MAKANA MUNICIPALITY
LOCAL ENVIRONMENTAL ACTION PLAN

Environmental Education and Training Strategy

FEBRURARY 2005

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List of acronyms

ABET	Adult Basic Education and Training
CBO	Community Based Organisation
CCT	City of Cape Town
DEAT	Department of Environmental Affairs and Tourism
DBSA	Development Bank of Southern Africa
DWAF	Department of Water Affairs and Tourism
ECD	Early Childhood Development
EE&T	Environmental Education and Training
EETDP	Environmental Education and Training Development Practices
EMS	Environmental Management System
FET	Further Education and Training
GET	General Education and Training
IDP	Integrated Development Planning
ISO	International Standards Organisation
KCC	Kowie Catchment Campaign
LEAP	Local Environmental Action Plan
LGWSETA	Local Government and Water Seta
MBA	Masters in Business Administration
NEMA	National Environmental Management Act
NGO	Non Governmental Organisation
NSDS	National Skills Development Strategy
NSSD	National Strategy for Sustainable Development
NQF	National Qualifications Framework
RSA	Republic of South Africa
RUEESU	Rhodes University Environmental Education & Sustainability Unit
SAQA	South African Qualifications Authority
SETA	Sectoral Education and Training Authority
SDF	Sustainable Development Framework
UN	United Nations
UNESCO	United Nations Education, Science and Cultural Organisation
WSA	Water Services Act
WSSD	World Summit on Sustainable Development
WWF	Worldwide Fund for Nature

Executive Summary

This environmental education and training strategy has been developed through a one year stakeholder consultation process. Focus group interviews and workshops, document analysis and three different research projects informed the development of the strategy, notably an environmental education and training needs analysis of Makana Municipal employees; a stakeholder analysis involving key environmental education and training service providers and an in-depth policy review, which also considered ways of situating the environmental education and training strategy within existing environmental and education and training policy frameworks, most notably the National Skills Development Strategy.

The scope of the EE&T strategy is broad, in that it encompasses a broad view of environment which includes both natural and cultural heritage. It is focussed on strengthening environmental management capacity within the Makana District, and in building community-municipality partnerships for sustainable development and enhanced service delivery. The strategy has been developed to respond to the needs of diverse learner groups in the Makana District. The aims of the strategy are to: guide decisions and address priorities regarding environmental education and training in Makana; and to create opportunities to strengthen the development and provision of environmental education and training in the District. The **aims, objectives and principles guiding the strategy,** are set out in Section 1.

Section 2 of the strategy provides an overview of **the legal framework** that currently governs the development of environmental education and training programmes in South Africa. This includes a range of environmental policies and guidelines including Agenda 21, which is a global framework for action; NEMA (the national framework for sustainable development and environmental management); and policies and strategies relevant particularly at local government level, such as the Municipal Systems Act and the IDP. It also reviews educational policies such as the South African Qualifications Act, the National Skills Development Strategy and national curriculum policies. Special attention is drawn to the **competence requirements for implementing South Africa's environmental policies**, and **a competence framework** is presented which guides much of the strategy. This framework is particularly useful in guiding **skills development programmes** and the **development of an environmental management learnership**.

Section 3 provides an overview of the **education and training implications associated with the key environmental issues and risks** as identified in the comprehensive environmental audit undertaken as part of the LEAP. It also considers the priority environmental issues identified by Makana municipal employees (sanitation, waste and livestock management), as well as those identified by stakeholders, and makes the point that diverse interest groups have diverse needs for environmental education and training, and would have different priority issues that they need to / wish to respond to.

The strategy is developed in response to this range of environmental issues and risks. It also considers the competence needs for implementing the environmental management strategy (EMS); the sustainable development framework (SDF) and the environmental monitoring protocols that have been developed within the LEAP, and which provide Makana with a broad environmental management system. The strategy has been developed to make provision for the development of significant EMS capacity in Makana.

Section 4 provides **the detail of the Environmental Education and Training strategy**, and specific education and training interventions, focus areas and programmes are suggested for **a range of learner groups** notably: notably Municipal employees (all employee categories); learners and educators in formal education institutions (schools, ABET centres, NGO programmes, training colleges and the University); the general public, the agriculture and eco-tourism sector and business and industry. **For municipal employees a strategy is suggested which builds capacity for environmental management and sustainable development amongst ALL employee categories (including associated councillors and ward committees). This training strategy is aligned with the workplace skills planning of the Municipality, and is designed to address a) individual capacity needs; b) organisational capacity needs and c) to ensure institutional sustainability of environmental education and training for municipal employees in the longer term**. A partnership orientation is recommended for the education and training programmes for other learner groups, as is a strong environmental action learning focus.

Section 5 provides an overview of **some of the active service providers in Makana**, as well as some insight into the current scope and focus of their programmes. This provides the Municipality with **an indication of locally available capacity for providing environmental education and training** in the context of the EE&T strategy. This section also considers some of the strengths and some of the challenges faced by these service providers. A small resource directory has been developed as part of this EE&T strategy to strengthen access to some of the resources for EE&T in Makana (published as a separate booklet). Section 5 of EE&T strategy makes some broad suggestions for funding possibilities for the EE&T strategy, and a broad outline for a fundraising proposal is provided in Appendix D, to provide some practical starting points for resourcing the EE&T strategy in a coherent, co-ordinated manner.

In **concluding** the EE&T strategy, it is noted that if the EE&T strategy is implemented in a co-ordinated manner, within a partnership orientation, it has the potential to provide a strong mechanism to enable a) the strengthening of internal capacity for environmental management and sustainable development within the municipality b) enhanced municipality-community partnerships and c) contributions to sustainable development, service delivery and social and environmental change in Makana, which will no doubt contribute to an improved quality of life for all Makana's citizens.

Section 1:

Background, scope and intent:
Why environmental education & training?

1.1 Background

The Makana Local Municipality has adopted an Integrated Development Planning strategy to address development issues and priorities in the Municipality. A key component of the IDP is to address environmental management issues, and to ensure a healthy environment for Makana's citizens. The IDP framework identifies the development of a Local Environmental Action Plan (LEAP) as a key project, and funding was raised to develop a LEAP. The LEAP provides an in-depth analysis of environmental issues and risk in the Makana District, a sustainable development framework to guide development decisions; a monitoring framework to monitor environmental issues, and an environmental management strategy. In addition, a set of implementation projects have been identified to implement the LEAP. A key dimension of the LEAP is environmental education and training, which will strengthen public participation in environmental management, and build capacity within the Municipality for environmental management. A key component of the LEAP is therefore this environmental education and training strategy that will:
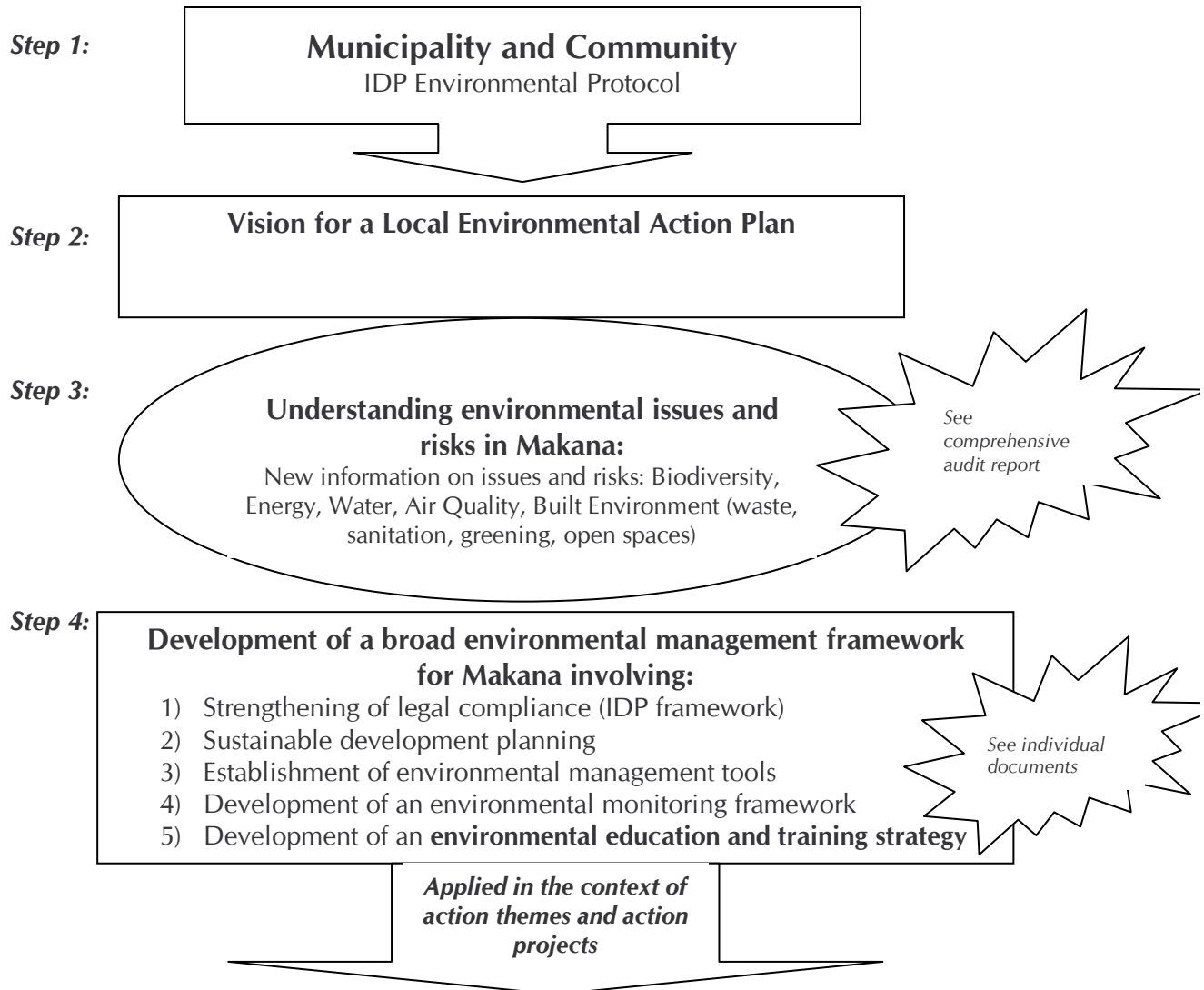
    a) strengthen the environmental objectives in the IDP
    b) strengthen the implementation of the local environmental action plan.

Within the IDP framework (revised IDP, 2004), environmental education has been identified as project, but little direction is given as to what environmental education and training is required, by whom and who would be able to provide such environmental education. The Rhodes University Environmental Education Unit is listed as a key provider, and a project is identified within the LEAP to provide greater clarity into the need for environmental education within the Makana Municipal area. Within the LEAP the need to clarify environmental education and training needs for municipal workers was identified, as well as the need to provide orientation to schools and education centres.

This provided the starting points for the development of this environmental education and training strategy. An integrated research approach was adopted as framework to inform the development of the EE&T strategy (see Appendix A). Active, integrated approaches to environmental education have been recognised as an important social strategy for enabling improved environmental management, and this provided a starting point for the educational recommendations in the strategy.

1.2 *Environmental Education and Training within the LEAP*
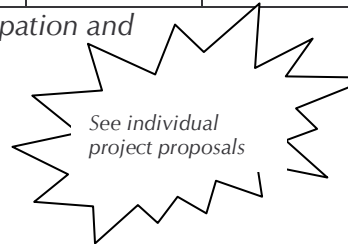
A summary of the LEAP:

Step 1:
> **Municipality and Community**
> IDP Environmental Protocol

Step 2:
> **Vision for a Local Environmental Action Plan**

Step 3:
> **Understanding environmental issues and risks in Makana:**
> New information on issues and risks: Biodiversity, Energy, Water, Air Quality, Built Environment (waste, sanitation, greening, open spaces)

See comprehensive audit report

Step 4:
> **Development of a broad environmental management framework for Makana involving:**
> 1) Strengthening of legal compliance (IDP framework)
> 2) Sustainable development planning
> 3) Establishment of environmental management tools
> 4) Development of an environmental monitoring framework
> 5) Development of an **environmental education and training strategy**

See individual documents

> ***Applied in the context of action themes and action projects***

Step 5: *Development of action themes and action projects* (defined in 2005)

	LED	*Waste*	*Sanitation*	*Biodiversity*	*Greening*	*Energy*	*Water*	*Livestock*
New projects can be defined in future	*LED projects defined within the Sustainable Development Framework*	Recycling project Waste management implementation plan	Sanitation action project	Biodiversity conservation project Biocarbon project	Green infra-structure proposal	No energy project proposal	Water quality, availability and management	Livestock and commonage management project

Action projects *involve both: municipal involvement and community participation and where possible, these are built around the concept of municipal-community partnerships. They involve multiple stakeholders and are aimed at:*
(a) strengthening municipality-community partnerships;
(b) building capacity within the municipality and community and
(c) action for social and environmental change.

See individual project proposals

As can be seen from the diagram summarising the LEAP, environmental education and training forms one of the key components of the broad environmental management system for Makana, and is therefore an integral part of building environmental management capacity in the Municipality.

