
   - Fruit, vegetable and cut flowers are fast-growing export businesses, with great potential for private investment. There are already some integrated agro-industrial processing plants.
   - Development cooperation for enhancing food security

4. **Conclusion**
Irrigation and improved agricultural water management practice is important in Ethiopia to increase productivity of land, water and Crops. Dutch water sector will have crucial role by Knowledge sharing and capacity building in water management and productivity.

5. **Infographic**
Infographic found in the attached document. It shows the Existing and potential irrigation schemes and opportunities in Ethiopia.
Shifting from small to medium & large scale irrigation in Ethiopia

**More investment in agriculture**

**Shift from small to medium and large scale irrigation**

- **1950**: 1st large scale irrigation project (Wojni sugar cane)
- **1960**: 1st dam for large scale irrigation constructed in Koka
- **1975 - 1987**: Derg era – all farms nationalised, irrigation only in State Farms
- **1990**: Fall of the derg – no investment in irrigation by public or private sector
- **2003 - 2010**: Slow development of irrigation by public and private sector
- **2010 - Today**: Growing development of irrigation by public and private sector

**What Ethiopia has to offer**

- Availability of markets, water, land, labor
- Growing infrastructure
- Improved investment climate
- Improved stability

**Opportunities for the Netherlands**

- Investment in agro-business
- Development cooperation for enhancing food security
- Knowledge sharing and capacity building in water management and productivity
- New product development, piloting and pioneering in agro-business
# TREND ASSIGNMENT TEAM KENYA

## 1. Introduction
During the first year of the Young Expert Program (YEP) all young experts were requested to identify trends which could be of interest for the Dutch Water Sector. ‘Team Kenya’ consists of two Kenyans (Euphresia Luseka and Lawrence Kimaru) and three Dutch people (Peter Bervoets, Reinilde Eppinga and Sandra van Soelen). In the second half of 2014, team Kenya decided to focus on the following trend: YEPers in Kenya see opportunities for potato farming: Increase in potato farms and potato consumption in Kenya.

## 2. Trends
During the first year, nine trends were identified by Team Kenya. The trends are listed below, including a short description.
- From small scale farming to mega farms and an increase in potato farming: change in lifestyle and an increasing middle-class living in urban areas have led to the consumption of more fast-food. The trend is: Less farmers, bigger farms. At the same time, potato is increasing its important in the Kenyan food market.
- Payment for water services: there are 3 interesting trends between the water service providers and the consumers which include: (a) Willingness to charge and willingness to pay (b) un-willingness to charge and un-willingness to pay (c) Willingness to charge and un-willingness to pay.
- Availability of different types of waste and current waste management by companies, council and individuals: the trend we have seen is that industrial companies (oil refineries, saw millers, animal feed companies etc.) dealing with mostly organic waste are increasing their awareness on waste management.
- Increasing use of Public Private Partnerships (PPPs): Within the past decade Kenya is embracing PPPs as the demand for quality and affordable services from citizens is increasing. PPP is visibly present in major drivers of economy they include transport, water and sanitation, telecommunications, power, social services.
- Devolution in Kenya: in 2010, the Government of Kenya adopted a new constitution, where 47 County Governments were created. In the process of devolution, the county governments are getting more responsibilities, including being responsible for the water supply and sanitation.
- Economic development for all: Kenya is making significant steps in many facets of economic activities. Kenya is fast opening up its economy to pool of investors. Moreover, the Kenyan government has formulated and implemented policies that have mainstreamed gender, inclusion and equity issue to foster economic growth.
- Professionally managed water systems: the Market Assistance Programme (MAP) aims to improve management of rural water systems through improving Management Strategy and Practice of Micro, Small and Medium Water Service Providers and improving the policy process governing the water market system.
- The role of Sanitation: for long the “water and sanitation” companies have focused on water while sanitation services were limited. A current trend though is increased interest within WSPs as well as donor-funded projects (like the Nakuru County Sanitation Program) to provide sanitation services to all within the service area.
- Trends in Sanitation: with increased funding for water, sanitation and hygiene activities being promoted, there is a growing concern over the increased construction and use of pit latrine as the common excreta disposal system in order. Furthermore, there is increased interest in how to re-use faecal matter.
3. **Selected trend: Opportunities in Potato Farming**

