ENVIROMENTAL HEALTH

South Africa’s environmental health sector faces numerous challenges in all three spheres of government. The recent Environmental Health Act has helped identify the goals and issues of the sector and clarify the tasks of the role players in delivering these goals.

With support from the Programme, the Department of Health is completing a major study aimed at detailing upcoming challenges and solutions. The Department is implementing projects for education and capacity building of officials from all spheres of government, particularly in relation to indoor air pollution and its subsequent health effects. Municipalities are also restructuring and building capacity to meet challenges and achieve goals.
Background

Cape Town’s many municipal departments all have their own approaches to health education and tend to run parallel programmes covering much of the same material. The departments of water, sanitation, housing and health may have slightly different angles to their programmes but there is much duplication, making inefficient use of human and financial resources.

From the community’s point of view, it is confusing to deal with so many departments. It is also difficult for community members to organise and make themselves available (often after hours) for multiple meetings and training sessions. In light of these problems, this project aimed to develop a more collaborative and efficient approach to health and hygiene education in informal settlements.

Process

The project team started by reviewing the staff and material resources of the department most synonymous with health and hygiene. The Department of Water and Sanitation is responsible for the provision and maintenance of toilets and standpipes in informal areas. It employs and educates 36 community members to oversee the general upkeep of toilets and report related misuse or vandalism.

Using this infrastructure as the collaborative springboard, the project team set about training and redeploying the community staff. Their basic levels of competence and training were determined, after which they received six days of tailored education covering key health topics such as: proper use of toilets, hygiene, spreading of disease, waste management (solid and other), dry sanitation toilets, grey water at standpipes, mosquito breeding, stagnant water, etcetera. An additional 13 community staff were trained, plus four environmental health practitioners (EHPs) from the health department.

The next step entailed determining where to place the 49 staff among Cape Town’s 240 informal settlements, in order to maximise their effectiveness. The team developed a base-line indicator using diarrhoeal deaths and case-loads and allocated staff to the respective areas scoring highest on the index. The newly trained EHPs assisted with monitoring and supervising, while the health department supplied training materials and chart tools for use in the field. The waste and sanitation department handled the procurement of staff and administration of time sheets using its existing infrastructure, It also provided equipment, cleaning materials and protective clothing. The health department paid the salaries.

The project’s educational approach emphasises sustainability through the use of health clubs. Health clubs are initiated by the community staff and operate very much like scout clubs. They have a group of members, hold regular training sessions, meet to prioritise problems, and negotiate with officials to resolve issues. The clubs often

Objectives

- To pilot a collaborative approach to health and hygiene education in informal settlements.

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Timeframe
4 months

Funding
R300 000

1. Theatrical scene from a training session.
Commitment was shown by most community workers – there were good records of attendance and no absenteeism. However, xenophobic attacks during the pilot phase severely hampered the establishment of health clubs, as did the short project duration. Other drawbacks reported include: a lack of suitable venues for the community to meet; poor support from the EHPs to the community workers; EHPs not reporting progress to coordinators; community workers operating singularly instead of as teams; slow provision of information to determine baseline indicators; lack of commitment by some community workers. These issues are being addressed prior to the roll-out phase.

According to project leader Armien Petersen, the pilot clearly illustrates that local departments can successfully collaborate to deliver sustainable health education.

### Balanced Scorecard

**INPUT**

<table>
<thead>
<tr>
<th>1. Did you have adequate internal resources to implement your project?</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Total: 12</th>
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<tr>
<td>2. Did you have adequate funding for your project?</td>
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<td>3. Did you have adequate technical expertise to implement your project?</td>
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</tbody>
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**EXTERNAL**

| 1. To what extent did the project impact on vertical (national - provincial - municipal) linkages? | 1 | 2 | 3 | 4 | 5 | Total: 6 |
| 2. To what extent did this project improve linkages (horizontal) with similar UEMP partners? | | | | | | |
| 3. Did the project have a higher than expected impact on stakeholders? | | | | | | |

**UEMP VISION & GOALS**

| 1. To what degree did your project have a focus on poverty reduction? | 1 | 2 | 3 | 4 | 5 | Total: 9 |
| 2. To what extent was this project relevant to the targeted beneficiaries? | | | | | | |
| 3. To what extent will this project be replicated sustainably in the future? | | | | | | |