Environmental education and training is also integral to the different action themes and action projects identified by the LEAP. As such it is an important social strategy for engaging municipal – community links and partnerships, and for strengthening action and participation in environmental management.

1.3 Aims

The environmental education and training strategy provides a framework for planning and implementation of the environmental education and training component of the LEAP and aims to:

- *Guide* decisions regarding environmental education and training in the Makana Municipality
- *Address* priorities for environmental education and training for a) municipal officials and b) educational centres and c) the community
- *Link* the Makana Municipality's Environmental Education and Training programmes to broader initiatives associated with sustainable development
- *Create opportunities* to ensure that the achievements and quality of current best practice is maintained and strengthened.

The environmental education and training strategy is developed as a document for:
   a) the Municipality (to inform internal decision making)
   b) the Makana environmental education and training stakeholders (to inform stakeholder planning)
   c) potential funders of EE&T programmes in the Makana District (to inform decision making)

1.4 Environmental education and training programme objectives

Environmental education and training programmes developed within the framework of this strategy will be guided by the following broad objectives to:

- *Strengthen the implementation* of the environmental objectives of the IDP
- *Strengthen environmental management capacity* within the Municipality and its broader community
- *Strengthen the implementation* of the Local Environmental Action Plan

- *Foster co-operation* between the community and the Municipality
- *Build capacity* for the sustainable provision of environmental education and training in Makana

The EE&T strategy is focussed on assisting the Municipality and community to **work together**, to achieve the common objective of improved environmental management and sustainable development, through environmental education and training programmes that are:

a) future oriented
b) responsive to environmental issues and risks in the Makana District
c) oriented towards sustainable development in the Makana District

1.5 Scope of the strategy

In this EE&T strategy, environmental education is understood to relate to, among others:

- the natural and built environment
- socio-ecological and socio-economic aspects, including 'green' and 'brown' environmental issues
- natural and cultural resources, including historical sites and landscapes

Environmental education is therefore understood broadly, and is aligned with the definition of environment and the views on environmental management provided in the National Environmental Management Act:

"Environment" means the surroundings within which humans exist and that are made up of i) the land, water and atmosphere of the earth; ii) micro-organisms, plant and animal life; iii) any part or combination of (i) and (ii) and the interrelationships among and between them; and iv) the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence the human health and well-being" (RSA, 1998: 8)

"Environmental Management must place people and their needs at the forefront of its concern, and serve their physical, phsychological, developmental, cultural and social interests equitably" (RSA, 1998:10)

"Environmental Management must be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the best practicable environmental option". (RSA, 1998: 12)

From an educational point of view, the environmental education and training strategy follows NEMA guidelines for broadening participation in environmental governance and environmental management, and it recognises the importance of considering different values and different forms of knowledge:

> *"Community wellbeing and empowerment must be promoted through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means" (RSA, 1998:12)*

> *"The participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, and participation by vulnerable and disadvantaged persons must be ensured".* (RSA, 1998:12)

> *"Community well being and empowerment **must be promoted through environmental education**, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means" (RSA, 1998:12)*

This strategy therefore supports a broad view of environment, as well as a broad view of knowledge, in order to foster broad-based participation in environmental management, as outlined in the National Environmental Management Act of 1998.

1.6 *Scope of environmental education and training programmes*

Environmental education is not confined to schools and classrooms. It includes life-long learning and involves people from all walks of life. In includes learning that takes place in, between and outside of formal institutions and organisations. The EE&T strategy recognises that environmental education and training has relevance to the following sectors:

- Municipal officials, workers and councillors
- Educators in schools, ABET centres and ECD centres
- Educational managers (including principals, department officials and school governing bodies)
- Agricultural extension services
- Business and industry
- NGOs and CBOs
- The broader community (public education)
- The conservation sector
- The eco-tourism sector

Environmental education and training thus includes:
- Workplace education (for those in full time employment)
- Community / public education
- Formal education (for those in educational institutions)

This EE&T strategy will aim to illuminate the range of EE&T programmes in response to a) the legal requirements, b) the key issues and c) within the different sectors.

1.7 Terminology and principles[1]

Environmental education is not confined to the classroom and not only aimed at children. Environmental education has lifelong relevance to all people from different walks of life. Environmental education is integral to the socio-economic development processes required to ensure equality and a better quality of life for all. Environmental education processes can differ in different contexts, and a range of different methods will be needed.

Environmental education processes are open-ended, in recognition that environmental issues are complex, and that learners need to develop and implement solutions collectively.

Training is a particular form of education, aimed at developing specific skills, in relation to specific tasks, which are often job related. The National Skills Development Strategy in South Africa requires learners to a) know how to undertake actions (develop practical skills) b) know why they are doing things in particular ways (develop deeper knowledge and understanding of actions and c) know how to adapt and change (develop reflective skills, and skills for changing practice). Training therefore is seen as **being integrated with education.**

Environmental education and training are different to communication and marketing. Communication and marketing are often focussed on 'getting the message across' to 'target groups' or convincing or 'selling' and idea to someone. Education and training are more focussed on developing knowledge, skills and values and capabilities to respond to issues and risks. This requires more than 'getting the message across'.

Some principles for environmental education and training (adapted from CCT, 2003)

Environmental education and training should:
- Involve learners of all ages – it has lifelong application.

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[1] These are adapted from the City of Cape Town's Environmental Education and Training Strategy.

- Involve all communities – in Makana this would include rural, urban, commercial, educational, public service etc.

- Consider the relevance of the learning for the learner's lives and the community more broadly.

- Link environmental issues and risks to health, socio-economic development, social justice, ecological integrity and quality of life.

- Produce learning outcomes that include environmental consciousness and values, but also the commitment and capacity to act on environmental matters and contribute to changes in the community.

- Recognise the complexity of environmental issues and risks, and the need to develop solutions collectively, in processes where everyone has something to contribute, and something to learn (recognising that we are all learners and educators).

- Mobilise and build on learners' existing knowledge, experience and competencies.

- Recognise that there may be more than one way of knowing something, and that different knowledges may provide different views and perspectives.

- Provide high quality information, but also develop the skills and ability to find, critically analyse and use information.

- Demonstrate and illustrate good environmental practice, along with analysing problems and issues.

- Develop the capabilities (capacity & ability) of all people to participate effectively in democratic change towards a better environment for all.

- Where possible, work within a partnership orientation, as more can be achieved by working together than by isolated attempts that often re-invent the wheel, or duplicate efforts.

- Recognise that we are all part of the same community of life, and that what benefits one should ideally benefit all.

Section 2:

Motivation & legal framework:
Implications for environmental education and training

2.1 International guidelines

Agenda 21 and the World Summit on Sustainable Development Implementation Plan:

The South African government supports Agenda 21, adopted at the 1992 United Nations Conference on Environment and Development. The purpose of Agenda 21 is to set out policies and programmes to achieve a balance between the primary forces of environmental change (resource consumptions, pollution and population growth) and the world's natural resource base on which sustainable development depends. Recognising that these objectives are not likely to be met without strong involvement from the private sector and local government sector, emphasis was placed on developing local Agenda 21 programmes. The goals of Local Agenda 21 programmes are as follows:

- Raise awareness of environmental and sustainability issues amongst all citizens
- Maximise the support and involvement of local communities and businesses
- Persue economic development and social progress whilst limiting the impact on environmental resources and fragile ecosystems
- Reduce the consumption of all natural resources
- Maximise energy efficiency and the proportion of energy from renewable resources
- Conserve and enhance green space and diversity of wildlife
- Encourage all organisations and individuals to adopt sustainable practices and lifestyles
- Minimise levels of pollution
- Minimise the environmental impact of waste and promote the reduction, re-use and recycling of resources (Du Plessis et al. 2000).

The goals of the Makana LEAP are similar to the goals of Local Agenda 21 programmes.

Agenda 21, Chapter 23 (pg. 2) states that 'Education is critical for sustainable development and increasing the capacity of people to address environment and development issues". Chapter 36 of Agenda 21 sets out a broad framework for integrated and lifelong learning, education and training for all sectors of society.

The main outcome of the World Summit on Sustainable Development (WSSD) was the Johannesburg Plan of Implementation. In relation to the area of local governance, the main commitments agreed to in this plan include:

- halving the number of people lacking access to basic sanitation by 2015
- Minimising the harmful effects on health and the environment from the production and use of chemicals by 2020
- Significantly reducing the loss of biological diversity by 2010
- Increasing substantially the use of renewable energies in global energy consumption

- Setting up a 10 year framework for programmes on sustainable consumption and production
- Taking significant steps towards the eradication of poverty
- Implement food security by 2005

A three day local government session, hosted as a parallel event at the WSSD produced the following outcomes.
- The **Johannesburg Call** was a statement of commitment by local governments of the world to realise the goals, aspirations and targets of the Johannesburg Implementation Plan
- Through the **Local Government Declaration**, leaders committed themselves to the goals and targets of Agenda 21
- The **Declaration on Sustainable Development** by African Mayors was a commitment to the achievement of sustainable development.

South Africa has committed itself to the outcomes and targets set during the WSSD and has taken action to set in place a National Strategy for Sustainable Development (NSSD). This includes mandates for local government structures, most notably a renewed commitment to Local Agenda 21.

The 2002 World Summit on Sustainable Development described education as a 'key agent for change' in its Plan of Implementation (paragraph 114) and recommended to the UN General Assembly the adoption of a Decade of Education for Sustainable Development (2005-2015).

The Millennium Development Goals:
The Millennium Development Goals (United Nations, 2000) highlight the need for strategic action in the areas of poverty and hunger eradication; reducing child mortality; improving maternal health; achieving universal primary education; promoting gender equity; combating HIV/AIDS and other diseases, ensuring **environmental sustainability** and good governance. The educational implications of the Millennium Development goals are that they begin to set an agenda for the content and focus of education and training programmes that are more relevant and responsive to contemporary socio-ecological and socio-economic challenges at local, national and international levels.

The United Nations Decade on Education for Sustainable development:
The United Nations General Assembly have recently launched a Decade of Education for Sustainable Development. The Implementation Plan for the Decade emphasises the role of local government and notes that "Local governments, as the closest level fo government to the people have a key role to play in improving the quality of people's lives and to achieving the goal of sustainable development" (UNESCO, 2004:42). The same implementation plan notes that "one of the indicators of success of the Decade will be the extent to which education for sustainable development (which includes

environmental education and training) becomes part of the development dialogue at community level" (UNESCO, 2004: 41).   The UN Decade further emphasises the need for education for sustainable development in a range of different contexts including:

- non formal learning, including adult and community learning
- community-based organisations and local civil society
- the workplace (involving formal employee training)
- the formal education sector (schools, colleges, ABET centres, pre-schools, teacher training institutions, vocational training institutions and higher education).

2.2   National directives and legal requirements

Reconstruction and Development Programme (RDP 1994)
Early on, the ANC indicated that attention to environment and environmental education was a key dimension of reconstruction and development in South Africa. The RDP advocated "programmes to rekindle our people's love of land, to increase environmental consciousness amongst our youth, to *co-ordinate environmental education policy at all levels*, and to empower communities to act on environmental issues and to promote an environmental ethic" (CCT, 2003:11).

South African Constitution (1996)
Through the South African Constitution (1996) a significant amount of responsibility for sustainable development rests with local authorities. The view of development upheld by the legislative frameworks prioritises activities that are people-centred, participatory and environmentally sound.

The Constitution, in its Bill of Rights, enshrines the right to a) an environment that is not detrimental to health and well being and b) to have the environment protected for the benefit of present and future generations, through reasonable *legislative and other measures*. The aims of the SA Constitution are (amongst others) to "establish a society based on democratic values, social justice and fundamental human rights" and to "improve the quality of life of all citizens and free the potential of each person". Environmental management and environmental education and training provide a direct framework towards achieving these goals. Education and training should therefore be seen as "more than just skills development activities, but rather as contributions to the long-term realisation of Constitutional goals" (DEAT, 2004).

National Environmental Management Act (NEMA, No 107 of 1998)
The NEMA provides principles of environmental management, many of which emphasise the role of public participation and the role of environmental education and training in making such participation possible.   NEMA emphasises that environmental education and training has an important role in ensuring community well being, and

that it is through environmental education and training that knowledge and experience can be shared to enable broad-based empowerment and participation. NEMA notes that the "effectiveness of governance structures is influenced by the capacity of civil society to work together with government (DEAT, 1999:115). This point is reflected in the objectives of this Environmental Education and Training Strategy, which aims to strengthen community and municipality interaction and partnerships.

NEMA creates many challenges for local authorities, key amongst them the need to place people and their needs at the forefront of environmental management concerns, while taking into account the effects of decisions on all aspects of the environment and all people in the environment. It requires the selection of best practicable environmental options. Local government structures thus face the challenge of a) *interpreting* the legislation provided at national level, b) *identifying* its relevance and significance in local context and c) *responding* through local frameworks, authorities and systems, using local resources (Wigley & Olvitt, 2005).