Team Kenya agreed to focus on potato farming and consumption in Kenya as a trend. **What is interesting about this trend?**

- Potato production and consumption is growing in Kenya, where the crop is the largest consumed after maize – Kenya’s staple food.
- Change of lifestyles: a growing middle-class, change in roles of women in the household (bread winners), value added products of potatoes.
- Potatoes are healthy: 85% of the plant is edible and there are double amounts of protein and calcium compared to maize which mainly contains carbohydrates. This crop can therefore aid in managing the high child mortality rates due to nutrition in Kenya.
- Kenya’s population is increasing at an increasing rate while the agricultural land is decreasing. Hence the agriculture sector is facing twin challenges: to ensure food security in Kenya while sustainably exploiting the fresh water resources.

4. **Opportunities**

The Netherlands is a traditional potato country with a lot of experience in planting and processing potatoes. Furthermore, the Netherlands is famous for its water management. Therefore we see a lot of opportunities for the Dutch Water Sector to assist in the Kenyan Potato sector and help in the agriculture-water nexus. As potatoes production and consumption is growing in Kenya, a lot of things can be done to make the sector more efficient. We see the following opportunities:

- Currently 2% of the farmers is classified a large-scale farmer, but these farmers are producing 17% of the market share. Therefore there is room for more large scale farms to increase potato production in Kenya. At the same time, there are still 500,000 small scale farmers producing potatoes, which can use help in producing more efficiently.
- There is a large potential for irrigation expansion in Kenya. Currently only 2% of agricultural land is irrigated. The government has big plans to increase irrigation in the country and this can lead to great opportunities for large-scale projects.
- Planting potatoes is not enough for a market who wants chips and crisps as well. Processing is needed for that. Currently there is only 1 potato processing plant in Kenya and only 2 in East and South Africa. An opportunity for Dutch investment and knowledge of processing potatoes. This can help Kenya in reducing import of potato products.
- Other possible areas of opportunities are in fertilizer supply and use (e.g. the application of fertilizer through irrigation systems, called fertigation), food processing knowledge, improved seed supply and sector development cooperation.

**Kenya is ready!** Demand for potatoes are growing, at the same time there is enough labour and is the Kenyan Government supporting the sector by means of policies and investments. The Netherlands and Kenya are working together in the Potato Platform Kenya, a PPP initiative between governments, companies and knowledge institutes from the Netherlands and Kenya. In this way, actors in the potato sector come together to share knowledge and are trying to improve the potato sector in Kenya. At the same time, the International Fertilizer Development Cooperation (IFDC) is willing to establish links between the Dutch Water Sector and Kenyan Agribusiness. Two possibilities for Dutch companies and organisations to step in.

We as YEPPers are willing and able to create links between Government, Private Sector and Farmers; Agriculture and Water Sector; Local and Dutch Technical Expertise; and Dutch Investors and Opportunities. You can contact us via email:

- Peter Bervoets: [Peter.Bervoets@vitens.nl](mailto:Peter.Bervoets@vitens.nl)
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- Euphresia Luseka: [ELuseka@snvworld.org](mailto:ELuseka@snvworld.org)
- Sandra van Soelen: [SvanSoelen@snvworld.org](mailto:SvanSoelen@snvworld.org)

5. **Infographic**

An infographic is attached to this document and shows the most interesting facts and opportunities of Kenyan potato farming for the Dutch Water Sector.
YEPpers in Kenya see Opportunities in Potato Farming

Increased Potato Production
Currently 128,000 Ha

Potatoes are good for Health
85% of plant is edible Double protein and calcium

Changing lifestyle
More middle-income class Changing role of women Variety of products

Growing potatoes: 3 months growing cycle requires relatively little water

Only ONE potato processing plant in Kenya serving East/Central Africa
Potential to reduce import of potato and potato products

NOW: 114,600 hectares are under irrigation in Kenya. POTENTIAL: estimated irrigation potential of 1.3 million hectares. GOVERNMENT GOAL: increase irrigation 10 times by 2017. In 2014 the Kenyan Government allocated €63 million for irrigation

Opportunities:
1. More mega farms
2. 500,000 efficient small scale farmers

Expertise opportunities:
Water treatment & irrigation Fertilizer supply (fertilization) Food processing knowledge Improved seeds Sector development cooperation

YEPpers CREATE LINKS between: Government, Private Sector and Farmers Agriculture and water sectors Local and Dutch technical expertise Dutch Investors and Opportunities

Opportunities enough!