**INTERNAL**

| 1. Did you have adequate support from management to implement this project? | 1 | 2 | 3 | 4 | 5 | Total: 12 |
| 2. To what extent did the project link with other priorities of the organisation? | | | | | | |
| 3. Did the project have a higher than expected impact in your organisation? | | | | | | |

**OUTPUT**

| 1. To what extent did your project have tangible benefits? | 1 | 2 | 3 | 4 | 5 | Total: 10 |
| 2. To what extent did your project fulfil its aims? | | | | | | |
| 3. Was this project a cost effective response to the problem addressed? | | | | | | |
Background
The City of Cape Town (CoCT) manages operations and facilities that make significant contributions to pollution in the city. These include landfill sites and waste treatment plants. The city government formally identified a lack of pollution control in 2004 and subsequently developed a discussion document which it published in 2006. This has become the origin of an ‘integrated pollution control policy’ containing the strategy, policy and implementation plans for controlling pollution in the city. The strategy component focuses on gathering the city role players together to resolve the issues identified in the discussion paper.

Process
The discussion document on pollution control highlighted a number of key issues facing Cape Town’s municipality. First, there are many different departments involved in pollution control, with no single entry point for monitoring and reporting. Responsibilities are not clearly defined and when problems are reported, there may be a response from either many departments or absolutely none. With no single authority responsible for pollution control, actions taken by city authorities are disjointed and uncohesive.

Using the discussion document as a starting point, the city health team formed four subcommittees to help take the process forward. A number of draft versions were circulated to CoCT role players and rounds of comments incorporated into a working document. An independently facilitated workshop was held, with a wide group, to examine the problem statements and develop a strategy that could later be translated into policies and implementation plans. A last round of comments from workshop attendees were incorporated and the

Objectives
- To develop an integrated plan to control pollution in the city of Cape Town.

Environmental Health Cape Town
INTEGRATED POLLUTION CONTROL POLICY

Objectives

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<tr>
<th>Contact person</th>
<th>Time frame</th>
<th>Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kosie Schippers</td>
<td>8 months</td>
<td>R200 000</td>
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</table>

1. Blocked sewage reticulation line overflowing into the stormwater channel and polluting the water resource (river) and environment downstream.

2. Chemical drums illegally disposed off by a waste company. This activity creates the potential for environmental pollution, also placing human and animal health in danger through exposure to such chemicals.

3. Solid waste dumping in the vicinity of an informal settlement. Burning of waste impacts on the air quality, posing a threat to community health and safety in informal settlements.
final document presented to the city’s management team for endorsement. Five committees were responsible for approving the final strategy document which lays down administrative and legislative structures and processes for controlling pollution in the city. This will be developed into policy and planning documents by a small core group, and public participation will occur during this stage.

Outcomes
An important outcome of the process was raising awareness about CoCT’s disintegrated operations and ‘silo’ management, as well as current problems and legal requirements related to pollution control in the city. Role players became more sensitised to the situation and more willing to engage in the process.

There was recognition that an integrated approach and well-defined responsibilities are needed, especially around the city’s monitoring and enforcement roles. The project successfully nurtured buy-in to the process and commitment to a co-ordinated approach. As a result of the project, CoCT has developed a new electronically-based system for processing pollution complaints and reports from the public.

Lessons
Project manager Kosie Schippers says that managing expectations was the biggest challenge. Feedback and comments were not forthcoming initially and this necessitated a slow and staged approach. On-going dialogue was imperative to ensure buy-in and build interest in pollution control issues. Internal politics and problems often challenged the project, and it was further slowed by changes in legislation and city structures that occurred during the time frame.
Background
Between 1999 and 2001, a nationwide project was undertaken to test the effect that dense settlements have on local water quality. At the same time, the project team ran a communications strategy that had been developed by the Department of Water Affairs and Forestry (DWAF - now defunct). The strategy was aimed at helping communities become more aware of their behaviour and understand associated impacts on the environment. Recognising limitations and financial implications for the community, the campaign focused on empowering communities to identify and solve problems caused by certain behaviour patterns. Via road shows and meetings, officials worked closely with the community, educating and testing water quality at the same time, in order to illustrate impacts.

The project successfully achieved the following:
- Skills transfer, knowledge-sharing and empowerment
- Community knowledge of government departments, contacts and links with local councils.
- Mobilising internal community resources to provide services and employment for some.

Ethekwini undertook to extend the initiative to three local districts, using community members previously working with DWAF and already exposed to the strategy. Key individuals were moved to other communities and became champions for the campaign and widening its spread. The project was carried out in two phases, with the second phase incorporating improvements on the first.