National Heritage Resources Act (1999)

Heritage management is the responsibility of national, provincial and local government. The Act requires (Section 5(2)(a) and (b) that the skills and capacities of communities be developed to ensure that heritage resources are effectively managed. It further stipulates that the relevant authorities must make provision for ongoing education and training of heritage management workers (CCT, 2003).

National Integrated Waste Management Bill

The Bill requires each local government to produce a waste management plan which should include a waste education strategy. This broader environmental education and training strategy covers waste management education, and thus provides the Makana Municipality with the tools to develop such a waste education strategy.

National Water Act

In South Africa there are two major pieces of water legislation: the South African National Water Act (no 36 of 1998) which deals with water resource management (WRM) and the South African Water Services Act (No 108 of 1997) which deals with Water Services Provision (WSP). The institutional arrangements that support the implementation of this legislation are devolved across all three tiers of government: national, regional and local. At the local level, water management will be facilitated by Water Users Associations, with additional stakeholder input from catchment forums. The Constitution devolves responsibility for water services provision to local government, in the form of municipalities. The Water Services Act establishes water services authorities (WSA's) to manage water services provision, and local authorities can act as WSA's. Capacity building and participation are key dimensions of all South Africa's new water legislation, and environmental education and training to support

water resources management and services provision is thus central to enabling this legislation to be optimally implemented.

King Report on Corporate Governance (Institute of Directors, 2002)

This document sets benchmarks for corporations, encouraging all businesses to embark on 'triple bottom line' reporting which includes economic, social and environmental reporting. The King Report calls for transparency and accountability, and for companies to take responsibility for the management of environmental risks and environmental impacts. To implement environmental management systems in businesses and industries requires a component of environmental education and training. Environmental education and training in business and industry contexts should, however, not be narrowly defined in terms of environmental management training or skills development for health, safety and environmental management, but should include broader understandings and reflexive skills which enable evaluation and change (as outlined in the National Skills Development Strategy).

National Skills Development Act (1998) and Workplace Skills Plans (WSPs)

The National Skills Development Act (1998) and the Skills Development Levies Act (Act 9 of 1999) an employer can reclaim 15% of its levy payment on submission of a Workplace Skills Plan to the relevant SETA. This comprises a strong message from national government for employers to invest in the education and training of employees. The Local Government and Water Seta requires municipalities to prioritise training and skills development interventions in 13 skills areas including management / leadership training (which ought to include environmental management / leadership training) and specialist technical skills (which could include environmentally oriented technical skills), social / community / economic development skills and training skills (which can include environmental education and training skills). The most obvious place for identifying environmental skills would be under the employment category 'Environmental Management' which occurs under most of the broader categories in the workplace skills plan framework. There is, however, potential to include environmental management training in other employment categories for example employment categories such as Health Care (focussing on environmental health issues); local economic development (where training can focus on sustainable development planning); water conservation / treatment; waste management; community development; land management etc, thus making sure that environmental education and training is included as a **cross-cutting training programme** within the Workplace Skills Plans.

White Paper on Education and Training (1995)

The 1995 White Paper on Education and Training states that "environmental education, involving an interdisciplinary, integrated and active approach to learning, must be a vital element of all levels and programmes of the education and training system, in order to create environmentally literate and active citizens and ensure that all South Africans,

present and future, enjoy a decent quality of life through the sustainable use of resources" (pg. 18). The White Paper advocates for environmental education and training at all levels. This would include the local government sphere, particularly when it comes to the environmental education and training of municipal employees (officials and workers). Through the co-operative governance approach adopted by the South African government, local government also has the responsibility to support education and training in other governmental contexts (eg. the Department of Education, DoE) in areas of its own focus, such as environmental management and sustainable development (CCT, 2003).

The National Curriculum Statements (2002)

The curriculum framework for the General Education and Training band (Grades R-9 of formal schooling) emphasises the importance of considering the relationship between human rights, social justice, inclusivity and a healthy environment. The principle of a healthy environment is integrated into all the learning areas in this band of education and training. This principle also informs and influences Adult Basic Education and Training programmes (ABET) from level 1-4. In the Further Education and Training band (Grade 10, 11 & 12), the National Curriculum Statements emphasise environmental justice as a principle that needs to be addressed in all subjects. The national curriculum statements provide guidance to educators for the production of meaningful outcomes that are relevant to learner's lives and communities. The content of what is taught in the curriculum must (where relevant) relate to local context. This curriculum therefore provides local authorities with valuable opportunities to support educators with information and locally relevant learning opportunities that focus on the local environment and environmental management needs and practices.

The Municipal Systems Act (Act 32 of 2002)

The Municipal Systems Act (Act 32 of 2000) outlines the role and responsibilities of local governments to:

- Provide democratic and accountable government for local communities
- Ensure the provision of services to communities in a sustainable manner
- Promote social and economic development
- Promote a safe and healthy environment
- Encourage the involvement of communities and community organisations in the matters of local government, and
- Strive, within its financial and administrative capacity, to achieve the objectives above.

To implement this Act, environmental education and training is needed to a) build internal capacity and b) to broaden participation.

2.3   Institutional policies and frameworks

Makana IDP

As mentioned above, the LEAP is a project of the Makana IDP, developed to strengthen the environmental protocols of the IDP, and to strengthen the local development objectives for environmental management within the IDP. The IDP process requires local government authorities to prepare their financial and other plans in accordance with the IDP they have developed, and regularly monitor and assess their performance against their IDPs. Annually they are also required to report to and receive feedback from the community regarding the objectives set out in the IDP.   For the environmental objective in the IDP this would ideally involve:

- A close assessment of the current reality of the total municipal area (such as the comprehensive environmental audit conducted under the LEAP)
- A determination of community needs (as outlined in the LEAP action projects)
- An audit of available resources (including a Strategic Environmental Assessment)
- The prioritisation of needs
- The development of frameworks and goals to meet these needs
- The formulation of strategies to achieve goals within specific time frames (e.g. the EE&T strategy serves as an example of such a strategy)
- The implementation of projects and time frames to achieve key objectives
- The use of performance monitoring tools to measure impact and performance.

The Makana IDP emphasises four principles that guide development projects in Makana. These are:

- **Holistic development**, which considers the impact of one decision on other development aspects
- **Sustainable development**, which develops an understanding of, and nurtures resource-based development that is sustainable
- **Partnerships,** which aims to forge partnerships and strengthen democracy, create a better environment and share financial costs
- **Redress of past imbalances**, which seeks active contributions to addressing past inequalities (IDP Review, 2004).

The Makana Municipality currently has the following local development objectives in place, that are focussed on environmental management:

Batho Pele ('People First') principles

The following principles were identified by the South African government as very important principles for service delivery, and thus influence environmental management service delivery in Makana:

- Consultation
- Service standards
- Access to services

- Courtesy
- Information
- Openness and transparency
- Redress
- Value for money

The challenge for local authorities such as Makana will be to apply the principles of Batho Pele, while also considering the environment, as outlined in the National Environmental Management Act and other legislation.

Workplace Skills planning in Makana

The Makana Municipality has developed a Workplace Skills Plan which makes provision for education and training for its officials and workers on an annual basis, as required by the National Skills Development Strategy (see Appendix B for a review of the 2004 Workplace Skills Plan).

The 2004 Makana Workplace Skills plan reveals the following:
- The Makana Municipality are using the training and skills infrastructure of the National Skills Development Strategy to strengthen skills at all levels in the Municipality, with a view to meet operational objectives.
- The Makana Municipality have prioritised client services skills at all NQF levels; Management / leadership training at NQF levels 4-5; financial training at NQF levels 4-5; administration skills at NQF levels 4-8; Information technology skills at NQF levels 4-5 and Life skills and basic education at NQF level 1.
- Training and skills development interventions in the following areas were not prioritised: Project management / planning; Corporate and legal support; Policy development; Specialist technical skills; Training skills and Social/ community / economic development and planning skills, but it seems that the Makana Municipality has targeted training interventions in some of these areas for particular employee categories.

These training needs are revised on an annual basis, and the potential exists to include a substantive environmental education and training component within future Workplace Skills Plans. This will, however, need to be aligned within a) employee categories and b) skills development categories as outlined by the Local Government and Water Seta.

2.4   A framework for environmental management education and training

To fulfil the legal requirements of NEMA, and the Municipal Systems Act (as outlined above) there is a need for an environmentally educated workforce (to ensure accountability) as well as an environmentally educated pubic (to encourage involvement).

Environmental education and training supports core local government functions in a number of ways, including (see CCT, 2002:14):

- Planning
- Regulation
- Environmental Management
- Redress and Development

Environmental Education and Training also builds capacity in local authorities to:

- develop in-depth knowledge and understanding of the local context
- develop abilities to engage with all sectors of the public in participatory and constructive ways
- use education and training programmes effectively for the betterment of these communities
- interpret and respond to national and provincial legislation
- conduct activities in environmentally sustainable ways, and develop the capability to make decisions on the best practicable environmental options
- conduct activities in socially acceptable, democratic, participatory and ethical ways
- set appropriate and realistic plans in place (through the IDP) and manage and administer these plans effectively.

These competencies are all required if local authorities are to implement the requirements of the Municipal Systems Act (DEAT, 2004).

A recent study undertaken by the Department of Environmental Affairs and Tourism (DEAT, 2004) indicates that effective environmental management practice requires an **integration of thinking and doing.** In the South African qualifications context, competence is broadly understood as the ability to crucially assess, transfer and apply knowledge, skills and values; this has come to be known as **applied competence.** The development of applied competence is necessary given that policies that are centrally made, are 're-made' during implementation as the people tasked with realising the policy into practice give it identity and form. The National Training Board (1998:31) emphasised that improving the 'professional judgement' of users has become an important focus in achieving transformation. This requires an integration of 'thinking and doing' (as outlined above).

Education and training developed within the framework of the National Qualifications Framework therefore requires **applied competence** which is 'made up' of three different kinds of competence (DEAT, 2004:14&15):

- **Foundational competence**: the demonstrated understanding of what a person is doing, and why. This would include, for example, the demonstrated knowledge of a person's knowledge of environmental legislation, and an understanding of

why this legislation is needed. **This is seen as the 'foundation' of effective practice.**

- **Practical competence**: the demonstrated ability to perform a set of tasks. This would include, for example, the ability to implement a public participation and community involvement process. **This is seen as the 'practical' dimension of effective practice.**

- **Reflexive competence:** the demonstrated ability to connect what is known with what is done so that practitioners can learn from their actions and adapt or change their practice. This is a very significant dimension of environmental management as it requires practitioners to reflect critically on the work they do, and seek ways of improving practice in their areas of responsibility. It can be described as the 'engine room' of transformation. This would include, for example, being able to adapt to a new waste management technology as it is introduced, and to change existing practices in light of the new technology, and new knowledge of the technology. It would also involve being able to consider the new technology critically and make assessments about its relative value to improved practice. **This is known as being 'reflexive' in practice**.

These three forms of competence are to be 'integrated' in the context of the following **'categories' of competence**, which have been identified by DEAT (2004) as being important for the implementation and review of South Africa's environmental legislation. These categories of competence include:

- **Environmental competence:** Legislation currently calls for practice that is strongly grounded in the principles and practices of ecological sustainability. For example practitioners in local authorities are required to: identify causes and effects of air pollution on the environment; plan or oversee development in ecologically sustainable ways; identify and manage the impacts of water wastage and pollution by humans on ecosystems (amongst others).

- **Management / planning and administrative competence:** All areas of environmental management (educational, communicative, legislative etc.) require basic levels of management and administrative competence. Skills required here include the ability to contribute to integrated environmental management plans and strategic plans (eg. IDP objectives). Skills associated with formalised agreements with stakeholders, and the co-ordination of various projects and programmes are also relevant within this competence category.

- **Legislative competence**: Environmental management practitioners and local authorities are required to know and implement a wide range of applicable legislation, policy and regulations at national, provincial, municipal and area-specific levels. Some examples include: Implement the precautionary principle of NEMA; harmonise policies, legislation and actions at local levels; enforce legislation that governs environmental impact assessments (amongst others).

- **Communications competence:** Environmental management practitioners and local government employees working with environmental management issues are required to ensure that a) interdepartmental communications are strengthened and that b) communications with the public are conducted in participatory ways. All environmental and local government legislation calls for activities that require liaison, facilitation, consultation and negotiation. Examples of competencies required in this category include: Promote participation of interested and affected parties; negotiate land claims and land use priorities; follow a process of public participation (amongst others).

- **Social Justice / ethical competence:** Competencies associated with this category reflect the broader South African Constitutional commitment to human resource development, equity, human rights, redress and community empowerment. Examples of social justice / ethical competence that need to be applied practically include: Plan or oversee development in socially and culturally sustainable ways; implement community-based natural resource management programmes; ensure negotiations are conducted on an equal footing (amongst others).

- **Education and training competence:** Most environmental management legislation requires include a need to 'transmit knowledge, raise awareness and build capacity' for participation in environmental management. This presents a weak framework for environmental education and training as knowledge transmission and awareness raising have long been proven to be ineffective in broadening participation. More in-depth, participatory approaches to education and training are required. Public participation is a key concern in environmental legislation, and this overlaps with education and training competence. Practitioners therefore need to understand the challenges and opportunities of working in participatory ways with local communities.