Peto Sbervoots, Sandra van Soelen, Euphresia Luseka, Laurence Kimaru & Reelide Eppinga

12 September 2014
1. Introduction
During the first year of the Young Expert Program (YEP) all young experts were requested to identify trends which could be of interest for the Dutch Water Sector. The trends for group 1 are identified for each country: Ethiopia, Ghana, Indonesia, Kenya and Pakistan. ‘Team Indonesia’ consists of three Indonesian (Aditya Chandra Reymonza, Anton Sanjaya and Dwi Wanna) and two Dutch people (Arthur Geilvoet and Lourens Meijer).

In the first half year of 2014 various trends were identified. One of these trends was selected and further elaborated. Eventually this trend was presented to NWP and Ministry of Foreign Affairs during the last day of the two week training for group 1 in September 2014. The selected trend of Team Indonesia is: Jakarta, the twitter capital of the world. Chances and opportunities for the Dutch water sector to create value with help of new and innovative social media platforms.

2. Trends
Ten trends were identified by Team Indonesia. The trends are listed below, including a short description.

- Continuous devaluation of Indonesian Rupiah currency: This trend is not directly related to water, but is related to the economic situation of the NWP to Indonesia, and therefore affects the impact of the NWP in Indonesia. This trend is about the Indonesian Rupiah which is devaluing in an accelerating.
- Jakarta is 'Twitter Capital of the World' - Social Media explosion: Jakarta appears to be the place in the world with the 'highest twitter density', or the twitter capital of the world. Twitter is really exploding in Jakarta. This is interesting because it offers many opportunities for new smart information gathering.
- Increasing traffic problems in Jakarta: Traffic is an ever increasing problem in Jakarta. Traffic jams are getting worse and worse every year. All people in Jakarta recognise the problem, but there seems to be no short term or even long term actions to solve the big problem.
- Deforestation: Indonesia has taken over Brazil in 2014 and has the highest deforestation rate in the world. Primary forests are disappearing very fast, especially on the islands of Borneo, Sumatra and Java. The most important reason is that the land is used for palm oil plantations.
- Increasing flood risks in Jakarta: Together with the increasing traffic problem, floods in Jakarta are probably the best known problems in Jakarta. Floods occur mostly during the rainy season and many parts of Jakarta get flooded several times a year. The number of flood and intensity of the floods are getting worse every year.
- Clean and fresh water scarcity in Jakarta and Indonesia: Indonesia is foreseen to have a scarcity of clean water in the next few years. One of the issues is that it is no longer allowed to use ground water as a water source for drinking water in Jakarta. The reason for that is that the extraction of ground water causes further land subsidence.
- Alarming rate of decreasing bird population in Indonesia: Catching birds and bird trade is booming business in Indonesia and especially in Java. Having a bird as a pet at home is some kind of status symbol. By catching certain birds one can earn 100 Euro's per bird, which is a lot of money for Javan people. Besides a lot of natural vegetation is disappearing quickly (see the trend of deforestation).
Major damage and incidents due erupting Volcano’s in Indonesia: Volcano eruption occur yearly in Indonesia, especially on Java and Sumatra.

Upcoming Greenhouses around Jakarta: Housing estates in several regions in Indonesia such as in Jabodetabek (Jakarta, Bogor, Depok, Tangerang and Bekasi), Bandung, and Surabaya have been issuing and practising an idea of greenhouse estate.

3. **Selected trend: Jakarta, the twitter capital of the world**

Team Indonesia decided to further elaborate Twitter. Not only because the use social media (and especially Twitter) is still growing, but also because other trends can be covered with twitter as well, such as floodings, traffic and deforestation.

