THE MANAGEMENT AND CONTROL OF MILK HYGIENE IN THE INFORMAL SECTOR BY ENVIRONMENTAL HEALTH SERVICES IN SOUTH AFRICA

By

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Thesis submitted in fulfilment of the requirements for the degree

MAGISTER TECHNOLOGIAE: ENVIRONMENTAL HEALTH

in the

School of Agriculture and Environmental Sciences

at the

Central University of Technology, Free State

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BLOEMFONTEIN, SOUTH AFRICA
July 2008

DECLARATION OF INDEPENDENT WORK

I, MICHAEL HERMANUS ALBERTUS AGENBAG, do hereby declare that this research project submitted to the Central University of Technology, Free State for the degree MAGISTER TECHNOLOGIAE: ENVIRONMENTAL HEALTH is my own original work and has not been submitted before to any institution by myself or any other person in fulfilment of the requirements for the attainment of any qualification.

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SIGNATURE OF STUDENT DATE

ACKNOWLEDGEMENTS

“Daring ideas are like chessmen moved forward; they may be beaten, but they may start a winning game.” - Johann Wolfgang von Goethe.

I wish to acknowledge the following persons who have all contributed towards my success:

- My **Heavenly Farther** for the strength He has given me and for allowing me the immense privilege to study;

- **Lida, Mariena, Maretha and Franciska** for their understanding, motivation, patience and support;

- **Prof. Ryk Lues** for his encouragement, enthusiasm, leadership, assistance and support;

- **Dr Liezel Lues** for her advice and assistance in writing up the first article;

- In remembrance of **Mr Marius Gouws** (former environmental health practitioner) for his willingness to share his knowledge, assist with analytical skills, and participate in the testing of the questionnaire;

- **Ms Marayn Brusso** (biostatistician, UFS) for statistical analysis and advice;

- **Mrs Nanette Lotter** and **Ms Erica Wessels** for the linguistic revision and editing of the dissertation;

- **Mrs Anita du Toit** (librarian) and **Ms Kaylene Maasdorp** (research assistant) at the Central University of Technology, Free State, for their invaluable assistance;

- **Mr Piet Groenewald** (retired MHS manager of the Mangaung Municipality, Bloemfontein), **Mr Andile Felati** (regional environmental health practitioner, Buffalo City Local Municipality, East London), and **Mr Dirk Lourens** and **Mrs Malefu Saule** (environmental health practitioners, Ukhahlamba District Municipality) for their assistance with the testing of the questionnaire;

- The Central University of Technology, Free State Innovation Fund (**CUTIF**) for financial support;

- The **Ukhahlamba District Municipality** for their assistance and support;

- The **National Department of Health (NDoH) – Directorate: Food Control**, the **Health Professions Council of South Africa – Professional Board for Environmental Health Practitioners (HPCSA-PB for EHPs)** and the **South African Institute of Environmental Health (SAIEH)**, for their support of the study; and

- All colleagues at the metropolitan and district municipalities, who responded as listed in Appendix A2, for their willingness to complete the questionnaire and to offer advice.

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SUMMARY

THE MANAGEMENT AND CONTROL OF MILK HYGIENE IN THE INFORMAL SECTOR BY ENVIRONMENTAL HEALTH SERVICES IN SOUTH AFRICA

Local government (LG) is under increasing pressure from the milk industry and consumers regarding their ability and willingness to carry out their mandate with regard to the quality control of milk, especially in the informal sector. The government and the milk industry currently have programmes underway to stimulate economic activities in the informal sector, targeting emerging cattle farmers for the production of milk as part of government's Accelerated Shared Growth Initiative of South Africa (ASGISA). These initiatives further increase the number of informal milk producers and distributors, which holds a further challenge to regulatory authorities. At the same time, the quality of milk from the informal milk-producing sector poses a serious public health concern. Most of the milk produced and sold by the informal sector is raw (unpasteurised), which does not meet the minimum statutory requirements, and the milking practices applied by the informal sector also do not comply with best practice compliance standards. Local authorities (LAs) are statutorily responsible for registering milking parlours and controlling milk hygiene quality from production stage to purchase stage in order to ensure safe and wholesome dairy products to the consumer. Therefore, LG should play an increasingly important role in ensuring that safe and wholesome milk is produced and distributed to the consumers. All metropolitan municipalities (metros) and district municipalities (DMs) should be authorised by the Ministry of Health to enforce the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 54 of 1972) through their authorised officials – mainly environmental health practitioners (EHPs). Secondly, LG should have specific programmes, systems and resources to register, monitor, evaluate and control milk production and distribution outlets for continued compliance.

The main aim of this dissertation is to determine the legal compliance of LG in controlling food hygiene in general, and the approach of municipal health services (MHS) to monitoring and controlling milk hygiene at LG level. A further aim is to determine specific the availability of resources and systems to sustain their activities in this regard.

This study was conducted amongst all participating metros and DMs in South Africa, targeting specifically the municipal health service managers. In the study the legal compliance and authorisation status of metros and DMs by the Ministry of Health and their respective EHPs was determined. The estimated number of informal milk producers in each metro and DM area was determined, as was MHS' awareness of such. The availability of certain resources and the approach of MHS towards milk hygiene quality control in general were established in order to determine the MHS' capacity to properly monitor and control milk hygiene in the informal sector.

By September 2006 the majority (69.6%) of DMs and one metro had not yet been authorised by the Ministry of Health to enforce Act 54 of 1972. Accordingly, most of the EHPs had not been authorised by their statutorily mandated metros and DMs as required by that particular Act. It was noted that a few municipalities had authorised their EHPs, though they themselves had not yet been authorised by the Ministry of Health. Old disestablished municipalities, which were not supposed to be authorised after July 2004, were nonetheless still being authorised. For an LG to allow the sale of raw milk in its area of jurisdiction, application should be made to the Ministry of Health to be listed in Annexure C of Regulation 1555 of 21 November 1997, and proof should be given of its ability to exercise sufficient control over the selling of raw milk. However, according to the actual listing of relevant authorised LAs in the government notices, only the West Coast District Municipality is listed in Annexure C, allowing the sale of raw milk in its area, as statutorily required, together with local municipalities (LMs) and disestablished municipalities that are still listed, yet should not be.

There are two tools that should assist metros and DMs, as well as the Ministry of Health, to determine the relevant municipality's capacity to deliver MHS (including food control, of which milk hygiene control forms an integral part). The first tool is the approved report of a Section 78 (S.78) assessment, which was done in accordance with Sections 76, 77 and 78 of the Municipal Systems Act, 2000 (Act 32 of 2000). The legislation makes it compulsory for metros and DMs to conduct such an assessment to determine the authority's current and future ability to render MHS and also to identify shortcomings. At the time of the survey (January 2006) only 25% (n=7) of the respondents indicated that their municipality had completed an S.78 assessment. The second tool is to ascertain that a project for milk hygiene control in the informal milk-producing sector is part of the municipality's Integrated Development Plan (IDP) and subsequently part of the council's budget. Unfortunately a specific question in this regard was not asked, but the Karoo DM indicated that milk hygiene monitoring and control was part of their district municipality's IDP.

Although just over half (55.3%) of the respondents were aware of informal milk-producing sources in their respective areas of jurisdiction, only 20% were making an effort to control them. A total of 68.1% (n=32) of the respondents stated that resources were not sufficient for the effective monitoring and control of milk hygiene, while a corresponding number of respondents (n=15 [48.4%]) stated that funds and the number of EHPs were regarded as their key reasons, and 35.5% (n=11) were of the opinion that a lack of basic equipment was contributing to insufficient resources. More than half (57.4% [n=27]) of the respondents were of the opinion that MHS were not applying effective monitoring and control of milk hygiene from the production stage to the consumer. In summary, the reasons involved a lack of systems, lack of fixed programmes, lack of a standardised approach or system to capture visits to premises and sampling results, and lack of a database in terms of milking parlours and distributors. When all the inputs from the respondents with regard to their reasons for the MHS not having proper control over milk hygiene are analysed and grouped in appropriate categories, 96.8% (n=30) of the reasons are management-related issues.

Although food quality control was high on the agenda of the MHS' daily activities, 63.6% (n=28) of respondents indicated that they were taking milk samples on an *ad hoc* basis, whereas 22.5% (n=9) disclosed that they were conducting planned premises evaluations, and 78.8% (n=26) of respondents stated that they were carrying out their health and hygiene education on an *ad hoc* basis. Only 16.3% (n=7) of the respondents indicated that they were integrating their inspections and sampling. The results therefore suggest that there is no audit- and risk-based approach to evaluating the premises. This means that most of the respondents were not planning their work in advance, resulting in superficial and inefficient MHS delivery. Various authors remind us that there is little value in this kind of monitoring and control activities at food premises in order to determine the safety of foodstuffs, and the approach should rather be outcomes driven.

In conclusion, it is evident that MHS do not properly manage and control milk hygiene in the informal sector due to a lack of management capacity, as well as a lack of resources, standardised programmes, systems and so forth to optimally use the available resources in order for MHS interventions to serve their purpose and to contribute towards the building of consumer trust. There is thus a need for guidance and assistance from relevant role-players such as the National Directorates of Food Control and Environmental Health, the Department of Provincial and Local Government (DPLG), the South African Local Government Association (SALGA), the South African Institute of Environmental Health (SAIEH), tertiary institutions, the milk industry and other interested parties, to assist metros and DMs in the development of the abovementioned LG and MHS capacity. The Ministry of Health should ensure that all metros and DMs are authorised as legally required. Municipal health service managers should ensure that milk hygiene monitoring and control, especially of the informal sector, is included in their councils' IDPs and subsequent linked programmes to ensure the availability of the necessary resources required to properly monitor and control the informal milk-producing sector.

OPSOMMING

DIE BESTUUR EN BEHEER VAN MELKHIGIËNE IN DIE INFORMELE SEKTOR DEUR OMGEWINGSGESONDHEIDSDIENSTE IN SUID-AFRIKA

Plaaslike besture is onder toenemende druk van die melkindustrie en die verbruikers oor hulle vermoë en gewilligheid om hul mandaat uit te voer met betrekking tot die beheer oor die registrasie en melkkwaliteitbeheer van veral die informele sektor. Die regering en die melkindustrie is tans besig om projekte te implementeer waar hulle opkomende beesboere organiseer en aanmoedig om melk te produseer en te bemark as deel van die regering se “Accelerated Shared Growth Initiative of South Africa” (ASGISA) om sodoende ekonomiese aktiwiteite in die informele sektor aan te moedig. Hierdie regeringsinisiatiewe het ’n bykomende impak op die vermeerdering van die informele melkprodusente en -verspreiders, wat ’n verdere uitdaging vir die reguleringsowerhede inhou. Die melkkwaliteit van die informele melkproduseerders hou ’n ernstige openbare gesondheidsgevaar in. Die melk wat deur die informele sektor geproduseer en versprei word, is hoofsaaklik ongepasteuriseerd (rou melk) en voldoen nie aan die minimum wetlike vereistes nie, en die melkprosedures wat deur die informele sektor toegepas word, voldoen ook nie aan algemeen aanvaarbare vervaardigingspraktyke nie. Plaaslike owerhede is wetlik verplig en verantwoordelik vir die registrasie van melkstalle en vir die beheer van die melkhigiënekwaliteit vanaf produksie tot by die verbruiker, om sodoende te verseker dat veilige en gesonde suiwelprodukte aan die verbruiker verskaf word. Plaaslike regering behoort ’n groter rol te speel om te verseker dat veilige en gesonde melk geproduseer en versprei word.

Alle metropolitaanse en distriksmunisipaliteite moet deur die Minister van Gesondheid gemagtig word om die Wet op Voedingsmiddels, Skoonheidsmiddels en Ontsmettingsmiddels, 1972 (Wet 54 of 1972) in hulle onderskeie gebiede toe te pas deur hulle gemagtigde beamptes (hoofsaaklik omgewingsgesondheidspraktisyns [OGP’s]).

Tweedens behoort plaaslike owerhede bepaalde programme, stelsels en hulpbronne te beskik om melkprodusente en -verspreiders te registreer, moniteer, evalueer en te beheer vir deurlopende voldoening aan neergelegde vereistes.

Die doel van hierdie studie is om te bepaal of die plaaslike regering aan die wetlike vereistes voldoen om voedselhigiëne oor die algemeen te beheer, en hoe die MGD melkhigiëne in hulle onderskeie gebiede moniteer en beheer. Voorts is dit om die beskikbaarheid van hulpbronne en stelsels te bepaal wat MGD-programme volhoubaar kan ondersteun.

Hierdie studie is onder al die munisipale gesondheidsdiensbestuurders van al die metropolitaanse en distriksmunisipaliteite in Suid-Afrika uitgevoer. Die status is bepaal ten opsigte van die statutêre magtiging van plaaslike besture en hulle beamptes. Daar is onder andere bepaal tot watter mate die MGD bewus is van die hoeveelheid informele melkprodusente in hulle onderskeie gebiede. Die beskikbaarheid van sekere hulpbronne en die algemene melkhigiënebeheer-benadering is ondersoek om vas te stel wat die kapasiteit van die MGD is om melkhigiëne in die informele sektore te beheer.

Gedurende September 2006 was die meerderheid (69,6%) van die distriks- en een van die metropolitaanse munisipaliteite nog nie deur die Minister van Gesondheid gemagtig om Wet 54 van 1972 in hulle onderskeie gebiede toe te pas nie. Dienooreenkomstig was die meeste van die OGP's ook nie deur hulle onderskeie munisipaliteite gemagtig om die genoemde wet toe te pas nie. Tydens die studie is daar vasgestel dat van die munisipaliteite wat nog nie deur die minister gemagtig is om die genoemde wet toe te pas nie, inteendeel reeds hul OGP's gemagtig het. Volgens die amptelike publikasies in die *Staatskoerant* is daar selfs ontbinde munisipaliteite wat nog deur die Ministerie van Gesondheid gemagtig is.

Wanneer plaaslike besture die verspreiding van ongepasteuriseerde (rou) melk in hulle onderskeie jurisdiksiegebiede wil toelaat, moet hulle by die Ministerie van Gesondheid aansoek doen om op aanhangsel C van regulasie 1555 van 21 November 1997 gelys te

word. Alvorens ’n munisipaliteit gelys kan word, moet die plaaslike bestuur bewys kan lewer dat hulle genoegsame beheer kan uitoefen oor die verkoop van ongepasteuriseerde melk. Volgens die amptelike lys in die *Staatskoerant* is dit slegs die Weskus-Distriksmunisipaliteit wat gelys is, tesame met ’n paar plaaslike en ontbinde munisipaliteite wat ook nog gemagtig is alhoewel dit eintlik sedert Julie 2004 nie so behoort te wees nie.

Daar is twee hulpmiddels vir plaaslike owerhede, sowel as die Ministerie van Gesondheid, om te bepaal of ’n munisipaliteit oor die nodige potensiële kapasiteit beskik om die MGD (wat voedselbeheer insluit, en waarvan melkhigiëne ’n integrale deel vorm), te lewer. Die eerste hulpmiddel is ’n goedgekeurde artikel 78-ondersoekverslag wat uitgevoer is ooreenkomstig artikels 76, 77 en 78 van die Wet op Munisipale Stelsels, 2000 (Wet 32 van 2000), wat dit verpligtend maak vir plaaslike owerhede om sodanige ondersoeke te doen om hulle vermoë te bepaal om die diens te lewer. Ten tye van die studie (Januarie 2006) was daar slegs 25% (*n*=7) van die respondente vanaf onderskeie munisipaliteite wat goedgekeurde artikel 78-ondersoeke gehad het. Die tweede hulpmiddel is om vas te stel of ’n munisipaliteit ’n projek ten opsigte van melkhigiënebeheer as deel van hulle geïntegreerde ontwikkelingsplan (GOP) ingesluit het en of daarvoor voorsiening gemaak word in die Raad se begroting. Ongelukkig was daar nie ‘n spesifieke vraag in die verband, maar die Karoo-Distriksmunisipaliteit was die enigste wat aangedui het dat melkhigiënebeheer deel van hulle Raad se GOP is.

Alhoewel net meer as die helfte (55,3%) van die respondente aangedui het dat hulle bewus is van informele melkproduseringspunte in hul onderskeie gebiede, het slegs 20% ’n poging aangewend om beheer uit te oefen. Daarteenoor het 68,1% (*n*=32) van die respondente het aangedui dat hul hulpbronne nie voldoende is vir die monitering en beheer van melkhigiëne nie, waarvan dieselfde hoeveelheid respondente (*n*=32 [48,4%]) onderskeidelik aangedui het dat fondse en die hoeveelheid OGP’s die hoofrede is, tesame met 35,5% (*n*=11) wat van mening was dat ’n gebrek aan basiese toerusting die rede was. Meer as die helfte (57,4% [*n*=27]) van die respondente is van mening dat die MGD nie voldoende monitering en beheer oor melkhigiëne vanaf die produksiestadium tot by die

verbruiker uitoefen nie. Die redes word hiervoor toegeskryf aan ’n gebrek aan stelsels, soos ’n gebrek aan vasgestelde programme, geen gestandaardiseerde benadering of stelsels om besoeke en melkmonsterresultate te dokumenteer en te reflekteer nie, die afwesigheid van databasisse ten opsigte van melkstalle en –verspreiders. Wanneer al hierdie insette (redes) wat deur respondente verskaf is vir die gebrek aan die MGD se vermoë om melkhigiëne te beheer, geanaliseer en in toepaslike kategorieë saamgegroepeer word, is 96,8% van die redes bestuursverwant.