- **Monitoring, evaluation & research competence:** This category of competence is required to ensure capability to apply the findings of relevant monitoring, research and evaluation activities to short, medium and long term planning. This area of competence is key to effectiveness in other areas of competence outlined above.

DEAT (2004:25) therefore provides the following framework for the development of environmental management qualifications, skills development programmes and learnerships:

CATEGORIES OF COMPETENCE	PRACTICAL COMPETENCE	FOUNDATIONAL COMPETENCE	REFLEXIVE COMPETENCE
Environmental competence	e.g. take action to reduce pollution	e.g. understand why pollution is a problem	e.g. evaluate the action taken to reduce pollution and implement improvements to the initial strategy if needed
Management / Planning and Administrative competence	e.g. implement an EMS	e.g. understand that there are different ways of approaching environmental management, and there are different choices of EMS	e.g. recognise problems in the EMS implementation, make decisions and change practice accordingly
Legislative competence	e.g. ensure air quality regulations are complied with	e.g. understand why air pollution is a global problem (i.e. understand global warming issues etc).	e.g. if problems are experienced with air quality control, be able to source appropriate help, evaluate the available capacity and implement changes
Communications competence	e.g. run a public participation meeting	e.g. understand the dynamics of different interest groups in the public forum	e.g. be able to assess possibilities for conflict, and successfully use strategies to address conflict as it arises in a public participation process
Social Justice / Ethical competence	e.g. select a new provider for a waste management contract to support local economic empowerment	e.g. be able to justify why the particular choice was made	e.g. if the provider is not able to meet the required service levels, implement a support strategy to address capacity constraints
Monitoring / evaluation and research competence	e.g. use a particular monitoring tool for a particular purpose (eg. water quality monitoring)	e.g. know why a particular monitoring strategy was used	e.g. critically assess the effectiveness of the monitoring process, and adjust procedures accordingly

Implications for NQF levels 2-4: At these levels, there is a stronger focus on practical and foundational competencies; work is conducted with guidance and support, and reflexivity is limited to locally situated practice.

Implications for NQF levels 5-7: At these levels, the scale of operation is broader (international, national or provincial), with more managerial responsibility, and more reflexive skills being required.

DEAT (2004) also recommends that when specific qualifications or programmes are being developed, it will be important to apply these categories of competence to the **specific** environmental management workplace contexts, for example the management of IDP local development objectives on sanitation; or waste management practices in Makana, which will all have specialised education and training needs.

DEAT (2004) also recommends that this framework can be used to guide development of a generic level 5 learnership in environmental management, or that the framework can guide the development of skills development programmes relevant in different contexts.

2.5 Relevance of the legal framework for the Makana Environmental Education and Training Strategy

The Makana Environmental Education and Training strategy is situated, and guided by the above mentioned legal framework which governs a) environmental management practice b) local government practice and c) educational and training practice in South Africa. The Environmental Education and Training Strategy thus takes account of:

- Key international policy frameworks including: Agenda 21, the WSSD Implementation plan, the Millennium Development Goals
- National policy and legislation including: NEMA and other environmental legislation; the National Skills Act and National Skills Levy Act and the National Curriculum Statements, and broader educational policies; and the Municipal Systems Act.
- Institutional policy frameworks and strategic planning including: the IDP and Workplace Skills planning in the Makana Municipality.

The Environmental Education and Training Strategy is further developed in such a way that it strengthens the capability of Municipal employees (officials and workers) and members of the community to enable improved implementation of South Africa's environmental, educational and local government policies. It thus takes account of the competencies that are likely to be required by South Africa's citizens as they respond to local environmental issues and risks and the challenges of sustainable development in local context.

Section 3:

Environmental issues, environmental management and sustainable development:

Implications for environmental education and training

3.1 Educational responses to environmental issues and risks in Makana

Education as part of the solution

Education provides an important social strategy through which Municipalities can respond to environmental issues and risks. It should be noted, however, that educational programmes will have a limited effect, unless implemented **in conjunction with** other strategies to address environmental issues and risks (e.g. appropriate infrastructure projects, implementation of management plans etc.).

To be most effective, educational responses should, wherever possible, be integrated into a broader strategic programme of responding to environmental issues and risks, and should not be seen as 'stand alone' programmes.

Diverse needs and priorities

Different issues are also likely to require different educational solutions, and will involve different learner groups and will need to respond to their particular interests and priorities. As illustrated below, different groups prioritise different issues. Together, the diverse views presented below provide a broader picture of the environmental issues and risks that need to be addressed through environmental education and training (and other strategies) in Makana.

- ### Environmental issues in the Makana District:

The Makana environmental audit undertaken for the LEAP identified a number of environmental issues in the Makana district. Major concerns associated with the issues are outlined, to provide guidance for EE&T programmes in Makana district. Potential learner groups are also identified.

Issues (not in order of priorty)	Major concerns (of relevance to EE&T programmes)	Potential learner groups
Air quality	Health impacts of indoor air pollution	Households (the public) Learners in schools & ABET centres
Biodiversity: Vegetation	Rich diversity of vegetation types. High endemism Threats to biodiversity of the thicket: overgrazing, new land use for arable crop production; medicinal use of plants; encroachment of invasive alien plants Legal compliance and enforcement of conservation legislation Knowledge of endangered species Stakeholder engagement (participation of interested and affected parties)	General Public Medicinal plant users Livestock owners Agricultural extension workers Farmers Conservation sector Municipal officials and workers Learners in formal education institutions (schools, ABET centres, NGO's)
Biodiversity: Wildlife	Need for increased awareness of the wildlife industry (eco-tourism)	General public Eco-tourism sector

management	Greater control and government involvement Communication between private landowners and government officials Land use planning and sustainability of eco-tourism ventures	Conservation sector Municipal officials Landowners Learners in formal education institutions (schools & ABET centres)
Waste Management	Illegal dumping and littering Use of communal waste skips Waste management practices at landfill sites Community participation in recycling Alternatives for disposal of hazardous wastes	General public (in built up areas) Municipal officials Learners in formal education institutions (schools, ABET centres, NGO's, University staff & students etc.)
Sanitation	Bucket system management and eradication Negative health and environmental impacts associated with poor sanitation practices Use of new sanitation systems and sanitation system maintenance	Municipal officials & workers General public Learners in formal education institutions (schools, ABET centres) Households
Open space & urban greening	Condition of recreational facilities Maintenance of recreational facilities Use of recreational facilities Greening programmes in urban townships	General public Municipal officials and workers Learners in formal education institutions (schools, ABET centres, University)
Energy	Options available for energy production (e.g. solar energy) Reductions in risks associated with energy sources (e.g poor indoor air quality) Availability of fuelwood resources Energy saving strategies & energy efficiency	General public Learners in formal education institutions (schools, ABET centres, University) Businesses
Water quality (chemistry and biotic indicators)	Poor ecological state of Bloukrans river downstream from industrial & urban area Measurable eco-toxicity of the influent and effluent around Grahamstown Sewage Treatment Works Salt levels in Bushmans & Kariega rivers Alicedale tannery effluents and other effluents linked to recent developments Alien vegetation encroachment	Municipal officials General public (eg. KCC) Learners in formal education institutions (schools, ABET centres, University) Businesses Agricultural sector
Water quantity (flow and storage)	Over-abstraction of surface and groundwater Inadequate monitoring of surface and groundwater quantity Water saving strategies	Municipal officials involved in water resource management General public Agricultural and tourism sectors Educational institutions Businesses
Wetlands	Erosional degradation of wetlands on commonage areas due to subsistence grazing Alien vegetation encroachment General health of the catchment	Municipal officials Livestock owners Agricultural sector General public Learners in formal education institutions (schools, ABET centres) Businesses (where appropriate)

- ***Environmental issues prioritised by Municipal officials:***

Municipal officials in the Makana District identified the following priority issues associated with the day-to-day challenges of environmental management in the Municipality context:

Issues prioritised (in order of priority)	Major concerns (of relevance to EE&T)	Learner groups affected
Sanitation	Eradication and management of the bucket system Health and safety risks associated with the bucket system Sewer blockages Lack of public toilets	Municipal management - including councillors Municipal workers General public Learners in formal education institutions
Waste management	Illegal dumping Clearing and provision of adequate facilities Stray livestock	General public Municipal management & workers Learners in formal education institutions
Livestock management	Increases in livestock numbers Stray livestock in urban areas Stock registration and levies Health risks associated with keeping animals in urban areas Monitoring	Livestock owners Municipal workers Councillors and ward committees
Fire	Planning co-ordination Capacity to respond to fire Volunteer support for responding to fires	Municipal management & workers General public

- ***Environmental issues prioritised by stakeholders in Makana:***

Stakeholders in the LEAP process identified the following priority issues as foci for LEAP implementation plans. These also have implications for EE&T programmes, and involve different learner groups.

Issues prioritised (not in order of priority)	Major actions (with EE&T implications)	Learner groups
Livestock and Commonage Management	Training of livestock owners on issues of animal health, breeding and trading Veld monitoring and resting programme	Municipal officials Livestock owners Councillors and ward committees
Sanitation	User education: maintenance and management of household sanitation systems Broader awareness different sanitation options in rural areas (particularly more sustainable technologies) Education on stormwater drainage Community leak reporting and fixing programme	Municipal officials General public (household) Agricultural sector Learners in formal education institutions (schools, ABET centres)

Water quality, availability and management	Understanding of dependency of optimal social and economic use of water on the wise environmental management of water resources Effective use of water resource management tools (including tools such as models, manuals, handbooks and training courses) for water quality, water quantity, ecosystem health and stakeholder participation tools. Application and use of hydrogical and water use model – as educational tool for senior school learners and the general public Biomonitoring of water resources	Makana municipal employees (officials and professionals) Learners in formal education institutions NGO's and CBO's General public Agricultural sector Ecotourism sector
Waste Management & Recycling	Pollution of water and land resources from illegal dumping Using DEAT guidelines on issues surrounding waste collection – to inform the public on appropriate waste disposal facilities and provide a creative forum for problem solving Establish community willingness to pay for waste collection services Implementation of a community collection pilot project Development of public private partnership approach to recycling & increase recycling and separation at source Community-based waste monitoring	General public Municipal employees Learners in formal education institutions (schools, ABET Centres, University) NGO's and CBO's Business
Green infrastructure	Integrate 'natural systems' into concepts of infrastructure to maintain and enhance quality of life Increase open space and protected areas within the Municipality Increase tree planting within local municipality	General public NGOs and CBOs Learners in formal education institutions (schools, ABET Centres and University)
Biodiversity	Integrated and holistic approaches to management of biodiversity Education on rare and threatened species	Agricultural sector Municipal employees General public Learners in formal education institutions

As this EE&T strategy aims to ***respond*** *to* these environmental issues and risks, environmental education and training programmes will need to:

- Take the priorities and interests of different groups into account
- Consider the different dimensions of the issues identified
- Consider the policy requirements associated with these issues
- Consider the competences required for responding to the issues and risks

Context-specific needs and priorities

There will be also be contextually specific needs to consider when working with different learner groups. For example when sanitation issues are dealt with in schools, educators will need to take the national curriculum requirements into account, while learning programmes on sanitation for workers in the Makana Municipality will have to

take health and safety regulations into account, as well as workplace learning constraints. When public education programmes are developed on waste management and recycling, access to the public will need to be considered in the development of the programme, while waste education programmes for industry and business managers will probably be strongly focussed on legal compliance issues.

Programmes will need to be designed in ways that consider these context-specific needs.

3.2 Education to strengthen environmental management in Makana

Addressing the above mentioned environmental issues and risks is likely to form the core of the environmental management activities in Makana. To co-ordinate this response, the LEAP has developed a framework for an environmental management system (EMS) for Makana. An EMS is a tool that can be used to ensure that projects or plans put in place to deal with environmentally related problems are regularly reviewed to ensure that the municipal and community objectives are being achieved. An EMS is not a 'static plan' but should adapt, develop and evolve to best fit the Municipality's requirement and structures. A good EMS normally takes a few years to implement, and requires the participation of a range of stakeholders to make it efficient and effective. Implementing an EMS is essentially a **learning process**, and workplace-based environmental education and training strategies that support the implementation, use and review of the EMS will strengthen the effectiveness of the EMS. The EMS developed within the LEAP process recommends that "participation by the people directly involved in the projects and implementation plans is crucial to the system".