Some interesting facts about twitter in Jakarta and the rest of Indonesia are listed below:

- From all cities, most tweets in the world come from Jakarta (385 tweets per second)
- Jakartian twitter users tweet 2.4% of the 10.6 billion tweets worldwide
- Indonesia is number 3 twitter country in the world
- Internet use in Indonesia grew from 2 million in 2000 to over 55 million in 2012
- Indonesia’s internet penetration is only 24% and still growing
- 62% of internet users are accessing internet by mobile phone
- Indonesian people use social media to share information, in contrast to most other countries where people share their own daily life

The combination of the facts that internet use is growing, the high density of people, the high percentage of using mobile phones (which means time and location are recorded) and that Indonesians share information is reason enough to consider Twitter as a huge opportunity for new business development which may be of interest for the Dutch Water Sector.

4. **Opportunities**

Twitter has created an immense database of all sorts of data. An advantage of this data is that it is open source and that time and location are included in a tweet. For that reason it can be used to collect historic data regarding topics such as floods, deforestation, instant pollution, bad water quality, traffic jam and many other subjects.

Team Indonesia already identified one company that uses Twitter for data mining. Floodtags (www.floodtags.com) for example uses twitter for data mining for operational decisions during floods, reconstruction of past flood events, analysis of communication on floods and support to flood research and development.

Twitter is a very promising tool to obtain, map and analyse objective unbiased data on actual social issues.

5. **Next step**

Team Indonesia will elaborate a business case of twitter in the upcoming year.

6. **Infographic**

An infographic is attached to this document and shows the most interesting facts and opportunities of Twitter for the Dutch Water Sector.
JAKARTA
THE TWITTER CAPITAL OF THE WORLD

Jakarta, Indonesia

Fresh Water Scarcity  Bird Population Decreasing
Clean Water Scarcity  Flood  Volcano Eruption
Green Houses  Waste Water Techniques  Deforestation

Indonesia’s internet penetration is 24%
62% of users are accessing the internet using their mobile
55 million users in 2012
2 million users in 2000

Top 5 cities by numbers of posted tweets
Jakarta
Tokyo
London
Sao Paulo
New York

Twitter users in Jakarta send 385 tweets per second!!!

Indonesians are using social media to make their voices heard

Future opportunity
- floods
- traffic
- deforestation
- etc

Jakarta We Are Social

@earthurgeilvoet  @antonsanjaya @sweetwannabee @znomyer
TREND ANALYSIS GHANA: GHANAIAN YEPPERS OBSERVE PLASTIC EXPLOSION

Introduction
During the first year of the Young Expert Program (YEP) all young experts were requested to identify trends which could be of interest for the Dutch Water Sector. Ghanaian YEPers of group 1 are Richard Kofi Appoh and Toon van den Heuvel. During year 1 we have been working to identify different trends and finally presented “Ghanaian YEPPers observe plastic explosion” to the NWP and Ministry of Foreign Affairs on 19 September 2014.

Ghana is crazy about plastic. The more bags the better and no customer will walk away without at least one “rubber” around their products. At the same time the bags are becoming lighter and lighter to save the shop owners money and often the bag barely lasts to reach its destination and can never be used again. This has caused increased pressure in the form of pollution on the water bodies in Ghana, increasing treatment costs for the drinking water company GWCL as well as contributing to the growth of the “plastic island” in the ocean.

Trend analysis
Not so long ago, before the flood of cheap plastic, reached Ghana, things were very different. People went to the market with a basket and most of the foodstuff was wrapped in paper or banana leaves. One had to take his or her own plate to buy food or another option was to eat the food at the joint. Water was bought and stored in pots and drank from cups provided by the sellers. Inorganic waste such as plastic take up to 1000 years to decompose while Styrofoam and plastic bottles can last up to 1 million years!