Alhoewel voedselkwaliteitbeheer prioriteit geniet het bo ander daaglikse omgewingsgesondheidsdienste (OGD)-aktiwiteite, het 63,6% (*n*=28) van die respondente aangedui dat hulle melkmonitering op ’n *ad hoc*-basis doen, terwyl 22,5% (*n*=9) bekend gemaak het dat hulle hul perseelinspeksies vooraf beplan. Daarteenoor het 78,8% (*n*=26) van die respondente gemeld dat hulle voorligting op ’n *ad hoc*-basis onderneem. Slegs 16,3% (*n*=7) van die respondente het aangedui dat hulle die melkstalinspeksies en melkmonitering kombineer. Die resultate beklemtoon dat daar nie ’n geïntegreerde ouditerings- en risikobestuursbenadering met die evaluering van melkstalle en melk gevolg word nie. Dit beteken dat die meeste van die respondente nie hulle werk vooraf beplan nie, wat derhalwe tot oppervlakkige en oneffektiewe MGD-lewering lei. Verskeie outeurs herinner ons daaraan dat daar beperkte waarde is in hierdie benadering tot moniterings- en beheeraksies by voedselpersele om sodoende voedselveiligheid te bepaal. Dus behoort die benadering eerder uitkomsgebaseerd te wees.

Samevattend kan gemeld word dat MGD nie behoorlike bestuur en beheer oor melkhigïene in die informele sektor uitoefen nie. Daar is dus ’n behoefte aan leiding en ondersteuning van betrokke rolspelers soos die Nasionale Direktorate vir Voedselbeheer en Omgewingsgesondheid, die Departement van Provinsiale en Plaaslike Regering, die Suid-Afrikaanse Plaaslike Bestuursvereniging, die Suid-Afrikaanse Instituut vir Omgewingsgesondheid, tersiêre instellings, die melkindustrie en enige ander belanghebbendes om die betrokke munisipaliteite en MGD te ondersteun met die ontwikkeling van gestandaardiseerde programme, stelsels en so meer om die beskikbare hulpbronne optimaal te benut. Dit kan verseker dat die MGD se intervensies hulle doel

dien, en dit kan bydra tot die vestiging van die verbruiker se vertroue. Die Ministerie van Gesondheid behoort te verseker dat al die relevante munisipaliteite gemagtig is soos wetlik vereis word. Munisipale gesondheidsdiensbestuurders behoort te verseker dat melkhigiënemonitering en -beheer, van veral die informele sektor, deel vorm van hulle onderskeie rade se geïntegreerde ontwikkelingsplanne (GOP's) om sodoende kritieke hulpbronne te verseker wat nodig is om effektiewe melkhigiënemonitering en -beheer te verseker. Sodoende kan die MGD hulle mandaat uitvoer en die regering se ASGISA-programme ondersteun om 'n bydrae te maak tot die land se ekonomiese groei en om veilige produkte aan die verbruikers te verseker.

LIST OF ABBREVIATIONS / ACRONYMS

ASGISA	Accelerated Shared Growth Initiative for South Africa
CIEH	Chartered Institute of Environmental Health
CoA	Certificate of Acceptability
CPD	Continuing Professional Development
CUTIF	Central University of Technology, Free State Innovation Fund
DBSA	Development Bank of Southern Africa
DM	District Municipality
DoH	Department of Health
DPLG	Department of Provincial and Local Government
DSA	Dairy Standard Agency
EHP	Environmental Health Practitioner
EHS	Environmental Health Services – Due to legislative changes in the constitutional and subsequent acts regulating local government issues, environmental health services at local government level is defined as municipal health services since July 2004. See also MHS – Municipal Health Services
EH	Environmental Health
EHO	Environmental Health Officer
FFC	Fiscal Financial Committee
GOP	Geïntegreerde Ontwikkelingsplan
HACCP	Hazardous Analysis Critical Control Point

HI	Health Inspector
HPCSA	Health Professions Council of South Africa
HPCSA-PB for EHPs	Health Professions Council of South Africa: Professional Board for Environmental Health Practitioners
IDP	Integrated Development Plan
IFEH	International Federation of Environmental Health
INMDCSA	Interim National Medical and Dental Council of South Africa
JHB	Johannesburg
KZN	KwaZulu-Natal
LA	Local Authority (metropolitan and district municipalities) – where indicated, local municipalities are included
LG	Local Government – similar meaning to "Local Authority" and refers also to metropolitan and district municipalities – where indicated, local municipalities are included
LM	Local Municipality
MDB	Municipal Demarcation Board
Metro	Metropolitan Municipality
MGD	Munisipale Gesondheidsdiens
MHS	Municipal Health Services – For purposes of this study, "EH" has been used in cases where it was still applicable as stipulated by legislation, whereas the newer term "MHS" has been used later in the document according to relevant legislative changes
MINMEC	Ministers and Members of the Executive Council
MPO	Milk Producers' Organisation

MTEF	Medium-Term Expenditure Framework
NAMC	National Agricultural Marketing Council
NDoH	National Department of Health
N and PDoH	National and Provincial Departments of Health
N and PDPLG	National and Provincial Departments of Provincial and Local Government
NQF	National Qualifications Framework
OGD	Omgewingsgesondheidsdiens
OGP	Omgewingsgesondheidspraktisyn
PCoA	Provisional Certificate of Acceptability
PDoH	Provincial Department of Health
PHC	Primary Health Care
RATES	Regional Agricultural Trade Expansion Support Programme
SA	South Africa
SAIEH	South African Institute of Environmental Health
SALGA	South African Local Government Association
SDBIP	Service Delivery and Budget Implementation Plan
SI	Sanitary Inspector
S.78	Section 78
UFS	University of the Free State
UK	United Kingdom
WHO	World Health Organisation

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Chapter 1

INTRODUCTION

This chapter has been submitted partially or in full for publication to the:
South African Health Review of 2008

1.1 HISTORICAL PERSPECTIVE ON ENVIRONMENTAL HEALTH IN SOUTH AFRICA

Environmental health (EH) is a diverse science with its primary objective to ensure a safe and healthy environment for all. In essence EH is the prevention of unhealthy practices, situations and circumstances that may cause harm or lead to illness in any person who may be surrounded by, in contact with, or in the vicinity of any harmful element whether microbiological, physical or chemical. These harmful elements may be found in food, housing, water supply, industry, recreation, and the working environment.

Before one can focus on the historical background of EH in South Africa, one first needs to consider its origin in the United Kingdom (UK). It is important to keep in mind that the colonial system in South Africa, and especially the Cape Colony, played a vital role in the development of the country's health system and EH in particular.

1.1.1 Environmental health in the United Kingdom and its influence on South Africa

Environmental health as we know it today is a fundamental component of public health, which originated during the early to mid-nineteenth century as a result of the appalling living conditions of the labouring poor in England. Edwin Chadwick (1800 – 1890) is regarded as the father of public health. Chadwick played a monumental role in emphasising the effect of the appalling living, working and environmental conditions on the health of people (States of Jersey, [s.a.]; Clay, 1939; Finer, 1952; Hamlin, 1998; CIEH, 2004; Science Museum, 2004). After conducting his inquiry, Chadwick concluded that a substantial portion of ill health is due to a poor environment, and he believed that the required environmental change was an engineering and not a medical challenge (States of Jersey, [s.a.]; Finer, 1952; CIEH, 2004). Chadwick argued that diseases were directly related to living conditions and that there was a need for public health reform. The government refused to publish his report, but allowed Chadwick to do so in his own name. Chadwick then published at his own expense more than 7,000 copies of the report

to create awareness of the need for government to take action in order to protect the lives of the people. The conservative administration at the time was unwilling to support Chadwick's recommendations because of people with pecuniary interests being affected. A pressure group, the Health of Towns Association, was formed in an effort to persuade the government to take action. After a prolonged fight, Chadwick had a Bill introduced into Parliament that provoked a great deal of opposition from people with vested interests, and it was only after the 1847 general elections, when a new liberal government was elected, that the 1848 Public Health Act was passed. The latter made provision for the formation of a General Board of Health, which could approve the establishment of local boards of health, which were the forerunners of municipalities (States of Jersey, [s.a.]; Clay, 1939; Finer, 1952; Hamlin, 1998; CIEH, 2004; Science Museum, 2004).

As in the case of Liverpool, under the Liverpool Sanitary Act of 1847, the local boards of health had to appoint an officer of health, a surveyor, and an inspector of nuisances (antecedent of the sanitary inspector [SI], health inspector [HI] and lately environmental health officer [EHO]) as the public health team (States of Jersey, [s.a.]; Clay, 1939; Finer, 1952; Hamlin, 1998; CIEH, 2004). With the passing of the Nuisances Removal and Disease Prevention Act of 1855 (Section 9 is of interest) the local authority (LA) had to appoint and employ a sanitary inspector(s) or join with other authorities in doing so. This was the first occasion on which the term "sanitary inspector" was substituted for that of "inspector of nuisances." The Act states very little about the powers and duties of the SI, but it is of interest to note that it made particular mention of two duties, namely the giving of notices to the LA regarding the existence of nuisances, and the duty of inspecting articles intended or exposed for sale for the food of man (Clay, 1939).

It was becoming obvious in England that an unqualified person was no longer able to operate successfully and therefore the Royal Sanitary Institute established a simple examination during 1877. It was only from 1897 that it became obligatory for all the newly appointed inspectors of nuisances in London to have a certificate of competency. As a growing need arose to regularise the position, a set of procedures, training and examination was instituted. The successful SIs were awarded the Certificate of the Royal

Sanitary Institute and the Sanitary Inspectors' Examination Joint Board. The qualification was known among the holders as the SI's ticket. This ticket allowed the holder to practise the profession of Sanitary Inspector. This qualification was followed by a specialised qualification, the Diploma for Inspector of Meat and other Foods (meat ticket), and for others a similar qualification of Smoke Inspector (smoke ticket). The mentioned body was superseded by the Public Health Inspectors' Examination Board. In keeping with the upgraded qualifications, the title of Sanitary Inspector was changed in 1956 to that of Public Health Inspector, and later, to show the expanded role of the profession, to Environmental Health Officer (States of Jersey, [s.a.]; Clay, 1939; CIEH, 2004).

1.1.2 Evolution of environmental health in South Africa

Local government (LG) has been playing a key role in the delivery of environmental health services (EHS) since the early 1800s. In South Africa the first Public Health Act was promulgated in the Cape Colony (South Africa) during 1883 following a smallpox epidemic in Kimberley (currently situated in the Northern Cape province as part of the Sol Plaatje local municipality within the Frances Baard district municipal area) (Nathan & Thornton, 1929; Cluver, Smith & Schwär, 1971). Extensive emergency powers were delegated to the LAs by the governor to permit officials to enter premises and to draw up and enforce quarantine regulations. LAs, by virtue of previous colonial legislation and subsequent ordinances and under their local by-laws, were responsible for environmental hygiene and measures to deal with outbreaks of infectious diseases (Nathan & Thornton, 1929; Cluver *et al*., 1971). The Public Health Amendment Act, No. 23 of 1897, extended and defined the jurisdiction and powers of LAs in respect of matters relating to public health, which included the regulation of dairy and related activities (Cape of Good Hope, 1897; Nathan & Thornton, 1929; Cluver *et al*., 1971). Nevertheless the influenza epidemic of 1919 exposed serious inadequacies in the responsibilities, safeguards and procedures. This resulted in the Public Health Act of 1919 (Act 36 of 1919), which determined that "every LA (urban and rural LAs) could, and when required by the Minster had to, appoint competent SIs to assist in safeguarding public health within its district" (Union of South Africa, 1919; Nathan & Thornton, 1929; Cluver *et al*., 1971). It

is interesting to note that the Public Health Act of 1919 had a clause that prevented LAs from dismissing sanitary/health inspectors without the approval of the Minister.

The Act further determined that "the SIs had to possess a certificate in practical sanitation or sanitary science which was granted after a special examination from an authority specified by the Minister in the government gazette (Government Notice No. 519 of March 19, 1920)" (Nathan & Thornton, 1929; Cluver *et al*., 1971). At that time the only authorised authorities that were approved as competent to grant certificates were the Royal Sanitary Institute, the Sanitary Inspectors' Examination Board of London, and the Sanitary Association (Incorporated) of Scotland (Nathan & Thornton, 1929; Cluver *et al*., 1971). Consequently, for the first couple of years of the existence of EH in South Africa, the professionals were trained in South Africa, but they obtained their qualifications from the UK and were registered by their professional bodies, as mentioned above. Thus the pioneers of EH in South Africa received their certificates from the UK – hence the need to focus first on the history of EH in the UK.

Prior to the restructuring, redemarcation and allocation of powers and functions to the different categories of LG in South Africa, there were multiple authorities providing EHS (Figure 1.1). Even the former homelands had their own EHS. Urban and rural LAs had their own EHS, and the different provincial departments of health also rendered certain EHS within the district and local municipal areas (Figure 1.1). Some local municipalities (LMs) with sufficient capacity had their own EHS to serve their communities (Figure 1.1, Local Municipality A). Some district municipalities (DMs), especially in areas where the erstwhile district councils and divisional councils (also known as rural LAs) rendered EHS, also provided EHS mainly to rural communities (Figure 1.1, Local Municipality A & Local Municipality B) and to urban communities in small towns that could not afford their own EHS (Figure 1.1, Local Municipality B).

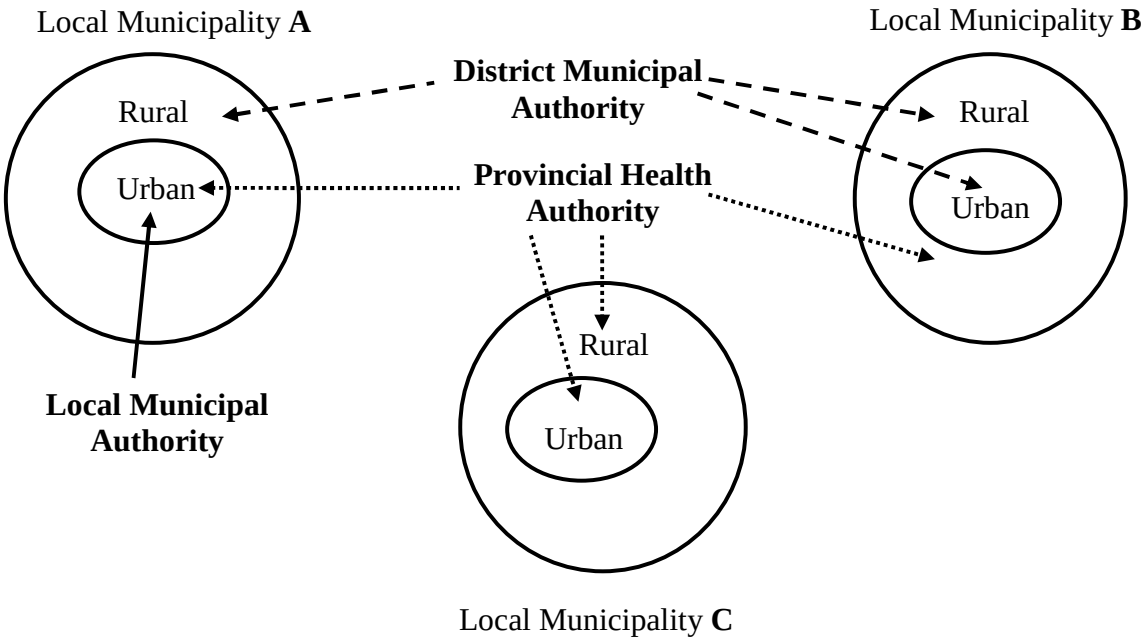

Figure 1.1: Fragmented environmental health services delivery in South Africa, by three different service providers: (1) The local municipality, which is only responsible for environmental health services in the urban area (Local Municipality A); (2) The district municipality responsible for environmental health services in the rural areas surrounding the urban centre (Local Municipality A & Local Municipality B), although in some cases also rendering environmental health services to urban communities (Local Municipality B) where local municipalities could not afford their own environmental health services; (3) The provincial departments of health, which were responsible for government premises, hazardous substance control and port health (where applicable) for the entire area (urban and rural) (Local Municipality A & Local Municipality B), and also for rendering local-authority environmental health services to areas with no local authority able to afford to render such (Local Municipality C).

Government environmental health practitioners (EHPs) rendered EHS mainly to government premises such as hospitals while also monitoring hazardous substances in urban and rural areas (Figure 1.1, Local Municipality A & Local Municipality B). Government EHPs also rendered general EHS to towns where there were no local government EHS available (Figure 1.1, Local Municipality C) (Nathan & Thornton, 1929; Cluver *et al*., 1971; RSA, 1977; Agenbag & Thétard, 1997; RSA, 2003; Atkinson, Van der Watt & Fourie, 2003; Venter & Landsberg, 2006:134).