The proposed EMS for Makana focuses on the following strategic areas. The implications for competence development, and therefore for education and training are highlighted to illustrate how environmental education and training can strengthen environmental management in Makana:

Strategic competence areas within the EMS	Implications for environmental education and training
Communication competence	**Communication competence:** Skills to foster inter-departmental communications within the Municipality Skills to communicate effectively with the public and stakeholders
Legal compliance competence	**Legislative competence**: Knowledge of legal requirements Skills to assess legal compliance Skills to review progress against legal compliance Development of environmental bylaws to strengthen EMS

Ecological sustainability and sustainable development competence	**Environmental competence**: A deeper understanding of the environmental issues and risks in Makana (as outlined in the comprehensive environmental audit) Knowledge of ecological sustainability and sustainable development Abilities to implement and manage environmental and sustainable development projects and programmes (as outlined by the LEAP and the IDP) Use Sustainable Development Framework to evaluate and inform new projects or developments planned for the municipality. Development of environmental management plans, including plans for environmental emergencies and hazardous spills
Social justice and ethical competence	**Social justice & ethical competence:** Ensure public involvement, participation and transparency Seek best practicable environmental solutions Consider issues of equity and redress
Environmental education and training competence	**Environmental education and training competence:** Establish environmental education and training programmes that will foster community action and participation Establish environmental education and training programmes that will foster applied competence for environmental management within the municipality
Monitoring, evaluation and review competence	**Monitoring competence:** **Prioritise** areas that need monitoring **Implement** monitoring systems for: • Air quality (including ambient air quality and indoor air quality) • Biodiversity • Energy needs • Open space and urban greening • Drainage and flooding • Water quality (source directed controls and resource directed measures) • Water quantity • Sanitation • Waste management **Use** practical monitoring forms such as those provided in the LEAP for: • Alternative sanitation technologies • Bucket system eradication tracking • Illegal dumping tracking form • Recycling tracking form • Sanitation questionnaire • Waste use survey questionnaire • Illegal dumping complaints • Tree Planting • Oil and Petrol • Industrial environmental management • Stormwater tracking **Review and evaluate** monitoring process and outcomes: • Monitor the implementation of the EMS and the LEAP process • Undertake regular reviews • Prioritise monitoring areas and review priorities • Make adjustments to monitoring tools, and priorities for monitoring activities • Evaluate changes to environmental problem areas

Drawing on the DEAT (2004) recommendations for environmental management education and training (see Section 2), and the guidance provided by the EMS for Makana (produced as a LEAP outcome), environmental management education and training will be required for municipal officials to establish the EMS, and to monitor and review the EMS. This education and training should develop **applied competence** as outlined in Section 2 of this EE&T strategy, and should address the competence categories outlined by DEAT (2004). As noted in the review of the key areas of the Makana EMS, these competence categories are required to implement the Makana EMS. This EMS education and training should also consider the priorities identified by Municipal employees (as identified in Section 2.1 above, and in Section 3), and the workplace skills planning process (see Appendix B for a review of current workplace skills planning).

Where possible and relevant, stakeholders can be involved in monitoring activities (eg. the Kowie Catchment Campaign are currently involved in monitoring of water quality). The tools developed for the Makana EMS can therefore also be used in public environmental education and training programmes, and with learners in formal education institutions, NGOs and CBOs, the agricultural sector and other stakeholder groups.

3.3   *Education and training to strengthen sustainable development in Makana*

To strengthen sustainable development planning, the Makana LEAP has developed a Sustainable Development Framework (SDF). This document identifies sustainability goals and indicators for the foreseeable future for the Makana District. It also outlines specific actions needed to bring about a higher degree of sustainability for future development projects. The goal of the SDF is to broaden participation in the development process, and environmental review criteria are provided for distribution to interested and affected parties.

Key competencies required to implement the SDF are therefore:

Competence required to implement the Sustainable Development Framework	Learner group
Environmental competence (to understand issues associated with SDF objectives for air quality, biodiversity, built environment – open space, waste, energy, sanitation; land resources; water quality and quantity) **Sustainable development competence** (understanding of sustainable development principles and practice, and understanding of sustainable development issues).	Municipal officials & decision makers (especially those involved in development planning) Interested and affected parties
Legislative competence (to interpret and apply environmental legislation)	Municipal officials (particularly decision makers & planners)

Management competence Understanding of integrated environmental management approaches (eg. Environmental impact assessments, Environmental Risk Assessments, Strategic Environmental Assessments, Regional Environmental Assessments, Social Impact Assessments; Land use options and impacts associated with different land use practices; Rehabilitation procedures; Conservation and preservation strategies) Practical environmental management competence (ability to use the environmental review criteria)	Makana officials (particularly decision makers & planners)
Communication competence (for engagements between interested and affected parties and developers (including the municipality))	Municipal officials Interested and affected parties
Education and training competence (to encourage wise and careful use of resources by all sectors of society)	Municipal officials Makana education and training providers

As can be seen from the analysis above, both the Makana EMS and the SDF require a similar set of competences. These are consistent with the framework provided in section 2.4, developed by DEAT (2004) for building environmental management competence in South Africa.

Section 4:
A framework for environmental education and training in Makana:
Learner groups, programmes and suggested strategies

The environmental education and training strategy outlined below addresses the specific and diverse education and training needs of different sectors of the Makana District. It provides the Municipality with an **integrated strategy** that is likely to a) develop internal capacity and b) strengthen community participation in environmental management, service delivery and sustainable development.

The strategy is likely to work best if it is implemented through a partnerships approach, and the Makana Municipality should appeal to education and training providers and other partners in the Makana District to develop creative ways of enabling and implementing this strategy. As indicated in Section 5 of this EE&T strategy, there are already numerous providers that are actively contributing to environmental education and training in Makana. The Municipality should appeal to these groups to draw on the insights provided by this strategy, and the information provided by the LEAP to strengthen local environmental actions.

Implementation of this strategy therefore needs to be a **community-municipality partnership project**.

The environmental education and training strategy addresses the specific education and training needs of each of the following learner groups:

- Municipal employees
- Learners in formal education institutions (including NGO's and CBO's that provide training)
- The General public
- The Agriculture and Eco-tourism sectors
- Livestock owners
- Business and industry

This is based on the research conducted for the EE&T strategy in Makana, as well as research conducted to inform the compilation of the Makana LEAP.

4.1   Municipal employees

General orientation to environmental education and training:
Environmental education and training for municipal employees needs to encompass **both technical and social competencies** (Hamaamba, 2004, see appendix E). It should be developed to address the broad competence categories identified by DEAT (2004) which include:
- Environmental competence
- Management / planning / administrative competence
- Legislative competence

- Communicative competence
- Social justice / ethical competence
- Monitoring / evaluation / research competence (Hamaamba 2004, see appendix E)

Environmental education and training for municipal employees should also develop **applied competence** as outlined in Section 2.4, and should be aimed at developing a range of practical, foundational and reflexive competences in an integrated manner (Hamaamba, 2004, see Appendix E).

Environmental education and training should be further developed to enable:
- A responsiveness to, and capability for dealing with change
- A responsiveness to, and capability for dealing with complex issues
- Compliance with legislative requirements (Hamaamba, 2004, see Appendix E)

Environmental education and training for municipal employees should be supported by broader skills development programmes that include:
- Planning / administrative competence
- Financial management competence
- Project management competence
- Communication competence
- Social justice competence
- Literacy and numeracy development (for all employees at levels 1- 6 of the NQF) (Hamaamba, 2004, see Appendix E).

Environmental education and training should furthermore, be **consistent with the skills development planning framework provided by the local government and water** SETA, to ensure sustainability of the programmes and longer term value. Environmental education and training should therefore be planned according to employee categories and training categories. The table below provides insight into how this might be done for the Makana Municipality. The table below also indicates how the suggested environmental education and training programmes will enable the development of environmental management competence, as defined by DEAT (2004) and described in section 2.4 of this EE&T strategy.

If implemented, this EE&T strategy has the potential to **significantly enhance** municipal capacity for environmental management and sustainable development; public participation in environmental management and sustainable development; municipal – community partnerships and social and environmental transformation.

Suggested environmental education and training programmes to be developed for municipal employees (see Appendix C for further detail):

LGW SETA training category	Suggested training module (skills development programme) and level of training	LGW SETA Employee category & total number of potential learners from Makana Municipality	Outcome: Environmental Management Competence (DEAT, 2004)
Management / leadership	**1. NQF Level 5/6:** Module on environmental management, planning, administration and communication (with focus on the IDP environmental objectives, EMS, SDF and LEAP action projects – should include focus on environmental project management) OR **2. NQF Level 8:** MBA programme at Rhodes (with specialisation in environmental management and sustainable development) *– where appropriate*	<u>Leadership & Governance:</u> - Councillors (17) - Chairpersons (6) <u>Senior officials & managers:</u> - Directors (3) - Department heads (15) <u>Technicians / professionals</u> - Water conservation (2) - Waste (2) - Land management (5) - Environmental management (4) - Roads (1)	Management / planning / administrative competence Communication competence Environmental competence Social justice and ethical competence
Corporate, legal & support	**1. NQF Level 5 / 6:** Module on environmental legislation	<u>Leadership & Governance:</u> - Councillors (17) - Chairpersons (6) <u>Senior officials & managers:</u> - Directors (3) - Department heads (15) <u>Technicians / professionals</u> - Water conservation (2) - Waste (2) - Land management (5) - Environmental management (4) - Roads (1) *(same as above)*	Legislative competence
Social / community / development and planning	**1. NQF Level 5 /6:** Module on environmental and sustainable development issues in Makana (including environmental health, social justice and ethics) **2. NQF Level 3:** Introductory module on environmental issues (with focus on job-related environmental and sustainability issues)	**All employee categories** (this forms the foundational module) Leadership & Governance Senior Officials, Professionals, Technicians & professionals (to complete the module at level 5) Clerks (where appropriate), service workers and elementary occupations (to complete the level 3 module) **Include members of ward committees**	Environmental competence Social justice and ethical competence Environmental competence Social justice and ethical competence

Specialist technical	**1. NQF Level 5:** Module on environmental monitoring (in the context of the EMS and SDF) **2. NQF Level 5/6:** Specialist technical training on key issues (eg. water issues / waste management) – where relevant **3. NQF Level 3:** Introductory module on environmental actions and monitoring (with focus on job-specific actions and monitoring) **4. NQF Level 3 / 4:** Environmental Management Learnership	**Technicians / professionals** - Water conservation (2) - Waste (2) - Land management (5) - Environmental management (4) - Roads (1) **(level 5/6 training)** **Service workers** - Public safety / emergency (35) - Electricity (10) **(level 3 introductory module)** **Elementary occupations** Public service / emergency (6) Water conservation / treatment (20) Waste (55) Parks / community facilities (71) Environmental management (68) *(all of the above could complete the introductory module OR the environmental management learnership)* Roads (59) Electricity (18) *(level 3 introductory module)*	Monitoring, evaluation and review competence Monitoring competence Environmental competence All categories of environmental management competence
Training skills	**3. NQF Level 5 / 6:** Module on capacity building and public participation (with a focus on public participation skills *and* participation in action projects *as well as* skills development for workers) Can also be offered at **level 2/3**	**Leadership & governance**: - councillors **Technicians / professionals** (where relevant to job descriptions) **Include: Members of ward committees**	Education and training competence Social justice and ethical competence

Integration into regular Workplace Skills Planning:

As indicated above, it is strategically important that the environmental education and training of municipal employees be **integrated into the regular Workplace Skills Planning** of the Municipality. A second important strategic dimension of the proposed environmental education and training is a) responsiveness to environmental issues and risks identified in the LEAP process as outlined in Section 3.1 above b) integration with the IDP objectives, c) integration with the Makana EMS, d) integration with the Makana Sustainable Development Framework and e) development of capacity for managing the Makana LEAP action projects.

The suggested programmes will introduce the following priorities into the Workplace Skills Planning of the Makana Municipality (with associated programmes). These are:

- Corporate, Legal and Support
- Social / community / economic development and planning
- Management / Leadership
- Specialist / technical

The Makana Municipality have already prioritised the following training categories (see Appendix B), all of which *indirectly* support the development of environmental management and sustainable development competences.

- Management / Leadership
- Financial
- Administrative
- Information technology
- Client service

In research undertaken to establish the training needs of municipal employees (Hamaamba, 2004, see Appendix E), **top and middle management EE&T** was seen as a priority, as this was central to decision making and support for environmental management 'lower down' in the system. In particular there appears to be a need for training in legislative requirements and associated implications. A need was also identified for training of the finance department and financial decision makers so that they had a better understanding of the nature and importance of environmental issues. It was also noted that training in improved communication skills was needed to enable engagement with cross-sectoral issues such as environment in the Municipality.

Responding to organisational needs (as well as individual capacity needs)

Besides the individual capacity development that such environmental education and training would provide, the environmental education and training strategy has been developed to respond to the following **organisational needs** (as identified by municipal employees – reported in Hamaamba's 2004 research, Appendix E):

Improved capacity for community interaction

- community based planning
- improved community awareness and co-operation
- understanding of DEAT community guidelines
- skills to address and interact with communities

Improved environmental management capacity

- strengthening of inter-sectoral co-operation and communications
- interpretation and implications of the National Environmental Management Act (NEMA) and associated legal compliance requirements
- sustainable development and Agenda 21

- implementation of Environmental Management Systems (EMS) for example ISO 14001 or other EMS approaches
- implementation of the LEAP Environmental Management system and tools, and LEAP action projects

Improved community and political awareness
- primary environmental education for whole community
- environmental education for politicians (councillors)

Improved management capacities
- financial planning and budgeting
- planning skills (prioritizing of environmental management issues)
- communication skills
- fundraising
- team building for top and middle management

Structures to involve in the EE&T process:
The following groups were identified as being critical in the decision making processes surrounding the implementation of the EE&T strategy for municipal employees:

- Heads of Departments and deputies.