Activities
Project staff used the first district as a learning opportunity to fine tune project activities which included the following:
- Surveys: held at the beginning and end of the project; used situational analysis

Objectives
- To develop communication and organisational skills in informal settlements, aimed at resolving local health challenges.
- To empower communities to deal with environmental challenges, using communications strategies.

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Time frame
2 years (phased)

Funding
R300 000 (phased)
questions to assess extent of community knowledge.
  • Workshops: with environmental health practitioners (EHPs), public sector officials, department specialists and consultants; to improve community awareness of environmental impacts.
  • Meetings: to engage with community and report back on progress.
  • Training: activities captured on video during phase one; videos used as an educational tool for phase two.
  • Road shows: using entertainment, personal stories and information-sharing to help implement the strategy.
  • Campaigns: for organised clean-ups.
  • Audits: to establish existing skills and inform training requirements

Benefits and successes
At workshops, participants reported problems and then used problem and situational analysis to start prioritising problems according to their potential impacts. Problems and related interventions were discussed between community members and consultants, after which relevant experts and specialists made recommendations. Workshops helped develop good working relationships between communities and officials, thus facilitating implementation and intervention.

The project brought about many practical changes in the settlements where it was implemented. Toilets were improved and a solid waste contractor was hired to service them. Initially, the community was given resources to build toilets but they sold the materials for cash. A new approach required 12-20% of a household’s monthly income to be held as a deposit for a toilet. The shift in strategy worked and the project team received 110 applications in two weeks.

Problems and lessons
During phase one it was found that community-sourced EHPs were not sufficiently trained so activities were halted while they received additional practical and technical training. This enabled them to implement the communication strategy more effectively and carry out prioritisation and analysis exercises.

Phase one also placed much responsibility with the community, resulting in a lack of implementation in some areas. For phase two, public officials were more involved and shouldered more responsibility.

Informal settlements generally lack basic services and infrastructure, making implementation of the strategy difficult at times. In some cases, new infrastructure was abused due to a low sense of ownership and a lack of knowledge. Communities also became hostile when they felt their expectations were not being met. The communications campaign helped show communities how to use infrastructure and services; and helped them understand the implications and costs of abuse and vandalism. Most importantly, community members were encouraged to act as custodians and caretakers of their environment.
Informal traders have been operating on the streets of eThekwini since the early 1990s. Initially they received no support from the City, which repeatedly tried to drive them away. Over time, the City recognised the survivalist nature of informal trading and realised that the traders were not going to disappear. Subsequently, it drew up a set of minimum trading standards to accommodate the traders without compromising public health.

The new regulation allowed the City to issue a certificate of acceptability to food traders in one of three categories identified as follows:

- Fruit and vegetable sellers: This is where first-time traders start as it is easy and quick to set up, simple requiring a bulk purchase and re-selling of individual items.
- Food preparation: This offers traders bigger margins but the cooking of meat and chicken presents high public health risks
- Caterers: These traders are responsible for many meals and operations can vary from domestic chicken rearing to small catering businesses.

The City’s informal trading section began to register the 6000-7000 food traders in the city, issuing certificates along with minimum standard requirements such as: tables or trolleys with impervious surface finishes, and portable, removable equipment. In order to control numbers, council began to demarcate bays for traders. For a minimum rental, traders are guaranteed a permanent spot, which can only be occupied if there is compliance with minimum standards.

At commencement of the DANIDA-funded training project, only about 7% of traders had been certified by temporary environmental health practitioners (EHPs). The City embarked on a process to prioritise registration of traders, especially after it was found that council and government contracts had been awarded to unregistered caterers whose substandard food was contaminated with bacteria.

The City progressively enhanced the health and safety requirements for registration. Standards were extended to prohibit sub-standard equipment and require a refuse receptacle and water on-site. It supported poverty alleviation by introducing traders to wholesalers, suggesting suppliers and encouraging the use of ice-packs to preserve food.

For every 30-40 caterers and food preparers registered, the City held an informal graduation event at a local auditorium. Here, health requirements were reinforced and information shared on topics such as: elementary bacteriology; germs and disease; use, storage and disposal of cooking oil; flies and cockroaches; cleanliness; and the risks of working with hot foods. Many informal traders are aged pensioners with excellent skills in preparing and cooking traditional meals. They’re also very open to new learning and many received education for the first time at one of these events.