Nevertheless, despite the impact of fragmented EHS delivery as mentioned above, the allopathic medicine dominance in health service delivery in South Africa also impacted negatively on the development, capacitation and monitoring of EHS from higher authorities, resulting in a lack of systems and also a lack of standardisation of the services, monitoring and control of the services, resource development and so forth, which resulted in EHPs becoming involved in other activities not directly related to EH (Mathee, Swanepoel & Swart, 1999; HPCSA, 2000a; Atkinson, Akharwaray, Fouche & Wellman, 2002:3-8; Agenbag & Gouws, 2004). EHPs without transport became drivers for primary health care staff who had access to transport, but who did not have licences. In other cases EHPs became acting managers of administration and technical services whilst only focusing on EH-related complaints for 10% of their time and when available, neglecting their own priority EH issues (Atkinson *et al*., 2002). A provincial survey in the Eastern Cape province during 2003 revealed that most (90%) of the provincial EHPs were without transport and basic equipment (Agenbag & Gouws, 2004).

1.2 DEVELOPMENTS IN ENVIRONMENTAL HEALTH AFTER THE DEMOCRATISATION OF SOUTH AFRICA

EHS in South Africa were also affected by the democratic elections and subsequent legislative changes such as the implementation of the LG-based district health system as the vehicle to implement an equitable, efficient and effective health system based on the principles of the primary health care (PHC) approach (McCoy & Engelbrecht, 1999;

Barron and Asia, 2001). Since the passing of the National Health Act, 2003 (Act 61 of 2003) during 2005, far-reaching changes were effected in the health and municipal sectors, which have had a significant impact on the way in which EHS are delivered. The National Health Act of 2003 devolves the responsibility for the majority of EHS to metropolitan municipalities (metros) and district municipalities (DMs) and redefines MHS to focus exclusively on EH (RSA, 1998; Sait, 2001; RSA, 2003). This is regarded as a positive development for EH (i.e. to make metros and DMs accountable for EHS). Recent cholera and typhoid outbreaks in the Mpumalanga, KwaZulu-Natal, Eastern Cape and North West provinces serve as a reminder of key challenges in the EH field, such as the communities' knowledge regarding how to protect themselves, access to basic services, lack of systems to properly monitor EH activities, resource shortages, as well as lack of management capacity to properly and sustainably monitor and control environmental conditions. The extent and the intensity of the outbreaks emphasised the severity of the backlogs and indicated that there has possibly been greater emphasis on curative care rather than prevention and control (Eales, Dau & Phakati, 2002).

After 1994, the first step taken by the government towards the implementation of a new health system with the aim of overcoming fragmentation was the demarcation of health districts along municipal boundaries (Barron & Asia, 2001). Metropolitan, local and district municipal boundaries were determined during 2000 and the country has done away with cross-border DMs that negatively affected service delivery (SALGRC, 2005a). The various powers, functions and responsibilities for the different categories of LG were determined, although there is still uncertainty with regard to some environmental/municipal health services activities such as air and noise pollution control that are divided between LMs and DMs, whilst the function for rendering MHS has been allocated exclusively to metros and DMs in South Africa (RSA, 1996; RSA, 1998; RSA, 2003; SALGRC, 2005b; MDB, 2005).

The latest developments in the delivery of EHS by LAs are influenced and directed by the Constitution of the Republic of South Africa, 1996 (Act 108 of 1996) (hereafter referred to as the Constitution), which promulgates three categories of municipalities, namely A –

metropolitan municipalities, B – local municipalities and C – district municipalities. It also makes mention of MHS under Part B of Schedule 4 of the Constitution, which is a responsibility of the metros and DMs in accordance with Section 84(1) of the Municipal Structures Act, 1998 (Act 117 of 1998) and Section 32(1) of the National Health Act, 2003 (Act 61 of 2003). MHS are also included in the term "health services" in the last-mentioned Act. Nevertheless, the term MHS, which is allocated to metros and DMs, includes a list of selected EHS activities and aspects, namely: water quality monitoring, food control, waste management, health surveillance of premises, surveillance and prevention of communicable diseases excluding immunisations, vector control, environmental pollution control, disposal of the dead and chemical safety, but excludes port health services, control of hazardous substances and malaria control, which are provincial functions (RSA, 2003). The necessity for this endeavour originated from the ministers for Provincial and Local Government and Health who agreed that the definition of MHS should be equated to EHS (RSA: DPLG, 2002).

From the latest study in the country to determine the progress made in the delivery of MHS by DMs in South Africa, conducted in 2007 by the Development Bank of Southern Africa (DBSA, 2007), it is clear that one third of DMs are still not delivering MHS, two years (from 1 July 2004) after they were required to do so. Local municipalities still play a significant role in delivering the service in instances where DMs do not do so. It is further claimed that some DMs are not complying with the legislative requirement of undertaking Section 78 investigations in accordance with the Municipal Systems Act, 2000 (DBSA, 2007). The latter Act makes it compulsory for a municipality that renders a new service or whose services have extended significantly to undertake a Section 78 investigation to determine whether they have the capacity to render the service internally or whether it has to be done externally (RSA, 2000). Only about 60% of DMs indicated that they had undertaken their Section 78 investigations, whilst approximately 43% of DMs had been delivering EHS before metros and DMs were mandated to do so (DBSA, 2007). These Section 78 investigations are important in determining whether the DMs have the current and future capacity to deliver MHS, and whether they should deliver the

service internally or externally through a service-level agreement (RSA, 2000; DBSA, 2007).

Over and above a Section 78 investigation, another important tool to determine whether the metros and DMs are fully prepared for the delivery of MHS, and therefore food and subsequently milk control, is to ensure that MHS form part of the respective municipalities' integrated development plans (IDPs) (RSA, 2000; MDB, 2005). From the DBSA (2007) survey it is evident that MHS are relatively well integrated into municipal planning processes, especially long-term processes, but provision for staffing is lacking. Eighty-two percent (82%) of DMs had included MHS in their IDPs, a large number having provided for the service in their 2006/07 budget and medium-term expenditure framework (MTEF), but only 41% had placed staff in organigrams (DBSA, 2007).

The abovementioned study shows that the MHS capacity of DMs, as far as access to services, transport, technical support and equipment are concerned, has mainly improved following the consolidation of MHS. It is only the staffing component that has not improved. Approximately 70% of DMs had made provision for a separate budget vote for MHS, but only 52% had budgeted for the service (DBSA, 2007). According to the Division of Revenue Act of 2006, government has classified EHS as a basic service that is funded through the local government equitable share basic services component, together with other basic services such as water, sanitation, refuse removal, electricity and so forth. However, only 55% of DMs reported that they had accessed or planned to access the funding for MHS (RSA: DoF, 2006; DBSA, 2007). Approximately 85% of chief financial officers at DMs deemed the funding for MHS to be inadequate (DBSA, 2007). Furthermore it was highlighted in the DBSA (2007) study that MHS are not developing in an equitable manner, with almost half the DMs indicating that there were no measures to ensure equitable delivery of the service. For almost half the DMs the service-level agreements did not cover new geographic areas, and fewer than half the DMs had service plans for underdeveloped areas, which suggests that the traditional way of delivering EHS on *ad hoc* basis and by means of the traditional 'health inspector' model is being maintained (DBSA, 2007). Local government has the primary

responsibility for the delivery of basic services such as water, sanitation, waste management and electricity (RSA, 1998; MDB, 2005; RSA: DoF, 2006). Each of these services has profound implications for the public and EH; however due to poverty and a lack of resources, some communities have no access to these services (Eales *et al.*, 2002). Thus the devolution/consolidation of EH to metros and DMs offers enormous opportunities for the integration of EH with development planning and the provision of basic services across all sectors. Unfortunately EH is not currently a high priority in municipal budgets and it remains to be seen whether this important function receives the resources and support it requires (Eales *et al.*, 2002).

National surveys conducted during 2006 and 2007 to establish the progress made with the devolution of MHS to DMs in the country revealed that respondents were of the opinion that most of the key national and provincial role-players, such as the South African Local Government Association (SALGA), the Department of Health (DoH) and the Department of Provincial and Local Government (DPLG), which should be playing a leading role in the consolidation of MHS in South Africa, are instead playing a very limited role in giving support and direction to metros and DMs (Agenbag, 2006; DBSA, 2007). This has further resulted in inequitable implementation of MHS consolidation in different provinces (Table 1.1).

When considering, a timeline of strategic high-level developments and direction in the devolution of MHS in South Africa (Figure 1.2) it is noted that there is a need to get the national and provincial support down to LG level where it should be interpreted and implemented.

Table 1.1: Perception survey to determine the support given to district municipalities by key role-players at national and provincial level upon the devolution/consolidation of MHS to their authorities

(Agenbag, 2006; DBSA, 2007)

Institution	**Level of support**		
	Good (%)	**Average (%)**	**Poor (%)**
National Department of Health	0	24	68
Provincial Department of Health	24	44	29
Department of Provincial and Local Government	9	18	65
South African Local Government Association	3	21	53
South African Institute of Environmental Health	3	32	59
Unions	24	24	34
Department of Water Affairs and Forestry	3	9	56

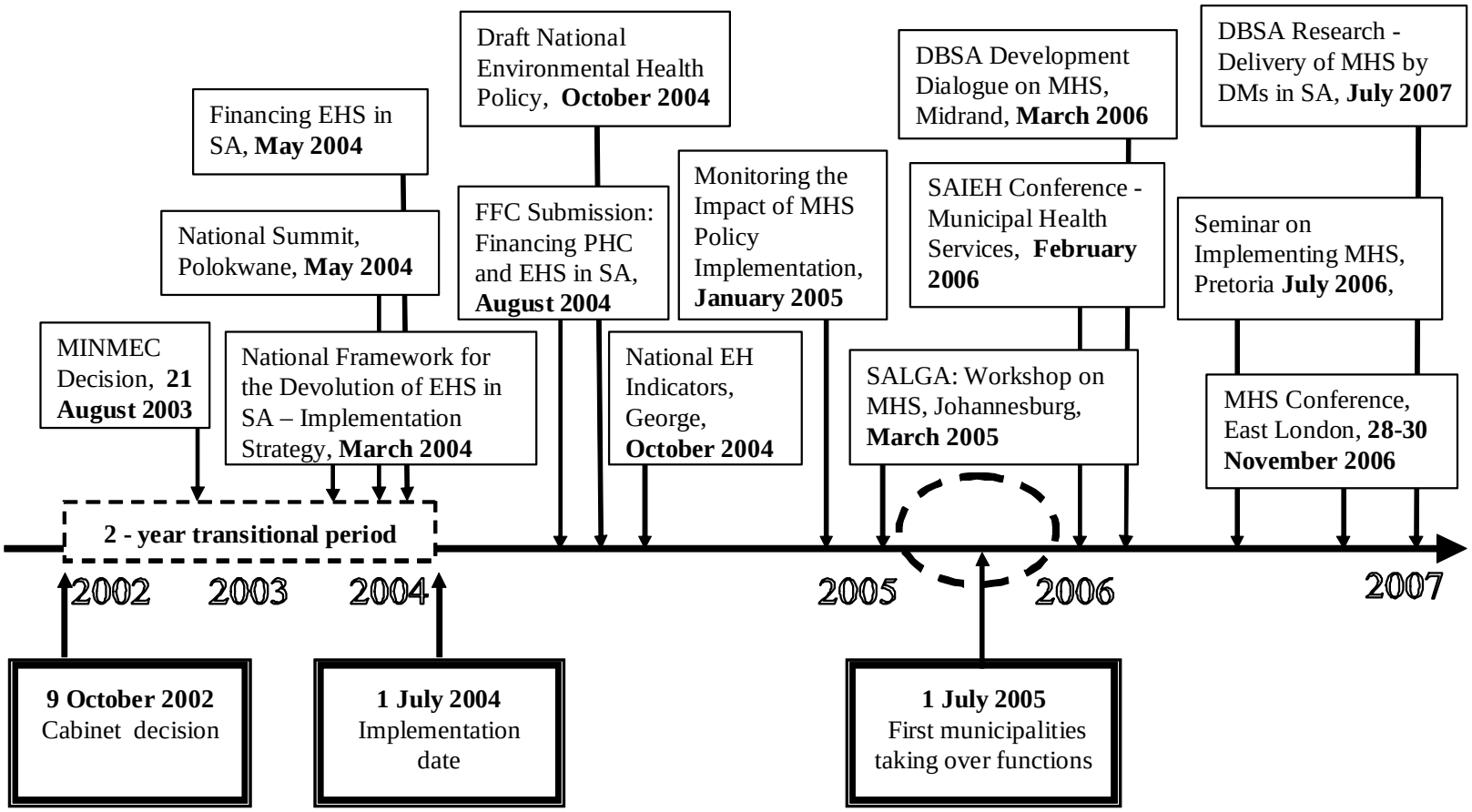

Figure 1.2: Timeline of developments with regard to the interpretation and implementation of municipal health services in South Africa since the Cabinet decision that environmental health services will be municipal health services and the function of metropolitan and district municipalities from 1 July 2004

Over the past three years more strategic and targeted research has been initiated on a strategic level by the National Department of Health (Figure 1.2). This research was done by non-governmental organisations such as the Health Systems Trust, and by the Development Bank of Southern Africa (DBSA, 2007), whose study was intended to guide government actions as far as MHS are concerned. These latest strategic research initiatives as referred to were, amongst others, a costing study to inform the funding for MHS, a study to monitor the impact of MHS policy implementation, and another study amongst DMs to determine the level of MHS delivery (Haynes, 2004; Haynes, 2005; DBSA, 2007). These research studies provide a good synopsis of the extent of MHS delivery to all relevant role-players that could be of assistance for future focus areas and programmes for the development of MHS in South Africa.

1.3 ROLE OF LOCAL GOVERNMENT IN DELIVERING ENVIRONMENTAL HEALTH SERVICES AND MILK CONTROL IN SOUTH AFRICA

Historically, LG has played a pivotal role in the delivery of EHS and in particular to control milk, amongst other functions (Cape of Good Hope, 1897; Union of South Africa, 1919; Nathan & Thornton, 1929; Clay, 1939; Cluver *et al*., 1971). The Public Health Amendment Act of 1927 (Act 36 of 1927), for example, made provision for two categories of LAs, namely the urban LA, which is endowed with sanitary powers for safeguarding the inhabitants of its district, and the rural LA, which is similar to a divisional council (Union of South Africa, 1927). Divisional councils existed throughout the Cape Colony (covering roughly the present-day areas of the Western Cape, Eastern Cape and Northern Cape provinces), with similar powers to those of the urban LAs. For the rural districts of the Transvaal (covering more or less the current areas of the North West, Gauteng, Mpumalanga and Limpopo provinces), the Orange Free State and Natal (currently known as the Free State and KwaZulu-Natal provinces respectively), the magistrate was the rural LA for the purposes of health provision (Nathan & Thornton, 1929; Cluver, *et al*., 1971; RSA, 1977; Barron & Asia, 2001).

The control of dairies and the sale of milk by LAs dates back to the commencement of the Public Health Amendment Act of 1897 (Act 23 of 1897), with LAs having the power and duty to alter and revoke by-laws or regulations for regulating, restricting and inspecting dairies and the sale of milk (Cape of Good Hope, 1897: Part III, 9(5)(c)). The Foodstuffs, Cosmetics and Disinfectants Act of 1972 (Act 54 of 1972), which is still in force, requires of LAs (since 1 July 2004 only metros and DMs) to be authorised by the Ministry of Health to enforce the stipulations of the mentioned Act, amongst others, to control milk hygiene issues in their areas of jurisdiction, by their authorised health inspectors (RSA, 1972; RSA, 2003). The latest National Health Act, 2003 (Act 61 of 2003) also gives metros and DMs the responsibility to deliver MHS and to appoint health officers to monitor and enforce compliance with the said Act (RSA, 2003).

The trend of LGs to fulfil such a significant role in milk control through their EHPs (health inspectors) and consequently their EH sections continues, although lately the current Constitution of South Africa, 1998 (Act 108 of 1996), the Municipal Structures Act, 1998 (Act 117 of 1998) and the National Health Act, 2003 (Act 61 of 2003) have redefined EHS at LG level, where the said Acts make mention of MHS, which are now the responsibility of the metros and DMs and no longer that of local municipalities. MHS are defined in the National Health Act of 2003 (Act 61 of 2003) to include, amongst other things, food control (RSA, 1972; RSA, 1996; RSA, 1998; RSA, 2003).