- Councillors should be involved in the EE&T process. This could be in two ways: a) to inform the learning programmes for EE&T programmes, and contribute to the training in different ways, depending on their experience and expertise and b) as participants in the EE&T programmes.

- Ward committees: This is a good network for reaching the public as each ward council has a committee of 10 people from that ward. This enables interactions with 'people on the ground'.

Timing and format of EE&T programmes for municipal employees
- Accredited training was recommended (see Hamaamba, 2004, Appendix E)
- Workplace-based training was strongly supported (particularly for workers)
- Training at institutions was supported as a preferred option for top and middle management.
- Accessibility of training venues was noted as being important.
- Timing of training (particularly for workers who worked on night shift) was noted as a key issue that would need attention.

4.2 Learners in formal education institutions

General orientation to the environmental education and training programmes

Programmes for this group should be **developed within Department of Education curriculum policy**, or within institutional policy frameworks (eg. school-based environmental education programmes should support the objectives of the National Curriculum Statements).

Programmes for this group should be developed as **partnership projects**, with the aim of broadening community participation in environmental management and sustainable development.

Programmes for this group should **strengthen municipality – community relationships** and should, where possible, be aimed at supporting and strengthening the EMS, SDF and LEAP action projects.

Learner group	Focus of training programme	Suggested approaches
Learners in schools (GET band)	**Support partnership projects on teacher professional development** Focus on active learning for a healthy environment (in eight learning areas) and help schools to create a healthy environment. Focus on environmental issues and risks as identified in schools and communities (drawing on the information provided in the comprehensive environmental audit & issues analysis in Section 3.1 of this EE&T strategy)	Establish a partnership project so strengthen **EcoSchools projects** for primary schools in Makana Provide information for the development of curriculum materials on priority issues identified in the LEAP comprehensive audit, the IDP and by stakeholders Encourage participation in environmental action projects to improve the school-community environment.
FET learners in schools and FET colleges	**Support partnership projects on teacher professional development:** Focus on participation in environmental justice projects (in the context of different subjects). Focus on environmental issues and risks as identified in schools and communities (drawing on the information provided in the comprehensive environmental audit & issues analysis in Section 3.1 of this EE&T strategy).	Provide relevant information for the development of materials on priority issues identified in the LEAP comprehensive audit, the IDP and by stakeholders. Encourage participation in environmental monitoring initiatives. Encourage participation in environmental action projects to improve the school-community environment.

ABET learners in ABET centres, technical colleges and other adult education programmes (eg. NGO / CBO programmes)	**Support partnership projects to strengthen environmental education and training capacity of adult education facilitators in ABET Centres, Technical colleges, NGO's & CBO's:** Focus on environmental action learning projects with a focus on environmental literacy development (in the context of broader literacy, numeracy and other adult education programmes). Focus on environmental issues and risks as identified by adult learners in communities (drawing on the information provided in the comprehensive environmental audit & issues analysis in Section 3.1 of this EE&T strategy) An important programme would be to assist those institutions offering training to develop the capacity to offer more accredited environmental education and training programmes, so that the SETA funding can be used to support this training in a sustainable manner.	Encourage participation in environmental monitoring initiatives Encourage participation in environmental action projects to improve the Makana environment & environmental management in Makana. Form a partnership with Rhodes University to strengthen service provider capacity to develop and provide more accredited environmental education & training programmes, so that these can be aligned with the National Skills Development Strategy, and also draw resources from this source.
University students and teachers	**Work with the University community engagement division:** Focus on: Environmental action learning projects (service learning). Focus on: Student research projects to assist with environmental monitoring and other research needs (e.g. sustainable development choices; EMS reviews etc).	Encourage participation in environmental action projects and environmental monitoring initiatives Encourage participation in research that contributes to environmental management and sustainable development

There are already a number of service providers that are working with the formal education sector (see Section 5). The Municipality should seek ways of strengthening partnerships with these service providers to strengthen EE&T in Makana, based on the recommendations of this EE&T strategy, the IDP requirements and the LEAP.

4.3 Public education

General orientation to the environmental education and training programmes

The orientation to environmental education and training programmes in this sector is likely to be varied, due to the wide diversity of the broader public. Programmes are therefore likely to range in scope, and vary in methodology, media and approach.

A special effort should, however, be made to develop programmes that are focussed on **poverty alleviation**, and which at the same time strengthen community-municipality partnerships and address environmental action priorities.

Learner group	Focus of training programmes	Suggested approaches
Unemployed community workers involved in environmental activities	Assist the Municipality with strengthening community-municipal partnerships through implementing key activities to reduce environmental impact (eg. waste collection, greening, water quality monitoring etc).	**Support the development of a community Education, Training and Development Practices learnership at level 4/5 on the NQF. Draw on the 18.2 fund in the Department of Labour for this (for the unemployed). Learners can be placed with a variety of education and training service providers in Makana through a partnership project to develop skills, reduce poverty and strengthen environmental action (see list in Section 5 of this strategy).
Community members involved in environmental activities (eg. Makana Environmental Forum)	**Public participation** Participation in environmental monitoring programmes Participation in environmental action projects and programmes **Public awareness:** Participation in local environmental action projects and programmes	Strengthen the environmental forum Provide active support to community-led initiatives (eg. Kowie Catchment Campaign, Institute of Water Research projects etc). Make use of the public media (eg. newspapers, radio etc).

** The Rhodes University Environmental Education and Sustainability Unit, working with the Wildlife and Environment Society of South Africa and the Environmental Justice Networking Forum have already started work to establish such a learnership within the Seta institutional framework. There is great interest in the learnership amongst the environmentally active unemployed community members in Makana. Other providers in Makana (eg. Umthati training project, Gadra etc. may also be interested in participating in the curriculum development and delivery phases of such an initiative).

There are already a number of service and organisations that work directly with the public. Partnerships with these groups should be strengthened to implement this EE&T strategy.

4.4 Agricultural and eco-tourism sectors

General orientation to the environmental education and training programmes

The education and training activities for this sector would need to be integrated with the operational strategies and structures of professional associations and bodies. Education and training approaches are likely to be short, but can be multiple in number, over a period of time.

Learner group	Focus of training programmes	Suggested approaches
Farmers	Awareness of environmental issues, risks and impact; EMS and sustainable development planning. Environmental Monitoring	Work with emerging and commercial farmers organisations to establish appropriate programmes / materials eg. pamphlets & public talks at meetings.
Eco-tourism service providers	Awareness of environmental issues, risks and impact; EMS and sustainable development Environmental Monitoring	Work with the tourism association to establish appropriate programmes / materials e.g. pamphlets & public talks at meetings.

4.5 Livestock owners

General orientation to the environmental education and training programmes

Education and training for this sector needs to be integrated into existing structures, of short duration, hands-on, and participatory.

Learner group	Focus of training programme	Suggested approaches to training
Livestock owners	Animal health Grazing management	A series of workshops Participatory methods Hands-on, active learning approaches Work with members of the grazing association to set up workshops

4.6 Business and industry

General orientation to the environmental education and training programmes

Environmental education and training for this sector should be integrated into workplace actions, should be practical while also supporting a deeper understanding of broader environmental issues, risks and impact, as well as sustainable development. In the Makana District this training should be tailor-made for Small and Medium Enterprises and should have the primary objective of improving environmental management systems and approaches in these organisations, in ways that support efficiency.

Learner group	Focus of training programme	Suggested approaches to training
Management	Environmental issues, risk and impact; EMS and Sustainable Development for Small & Medium Enterprises	Series of workshops and/or on the job action training which is integrated into everyday business practice. This can be offered at a range of NQF levels, and formal accreditation could be sought where necessary.
***Administration staff	Office environmental management	Award scheme for environmental management in offices (could be a partnership project with WWF SA, chamber of business etc).

*** Such a programme could involve other administration staff (eg. municipal administrators; university administrators etc). The Rhodes University Environmental Education and Sustainability Unit have developed an Eco-Office Pack (which as piloted in the Makana Municipality, in two local businesses and in the University). This could be used as a starting point for such an environmental education and training project.

4.7 Summary of proposed approaches

As indicated in the above noted framework, the following approaches are central to the effective implementation of environmental education and training in Makana:

- Where possible, programmes should be **integrated within existing structures and 'ways of working'.**

- **Environmental action learning** is a strongly recommended strategy for all sectors and programmes.

  Environmental action learning involves an integrated process of planning, doing and reviewing, and is participatory in orientation.

  Environmental action learning also involves sharing and finding information, undertaking enquiries, and participating in actions. This process is aimed at enabling contextually relevant change.

- Where possible, programmes should be designed to **strengthen municipality-community partnerships**.

Section 5:

Potential service providers and funding sources

The Makana District has a number of active service providers, many of whom are involved in the provision of environmental education and training. These service providers also service a range of learner groups, and collectively appear to have the necessary experience to strengthen environmental education and training in Makana, as envisaged in this strategy. It would greatly strengthen the impact of the EE&T strategy if the Municipality were to, as far as possible, draw on this capacity to implement the Makana EE&T strategy. To provide access to this capacity, an external stakeholder review was undertaken as part of the development of this EE&T strategy.

5.1 Potential providers, scope and type of educational activities

Note that this is not an exhaustive list of potential providers, but is based on information available at the time of producing this EE&T strategy. Ideally an information system documenting and updating available expertise in relation to relevant needs should be established and managed. This would be an important environmental management function.

Rhodes University:
Rhodes University has a number of departments that provide Environmental Education and Training

Existing programmes	Potential synergies with the EE&T strategy
The *Environmental Science Department* run short courses in environmental project management, environmental impact assessments, environmental resource economics and community based natural resource management. They also have undergraduate and post-graduate programmes in environmental management, including management training modules which are run in association with the *Investec Business School*.	Support for the development of environmental management training & sustainable development training for municipal employees. Lectures to agriculture & Eco-tourism sector MBA programme with specialism in environmental management for Managers.
The *Environmental Education and Sustainability Unit* offers inservice professional development to teachers and other educators, including ABET practitioners, NGO's, CBO's and local government employees. It also runs a community education programme/s, and has a range of learning support materials and materials development expertise and course design expertise to support EE&T programmes. It also has expertise to inform the development of accredited training programmes that are aligned with the competence requirements of the National Skills Development Strategy.	Support for capacity development amongst educators in formal education institutions Support for school-based activities Support for development of EETDP learnership for community practitioners Support for the development of accredited EE&T programmes.
The *Institute for Water Research* conducts training courses on wetland management, and supports water quality and quantity monitoring activities and training.	Support for specialist technical training in water quality and quantity & monitoring training

The *Centre for Social Development* supports the training of ECD educators, and provides services for the collection and re-distribution of waste to pre-schools for educational purposes.	Support for integrating EE&T issues into the ECD sector Community-based education programmes
The *Institute for Social and Economic Research* is mainly involved in research activities (eg. research projects that support greening and nutrition programmes), and in broader community awareness programmes.	Support for broader community awareness programmes Research to inform training programmes around key issues
The *Agricultural Research Council* works with communities, and undertakes surveys to establish environmental issues.	EE&T for agriculture & eco-tourism sector, as well as livestock owners.

The programmes offered by Rhodes University respond to issues in various ways. Issues addressed include: waste, poor quality of water catchments, threats to biodiversity, community issues, sanitation, water management, auditing and impact assessments, land degradation, soil erosion, local issues, alien encroachment, wood fuel harvesting, wetlands, food gardening and many others.

Learner groups involved in Rhodes University programmes include: Undergraduate students, post-graduate students, in-service professionals, own staff, community education, agricultural extension officers, conservation officers. Large numbers are involved in short courses. The University also has a community engagement division, which involves students in volunteer programmes and service learning.

NGO's and CBO's:

There are a number of NGO's and CBO's that provide EE&T in Makana:

Existing programmes	Potential synergies with the EE&T strategy
The *Presidents Award for Youth Empowerment* conducts environmental awareness activities amongst the youth, including food gardening initiatives.	Public education Education with youth Involvement in community action projects
GADRA Education conducts participatory curriculum development activities with communities, and conducts environmental education and team building courses. It also provides training and monitoring for teachers in five government schools.	Programmes in the formal education sector Community-based education and training Public education
The *Millenium Tree Planting Project* conducts workshops in the communities on the importance of indigenous trees, and actively supports urban greening.	Public education Programmes in the formal education sector
The *Society for the Disabled* makes furniture from cardboard, and toys from old plastic.	Community-based action projects
The *Umthati Training Project* runs an active school community gardens programme, and runs home garden courses for adults, based on perma-culture principles. It also sells seedlings for indigenous trees.	Communty-based action projects Adult education and training Public education Municipal employee education

	and training: particularly for service workers and elementary occupations employees
The *Kowie Catchment Campaign* provides catchment management monitoring and public education.	Community participation in monitoring activities

The main focus of NGO and CBO programmes include: basic environmental awareness, life skills, food and nutrition (food gardening), greening, social security, food security, littering and recycling. NGO and CBO programmes have strong poverty alleviation focus and interest.