On-going monthly training sessions (with transport provided) are attended by public health officials preparing to work in the field. Background, legislation and registration information is provided and monthly certification targets are set. Officials are mentored and supervised, while

**Objectives**

- Upgrading of informal food traders and caterers to ensure public health and food safety.

**Contact person**

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**Time frame**

2 years (phased)

**Funding**

R600 000 (phased)
even city councillors are sensitised to the issues facing informal traders.

EHPs monitor food safety and hygiene by randomly purchasing food and analysing bacterial levels; taking swabs from the hands of food preparers; and testing samples of cooking oil. If high bacteria levels are found in a sample, the trader receives further training. Around 200 food samples are tested every month.

In the project’s two year time frame, some 36% of eThekwini’s informal food traders were registered – a situation unique among South African cities.

Benefits
Apart from the obvious benefits of safe food and improved health, the project has helped develop strong relationships between the City and the informal traders. The City is investigating the possibility of accommodating informal traders at stadia, the International Convention Centre and sporting events like grand prixes. Registered caterers are selected from the City’s database for municipal functions, and general feedback from traders is immensely positive.

The project has empowered informal traders and is helping them remain in business longer. According to project manager Umar Singh, this is good news for workers. “Poor people travel long distances to work in the city and informal traders provide them with cheap and convenient food. This project contributes to a well-nourished workforce and a healthier population.

Lessons
Initially, inexperienced City staff were rejected by the trader community. In response, staff learned to seek the help of an influential community member in the area, to make introductions and assure traders that the City intended to help them and was not trying to stop their activities.

The City found that caterers, in particular, were operating out of garages and store-rooms in residential areas because commercial premises are not an affordable option. In some cases, health officials negotiated with town-planning departments to legalise cooking in certain outbuildings. In other cases, health officials negotiated occupancy and tenancy agreements at churches, community halls, under-utilised school kitchens and stadia. With support from the planning department, these venues became the commercial premises for informal caterers, who shared the space and contributed rental fees, making no negative impact on the facilities.
Background
In terms of Health Act 61 of 2003, local municipalities are required to provide vector control services aimed at reducing the incidence of insects and pests that spread disease. In order to meet this requirement, Ethekwini municipality has trained and capacitated environmental health practitioners (EHPs) to undertake vector services, such as ditching, spraying and educating.

Process
The two-phased process entailed two workshops attended by EHPs, various public sector experts and officials, as well as specialists from tertiary institutions.

The initial training workshop was aimed at orientating EHPs and providing them with a basic understanding of vector services. Content included the important components of plague peparedness and development of a response outbreak plan. This aligns with requirements of the World Health Organisation around re-emerging diseases.

A second workshop was devoted to the development of guidelines using recommendations tabled at the first meeting. Participants worked with standard national documentation to put together their own set of guidelines covering hands on implementation of vector control. They were subsequently trained to independently undertake control activities.

Objectives
- To ensure that vector control services are provided throughout KwaZulu-Natal province.
- To control, reduce and minimise vectors that transmit disease.

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Timeframe
Phases 1 & 2: 2 years

Funding
Phase 1: R250 000
Phase 2: R100 000
The training programme is on-going, with a Vector Control Committee meeting every quarter to gather feedback and monitor roll-out of training at sub-district level, across the province.

Outcomes
- EHPs throughout the province have been capacitated to carry out vector control services.
- A custom set of vector control guidelines have been developed and learning materials produced.
- The province has experienced a reduction in outbreaks of zoonotic (animal-to-man) diseases.
- The incidence of vectors in the province has been reduced.

According to Prem Maharaj, the project highlighted that many municipalities weren’t providing vector control services, or budgeting for them, even though this is a key component of environmental health. The most important challenge, he says, is changing people’s attitudes.
Background
The Health Act of 2003 and the Air Quality Act of 2004 respectively require that district and metropolitan municipalities must render municipal health and air quality services. Previously, for example, the permitting of scheduled processes was a national government responsibility (DEAT) but is now devolved to district level. Much preparation of systems and staff is required to implement the new air quality legislation, and supply municipal health and air quality services at a district level.

Sedibeng District embarked on a training programme as a first step towards supplying these services. The District is responsible for capacitating municipalities and assets in order to take on the new functions and, hence, it required properly trained and capacitated staff.