The control of milk hygiene is a component of food control and has been the responsibility of metros and DMs since 1 July 2004 (RSA, 1991; RSA, 1998; RSA, 2003; RSA: DoH, 1986; RSA: DoH, 1990; RSA: DoH, 2003). The following legislation is very specific about milk control and the role that LG and EHPs play in the enforcement thereof, from the production stage of milk until it is made available to the consumer: Firstly Regulation 1256 of 27 June 1986 promulgated by the Health Act, 1977 (Act 63 of 1977): “Regulations pertaining to milking sheds and the transport of milk” mainly determines the procedures and requirements for registration of a milking parlour, the role that LG plays with the issuance of a certificate of acceptability, following an inspection

report from the EHP regarding the structural, cold-chain and transportation requirements with which milking parlours must comply for the production and sale of milk and dairy products to the public (RSA, 1977; RSA: DoH, 1986). Regulation 1555 of 21 November 1997 promulgated by the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 54 of 1972): "Regulations relating to milk and dairy products" mainly determines the quality (hygiene and safety requirements) of milk and dairy products (RSA: DoH, 1997). Section 11 of the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 54 of 1972) determines the powers, duties and functions of inspectors under the mentioned Act (RSA, 1972). Fourthly, Regulation 328 of 20 April 2007 promulgated by the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 54 of 1972): "Regulations relating to the powers and duties of inspectors and analysts conducting inspections and analyses on foodstuffs at food premises" determines the powers, duties and functions of an officer or inspector to enter premises (RSA: DoH, 2007). Sections 82 to 84 of the National Health Act, 2003 (Act 61 of 2003) also emphasise the duties of health officers in the case of routine EH investigations, as well as the authority of officers to enter and search premises in terms of the mentioned Act (RSA, 2003). Regulation 1183 of 1 June 1990 promulgated by the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 54 of 1972): "Regulations relating to perishable foodstuffs" defines a list of perishable foodstuffs which, amongst others, include milk (RSA: DoH, 1990). The Business Licence Act, 1991 (Act 71 of 1991) determines that a place where perishable foodstuffs are sold should be in possession of a business licence, issued by the relevant LA (RSA, 1991). Regulation 918 of 30 July 1999 promulgated by the Health Act, 1977 (Act. 63 of 1977): "Regulations governing general hygiene requirements for food premises and the transport of food", as amended, further requires under Section 3(1) that premises where food is handled must be in possession of a certificate of acceptability issued by the LA (metro and DM), after the premises have been considered and recommended by the "inspector" (RSA: DoH, 1999).

The role of LAs (metros and DMs) in the control of food safety and its statutory mandate are derived from the authorisation of individual metros and DMs by the Minister of Health in accordance, firstly, with Article 23 of the Foodstuffs, Cosmetics and

Disinfectants Act, 1972 (Act 54 of 1972) (RSA: 1972) and secondly with Article 32 of the National Health Act, 2003 (Act 61 of 2003) (RSA, 2003). It is important to note that if food control is not specifically mentioned in the integrated development plans (IDP) and service delivery and budget implementation plans (SDBIPs) of the respective municipalities, in detail and by referring to specific programmes such as milk control or capacitating the informal milk producing sector, it would be problematic to focus on it or to make budgetary provision for it, primarily due to the most recent legislative changes and the performance management systems that are implemented at LG level (RSA, 2000).

1.4 CHANGES IN THE ENVIRONMENTAL HEALTH PROFESSION

The political movements in South Africa also affected the EH fraternity, its training institutions, professional registration bodies and placement of EH staff along geographical lines. After the 1994 democratic changes the professional registration of EHPs was centralised with the Health Professions Council of South Africa (HPCSA), with a separate and autonomous but integrated professional board for EHPs (RSA: DoH, 1973; RSA: DoH, 1976a; RSA: DoH, 1976b; RSA: DoH, 1994; RSA, 1974; Van Rensburg & Van Rensburg, 1999; HPCSA, 2000b). These arrangements minimised legislative and other practices that allowed for medical professional dominance of other health care professionals in the then South African Medical and Dental Council (HPCSA, 2000b). The majority of training institutions in the country were rationalised and merged during 2003, which also had an impact on the training of EHPs. The EHPs were primarily trained at the then technikons, which predominantly changed to universities of technology. This extended the scope of training of EHPs, which also made more research resources available to the profession. In order to be in line with the National Qualifications Framework (NQF), as part of the changes in higher education and training, the courses for EHPs were also re-curriculated (HPCSA, 2002). Currently one should have a three-year National Diploma in EH to be able to secure professional registration with the HPCSA as an EHP (RSA: DoH, 1976b). However, this is currently under

revision as per the stipulations of the NQF and the possible introduction of a register for EH assistants (HPCSA, 2002; 2005). Further training opportunities now exist, with an EHP now being able to obtain a doctoral degree in EH, which was not available before 1996 in South Africa (RSA: DoH, 1976c). With the introduction of compulsory community service for EHPs in South Africa, during 2004, more human resources in EH were made available, especially to the remote, under-served areas of the country. It also provided an opportunity for EHPs to gain more practical work experience and exposure in the EH field. The Professional Board for EHPs introduced voluntary Continuing Professional Development (CPD) for EHPs in South Africa as from March 2003 (HPCSA, 2002; HPCSA, 2006).

The enactment of the National Health Act, 2003 (Act 61 of 2003) further terminated a number of clauses of the 1977 Health Act (Act 63 of 1977) that originated from the colonial system, which stated that a health inspector had to work under the supervision of the Medical Officer of Health. This requirement impacted negatively on EHPs for many years in terms of their status and the highest positions they could achieve at LG level (RSA, 1977; Industrial Council for the Local Authority Undertaking of the Province of the Cape of Good Hope, [*s.a.*]). Various authors have concluded that the prevalence of allopathic medicine in the country in the past and to some extent at present negatively affected the growth of the EH fraternity as far as the development of systems, standardisation of services, strategic-level research regarding current service delivery levels and allocation of resources are concerned (Mathee *et al.*, 1999; Van Rensburg & Van Rensburg, 1999; Agenbag & Gouws, 2004).

The terminology relating to practitioners also changed: from Sanitary Inspector (SI) to Health Inspector (HI) during 1928, to EH Officer (EHO) in 1994, and to Environmental Health Practitioner (EHP) as from 2002. These changes reflect the shift from the inspector model to a more developmental approach in EHS delivery (Nathan & Thornton, 1929; RSA: DoH, 1973; RSA: DoH, 1976a; RSA: DoH, 1976b; RSA: DoH, 1994; RSA, 1974). The various associations for EHOs, which were divided along demographic lines, were also integrated in the South African Institute for Environmental Health (SAIEH),

which was inaugurated during November 1995 and linked the profession with international counterparts by becoming a member of the International Federation of Environmental Health (IFEH) (SAIEH, 2004). The SAIEH played a significant role in hosting the 8th World Congress of the IFEH during February 2004. The event assisted significantly in improving the profile of EH in South Africa amongst officials and politicians from local to national level (SAIEH, 2004).

Although the number of registered EHPs has increased over the past decade, their ratio to the general population has decreased. For example, in the Medical Officer of Health's report of 1902 for the city of Johannesburg (in Jones, 2000), mention is made of 23 SIs who were employed to serve the then population of 109,482 (EHP to population ratio = 1:4,760). The current number of EHPs in Johannesburg stands at 134 with a population of 3,225,810 people (EHP to population ratio = 1:24,073). This illustrates that although the number of EHPs is currently five times higher in Johannesburg than it was in 1902, the population has increased 28 times over the same period. Figure 1.3 shows the number of EHPs that have registered with the HPCSA since 1946. Interestingly, for 22 years the numbers remained constant at 51 EHPs for the entire country, with a marked increase since the mid-1970s (Figure 1.3). According to the latest annual report of the HPCSA there were 2,718 EHPs registered during the 2005/06 registration year in South Africa (HPCSA, 2006). The dramatic decline during 2000 could be ascribed to a number of EHPs that left the country and who deregister because they took up duties in other departments such as Departments of Water Affairs and Forestry as well as the Department of Environment Affairs and Tourism, where it is not required of them to be registered, leaving a skills gap at LG level. A portion of the decrease could also be because of a number of EHPs that did not continue their registration with the HPCSA. The HPCSA also increased awareness and efforts to get rid of professionals' such as EHPs that continues to practice whilst not registered with the HPCSA. This could also lead to the increase in the number of registered EHPs during 2003 together with government interventions such as the compulsory Community Service Year that EHPs also have to undergo before they can take up a permanent job and continue to be registered with the HPCSA as a professional.

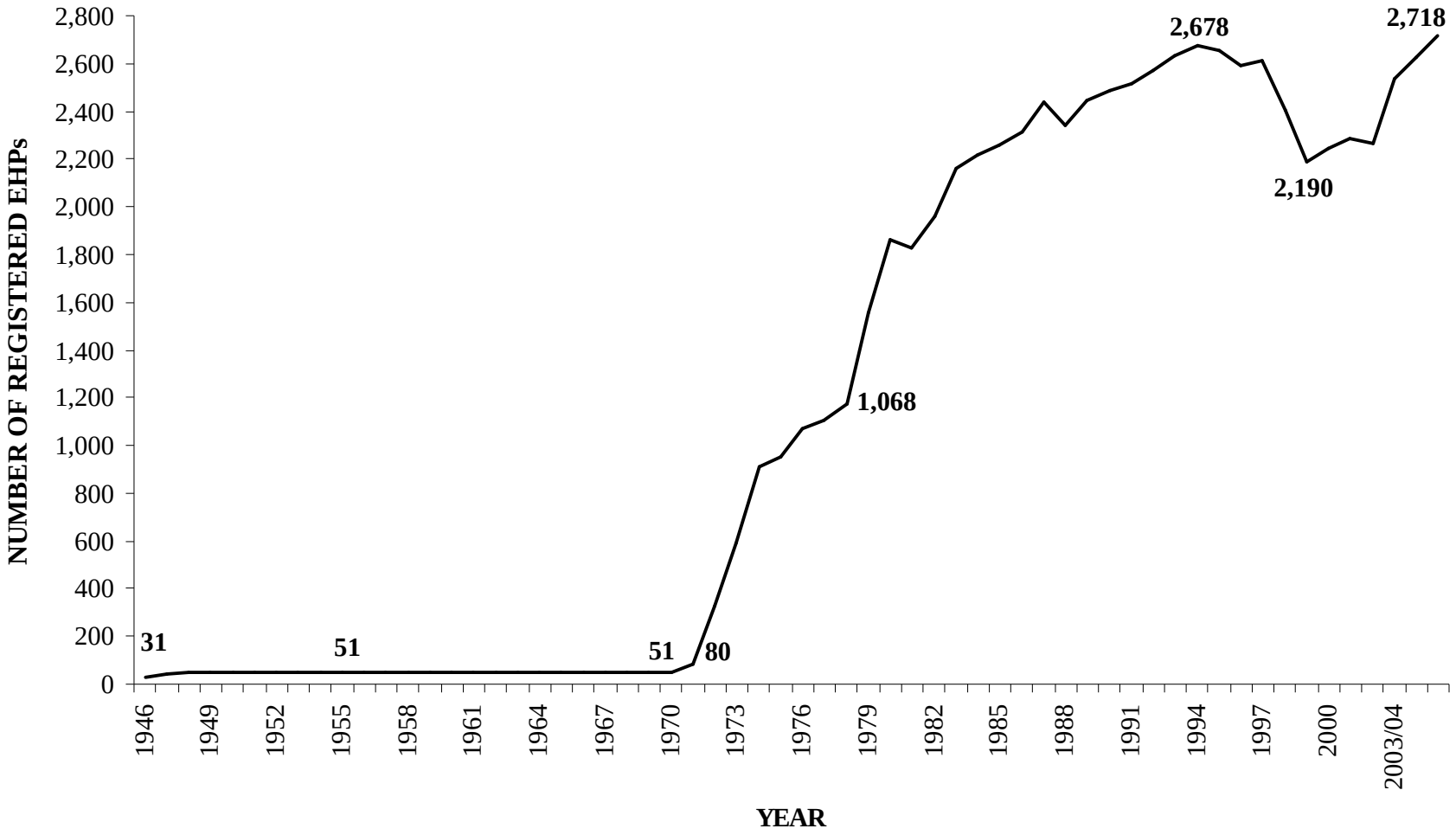

Figure 1.3: Statistics on environmental health practitioners registered with the Health Professions Council of South Africa from 1946 to 2006
(INMDCSA, 1999; HPCSA, 2002; HPCSA, 2005; HPCSA, 2006)

1.5 STATUS OF MILK QUALITY IN SOUTH AFRICA

Milk production in South Africa has followed similar trends as in other parts of the world where the number of formal commercial producers has decreased while the production volumes have increased (Herman 1984; Greathead, 1991; Costa, Reinemann, Cook & Ruegg, 2004; Coetzee, 2005; Coetzee & Maree, 2006). Since the deregulation of the industry after 1994, smaller and mainly informal (unauthorised/unregistered) milk producers have started supplying milk directly to the communities through bulk milk tanks, "spaza" shops (small, informal retailers) and so forth (Greathead, 1991; Gittens, 1996; NAMC, 2001; Jansen, 2003). This milk is generally not of good quality because of the focus on volume and the fact that there are no penalties for poor quality (Greathead, 1991; More O'Ferrall-Berndt, 2003; Jansen, 2003). In general, the milk quality in South Africa has been highlighted as a matter of concern, as shown by various studies (Greathead, 1991; Burri, 1993; Jooste, 1993; RSA: DoH, 1995; Greyling, 1998; Jansen, 2003; More O'Ferrall-Berndt, 2003; Agenbag, 2004).

The concerns about milk quality in South Africa were echoed by the 2001 National Agricultural Marketing Council report (NAMC, 2001) on the effects of deregulation on the dairy industry. Other studies have furthermore indicated that proper control over milk hygiene quality by LAs is lacking (Herman, 1984; Greathead, 1991; Winterbach, 1992; Burri, 1993; Jooste, 1993; Gittens, 1996; NAMC, 2001; More O'Ferral-Berndt, 2003). Recently, public awareness and public enquiries addressed to the relevant controlling authorities have been highlighted through the media and research studies on the hygiene quality and safety of various foodstuffs in South Africa, including milk (Burri, 1993; Jooste, 1993; Greyling, 1998:78-79; Carte Blanche, 2001; NAMC, 2001; More O'Ferrall-Berndt, 2003:35-40; Focus, 2006). This has raised concerns as to whether the responsible authorities tasked with managing and controlling the quality of foodstuffs are sufficiently equipped to execute their responsibilities effectively (Herman, 1984:6; Mathee *et al.*, 1999: 281-287; Atkinson *et al*., 2002:3-9; More O'Ferrall-Berndt, 2003:35-40; Agenbag & Gouws, 2004:3-5; Fairman & Yapp, 2004).

Studies have also highlighted the inability of municipalities to control milk quality. For example, a Human Sciences Research Council study during 2002 in the Northern Cape suggested that the delivery of EHS in the Karoo area was uncoordinated, as there were staff members from the Provincial Department of Health, the district municipality and the local municipalities working in the same area (Atkinson *et al*., 2002). The study indicated that EHPs were performing a number of other jobs unrelated to a typical EH job description (Atkinson *et al*., 2002). More often than not the EHP's job description tasks were being neglected and only performed in the case of public complaints. Over recent years EHPs have increasingly been acting as heads of administration, human resources, technical services, public works and finance departments while they are appointed as the only EHPs in their respective areas required to perform EHP tasks (Mathee *et al.*, 1999; HPCSA, 2000a; Atkinson *et al*., 2002; Haynes, 2005).

1.6 RATIONALE

1.6.1 Stating the problem

Currently no registration system for informal milk producers exists, hampering information transfer between the producers and the authorities (Jansen, 2003). It is thus difficult to determine the real extent of the informal milk-producing sector with regard to hygiene and economic impact, mainly because most of the informal milk producers consume their own milk and only sell to friends and family (Jansen, 2003:6; Dovie, Shackleton & Witkowski, 2006:263).

However, it is illegal in South Africa to produce milk from an unapproved milking parlour/shed (parlour without a certificate of acceptability) and to sell foodstuffs that hold a risk to consumers (RSA, 1972; RSA: DoH, 1986). Therefore it is the responsibility of LAs (metros and DMs) to regulate informal producers and establish such strategies to certify and formalise the informal sector. Through this approach, and through the stimulation of the "second economy" (RSA, 2006), the metros and DMs, together with

other role-players such as the milk industry, can assist the informal sector to become part of the economic activities of the country. Therefore an obligation is placed on both the milk-producing sector and the authorities who control the quality of milk and other government initiatives such as the ASGISA programme and Local Economic Development (LED) programmes to stimulate economical activities especially in the small business sector (Fairman & Yapp, 2004; Griffith, 2005). The control of the informal milk-producing sector and in fact all EH activities starts with the legal requirement that all LAs (metros and DMs) and their officials who administer the applicable food control legislation should be respectively authorised by the Ministry of Health and the officials by their LAs, but this is not currently the case (RSA: DoH, 2005a; RSA: DoH, 2005b; RSA: DoH, 2006a; RSA: DoH, 2006b).

Therefore it is an obvious challenge for MHS in South Africa to properly monitor and control the informal milk producers and also endeavour to have them authorised and formalised, not only for obvious reasons like the regulatory challenges between the formal and informal sectors, but also for the health and wellbeing of the consumers. Another reason entails the supporting of government initiatives to grow the economy through building trust in the quality of products from the informal sector. Government structures should assist LG and MHS in particular to standardise their services and to develop systems that are able to support management decisions towards measuring progress in the delivery of the services and the quality of milk.