Learner groups involved in NGO and CBO programmes include mostly: Youth, communities, learners in schools, workers and local entrepreneurs. FAMSA seems to have the largest training group (they trained 5400 in 2003 on life skills). Umthati trains more or less 1000 people per year. NGO's and CBO's therefore have a potentially wide reach into the broader community context. The Faith communities also represent a large group of people.

Schools and ABET centres:

Schools are involved in a range of environmental education activities involving learners and some members of the community. These include: gardening, water education, school improvement, tree planting, waste education, recycling projects, conservation education. Many schools are participating in the EcoSchools programme to ensure a healthy school and community environment.

The Makanaskop *ABET* centre provide awareness training and gardening project training, focussing on poverty alleviation.

Synergies with the EE&T strategy include: Integration of environmental management priorities and issues into school and other formal education programmes. Participation in environmental action projects and monitoring programmes.

Environmental issues addressed by schools include mainly: water, greening, pollution, litter, safety, conservation, trees, fauna, flora, responsibility, poverty alleviation, nutrition.

Large *numbers of learners* are involved in the formal education sector, and this therefore has a potentially wide reach into the broader community. Schools also serve as 'centres' for community engagement, and in many ways also serve community members. Many schools also have links to community members through parents. The Makana ABET centres work with about 400 adult learners per annum.

Government departments:

Existing programmes	Potential synergy with EE&T strategy
The *Albany Museum* is involved in community outreach programmes on culture, tourism and graphic arts.	Public education Education programmes for formal education institutions (focussing on natural and cultural heritage)
The *Department of Environmental Affairs and Tourism* encourages the public to visit Thomas Baines Nature reserve – they have an EE centre there	Education for formal education institutions and the public – focus on biodiversity issues
The *Makana Municipality* is involved in educating communities on waste.	Education for formal education institutions Public education Community action projects
The *Department of Labour* provides trains the Working for Water employees, and municipal workers.	Accredited training Learnerships for municipality and also unemployed community members
The *Settlers Hospital* provides occupational health and safety education	Environmental health education for municipal employees
The *EC Department of Health* provides training on occupational health and safety, and has environmental health awareness programmes.	Environmental health education for municipal employees

Environmental issues addressed by government groups include mainly: conservation of natural and cultural heritage, health and safety, alien vegetation, illegal dumping, blocked sewers and streams, water drains, bucket system, plastics, recycling, pollution, restoration, urban stock farming, deforestation, environmental health.

Government departments also have a wide reach, and seem to reach mainly *workers and learners* in formal education, as well as the public. For example: DEAT – works with 3000 learners per year; the library – 5000 learners per year; the Albany museum – 1600 learners per year; and the Department of Labour – 120 learners per year. Learners include staff and municipal workers.

Unions:
Unions offer general environmental education training programmes.

Synergy with the EE&T strategy includes contributions to public education and community action projects.

Environmental issues addressed by unions include: Cleaning up campaigns, sanitation (bucket system) and noise.

Unions reach large numbers of *workers* each year.

Business and industry:
Envirotan Water CC offers water and water treatment training.
Coastal and Environmental Services offer a well known Environmental Impact
Assessment Training course.

Synergy with the EE&T strategy includes contributions to business and industry training,
and specialist technical and EMS training for municipally employees.

Business and industry also have potential to reach large numbers of *workers* as well as
the *general public*, and *community leaders*.

5.2 Formal qualifications awarded by different groups

Rhodes University offers accredited certificates for its short courses, and recognised
qualifications for undergraduate and post-graduate programmes. The Rhodes EE&S Unit
has an open-entry, open-exit Certificate course for Environmental Education
practitioners and educational facilitators.

NGO's and CBO's also offer certificates, not many of these seem to be SAQA accredited
at this point in time.

Schools provide formally recognised qualifications (level 1) and ABET Centres offer
formally recognised ABET qualifications (level 1-4).

It seems that the SAQA/ SETA training accreditation is not widely used for providing and
recognising environmental education and training in Makana.

A key dimension of the EE&T strategy therefore needs to be a strengthening of training
provider capacity to develop and deliver accredited training programmes (see section
4.2).

5.3 General strengths

Most groups work within **a strong partnership orientation**. Partners are mostly local
groups and different initiatives seem to support each other.

There is a wide array of **learning support materials** available.

Education and training providers appear to have a strong **commitment to poverty
alleviation, social and environmental change** and to **democratic approaches** to
education and training.

When combined, the service providers in Makana have the potential to work together in synergistic ways to strengthen environmental education and training within Makana, and this represents an enormous resource for the EE&T strategy.

5.4   Educational challenges

While there are many service providers who have significant strengths, these same service providers also experience the following constraints and challenges, which will need to be considered when seeking synergies with, and partnerships to implement the Makana EE&T strategy: :

Contextual constraints:
- Poor educational background of learners
- Language problems (difficulties in communicating during training)
- Poor understandings of basic environmental challenges and issues
- Adults do not attend training
- Lack of ownership and responsibility amongst employees
- Need for ongoing orientation of facilitators (facilitators change often)
- Poor public response
- Physical constraints (eg. livestock destroys gardening initiatives)
- Resistance to change

Education and training system constraints:
- Struggling to achieve SETA accreditation
- Lack of facilities and resources to support environmental initiatives and environmental education and training initiatives.
- Transport facilities
- Unmotivated teachers
- Lack of management support
- Time constraints

5.5 Funding for EE&T training programmes

The Local Government and Water SETA (LGW SETA) framework was identified as an important **sustainable funding source** for the above mentioned municipally employee training. This would allow the Municipality to **regularly send** different groups of municipal employees on environmental education and training, following the first round of such training. Additional funding could be sought (eg. from DBSA) to ensure that high quality education and training programmes with good materials are developed. This can be used to supplement SETA funding where necessary.

Some of the LEAP environmental action project funding proposals have included funding for capacity building, skills development and education and training. Where possible, this training should be guided by this EE&T strategy.

Additional funding would need to be sought for supporting the EE&T of the other learner groups in Makana, and a partnership approach is suggested for this AND/OR funding can be allocated in the IDP budget to ensure that broader education of the Makana community takes place on an annual basis.

Supporting service providers to develop accredited education and training programmes may alleviate some of the longer term funding constraints as the National Skills Development Strategy does provide a sustainable source of funding in the longer term. The short term challenges of accessing these funds are, however not easy to navigate, as the NSDS system is complex and bureaucratic. *See a suggested framework for a funding proposal in Appendix D.*

5.6 *Monitoring and evaluation*

- *Establishing indicators*

Indicators of progress should be developed for environmental education and training programmes in each of the programmatic focus areas (e.g. progress of developing capacity for environmental management amongst municipal employees).
An example of such indicators may include:
Objective: Improve community-municipality interaction
Indicators:

1. Community engagement is integrated into KPAs of relevant staff members with environmental responsibilities at the municipal / community interface
2. Job descriptions are amended accordingly
3. Training programmes are put in place to ensure a strengthening of this competence.

- *Monitoring mechanisms*

At an organisational level, the Makana municipality should put in place organisation-wide monitoring and evaluation mechanisms to monitor the overall effectiveness of the EE&T strategy, so that adjustments can be made to the strategy over time. This would be an ongoing organisational strategic development process (CCT, 2003).

Monitoring strategies can be developed for each of the individual education and training programmes for example (example adapted from the CCT, 2003:30):

Objective	Programme	Schedule	Monitoring strategy
Strengthen internal capacity for	Module on environmental legislation	One 2 hour training session once a month for	Record each session & number of employees attending HR check on quality of materials

environmental management amongst decision makers		6 months	Trainee feedback at the end of each session Monitoring changes in the workplace

- *Evaluation*

Evaluation involves more over-arching processes to determine the value of initiatives. Different aspects of programmes can be evaluated, for example the quality of the materials; the suitability of the trainers; the relevance of the training programmes. Evaluation should ideally be ongoing, and can be conducted in-house (by staff) or by a combination of internal staff and external evaluators. It is wise to include formative (periodic or ongoing) evaluations to maintain and improve the value of the programmes.

- *Performance Assessment*

Performance assessment is increasingly an important form of evaluation in organisations. Staff are evaluated against agreed-upon criteria which reflect what is required of them. If environmental management competence is to be developed within the Municipality, it is recommended that these competences **be integrated into the performance management systems and key performance areas** of the Municipality.

(This section has been adapted from CCT, 2003. The City of Cape Town have also developed a very useful resource 'Into Evaluation: A start up resource' which provides useful guidance on programme evaluations, CCT, 2004).

5.7   Summary

From the above analysis it seems that there is a wealth of capacity in the Makana District to provide for at least some of the major EE&T needs, as outlined in this EE&T strategy. The capacity also seems to exist to provide training for a range of different learner groups. It would seem that there is a need for:

- A clearer focus on common issues
- More sharing of resources, skills and expertise
- A strategy to access and use the SETA system and the National Skills Development Strategy for training support, resourcing and provision.
- A more integrated approach to EE&T in Makana
- Strategies to address the constraints identified by service providers.

The Makana EE&T strategy has the potential to provide a synergistic framework which can respond to these issues in ways that will strengthen environmental education and training, and environmental management and sustainable development in Makana.

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Appendices

APPENDIX A:
RESEARCH UNDERTAKEN TO INFORM THE DEVELOPMENT OF THE MAKANA EE&T STRATEGY

An integrated research approach was adopted as framework to inform the development of the environmental education and training strategy. The following research techniques were applied:

- **Document analysis:**

Different documents were analysed to inform the development of the Makana Environmental Education and Training Strategy:

- Environmental reporting in the local newspaper *The Grocott's* (2003-2004) to identify those environmental issues that appeared to be of most concern to a) the municipality and b) the community;
- Municipal documentation reporting on environmental management planning, decision making and planning (included minutes of the portfolio committee;
- LEAP documentation, including emerging reports on for example the sustainable development framework; the monitoring framework; the audit and local action plans;
- Geographical and demographic data capturing information on the number of education institutions; population and numbers of employees in the Makana Municipality.

- **Interviews:**

Interviews were undertaken with top and middle management in the Makana Municipality (See Hamaamba 2004 for further details), including councillors.

- **Focus group discussions / workshops:**

A number of focus group discussions / workshops were held with educational stakeholders. These included:
- A workshop with Makana Municipal staff
- A workshop with educators (schools, ABET and ECD centres) and education department officials
- A workshop with education and training stakeholders

- **Questionnaire survey:**

A questionnaire was distributed to all education and training stakeholders in the Makana District, including:
- NGO/CBO stakeholders involved in environmental education and training
- Government departments involved in environmental education and training
- Rhodes University (departments involved in environmental education and training)
- Business and industry

Questionnaires were also distributed to a sample of senior and middle management in the Makana Municipality, as well as a sample of workers employed by the Municipality.

- **Materials review:**

Environmental education and training materials used by service providers were collected, and a directory has been compiled for educators in the Municipal area.

- **Policy analysis and analysis of the potential of the National Skills Development Strategy for enabling environmental learning:**

An in-depth analysis of environmental policies has been undertaken by the Rhodes University Environmental Education and Sustainability Unit for DEAT (DEAT, 2004). This has helped to develop a competence framework for environmental management training. Research has also been undertaken to establish how the National Skills Development Strategy works, and how Workplace Skills Planning can be used to enable a sustainable framework for environmental management education and training within local government.

Training needs analysis for municipal workers.

A full M.Ed study has been undertaken to inform the municipal training strategy included in this EE&T strategy. This study is available in the Rhodes University Library or with the Makana Municipality.

Hamaamba, T. 2004. *Training needs for municipal employees: A case study of Makana Municipality.* M.Ed thesis. Rhodes University, Grahamstown.