Process
Local level meetings were held and agreement reached to negotiate service level agreements with the universities of Pretoria, North West, and Johannesburg to undertake the necessary training. Limited budgets and limited ‘seats’ allowed for only eight staff to participate in the first air quality module, although demand was higher. Participants already involved or interested in air quality were drawn from all three municipalities in the district. Two weeks of full-time training took place at the University of Johannesburg, focusing on a full spectrum of air quality issues i.e. implementation, enforcement, monitoring, and principles of pollution. The training is considered one of the best available courses in South Africa and equivalent to an NQF level 7 qualification, providing a first step for students to pursue further studies and build a career in air quality management.

The same group of students received a second round of training in environmental issues at the University of the North West. The three-day course covered:

1. Emissions from a power station in the Free State, June 2007
2. Lancing of steel at a factory in Vereeniging, January 2008
3. Remains of burnt tyre casings in Vereeniging Main Street, 2007
4. A winters day in the Vial area

Objectives
- To train and capacitate staff to perform municipal health services and to implement the requirements of the air quality act.

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Timeframe
1 year

Funding
R200 000
environmental health law and enforcement for local government and focussed on air, water and soil.

The third round of training was an intensive four-month, part-time course at the University of Pretoria, where two students were trained as Environmental Management Inspectors. This function has significant powers, enabling inspectors (once designated by the MEC) to access premises and making it easier to enforce environmental legislation. The inspectors will link with the ‘green’ and ‘blue’ Scorpiions and other enforcement agencies.

Trained staff resumed with their day-to-day activities, using their new-found tools to better perform tasks.

**Benefits**
The project shows numerous benefits:
- Staff have a better understanding of air quality and environmental issues.
- Staff are equipped to better manage air monitoring stations. Six such stations are currently managed by the Department of Environmental Affairs and Tourism (DEAT) but the function is soon to be devolved to district level.
- Staff are better equipped to implement and manage the roll out of the clean fires campaign in the District.
- Staff have a better understanding of environmental legislation, and are able to perform implementation and enforcement.
- Two new Environmental Management Inspectors have significant powers to enforce legislation (although they are yet to be designated by the MEC).
- The municipal authorities are better prepared and equipped to take over air quality responsibilities from DEAT.
- Municipalities are better equipped to participate in and fulfil leadership roles in air quality projects.
- Particularly evident, is the high quality monitoring and reporting performed by newly-trained staff.

**Challenges**
Political difficulties sometimes hampered progress of the project, particularly in relation to clarifying roles and responsibilities. Some effort was required to gain the full support and understanding of local municipalities not previously involved in air quality functions. Disappointingly, the newly up-skilled staff are either being poached or finding opportunities elsewhere. The district has already lost four staff, leaving its environmental management capacity diminished.
Background
Environmental emissions can be linked to cancer cases (such as leukaemia) but accurate evidence is required before a practical response can be formulated. eThekwini Municipality seeks to develop a cancer registry as a tool for collecting data and correlating it with air pollution figures in order to illustrate such linkages.

Process
The project team held an initial workshop to explore the implications and determine the requirements for developing a cancer registry. Presentations were made to various stakeholders such as the national Cancer Association, professionals, institutions and government.

The clear and major constraint identified is that cancer is not an officially reportable and notifiable disease (like tuberculosis for instance). In order to create a registry, cancer cases would require full disclosure, including personal details. With this in place, analysts can begin to associate cancer prevalence with environmental conditions. For example, GIS mapping can be used to link cases of asthma and lung cancer to areas with high levels of sulphur dioxide.

At the time of writing, the project team was engaging with the National Department of Health to have cancer approved (by parliament) as a reportable and notifiable disease. In preparation for this, the team is developing the operational protocols needed to successfully establish a registry, and identifying the information required to minimise any loss of knowledge in the interim.

Objectives
- To conduct a situational analysis for the establishment of a cancer registry in the eThekwini Municipality.
- To define the resources and institutional framework required for the establishment of a cancer registry.

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Time frame
1 year

Funding
R140 000
Challenges

Project Manager Siva Chetty sees the registry as an incredibly important environmental health tool, yet its development remains uncertain until legislation is passed to declare cancer as reportable and notifiable disease. “Cancer patients are uncomfortable with making their personal details available and we are investigating the possibility of keeping the reporting anonymous,” he says. Meanwhile, the project team has mobilised all relevant stakeholders in the country and a supportive network is in place to help achieve buy-in at a national level.