1.6.2 Aims and objectives

The main aim of this study is to provide information on the quality of the monitoring, control and management of milk through MHS by selected municipalities. The study ultimately endeavours to improve MHS delivery and thus community health and wellbeing by investigating a key priority activity such as informal milk supply.

The objectives of the study are to determine:

- Whether metros and DMs are in compliance in terms of the control of milk hygiene in South Africa;

- The extent of the statutory compliance of the informal milk-producing sector and the challenge this holds for MHS at LG level;

- The availability and efficiency of resources for MHS to monitor and control the informal milk-producing sector in South Africa;

- How MHS are approaching the monitoring and control of milk hygiene in South Africa to optimise available resources for actions to serve its purpose; and

- Suggestions to be proposed to relevant role-players to support MHS in the proper monitoring and control of milk hygiene, in sustaining the informal milk-producing sector and government's economic growth initiatives.

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Chapter 2

COMPLIANCE OF LOCAL GOVERNMENT IN REGULATING THE INFORMAL MILK-PRODUCING SECTOR IN SOUTH AFRICA

This chapter has been submitted partially or in full for publication to the journal:
International Journal of Environmental Health Research

2.1 ABSTRACT

The purpose of this paper is to assess the compliance of local government (LG) (metropolitan and district municipalities) with legislative requirements concerning the control of milk hygiene at production level. Municipal health services (MHS) managers are fulfilling an increasingly important role through legislation to ensure the health and wellbeing of consumers and to secure consumer trust in the product. A survey questionnaire targeting 52 MHS managers or designated persons (directly responsible for milk control) at the various metropolitan municipalities (metros) and district municipalities (DMs) in South Africa was conducted. At the time of the survey the majority of metros and DMs had not been authorised by the Ministry of Health in accordance with Section 23(1) of the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 54 of 1972) in their respective areas of jurisdiction. Respondents indicated that a notable number of metros and DMs had not authorised their environmental health practitioners (EHPs) to administer the provisions of the above-mentioned Act. In accordance with this Act, this study concludes that the respective national and provincial governments, through their various departments, have to support and strengthen the capacity of municipalities to exercise power and perform their functions in this regard.

Keywords: *Milk hygiene control, Local government compliance*

2.2 INTRODUCTION

Historically South Africa's LG arena consisted of the former municipalities, which delivered municipal services to the urban centres of a town, whereas the previous regional services councils, specifically in the former Cape Province, rendered municipal services in the peri-urban and rural communities around the town (urban) centres. In the areas where there were no municipalities the Provincial Administration rendered the functions on behalf of the municipality (Venter & Landsberg, 2006:134). The enactment of the Constitutional Act of South Africa, 1996 (Act 108 of 1996), (hereafter referred to as the Constitution,

1996), the Local Government Municipal Structures Act, 1998 (Act 117 of 1998) (RSA, 1998b) and the Local Government Municipal Demarcation Act, 1998 (Act 27 of 1998) (RSA, 1998a) introduced a new era for local government, which makes provision for the reduction in the number of municipalities and integration and disfragmentation of the municipal areas. The Constitution, 1996 promulgates three categories of municipalities, namely A – Metropolitan Municipalities, B – Local Municipalities and C – District Municipalities. It also makes mention of MHS under Part B of Schedule 4 of the Constitution, 1996, which is a responsibility of the metros and DMs in accordance with Section 84(1) of the Municipal Structures Act, 1998 (Act 117 of 1998) and Section 32(1) of the National Health Act, 2003 (Act 61 of 2003), since July 2004.

Food control forms part of the delivery of environmental health services (EHS), which is redefined in the Constitution, 1996, the Municipal Structures Act, 1998 (Act 117 of 1998) and the National Health Act, 2003 (Act 61 of 2003) to be MHS. The control of milk hygiene is, in turn, a component of food control and has been the responsibility of metros (Category A) and DMs (Category C). In accordance with the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 54 of 1972), individual metros and DMs need to be authorised by the Ministry of Health to enforce this Act in their respective area of jurisdiction, following proof of their capacity to administer the said Act through authorised officers (mainly EHPs) and in selected cases by veterinarians (Basson, 2006:12-13).

The Department of Health (Directorate: Food Control) is directly responsible for all matters relating to food safety control at a national level, and related matters are addressed through broad objectives within the ten-point plan of the Health Sector Strategic Framework (2000-2005) (RSA: DoH, 2000, cited by Van Tonder, 2004:10-11). These objectives include the protection of consumers and facilitation of trade by preparing and administering food legislation, regulations, policy documents and guidelines that are in line with international standards; to ensure safe food intake as well as compliance with legal requirements by exposure studies and monitoring/auditing programmes; to promote the health of people by informing and educating consumers, industry and law enforcers; to ensure that the Department of Health fulfils its obligations as national contact point of the *Codex*

Alimentarius Commission; and to participate in the development of new food control systems for the country.

National and provincial governments have a further responsibility, as specified under Section 154(1) of the Constitution, 1996, to support and strengthen the capacity of municipalities so as to "manage their own affairs, to exercise their powers and to perform their functions". In accordance with Section 155(7) of the Constitution, 1996, national and provincial governments also have the legislative and executive authority to oversee the effective performance of municipalities in relation to their designated functions. It is therefore an obligation, for example, that the national and provincial departments of health (NDoH and PDoHs) and the national and provincial departments of provincial and local government (NDPLG and PDPLGs) support, strengthen and monitor the municipalities in the exercising of their powers and functions with regard to milk control.

The role of metros and DMs in the control of food safety and its statutory mandate is derived firstly from the authorisation of individual metros and DMs by the Minister of Health to comply with the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 54 of 1972), Article 23 (RSA, 1972) and secondly with the National Health Act, 2003 (Act 61 of 2003), Article 32 (RSA, 2003). The activities of metros and DMs relating to food safety control generally include law enforcement based on evaluations/inspections of food premises and sampling of foodstuffs (including milk and other perishable foodstuffs); health education of food processors, handlers and consumers, especially in the informal sector; advising existing and prospective entrepreneurs on requirements relating to food premises and the safe handling of food; controlling illegally imported foodstuffs offered for sale within allocated areas of jurisdiction; investigating and introducing appropriate control measures with regard to all incidences of food-borne diseases that come to their attention; investigating and taking remedial action concerning all food safety-related complaints received; certification of food premises destined for the handling of foodstuffs according to the national guidelines; and monitoring the labelling of foodstuffs in accordance with relevant regulations (Van Tonder, 2004:10-11; Basson, 2006:12-13).

A number of surveys conducted in recent years have pointed to the quality of milk in South Africa and have raised concerns about the safety and hygiene in certain areas. To this effect two studies in particular – one by the National Department of Health in 1995 (RSA: DoH, 1995:12) and the other by More O'Ferrall-Berndt (2003:35-40) – focused on milk quality and the factors impacting thereon. These and other studies have raised concerns as to the responsible authorities tasked with controlling the hygiene quality of milk, and whether they are sufficiently equipped to execute their responsibilities effectively (Mathee, Swanepoel & Swart, 1999:281-287; NAMC, 2001:33; Atkinson, Akharwaray, Fouche & Wellman, 2002:3-9; More O'Ferrall-Berndt, 2003:35-40; Agenbag & Gouws, 2004:3-5). This study therefore aims to ascertain whether the designated authorities and their appropriate officials are properly authorised to perform their legal mandate in controlling milk hygiene in their areas of jurisdiction in South Africa. The results and discussion firstly sketch the status of LG's authorisation by the Minister of Health to apply the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 54 of 1972) and secondly the authorisation of officers as inspectors by their LG.

Although the above only concentrates on metros and DMs, the results and discussion also reflect on local municipalities (LMs), because at the time of the survey some LMs were still delivering EHS in areas where DMs had not yet assume full responsibility for delivering MHS and where the function and services had not yet been fully handed over.

2.3 RESEARCH DESIGN AND METHODOLOGY

A questionnaire survey (quantitative method) was used for data collection and piloted using a draft questionnaire among five respondents with similar characteristics. Based on feedback and observations from the pilot study, adjustments were made to the final questionnaire (Appendix A1). All MHS managers or designated persons (directly responsible for milk quality control) in the respective metros (n=6) and DMs (n=46) concerned were targeted (100% sample) for the questionnaire survey. This amounted to a

sample size of 52. Forty-eight (92.3%) of the MHS managers responded, providing a 100% response rate from the metros and a 91.3% response rate from the DMs (Appendix A2).

The questionnaire responses were coded and analysed in collaboration with the Department of Biostatistics at the University of the Free State using the SAS 9.1.3 service pack 3. Descriptive statistics were used to summarise the results in tables with frequencies and summary proportions. The data from the questionnaires was used to formulate final conclusions and recommendations in order to achieve the aims of the research.

2.4 RESULTS AND DISCUSSION

The results indicated that respondents had an average of 19 years of working experience in environmental health, which varied from a few months to 38 years (data not shown). Fifty percent (n=23) of the respondents indicated that they were responsible for coordinating and/or managing MHS within the metro and DM area. Sixty-three percent (n=30) of these respondents revealed that they were employed at management level. Seventy-seven percent (n=23) of the respondents of the management cadre came from the metros and DMs, whereas the other portion of the management cadre was either from the LMs or the provincial departments of health. In contrast to all the metros, 40.5% (n=17) of the DMs had as yet appointed or placed MHS managers to control MHS.

2.4.1 Authorisation of local government by the Minister of Health to enforce the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 54 of 1972)

Table 2.1 shows that 46.8% (n=22) of respondents indicated that their respective municipalities were authorised by the Minister of Health to enforce the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 54 of 1972) in their areas. The median number of LMs per DM in the country was 5, which varied between 2 and 10 per DM (Table 2.1). The median number of authorities (metros, DM and LMs) authorised by the Ministry of Health in accordance with Section 23 of the Foodstuffs, Cosmetics and Disinfectants Act,

1972 (Act 54 of 1972) per metro and DM area were 1.5 (Table 2.1). The number of authorities authorised per metro and DM area ranged from zero to 11 (Table 2.1).

During the survey, the respondents were asked to give an indication of the number of authorities (metros, DMs and LMs) per metro and DM that were authorised in accordance with Section 23 of the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 54 of 1972), 1972. More than one LM existed within each DM area of jurisdiction, some of which had been authorised (prior to July 2004) before the function was allocated to metros and DMs, which could also influence the figures. Nevertheless, not all the DMs had yet assumed their legal responsibilities in this regard, and more authorities within the DM areas could still be authorised (RSA: DoH, 2003).

Table 2.1: Authorisation of local government (metropolitan, district and local municipalities) in accordance with Section 23 of the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 54 of 1972) from a national and provincial perspective

	Frequency	Percentage
Local government (metropolitan, district and local municipalities) authorised by the Minister (*n*= 47)		
Yes	22	46.8
No	25	53.2

How many local municipalities are there within the district municipality area of jurisdiction? (*n*= 43)

Mean	Median	25th percentile	75th percentile	Std dev.	Min.	Max.
4.9	5	4	6	1.9	2	10

How many of your authorities (metropolitan, district and local municipalities) are authorised per metropolitan and district municipality area in accordance with Section 23 of the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 54 of 1972)? (*n*= 30)

Mean	Median	25th percentile	75th percentile	Std dev.	Min.	Max.
2.5	1.5	1	3	2.7	0	11

Province	Mean	Median	25th percentile	75th percentile	Std dev	Min.	Max.	Frequency of Metros and DMs (*n*=52)	Frequency responded (*n*=30)
Eastern Cape	2.8	3.0	1.0	3.0	2.7	0	7	7	5
Free State	4.8	3.5	1.5	8.0	4.5	1	11	5	4
Gauteng	0.8	0.0	0.0	1.5	1.5	0	3	6	4
KZN	2.2	1.5	0.0	3.0	2.6	0	7	11	6
Limpopo	6.0	6.0	6.0	6.0	0.0	6	6	4	2
Mpumalanga	0.5	0.5	0.0	1.0	0.7	0	1	4	2
Northern Cape	2.5	2.5	2.0	11.0	4.9	2	3	5	2
North West	4.0	4.0	4.0	4.0	0.0	4	4	4	1
Western Cape	1.0	1.0	1.0	1.0	0.0	1	1	6	4

If the median number of authorities (metros, DMs and LMs) authorised per metropolitan and district municipal area was more than one (>1), for example in the Eastern Cape, Free State, KwaZulu-Natal, Limpopo, Northern Cape and North-West provinces, it may be interpreted that the former authorisations of some of the LMs within the district municipal areas had not yet been withdrawn and that the DMs had also not been authorised under their most recent names (Table 2.1). In such areas where the median or mean was less than one (<1) (for example in Gauteng and Mpumalanga; Table 2.1), it may be interpreted that the authorities (metros and DMs) had not yet been authorised. In the case of Gauteng, all the metros had applied to be authorised, while only the Johannesburg Metropolitan Municipality was authorised at the time of the survey (January 2006). At the same time none of the DMs in the Gauteng province was authorised, although three LMs within one district municipal area were authorised. A mean and median should equal one, for example in the Western Cape, because it is only the metros and DMs that should be authorised as legally required (Table 2.1).

These results can be more clearly understood against the backdrop of a letter to the provinces dated 15 February 2002, and in a follow-up letter dated 1 July 2003, in which the Directorate: Food Control (NDoH) stated that, due to policy changes regarding the delivery of MHS, they would only consider applications for authorisations from metros and DMs and not from LMs (RSA: DoH, 2003). Therefore, all the Section 23(1) authorisations that had been issued in the name of LMs and the predecessors of the DMs (regional services councils/district councils) had to be withdrawn by the Ministry of Health, on request of the respective metros and DMs. Consequently, new authorisations in the most recent name of the respective metros and DMs needed to be applied for and issued if the metros and DMs could provide evidence that they had sufficient resources to control food quality in their area of jurisdiction.

As a legislative mandate, Section 23(1) of the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 54 of 1972) determines that as from 1 July 2004 the Minister of Health can authorise any metro and DM in its area of jurisdiction to enforce the provisions of the mentioned Act through its duly authorised officers, after providing proof of capacity to

administer the Act (RSA: DoH, 2003). Furthermore, Section 10(3)(b) of the mentioned Act determines that a ministerial authorised local authority may authorise any person in its employ who is employed as a health inspector and authorised as such in writing by the local authority to administer any provisions of the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 54 of 1972) in its area of jurisdiction. The Health Act, 2003 (Act 61 of 2003), Section 80(3), states that the mayor of a metro or DM may appoint one or more persons in the municipality employed as a health officer to apply this Act in the area of jurisdiction. Legislation thus determines that the relevant municipalities must first be authorised by the National Minister of Health in the case of Act, 54 of 1972, as well as the officials who administer the provisions of the relevant legislation to control milk hygiene, must be authorised in writing by the relevant municipality and mayors respectively.

The metros and DMs mentioned below have been authorised by the Minister of Health by means of the publication of their names in the respective government notices. Simultaneously, the previous authorisations for their respective LMs and the predecessors of the metros and DMs have consequently been withdrawn as statutorily required. Government Notice No. R. 342 of 15 April 2005 lists Cape Town Metropolitan Municipality, Johannesburg Metropolitan Municipality and Ehlanzeni District Municipality (RSA: DoH, 2005a). Government Notice No. R. 429 of 13 May 2005 makes mention of Cape Wineland District Municipality, Central Karoo District Municipality and West Coast District Municipality (RSA: DoH, 2005b). Government Notice No. R. 393 of 21 April 2006 records Overberg District Municipality, Eden District Municipality, Fezile Dabi District Municipality, Ekurhuleni Metropolitan Municipality, Tshwane Metropolitan Municipality and Sedibeng District Municipality (RSA: DoH, 2006a). Finally, Government Notice No. R. 953 of 29 September 2006 lists Cacadu District Municipality, Sisonke District Municipality, Umzinyathi District Municipality, iLembe District Municipality, Uthukela District Municipality and Umgungundlovu District Municipality (RSA: DoH, 2006b). By September 2006, 20% (n=1) of metros and 69.6% (n=32) of DMs had not been authorised in accordance with Section 23(1) of the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 54 of 1972) by the Ministry of Health. This does not, however, mean that none of the

other metros and DMs had applied to the Ministry of Health, but rather that some applications still needed to be administered.

Research conducted during January 2006 and July 2006 to determine the progress made with the consolidation of MHS to DMs revealed that approximately 53% (*n*=25) of the all DMs still needed to put MHS into operation (Agenbag, 2006). This consolidation of MHS at metro and DM level takes into account (i) the appointment or placement of MHS managers; (ii) the undertaking of Section 78 investigations in accordance with the Municipal Systems Act, 2000 (Act 32 of 2000) to determine the capacity of DMs to render MHS; (iii) the provision of a budget for MHS; and (iv) the inclusion of MHS as part of the respective DMs' integrated development plans (IDPs) (Agenbag, 2006). A possible reason for this delay could be that the NDPLGs indicated that they accepted responsibility for MHS, but that they were relying on the support and assistance of the NDoH.