APPENDIX B: Existing workplace skills planning in Makana (2004-2005)

The 2004 Workplace Skills Plan indicates that the following numbers of employees were identified for training in the following areas:

Number of employees (according to employee category)	Number of employees to be trained; types and level of training prioritised in 2004
Leadership & Governance : 1: Executive Mayor 17: Councillors 6: Chairpersons	**NQF level 5 education and training interventions*** 1: Management / leadership, Life Skills, Social / community dev 17: Management / leadership, financial, administration 6: Same as above
Senior officials and managers: 1: CEO /MD 3: Directors 15: Department / Division Heads 2: Plant Managers	**NQF level 5 education and training interventions*** 1: Management / leadership, financial, corporate & legal None 9: Management / leadership, client service, corporate & legal, information technology, life skills, social community dev None
Professionals: 22: Health care 1: LED 2: Core finance	**NQF level 5 education and training interventions*** 17: Management / leadership, project management , info tech None 2: Management / leadership, client service, financial, information technology
Technicians / associated professionals 2: Water conservation / treatment 2: Waste 5: Land Management 1: Housing administration 4: Environmental Management 1: Roads 5: Corporate services 4: Information technology	**NQF levels 4 & 5 education & training interventions** 2: Management / leadership, specialist technical 0: None None 1: Management / leadership, project management, administration 4: Information technology, Life skills 1: Management / leadership, specialist / technical 5: Management / leadership, policy development, life skills, social / community development None
Skilled agriculture & fishery workers 3: Parks / community facilities	**NQF level 5 education and training interventions** 3: Management / leadership, admin, information tech
Clerks 1: Health care 6: Public safety / emergency services 1: LED 1: Parks / community services 3: Land management 4: Housing administration 2: Environmental Management 1: Electricity 10: Corporate services/core admin 22: Core finance	**NQF level 5 education & training interventions** 1: Client service, admin, information technology 6: Client service, admin, information technology 1: Client service, admin, information tech, life skills 1: Admin, information technology None 4: Admin, information technology 2: (training programme not identified) None 9: Client service, administration, information technology 22: Client service, financial, information technology

Service workers	**NQF level 4 education & training:**
35: Public safety / emergency services	15: Management / leadership, financial, information technology
1: Corporate services	None
10: Electricity	None

Elementary occupations	**NQF level 3 education & training:**
7: Health care	7: Information technology, Life skills and basic education
6: Public service / emergency services	6: Life skills and basic education
20: Water conservation / treatment	10: (training programmes not indicated)
55: Waste	None
71: Parks / community facilities	20: Information technology, specialised technical, life skills and basic education
68: Environmental management	20: Information technology, life skills and basic education
59: Roads	15: Specialised technical, life skills and basic education
18: Electricity	None
12: Corporate services / core admin	12: Information technology, life skills and basic education
2: Core finance	2: Client service, Life skills and basic education

- note that while there is an indication elsewhere in the WSP that skills need to be developed at levels 5-8 for these groups, planning seems to be for training programmes at level 5.

APPENDIX C:
Suggested modules and strategies according to employee category and training categories (as defined by the LGW SETA):

Learner group (according to employment category)	Focus of education and training programme (according to SETA training categories)	Suggested approaches and level of programme
Leadership and governance: • Mayor • Councillors • Chairpersons **Senior officials and managers:** • CEO / MD • Directors • Financial Director • Department / Division Heads	*Corporate, Legal & Support*: • Module on environmental legislation *Management / leadership* • Module on management, planning, administration and communication(with focus on the EMS, SDF and LEAP action projects) *Social / community / development and planning* • Module on environmental and sustainable development issues in Makana (including a focus on environmental health, social justice and ethics)	**NQF level 5-6** Workshops or short duration skills development programmes Where applicable, selected placements can be sought for senior officials and managers in the MBA programme at Rhodes (which allows for specialisation in environmental management and sustainable development – this training is offered at NQF level 8) *(total number of potential learners: 43)*
Professionals: • Health care • LED	*Social / community / development and planning* • Module on environmental issues and sustainable development (including a focus on environmental health, social justice and ethics)	**NQF level 5-6** Workshops or skills development programmes of short duration *(total number of potential learners: 32 – mainly health care professionals)*
Technicians / associated professionals: • Water conservation / treatment • Waste management • Land management • Housing admin • Environmental management • Roads	*Corporate, Legal & Support*: • Module on environmental legislation *Management / leadership* • Module on management / planning, administration and communication (with focus on implementation of the EMS, the SDF and LEAP action projects) *Social / community / development and planning* *Specialist technical:* • Module on environmental monitoring *Training skills:* • Module on capacity building and public participation (with a focus on public participation skills *and* skills development for workers)	**NQF level 5-6** Workshops or short duration skills development programmes *(Total number of potential learners: 15)*
Skilled agriculture & fishery workers: • Parks / community facilities	*Social / community / development and planning:* • Module on environmental and sustainable development issues in Makana (including environmental health, social justice and ethics) *Specialist technical:*	**NQF level 5** Workshops or skills development programme of short duration (3 learners)

	• Module on environmental monitoring	
Clerks: • Health care • Public safety / emergency services • Parks / community facilities • Land management • Housing admin • Environmental management • Electricity • Corporate services	*Social / community / development and planning* • Module on environmental and sustainable development issues in Makana (including environmental health, social justice and ethics)	**NQF level 5** Workshops or skills development programme of short duration (total number of potential learners: 30)
Service workers: • Public safety / emergency workers	*Social / community / development and planning* • Module on environmental and sustainable development issues in Makana (including environmental health, social justice and ethics) *Specialist technical:* • Module on environmental monitoring	**NQF level 5** Workshops or skills development programmes of short duration (Total number of potential learners: 35)
Elementary occupations • Health care • Public safety / emergency services • Water conservation / treatment • Waste • Parks / community facilities • Environmental management • Roads	*Social / community / development and planning* • Introductory module on environmental issues (with focus on job-related environmental and sustainability issues) *Specialist / technical* • Introductory module on environmental actions and monitoring (with focus on job-specific actions and monitoring)	**NQF level 3** Skills development programmes Total number of potential learners for skills development programmes (2 X shorter duration modules): 338 AND / OR Environmental Management Learnership (emphasising workplace application of skills and knowledge) *(Total number of potential learners for environmental management learnership: 68)* Programmes developed in Xhosa and English

APPENDIX D:
LEAP Planning Framework:
Suggested Project No. 7: Environmental Education and Training

Framework	Environmental Education and Training Strategy for Makana
Responding to the following main issues	Solid waste management; Biodiversity loss; Water and sanitation; Greening; Livestock management
Providing implementation support (and public awareness) to the following implementation frameworks	Implementation of the Makana EMS and sustainable development framework Supporting the monitoring framework Supporting LEAP action projects: 1. Green infrastructure (natural life support systems & built systems) 2. Biodiversity framework (monitoring of threats to biodiversity) 3. Livestock and commonage management (better livestock management) 4. Biocarbon Fund (promoting re-afforestation of endemic leaf succulent species) 5. Waste management (reduce waste footprints) 6. Water projects (risk assessment and sewerage treatment works, hydrological and water use and assessment of natural salinity levels)
Proposed actions/activities to address the issues incl. Alternative approaches	*Development of multi-sectoral education and training programmes* • Training programme for municipal workers at 2 levels (management; professionals and technicians (Group 1) and workers (Group 2)) • Public education programmes (including councillors and ward committee members) • Support for environmental learning in schools and adult education centres (teacher professional development and resource-based learning materials) • Supporting the development of accredited environmental education and training programmes • Training for business and industry (to implement environmental management systems in small and medium sized enterprises) • Training for the agricultural and the tourism sector *Optimum use of resources and co-ordinated service provision* • Development of a resources and service directory for EE&T provision • Forum-based interactions to encourage co-ordinated service provision • Development of community action projects video material, to use in all community and municipal educational programmes
Constraints/challenges to implementation	Funding of training programmes Co-ordination of service providers Leveraging SETA funding for municipal training and for accredited environmental education and training for community groups
Responsible agency	Municipality LEAP – phase 2 With support from stakeholders eg. Rhodes University Environmental Education & Sustainability Unit, Umthati Training project etc.

Potential partners	Service providers and education and training centres in Makana Development Bank of SA
Time-frame for actions/activities	Phased implementation plan over 5 years Phase 1: EE&T for internal capacity building in the municipality to strengthen and establish EMS, SDF and LEAP action projects Phase 2: EE&T to strengthen community-municipality partnerships and interactions
Estimated costs	R 500 000 per annum for 5 years
Possible sources of funding	National Lotto, Development Bank of SA, Local Government SETA

A more detailed proposal needs to be developed, based on the EE&T strategy, and in consultation with stakeholder groups.

Extract:

6.6.1 Recommended competence framework

As outlined above, recommendations are based on the competence framework developed in 6.1-6.4 above. Recommendations are also made according to the specific competences that were identified for the three specific learner groups.

Management and professionals

This study recommends that the management and professionals undergo accredited Environmental Education and Training at level 6 or 7 on the NQF. Table 8 summaries the range of practical, foundational and reflexive competences identified in the study, that should be incorporated into learning programmes. As suggested by the directors interviewed (see section 5.4), education and training for this particular learner group can be combined. Based on the findings, it appears that accredited training could develop the required identified competences (see sections 6.2, 6.3 and 6.4) to foster environmental management for the present and future generation in Makana. As indicated in the learner profile, such education and training should be designed to take account of, and draw on, existing experiences of the learner group, as many have experience that could inform the training programmes.

Table 8: Competence framework for management, professionals and councillors

Environmental Management Competence	
Practical	• Identify priority environmental management issues and risks
Foundational	• Understanding of the causes and effects of issues (long-term causes and effects as well as short-term causes and effects). • Understanding of the way in which environmental issues and risks are interrelated (e.g. sanitation and illegal dumping). • Understanding of socio-cultural and technical aspects of environmental issues (e.g. livestock issues).
Reflexive	• Ability to make and evaluate decisions, and consider the complexity of environmental issues and risks. • Ability to assess alternative solutions.
Legislative Competence	
Practical	• Implement relevant legislation in relation to these issues e.g. NEMA. • Implement legislation and make by-laws, as required in the local government context.
Foundational	• Understand relevant legislation for environmental management in local government. • Understand legislation in its broader socio-political context. • Understand the relationships between different legislation and related implications for environmental management in local government context.
Reflexive	• Critically review legislation and its implementation at local government level in response to environmental management issues.
Planning Competence	

Practical	• Participate in integrated planning through formulation of IDP.
Foundational	• Knowledge of how to formulate the IDP and how to identity issues that need attention, and how to develop the IDP's in such a way that they take into account other relevant policies which contribute to improved environmental management in the local municipality.
Reflexive	• Critically review the IDP through implementation of monitoring procedures, and other development concerns, as outlined in the IDP.
Project Management Competence	
Practical	• Implement the specific projects, such as the proposed LEAP implementation projects.
Foundational	• Develop Knowledge of designing and monitoring the intervention projects.
Reflexive	• Critically evaluate the projects and ongoing monitoring to ensure improved environmental management in the local municipality.
Financial and Budgeting Competence	
Practical	• Cost and manage the funds.
Foundational	• Develop Knowledge of how to cost projects, organise fundraising ventures and draw up budgets, which should all contribute to improved environmental management in local municipality.
Reflexive	• Critically review the budgets in order to allocate funding in priority areas and on time.
Communication Competence	
Practical	• Involve community in projects and decision-making, and strengthen interdepartmental communication, which improves environmental management.
Foundational	• Develop knowledge of the existing structures and strategies for working with communities, such as ward committees. • Build capacity in improved community interaction through effective use of councillors, arranging community meetings, lobbying either through media or public meetings.
Reflexive	• Critically review and evaluate the community programmes in order to improve communication strategies and ensure community well being which is also linked to social justice competence
Social Justice Competence	
Practical	• Implement projects such as recycling of waste, with a view to creating jobs for the community and the alleviation of poverty.
Foundational	• Develop Knowledge and understanding of the scope of job-creation projects linked to improved environmental management in the local municipality context.
Reflexive	• Critically review projects which are aimed at improving quality of life and redress, while improving environmental management projects.

Councillors
As outlined in table 8, this study recommends that the councillors need competences identified for management and professionals, as they are involved in decision making within the Makana Municipality. Education and training programmes for councillors, it appears, should be delivered through workshops as they work on a part-time basis. The study further recommends that ward committee members need to be involved in workshops, as they are a link to communities.

Workers

As outlined in Table 9, the study recommends that training for lower level workers would mainly focus on practical and foundational competences. The study also recommends that issues such as language and literacy should be carefully considered in education and training programmes for this learner group. It also recommends that education and training for this leaner group should ideally be workplace-based and should also draw on, and take account of learner's existing experience.

Table 9: Competence framework for workers

Environmental Management Categories of Competence	
Practical	• Collect all the buckets from the houses and clean them properly with good health and safety practice • Impound stray livestock in urban areas • Collect refuse efficiently, with good health and safety practices and skills to respond to illegal dumping • Fight fires efficiently.
Foundational	• Develop an understanding of health risks associated with poor management of bucket collection • Develop an understanding of health risks associated with stray livestock and socio-cultural issues associated with livestock impounding • Develop an understanding of health risks associated with solid waste management • Develop an understanding of health issues associated with fire.
Reflexive	• Critically develop ability to adapt to change

6.6.2 Recommendations for funding of environmental education and training for municipal employees

The study recommends that research be conducted to establish how funding could be accessed from the LGWSETA, as it is required to provide funding for training in local government through the National Skills Development Strategy. This would inform the implementation of education and training programmes. The study recommends that the competence framework identified in Tables 8 and 9 be used to inform education and training programmes articulated in the environmental education and training strategy for municipal employees, and that training programmes, based on this competence framework be developed and submitted for funding through SETA funding where possible to ensure sustainability.

6.7 Concluding remarks

In this study, I have established four priority environmental management issues in the Makana Municipality, which are of concern to municipal employees. These are sanitation, solid waste management, livestock management and fire. The study points out that responding to these issues requires a full range of competences, which include environmental management, legal compliance, planning, project management, financial and budgeting competences, communication and social justice competences for all council employees: management, professionals and technicians, lower level employees and councillors. These require new approaches to environmental education and training in workplaces, due to the context of change articulated in lifelong learning discourses. In the South African context, this involves a new framework for accrediting training within South Africa's NQF. Drawing on this, recommendations were made to inform the environmental education and training strategy, which is part of the Municipality's effort to ensure sustainable development through local governance.