Ghana, has a waste management problem and unless habits are changed it will only become worse. As the country looks for alternative land for dumpsites, they should also consider promoting segregation and recycling of waste. A change of behavior towards the environment will go a long way to solve part of the problem. Some plastic companies like Blow Plast Company Limited, Tenlong Company and TOP industries have taken recycling initiative by buying plastic waste from people. The plastic waste is recycled to make other plastic products, however collection and separation at the source is still in its infancy. Scavengers who are popularly called ‘Korluba’ collect waste of different ‘qualities’ and sell it to more business oriented Ghanaians who sell amounts up to 1000 kg/week to the recycling companies. The Korluba business used to be dominated by men but now women have also joined in the business collecting drinking bottles and sachet bags on the streets. They do not realize that their work is helping save the environment in addition to provide them with an income. Moreover within communities these people are called all sort of names because they are in the trash business. To instigate a significant change and moreover do good business the collection and separation of waste can be substantially improved. Additionally awareness on recycling waste and in that way improving the environment and generate an income is minimal.

Opportunities for the Dutch
Plastic is plenty in Accra, though only a small percentage is collected and recycled. Furthermore other waste streams such as metal, paper, glass and organic waste have been outside the scope of this trend but options to recycle these types of waste and make business can be investigated. Dutch NGO’s can use their expertise to raise awareness in communities, the drinking water sector can contribute to increased availability of CLEAN drinking water under their CSR policy by mitigating pressure on the water sources
Ghanaian drinking water companies tap into. Outside the water sector this trend could be an opportunity for the waste management sector in the Netherlands, though the (future) policy of Ghana on waste management has to be investigated before big investments can be made. Imagine the Dutch build a big recycling plant and the government decides to ban the use of plastic as in Rwanda. Lastly the Dutch development partners can invest in a viable business case to support Ghana with this challenge.

**Conclusion and way forward**
Obviously this trend provides several opportunities in contributing to a better/cleaner environment and more and cleaner drinking water for Ghanaians while at the same time doing business and earn back potential investments. Scale is important and within this YEP assignment Toon van den Heuvel (Richard Kofi Appoh’s contract is finished) will develop a business case from this trend in year 2. More interesting would be to really start working and having impact in a test case for which only a small initial investment will be required!

**PROJECT PLAN:**

Optimize collection starting at schools SELLING collected waste to highest bidder. The children will act as change agents and raise awareness in communities. Recycling is fun!

Potentially for a Public Private Partnership with Ghanaian and Dutch companies. Potential partners in Ghana could be:

**Private**
- Voltic (Bottled water)
- TOP industries Ltd. (Recycling company)
- Zoomlion (Biggest waste management company in Ghana)

**Public**
- Environmental Protection Agency
- Ghana Water Company Ltd.
- The Ministry of Environment, Science and Technology (MEST)

**NGO**
- Hipstersofnature ([www.hipstersofnature.org](http://www.hipstersofnature.org))

Hipsters of Nature is a community of people dedicated to bringing back Ghana’s natural beauty through engaging artistic events and projects. In cooperation with this NGO, YEP1 intends to develop an innovative approach to segregate and collect waste at schools. Hipsters of Nature were founded in 2012 and have since grown to a registered organization with several large and well publicized events to their name. They already identified many sellers in the market who are in need of used bottles. Hipsters of nature intends to creates several recycling centers in Accra and build a chain of supply. This will help recycle plastic bottles, protect the environment in our country and also provide businesses with sustainable, environmentally friendly materials. Hopefully the Dutch are interested in partnering with HoN in this project?

**Infographic**
Infographic about this trend found in the attached document. Is your interest captured?
Contact: toon.vandenheuvel@vitens.nl
Background

In September 2013 the first group of young experts left to their respective countries with a group assignment with the objective to identify trends within the countries where Young experts are based. This will lead to opportunities for Dutch organisations in the water sector and/or contribute to the development goals of the countries. This poster is presenting the results of team Ghana, who identified “a plastic explosion” in Ghana. YEP Ghana is certain that this trend with adverse effects on the environment contains business opportunities for the Dutch Water sector while at the same time providing a valuable contribution to Ghana's development goals.

Impact

Plastic is plenty in Accra. Only small percentage collected and recycled. Opportunities for the Dutch sector optimizing collection, starting at schools. SELLING collected waste. Children as change agents to raise awareness in communities. Furthermore technical assistance can be given to private Ghanaian companies involved in large scale waste management. Possible entry by foreign (Dutch) companies in the waste management sector is an option to be explored.