2.4.2 Local government authorisation of officers as inspectors

The number of functional EHPs per metropolitan and district municipal area is reflected in Figure 2.1 together with the actual number of EHPs authorised per metro and DM. The results in Figure 2.1 suggest that fewer EHPs per metro and DM were authorised, with a median of 10.5, compared to the number in the functional category EHPs per metro and DM, with a median of 17. The minimum and maximum number of functional and authorised EHPs varied between 0 and 104 in both cases (Figure 2.1). Sixty-four percent (*n*=30) of the respondents indicated that the functional EHPs were authorised by the respective metros, DMs and LMs. Twenty-one percent of the respondents (*n*=10) were of the opinion that, although their metros and DMs were not authorised by the Minister of Health to apply the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 54 of 1972), the metros and DMs had authorised their EHPs as inspectors. The functional category EHPs (junior and senior EHPs) indicated in Figure 2.1 reflects the minimum number of EHPs that are required to be authorised in accordance with Section 10(3)(b) of the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 54 of 1972) to enforce the provisions of the mentioned Act when monitoring and controlling food hygiene in general

as part of their daily tasks. Ideally, all EHPs (functional and management level) per metro and DM should be authorised.

Section 10(3)(b) of the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 54 of 1972) allows metros and DMs to authorise in writing any person who is employed by them as a health inspector to administer any provisions of the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 54 of 1972). Furthermore, in accordance with Section 80(1)(c) of the National Health Act, 2003 (Act 61 of 2003), "the mayor of a metro or DM may appoint any person in the employ of the council in question as a health officer for the municipality in question to monitor and enforce compliance with the Act". Consequently, all the EHPs involved in the metros and DMs who are responsible for enforcing the regulations published under this Act, applicable to the control of milk hygiene in their areas of jurisdiction, must further be authorised by the mayor of the relevant metro and DM. The authorisation under this Act is more extensive and is not limited to food premises only, but also applies to any premises that should comply with the said Act. In a survey conducted during January 2006 and repeated again in June of the same year to determine the progress made with the devolution of MHS in South Africa by DMs, the results revealed that 25% (n=12) of respondents could confirm that their EHPs were authorised in accordance with the National Health Act, 2003 (Act 61 of 2003) (Agenbag, 2006).

EHPs functioning as such and authorised under the mentioned Acts also have to be registered with the Health Professions Council of South Africa (HPCSA) to be appointed as an inspector (Basson, 2006:13). It is mainly the metros that have a separate unit for controlling milk hygiene, where veterinary surgeons, together with EHPs as part of the team, are responsible for monitoring and controlling milk hygiene. In circumstances where authorities do not officially authorise their officials, business owners begin to question the authority of officers attempting to enter business premises to enforce food control measures. The implication of officers being unauthorised could result in business owners refusing to allow officers access to their premises to exercise their functions, exacerbating the challenges already faced by responsible authorities, such as limited resources.

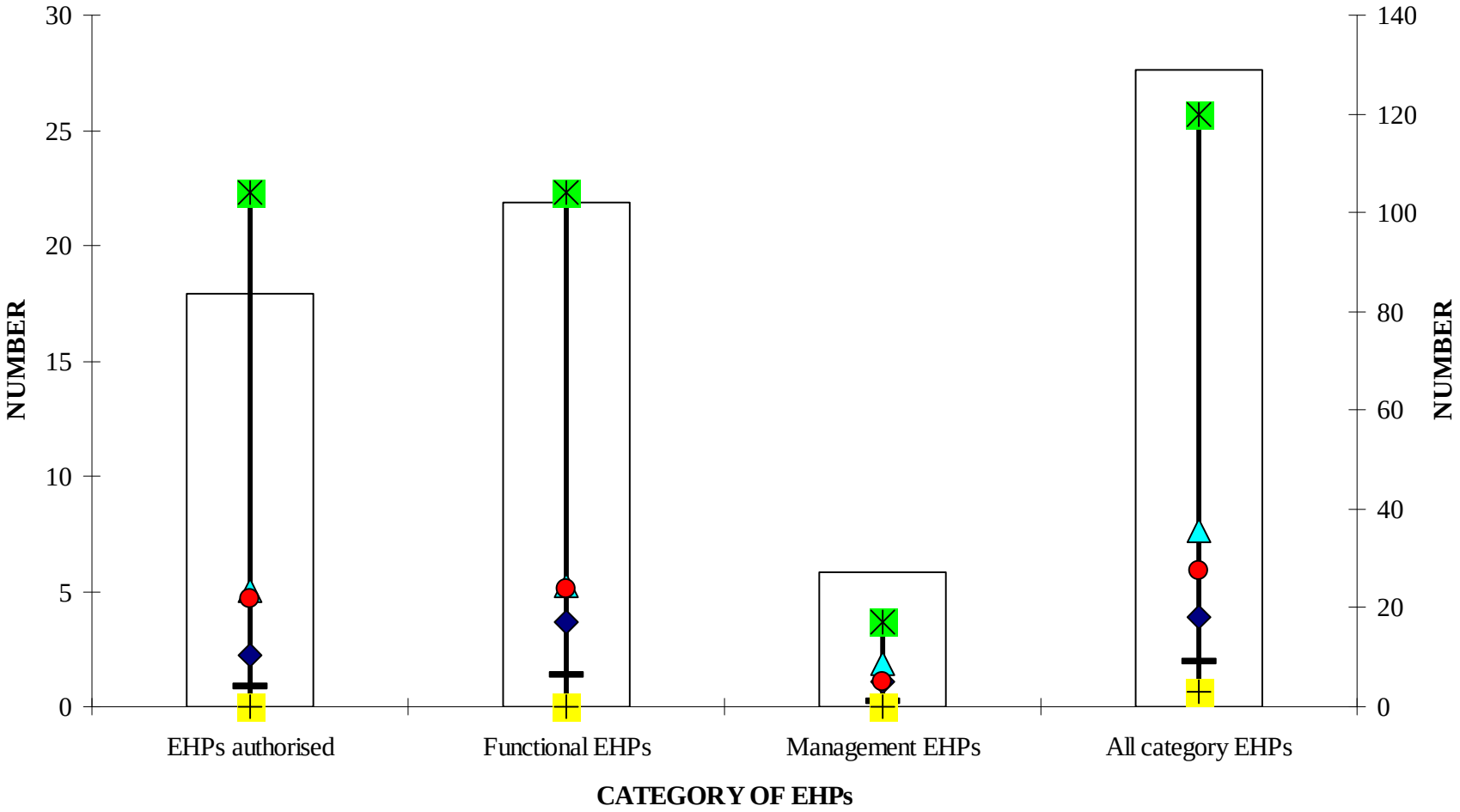

Figure 2.1: Different categories of environmental health practitioners per metropolitan and district municipal area compared to the number of environmental health practitioners authorised by their authorities in accordance with Section 10(3)(b) of the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 54 of 1972): Each box plot represents the 25th and 75th percentile (solid black bar and light-blue triangle), the median (dark-blue diamond shape), the mean (top of box) and the standard deviation (red dots). The minimum (cross on yellow background) and maximum (star on green background) of the different categories of environmental health practitioners per municipal area compared to the number of environmental health practitioners authorised by their authorities.

2.4.3 Recommendations

With regard to the authorisation of metros and DMs by the Minister of Health to apply the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 54 of 1972), a number of recommendations may be considered: The relevant departments, for example the NDoH and PDoH, the NDPLG and PDPLG, as well as SALGA, should assist DMs to perform Section 78 investigations with regard to MHS in accordance with the Municipal Systems Act, 2000, Art. 78 (RSA, 2000). Furthermore, the NDoH (Directorate: Food Control) could, for example, notify in writing the various metros and DMs not yet authorised in accordance with Section 23(1) of the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 54 of 1972), to apply to the Minister of Health to become authorised. This Directorate should further ensure that the various metros and DMs provide evidence of sufficient resources to control food quality in their respective areas of jurisdiction (Section 78 investigation reports should assist). In the event of possible lack of resources at a DM, the N and PDoH need to put forward mechanisms to assist the metros and DMs towards compliance with legislative requirements. For example, bodies such as the PDoH and South African Local Government Association (SALGA), provincial structures could provide the metros and DMs with *pro forma* motivations to assist councils to apply for the withdrawal of redundant authorisations and to apply for new ones. The N and PDoH should ensure that DMs who did not as yet assume full responsibility for MHS delivery to have appropriate Service Level Agreements in place with LMs and adjacent DMs to support until they have sufficient capacity.

A needs assessment to determine whether all of the metros and DMs are complying with the number of functional EHPs based on the 1:15,000 EHP to population ratio norm of the NDoH (Eales, Dau & Phakati, 2002:105), and whether people are equitably distributed in each area, should be coordinated. Monitoring whether sufficient funds and equipment are available for MHS and specifically for authorities is a matter of priority, as is the introduction of a proper milk-control programme in each metro and DM.

It is recommended that the Directorate: Food Control and the Directorate: Environmental Health of the NDoH further communicate respectively to the various metros and DMs that they must authorise their EHPs as “inspectors”. In cases where metros and DMs are not yet authorised, they should first be authorised by the Minister of Health as indicated

and thereafter authorise their officers as mentioned. Meanwhile, intermediary measures should be put in place in areas where legal action might arise between the MHS sections of metros and DMs and the milk industry due to non-compliance. Regular evaluations should be done to verify that all metros and DMs are authorised and that they have at least a host of officers available within each area that can function in accordance with the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 54 of 1972).

Finally, the metros and DMs should keep a register of the EHPs who are authorised to enforce the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 54 of 1972) and should assess the officers' registration status with the HPCSA. All the authorised EHPs should be in possession of an authorisation certificate in accordance with the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 54 of 1972) and the National Health Act, 2003 (Act 61 of 2003), issued by their respective metro and DM, which they can show when entering food premises.

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Chapter 3

STATUTORY COMPLIANCE OF THE INFORMAL MILK-PRODUCING SECTOR IN SOUTH AFRICA

This chapter has been submitted partially or in full for publication to the journal:

Journal of Public Health Policy

3.1 ABSTRACT

Studies in South Africa and elsewhere suggest that the hygiene standards of dairy products in some areas have deteriorated considerably since the deregulation of the dairy industry, and also that the effectiveness of local government (LG) in controlling standards has declined due to a lack of resources (funds, officials, equipment) and commitment (NAMC, 2001; More O'Ferrall-Berndt, 2003). A number of authors have suggested that the informal sector has grown considerably due to deregulation and socio-economic changes. This has created an opportunity for employment, as well as additional income for the informal sector (WHO, 1996; Ekanem, 1998; Dovie, Shackleton & Witkowski, 2006; Von Holy & Makhoane, 2006). This research was aimed at assessing whether municipal health services (MHS) at LG level are informed as to the extent of the informal milk-producing sector in their respective areas, as well as the measure of control exercised over this sector. This information is vital in terms of legislative compliance, as well as reporting economic growth as part of the government's strategy to create a regulatory environment conducive to the stimulation of the informal sector. Through legislation, MHS are playing an increasingly important role in ensuring the health and wellbeing of consumers and in securing consumer trust in the product. A questionnaire survey targeting the 52 MHS managers at the various metropolitan municipalities (metros) and district municipalities (DMs) in South Africa was conducted. It emanated from the result that at the time of the survey a notable number of informal milk producers existed per metro and DM with limited control by MHS. The results revealed that only one DM under its most recent name was authorised by the Ministry of Health to allow the sale of raw milk in its area, whilst in most metros and DMs the distribution of raw milk continues, without the authorities being authorised. A substantial number of metros and DMs have not done Section 78 investigations to determine their current and future capacity to render MHS and subsequently control milk hygiene. The relevant national and provincial governments should be encouraged to support and strengthen the capacity of municipalities to exercise power and perform their functions in this regard.

Keywords: *Informal milk production, Milk hygiene, Control, Environmental health services*

3.2 INTRODUCTION

Food safety worldwide remains a major public health concern, which has received considerable media attention and has influenced the policies of many countries (Burri, 1993; Carte Blanche, 2001; Griffith, 2005:132). This highlights the issue of responsibility for food safety (Costa, Reinemann, Cook & Rueg, 2004; Griffith, 2005; World Bank, 2005). Although individuals such as producers may be blamed, it is in reality a shared responsibility involving government, industry and consumer. Government plays an important role in this shared responsibility in accordance with section 78 of the Municipal Systems Act, 2000 (Griffith, 2005; Basson, 2006). Fairman and Yapp (2004) conclude that the primary motivation to improve food safety conditions in small and micro-businesses (which include the informal food and milk-producing sectors) will not come from within, but will be provided by external drivers such as personal contact with enforcement agencies' staff. Examples of these are the environmental health practitioners (EHPs) of metros and DMs (Fairman & Yapp, 2004:44).

In other developing countries such as Uganda, Malawi, Kenya and Brazil, the main source of milk is the small-scale farmer/producer sector. In the case of Kenya, the majority of the milk produced by these small-scale producers is marketed through informal outlets (e.g. hawkers/informal street vendors, unregistered brokers etc.) (RATES, 2004:17; Basson, 2005:29; Uys, 2005:27; World Bank, 2005:52). In the case of India, which is regarded as one of the world's largest milk-producing countries, the entire industry is built on small-scale farmers with 1-3 cows per farmer, which proves the potential of the informal milk-producing sector (Uys, 2005:27). The South African government has implemented a strategy to stimulate the country's economy, known as the Accelerated and Shared Growth Initiative for South Africa (ASGISA) (RSA, 2006). In terms of this strategy, government targets sectors with the greatest potential for economic growth, thus focusing government's and its partners' energy towards such sectors (RSA, 2006). Initiatives are already underway between government and the milk industry to develop emerging milk producers (which include some informal milk producers) in such a way as to enable them to participate in

more formal economic activities, by involving them in providing milk to institutional buyers such as schools, hospitals and correctional services (Nofal, 2005:2-9; Bieldt, 2006:25; 2007:6; Pretorius, 2006; Du Plessis, 2007:25; Slabbert, 2007:35-37; Weiss, 2007:24; Zvomuya, 2007). Consequently the South African government expects its organs of state (national, provincial and local-level authorities/departments) and the formal private sector to assist the informal sector towards becoming legal and becoming integrated in the mainstream economy (RSA, 1996; RSA, 2006).

For purposes of this study, informal (unregistered/unauthorised/illegal) milk production refers to raw milk that is produced for human consumption from an unapproved milking parlour/shed and which is sold ("offered, kept, displayed, consigned, conveyed or delivered for sale, exchanged, disposed of to any person in any manner whether for a consideration or otherwise") to the public (RSA, 1972:art.1(xxiii); RSA: DoH, 1986; RSA: DoH, 1990; RSA, 1991:art.1). An unapproved milking parlour is a place or structure where milk is produced for human consumption and which is not in possession of a certificate of acceptability (CoA) or provisional certificate of acceptability (PCoA), issued by the relevant local authority (LA) (metro or DM), in accordance with Section 2 of Regulation 1256 of 27 June 1986. Such producers may vary from commercial farmers to subsistence farmers (small-scale/informal/emerging farmers) encountered mainly on the commonages and smallholdings around towns, where they keep some cattle primarily for own use but also to sell in the form of raw milk to friends and family. The producers also sell to outlets such as spaza shops (small retail enterprises operating from a residential home, engaged in the trading of consumer goods) and street vendors and sometimes to other businesses (cafés) especially in smaller towns. Figure 3.1 shows the overall milk supply chain and how the informal milk-producing sector forms part of it (Mollentze, 1992; De Waal, 1998; Ngwenya, 1999; Jansen, 2003; RATES, 2004; Pretorius, 2006; Dovie *et al.*, 2006; Zvomuya, 2007).

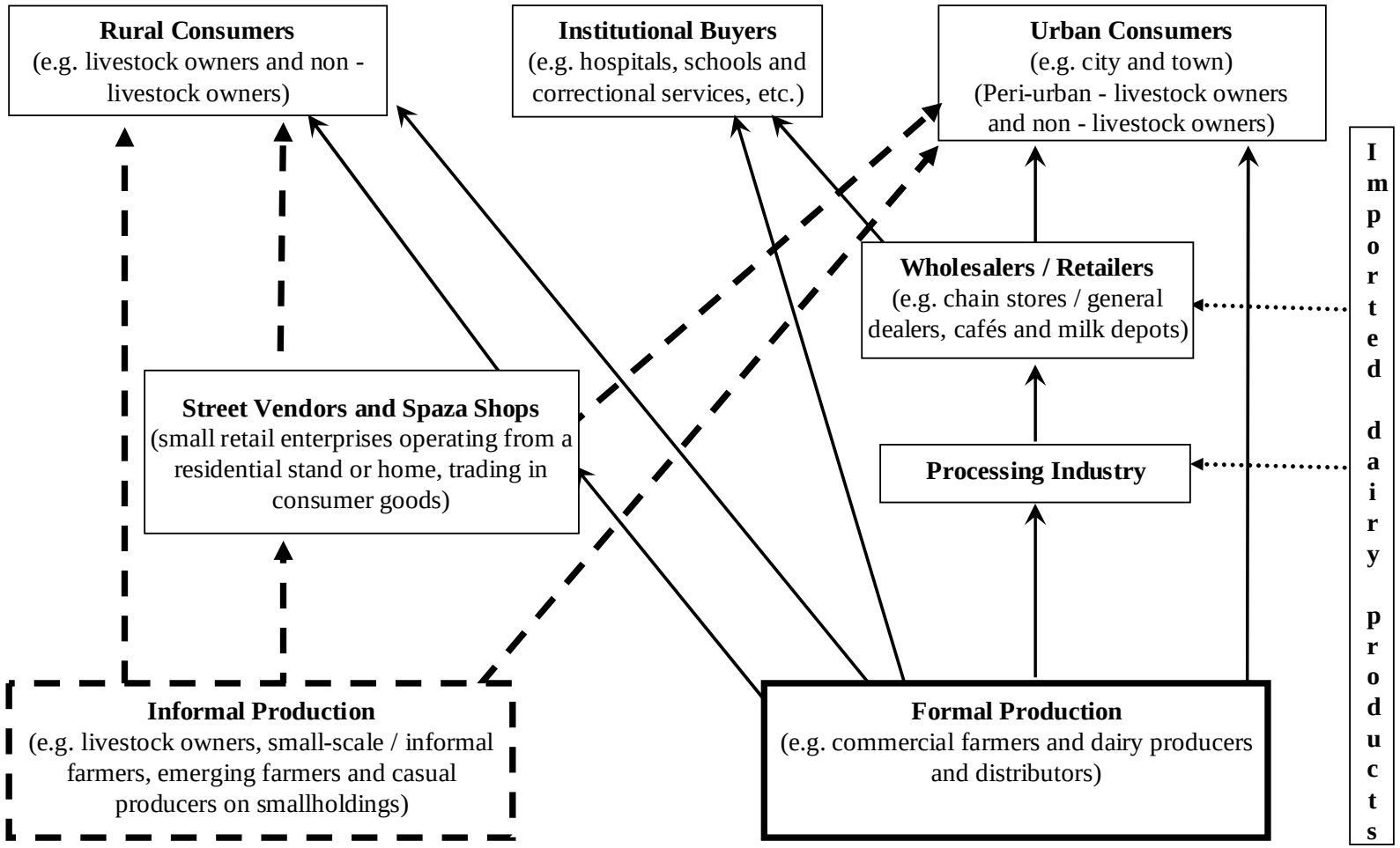

Figure 3.1: Illustration of where informal milk production by informal milk producers fits into the milk supply chain

In South Africa the dairy supply chain starts with raw milk production and ends when processors, institutions and consumers utilise the products created in the production chain (Kirsten, 2003:195). Informal production and supply of milk from informal milk-producing sources therefore continues to be a source of milk supply to consumers and must be regulated and monitored (RSA: DoH, 1986; RSA: DoH, 1990; RSA, 1991; RSA: DoH, 1999).

In developing countries such as South Africa, the migration of people from rural to urban areas as a result of unemployment has led to an increase in livestock farming around towns and peri-urban areas, where the majority of households with livestock keep cattle (De Waal, 1998; Jansen, 2003; RATES, 2004; Dovie *et al*., 2006; Zvomuya, 2007). Most cattle-owning households have milk cows, which they milk mainly for their own use. However, a substantial number of non-livestock-owning households buy milk from the cattle owners or receive milk as a gift (Jansen, 2003; Dovie *et al*., 2006:267). The scale of the unregistered milk trade through this supply chain is limited, however, although there are a notable number of informal milk producers per metro and DM area in South Africa, posing a challenge to regulatory authorities with already limited resources (Jansen, 2003; Dovie *et al*., 2006:267).

Various studies are in agreement that the milk quality (mainly raw milk) from the informal milk-producing sector is a public health concern, and the health status of milk-producing cattle, together with improper milking practices in the informal sector, often does not comply with the requirements of good manufacturing practices for the production of hygienic and wholesome milk (NAMC, 2001; Jansen, 2003; Nguz, 2005; World Bank, 2005:51; Dairy Mail Africa, 2007:29-33). The formal, commercial (registered/authorised) milk producers and the milk industry as a whole often object to the lack of ability and willingness of the authorities, especially LAs and the Department of Health, to control the informal milk-producing sector (NAMC, 2001:33; More O'Ferral-Berndt, 2003:35-40; World Bank, 2005:51), leading to an unfair advantage.

There is currently no registration system for informal milk producers, and this hampers information transfer between the producers and the authorities (Jansen, 2003:6; Dovie *et al.*, 2006:263). It is thus difficult to determine the real extent of the informal milk-producing sector, the hygiene quality of milk, and the economic impact thereof. It is furthermore illegal in South Africa to produce milk from an unapproved milking parlour (milking shed) without a certificate of acceptability (CoA) or provisional certificate of acceptability (PCoA). The sale of milk that holds a risk to consumers is also illegal (RSA, 1972; RSA: DoH, 1986). The control of the informal milk-producing sector commences with the legal requirement that all the LAs (metros and DMs), and their EHPs who administer the applicable food control legislation, should be authorised by the Ministry of Health and in turn by the LAs. However, many metros and DMs are not yet authorised in by the Ministry of Health in accordance with Section 23(1) of the Foodstuffs, Cosmetics and Disinfectants Act (RSA, 1972). Also, as noted in Chapter 2 of this study, not all the mentioned metros and DMs have as yet authorised their minimum number of EHPs as inspectors, as required by Section 10(3)(b) of the mentioned Act, to administer any provisions of the said Act in their respective areas of jurisdiction (DBSA, 2007).

This research is thus aimed at ascertaining whether the designated authorities are aware of the extent of the informal milk producers in their respective areas of jurisdiction and also whether they have the necessary control over the hygiene of milk from the informal sector. The results and discussion sketch the extent of the informal milk-producing sector per metro and DM area, as well as the legislative compliance of LAs in allowing the sale of raw milk in accordance with the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 54 of 1972).

3.3 RESEARCH DESIGN AND METHODOLOGY

3.3.1 Approval

Prior to the survey, written consent was requested from the various authorities in the environmental health (EH) fraternity, i.e. the National Department of Health: Directorate Food Control, the South African Institute of Environmental Health (SAIEH) and the Health Professions Council of South Africa (HPCSA): Professional Board for Environmental Health Practitioners (Appendixes B1-B4).

3.3.2 Questionnaire design

A structured, coded questionnaire was designed to acquire the relevant information from the respondents (persons in charge of MHS or in their absence those directly responsible for milk hygiene control within the metro / DM area) regarding the management and control of milk hygiene in general and also to focus on the control of informal milk producers by MHS in the respective areas (Appendix A1). Both closed and open-ended questions were used in the questionnaire (Coggon, 1995:177; Sapsford & Jupp, 1996:101-102) (Appendixes A1 and A2). A total of 67 questions were included in English, consisting of five sections. These were: Section A, which focused on the affiliation of the individual who was reporting for the metro and DM area; Section B, which touched on the resources and systems available for milk hygiene control; Section C, which evaluated the formal production of milk, as well as the informal production of milk; Section D, which assessed the formal distribution of milk at the outlets; and finally Section E, which touched on the general knowledge, attitudes and beliefs of the respondents (Appendix A1).

3.3.3 Sampling

The study population comprised the entire MHS management cohort of all the DMs (*n*=46) and metros (*n*=6) in South Africa. The questionnaire was rather e-mailed or faxed to the respondents, depending on the technology available to them. This was later followed up

telephonically to ensure that the respondents had received the questionnaires. Completed questionnaires from the respondents were e-mailed, faxed or mailed back to the researcher. Unique coding (traceability) of the questionnaires enabled the monitoring of those still outstanding. Questionnaires still outstanding after a specific date were obtained by means of telephonic follow-up (Czaja & Blair, 2005:229-236). Of the 100% sample that was selected from the 46 DMs and six metros (*n*= 52 authorities) in South Africa, a 92.3% (*n*=48) overall response rate was achieved (Appendix A2). This represents a 100% response from the metros and 91.3% (*n*=42) from the DMs.

3.3.4 Data collection

The targeted respondents of the questionnaires were the MHS managers or individuals directly responsible for milk quality monitoring and control at the various metros and DMs. In some cases where DMs had not yet assumed full responsibility for MHS delivery and had not yet appointed a full-time MHS manager to manage the MHS function, an EHP within the district municipal area of jurisdiction (either on a more junior level on the DM's staff establishment or on management level at a local municipality (LM) or a provincial EHP temporarily coordinating MHS in the area) was identified to complete the questionnaire (Coggon, 1995:176; Sapsford & Jupp, 1996:102-103).

3.3.5 Pilot study

The questionnaire was piloted by involving EHPs who had varied exposure and knowledge in the EHS/MHS field, and who were not included in the actual survey. The purpose of the pilot study was to ascertain whether the questions were clear, complete and unambiguous (Sapsford & Jupp, 1996:103).

3.3.6 Data analysis

The questionnaires were coded and analysed in collaboration with the Department of Biostatistics at the University of the Free State using the SAS 9.1.3 Service Pack 3. The results were then presented in tables with frequencies and summary proportions.

3.4 RESULTS AND DISCUSSION

3.4.1 Extent of informal milk suppliers

The respondents were of the opinion that the estimated number of informal milk producers in their respective areas of jurisdiction was notable when expressed as a proportion of the formal milking parlours with CoAs and PCoAs per metro and DM area in South Africa. The medians were 9 and 13 with a standard deviation of 49.6 and 82.5 respectively (Figure 3.2). The minimum and maximum number of informal milk producers varied between 0 and 200, compared to the formal milking parlours with a minimum and maximum that varied between 0 and 402 (Figure 3.2). When the estimated total number of informal milk-producing sources as reported by respondents is expressed as a proportion of the population per metro and DM area, it emanates that there is on average one informal milk producer for every 69,166 of the population, compared with the formal milk producers at 30,953 of the population for each milking parlour in possession of a CoA and/or PCoA. From this information it can be deduced that the extent of informal milk represents *circa* half that of the total number of formal milk-producing points.

Little information is available with regard to the real extent of the informal milk producers in South Africa (De Waal, 1998; Jansen, 2003:8; Coetzee, 2007). The only information currently available is the number of informal/small-scale/emerging farmers who form the basis of the informal producers in South Africa. However, the informal milk producers are not limited to the informal/small-scale farmers in informal settlements, but also include other milk-producing sources such as those expressed in Appendix C. The suggested

numbers of informal/small-scale farmers that produce and sell milk are reported by De Waal (1998), Jansen (2003) and Dovie *et al*. (2006). The latter authors carried out studies giving an indication of the number of cattle being kept in peri-urban areas in the Free State and Limpopo provinces respectively. These particular authors concurred that most informal farmers consume their own milk, although Jansen (2003:44) reported that 39.6% of his respondents were selling their milk to other families. According to Dovie *et al*. (2006:267) a notable portion (44%) of the non-livestock-owning households included in their study was obtaining milk (purchasing or receiving milk as a gift) from the livestock owners.

Jansen (2003:45) also reported that on average the small-scale farmers owned 6 cattle per household. This figure concurred with a survey conducted by De Waal (1998), in which he indicated that many of the peri-urban livestock owners owned between one and six head of cattle (De Waal, 1998). According to Dovie *et al*. (2006:262) the number of cattle-owning households increased from one in 1991 to fifteen in 1999 (Dovie *et al*., 2006:262). Dovie *et al*. (2006:263) further suggested that milk was the main reason for people to keep cattle in the study area and that such cattle-owning households were keeping between 2 and 67 cattle, most of which were dairy cows (Dovie *et al*., 2006:263).

Jansen (2003:45) further indicated that the cattle in her study area yielded between 1 and 5 litres of milk per day, which is less than half of what is normally produced by a healthy cow, presenting some idea of the volume of milk that is produced in the informal milk-producing sector. According to Steenkamp (1999) milk production increases by 20% when the milking protocols are changed from milking twice a day to three times a day (Steenkamp, 1999:84-100). According to Jansen (2003:44) the majority (69.8%) of the respondents milked their cows once a day. This suggests that the potential volume of milk that could be produced by the informal/small-scale sector could be substantially more.

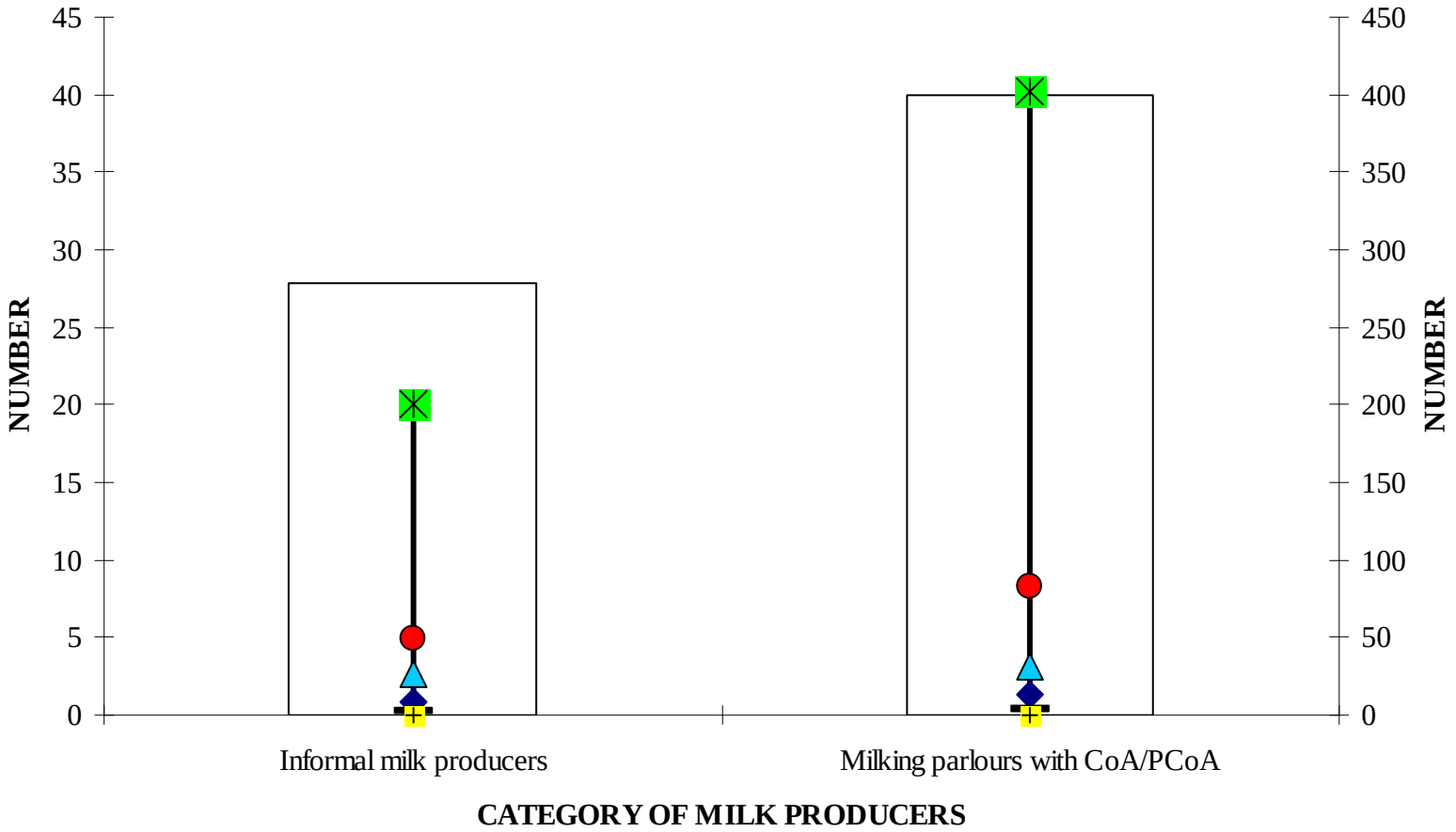

Figure 3.2: Ratio of informal (unregistered/unauthorised/illegal) milk production sources compared to formal milk production sources: each box plot represents the 25th and 75th percentile (solid black bar and light-blue triangle), the median (dark-blue diamond shape), the mean (top of box) and the standard deviation (red dots). The minimum (cross on yellow background) and maximum (star on green background) of informal milk producers and milking parlours with a certificate of acceptability/provisional certificate of acceptability.

3.4.2 Control of informal milk producers by metropolitan and district municipalities

Of the 55.3% (*n*=26) of respondents who indicated that they were aware of informal sources of milk in their area, 20.0% (*n*=5) reported that they were controlling such sources (Table 3.1). Of those respondents who reported that they were controlling the informal milk producers, 60.0% were doing it mainly by sampling, 40.0% by legal action, and 20.0% by regular inspections and education (Table 3.1). A question was also posed to the respondents to establish whether they were actively exploring unknown informal milk-producing sources in their areas, to which 57.4% (*n*=27) replied positively (Table 3.1). The methods that the respondents were using to detect these sources ranged from area surveys (96.3% [*n*=26]) and information from communities/complaints (55.6% [*n*=15]), to advertisements in newspapers and sampling (Table 3.1).

More than half (55.3%) of the respondents indicated that they were aware of unregistered milk-producing sources in their respective areas of jurisdiction, although more than three quarters (76%) admitted that they had no control over them (Table 3.1). The fact that at the time of the survey there were no registration systems for the small-scale/informal farmers forming the basis of the informal milk-producing sector makes it difficult to determine the real extent of this sector (Jansen, 2003:5). Almost half (42.6%) of the respondents indicated that they were making no attempt to detect other informal milk producers (Table 3.1), despite the fact that respondents estimated that there were notable numbers of such sources per metro and DM area (Figure 3.2). The difficulty in monitoring and controlling the informal milk producers may firstly be because they lack basic facilities (cooling, washing and storing facilities) to qualify to be registered, secondly due to the relatively small volumes of milk being harvested by individual informal producers, thirdly due to the fact that the informal producers are scattered, which makes control difficult. To this effect the changing national and international environment of the EH fraternity, from a policing approach to a developmental one, requires that EH sections at LG level initiate programmes and interventions that follow a more developmental approach (Mathee, Swanepoel & Swart, 1999).

Table 3.1: Awareness of unregistered milk-producing sources and the control thereof by local government (metropolitan and district municipalities)

	Frequency	Percentage
Awareness of unregistered milk production sources in area (*n*=47)		
Yes	26	55.3
No	7	14.9
Don't know	14	29.9
If yes, do you have control over them? (*n*=25)		
Yes	5	20.0
No	19	76.0
Don't know	1	4.0
If yes, specify what kind of control (*n*=5)		
Education	1	20.0
Sampling	3	60.0
Regular inspection	1	20.0
Court cases/legal action	2	40.0
Do you try to detect other informal sources of milk production? (*n*= 47)		
Yes	27	57.4
No	20	42.6
If yes, please specify (*n*= 27)		
Routine inspections/area surveys	26	96.3
Information from communities/complaints	15	55.6
Advertisements in local newspapers	1	3.7
Sampling	2	7.4

3.4.3 Authorisation of metropolitan and district municipalities to permit the sale of raw milk in their respective areas of jurisdiction (listing on Annexure C of Regulation R1555 of 21 November 1997)

For LAs, such as metros and DMs, to allow the sale of raw milk in their respective areas of jurisdiction, they have to apply to the Ministry of Health to be listed in Annexure C of Regulation R1555 of 21 November 1997 (Regulations relating to milk and dairy products, which mainly determines the quality [hygiene and safety requirements] of milk and dairy products), promulgated under Act 54 of 1972. Prior to the metros and DMs being mandated since 2004 to render MHS, including food control, the former local municipalities (LMs) could be listed in Annexure C of the mentioned regulations, as some LMs are still listed as such instead of the DMs, because a few DMs did not take on the MHS function as statutorily required. Therefore, certain administrative processes were not addressed accordingly, for example deregistration of previously disestablished municipalities and LMs, as well as the registration of DMs and metros as the appropriate authorities. It was for this reason that the respondents were requested to give an indication of the number of authorities, including LMs instead of only metros and DMs, listed in Annexure C of Regulation R1555 of 1997. The number of LMs present per district municipal area as the basis for the comparison of the number of LAs (LMs, metros and DMs), listed in Annexure C, as well as the number of LAs formally allowing the sale of raw milk, are illustrated in Table 3.2.

On average there were 4.9 LMs per DM area with a median of 5, with the minimum and maximum varying between 2 and 10 respectively. The respondents revealed that there were on average 1.3 authorities (LMs, metros and DMs) per metro and DM area, listed in Annexure C of Regulation R1555 of 1997 in their areas to allow the sale of raw milk. The median was 0.5 with a minimum of zero and a maximum of six (Table 3.2). As displayed in Table 3.2, respondents revealed that on average there was one authority (LM, DM and metro) per metro and DM area that was formally (with a council resolution) allowing the distribution and sale of raw milk in their area of jurisdiction (Table 3.2).

Table 3.2: Listing of local authorities (local, metropolitan and district municipalities) in Annexure C of Regulation R1555 to allow the sale of raw milk in their respective areas of jurisdiction

How many local municipalities are there within the area of jurisdiction of the district municipality that you are reporting on? (*n*=43)

Mean	Median	25th percentile	75th percentile	Std dev.	Min.	Max.
4.9	5.0	4	6	1.9	2	10

How many of the authorities *(local, metropolitan and district municipalities)* **in your area of jurisdiction are listed in Annexure C in accordance with Section 3(2) of Regulation R1555** *(21 November 1997)* **of the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 54 of 1972) to allow the sale of raw milk in your respective areas of jurisdiction?** (*n*=34)

Mean	Median	25th percentile	75th percentile	Std dev.	Min.	Max.
1.3	0.5	0	2	1.8	0	6

How many of the authorities *(local, metropolitan and district municipalities)* **formally** *(according to a council resolution)* **allow the distribution and sale of raw milk in your area of jurisdiction?** (*n*=29)

Mean	Median	25th percentile	75th percentile	Std dev.	Min.	Max.
1.0	0	0	1	1.7	0	6

How many of your authorities *(local, metropolitan and district municipalities)* **are listed in Annexure C under the latest names** *(i.e. Ukhahlamba District Municipality or Senqu Local Municipality)* **of the authorities?** (*n*=25)

Mean	Median	25th percentile	75th percentile	Std dev.	Min.	Max.
0.4	0	0	0	1.3	0	6

Any result showing a value of >1 suggests that more than one authority (LM, metro and DM) per metro and DM area is listed. Since June 2004 this could, at a maximum, be the number of metros and DMs. Therefore the mean and median can be maximum equal to one authority, if all metros and DMs allow the sale of raw milk in their respective areas, otherwise it should be zero. Table 3.2 suggests that there are fewer authorities (LMs, metros and DMs) listed in Annexure C than the number of LMs per DM area, but with the mean greater than one it suggests that there are still some of the LMs that are listed. This was confirmed by the actual listings in Annexure C of Regulation R1555 of 1997 (RSA, 1972; RSA: DoH, 1997).

According to listed authorities as per Annexure C of Regulation R1555 of 21 November 1997, it is mainly previously disestablished municipalities (towns) that are currently still listed. There are in total 46 LAs (LMs, disestablished municipalities (towns) and DMs) listed in Annexure C, which comprises 7 LMs under their latest names (Free State and Limpopo provinces). There is only one DM (West Coast District Municipality, Western Cape Province) that is listed under its latest name in Annexure C to allow the sale of raw milk in its entire area of jurisdiction (RSA: DoH, 1997). Most of the listed LAs are in the Free State Province (14). The Northern Cape and the Western Cape provinces each have 7 listed LAs, and the Limpopo Province 6. Limpopo is the only remaining province together with the Free State where three LMs per province are listed under their latest names. The North West, Eastern Cape and Gauteng provinces each have three disestablished LAs listed in Annexure C of Regulation R1555 of 1997, whereas Mpumalanga and KwaZulu-Natal (KZN) have two and one LA listed, respectively.

It is not compulsory for LAs (metros and DMs) to apply to the Ministry of Health to be listed in Annexure C of Regulation R1555 of 21 November 1997, unless the individual LA (metro and DM) is keen to allow the sale of raw milk in its respective area. Since July 2004, only metros and DMs can apply for such listing (RSA: DoH, 2003). However, the sale of raw milk across the country continues to be a common practice (RSA: DoH, 1995:12; NAMC, 2001; Kirsten, 2003:212; More O'Ferrall-Berndt, 2003; Agenbag, 2004). In response to the question intended to ascertain whether LAs who were not listed

in Annexure C were aware that if they continued to allow the sale of raw milk without being listed, they could be accused of dereliction of duty and could also be open to legal action by consumers, 34.9% (n=15) of respondents stated that they were not aware of their non-listing (Table 3.3). Another 27.9% (n=12) of the respondents reported that they were not aware that their non-listing could have implications if they continued to allow the sale of raw milk without being listed (Table 3.3).

In accordance with Section 3(2) of Regulation R1555 of 21 November 1997 it is a requirement that LAs (metros and DMs) should be able to exercise sufficient control over the selling of raw milk and dairy products before being able to apply to the Ministry of Health for listing in Annexure C of the mentioned regulation. One of the mechanisms to assist LAs in determining their capacity to deliver MHS is to perform a Section 78 (S.78) assessment (investigation) in accordance with Sections 76 and 77 of the Municipal Systems Act, 2000 (Act 32 of 2000). This Act makes it compulsory for LAs (metros and DMs) to conduct such an assessment for the rendering of MHS to determine the authority's current and future ability to render the service and to assist the LAs in deciding whether they need to render the service internally or externally and to identify any shortcomings (RSA, 2000). However, Table 3.3 reveals that only 25% (n=7) of the metros and DMs had completed S.78 assessments at the time of the survey (January 2006). Another 25% of respondents indicated that their metros and DMs were at various stages of the S.78 assessment process that varied from the planning stage to more than fifty percent completed (Table 3.3). The most recent study to determine the progress made by DMs in South Africa in terms of S.78 assessments revealed that approximately 64% of DMs that had commenced S.78 assessments had completed an S.78 report by May 2007 (DBSA, 2007). Nevertheless, it was observed in the mentioned study, as well as in similar studies, that in some provinces there were none of their DMs who as yet commenced with their S.78 investigations as required by sections 76, 77 and 78 of the Municipal Systems Act, 2000 (RSA, 2000; Agenbag, 2006; DBSA, 2007).

Table 3.3: Local authorities' awareness of their listing in Annexure C and their Section 78 assessment in accordance with the Municipal Systems Act, 2000 (Act No. 32 of 2000)

	Frequency	Percentage
Are the authorities that are not listed in Annexure C in your area of jurisdiction aware that if they continue to allow the sale of raw milk without being listed, they can be accused of dereliction of duty and may also be open to legal action by consumers who become ill due to the consumption of raw milk? (*n*=46)		
Yes	16	37.2
No	12	27.9
Am not aware of their non-listing	15	34.9
Is it compulsory for a metropolitan and district municipality to do a Section 78 assessment for municipal health services in accordance with S.78 of the Local Government: Municipal Systems Act, 2000 (Act No. 32 of 2000)? (*n*=46)		
Yes	28	60.9
No	4	8.7
Don't know	14	30.4
If Yes above, has your metropolitan and district municipality done or initiated a Section 78 assessment for municipal health services in accordance with S.78 of the Local Government: Municipal Systems Act, 2000 (Act No. 32 of 2000)? (*n*=28)		
Section 78 assessment in planning stage	4	14.3
Section 78 assessment <50% completed	1	3.6
Section 78 assessment >50% completed	2	7.1
Section 78 assessment completed	7	25.0
Nothing has been done	11	39.3
Don't know	3	10.7

Another important tool available to LAs to ensure proper milk control is to ascertain that food hygiene monitoring, including milking parlour registration and evaluation, are part of the metros' and DMs' integrated development plans (IDPs), service delivery and budget implementation plans (SDBIPs), and subsequently part of the managers' performance management indicators, as well as the budgets of councils. While the IDP is the policy statement and direction for a five-year period for LAs, the SDBIP is a more detailed plan that highlights the specific targets that should be achieved each year for the 5-year period of the IDP. Since the budgets of LAs have to be linked with the IDP and SDBIP it is unlikely that money will be spent on a programme if it is not listed in the IDP or part of the annual revised SDBIP (RSA, 2000). Even though the LA (metro and DM) may provide proof to the Ministry of Health that it has the capacity to control the sale of raw milk by means of a council resolution, this has limited value if it is not supported by an approved Section 78 assessment and proof that milk hygiene monitoring and control are part of the respective council's IDP, SDBIP and budget, and included in the relevant managers' key performance areas (RSA, 2000).

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Chapter 4

APPROACH TO RESOURCE MANAGEMENT AND ENVIRONMENTAL HEALTH SERVICE DELIVERY IN TERMS OF MILK HYGIENE

This chapter has been submitted partially or in full for publication to the journal:
Journal of Food Policy

4.1 ABSTRACT

The purpose of this paper is to assess the availability and efficiency of resources for environmental health services (EHS), as well as the approach followed by local government (metropolitan and district municipalities) in optimising the available resources to monitor and control the informal milk-producing sector in South Africa. As the regulatory authorities for registering, monitoring and controlling milk hygiene, metropolitan municipalities (metros) and district municipalities (DMs) should have sufficient resources and systems to properly support the recording of milking parlours, visits to such parlours and the sampling of milk, and to monitor and evaluate operations to ensure the compliance of milk. Given that there is never sufficient resources, as indicated by project management literature (Burke, 2001), it is important to use the available resources optimally by applying project management principles and skills in municipal health services (MHS) delivery to achieve the desired results in milk quality control. Seeing as local government (LG) is fulfilling an increasingly important role in ensuring the health and wellbeing of consumers, it is important that it should make sufficient resources and properly sustainable systems available to properly monitor and control milk hygiene and to properly manage the resources. A questionnaire survey was conducted, targeting the cohort of MHS managers (n=52) at the various metros and DMs in South Africa. It was apparent at the time of the survey that there were not sufficient resources (financial, human and transport) available for MHS to properly monitor, control and support the informal milk-producing sector. Although food control enjoys high priority in the daily activities of MHS, the main activities are sampling, premise inspections, and health and hygiene education at milking parlours, which are mainly done on an *ad hoc* basis. This *ad hoc* approach impacts negatively on the available resources and the outcomes of interventions. MHS lack resources, systems and management capacity, leading to a need for national and provincial governments, industry and relevant associations to support and strengthen the capacity of municipalities to exercise their powers and perform their functions.

Keywords: *Milk hygiene control, Environmental health services, Project management*

4.2 INTRODUCTION

Project management literature suggests that successful and proactive companies approach all their activities as projects, because there are in general insufficient resources (Burke, 2001). Therefore, there is a need for a project management approach (management by objectives) in MHS delivery to properly manage the available resources optimally to achieve the required results. In other parts of the world the availability of environmental health (EH) resources and the increase in food outlets have led to a risk-based approach to prioritising inspections (Bryan, 1982, cited by Griffith, 2005:134). This approach is intended to ensure better allocation of resources to the higher risk businesses that are inspected more often. It is important, however, to ensure quality and consistency of inspections – thus the move towards a more audit-based approach (Griffith, 2005:134). EH is supposedly a preventative service, following the national and international trend to move away from the "inspector model", which mainly supports a reactive approach rather than the latest more developmental and proactive approach to EHS delivery. This developmental approach should be integrated with other programmes such as LED to support Small, Micro and Medium Enterprises (SMMEs) and as a result it should lead to a better regulatory environment and assists the municipality's regulatory functions (Mathee, Swanepoel & Swart, 1999).

For approximately 57.1% of the DMs involved in this study, the delivery of EHS and subsequently MHS was a new service, and therefore they had not received any EH subsidies from their respective provincial departments of health (PDoHs) as in the case of their counterparts who had rendered EHS prior to the function being allocated to metros and DMs (DBSA, 2007). This resulted in the newly-established MHS sections at DMs having to compete with other functions in the DM for the available monitory pool. During 2006 the tax income base (levy income) collected by DMs in their respective areas was terminated and replaced with a levy replacement grant, which is paid directly from the National Treasury. This grant forms part of the equitable share allocation to DMs in South Africa. At the same time, the local municipalities (LMs) have their own tax base (health tax) through which they generate their own income, to cover their own EHS costs. All the

LMs that used to render EHS prior to the function being allocated to metros and DMs also receive(d) EH subsidies from the various provincial departments of health. The downside is that the tax income that was being used – and in some cases is still being used – by LMs to cover EHS is lost to the DM as soon as the DM accepts full responsibility for rendering MHS in its area of jurisdiction (DBSA, 2007). The legislative changes with regard to the allocation of the MHS function to the metros and DMs did not affect the income base of metros. This poses a further challenge to higher authorities such as the National Treasury, Department of Health (DoH), Department of Provincial and Local Government (DPLG), South African Local Government Association (SALGA) and the DMs to clarify future funding sources for MHS, specifically in DMs.

MHS are service oriented and mainly identify, monitor, educate and enforce the law to manage and control activities in the working, living and recreation environments, including milk hygiene monitoring and control, which could negatively affect the health and wellbeing of people. Consequently, MHS are entirely dependent upon people to perform these functions, and people are therefore the greatest asset of the service. The performance of MHS is thus directly related to the number of skilled municipal health staff and sufficient financial resources, equipment and systems to support and maintain MHS activities and decisions.

This study aims to ascertain the availability and efficiency of MHS resources and the approach followed by MHS in South Africa in optimising the use of the resources in achieving the desired results when monitoring and controlling milk hygiene. This information should be invaluable in making suggestions to higher authorities to capacitate metros' and DMs' municipal health sections and managers. It could further assist in the development of systems to aid management decisions and direction to properly monitor and control milk hygiene in the informal milk-producing sector in a more sustainable way. It is the statutory responsibility of the various authorities – namely the national and provincial departments of health (NDoH and PDoHs), the national and provincial departments of provincial and local government (NDPLG and PDPLGs) and local governments (LGs) such as metros and DMs – to comply with and enforce the laws of the country in order to protect

the public's health and wellbeing. SALGA also has a responsibility to collectively represent and guide LG.

4.3 RESEARCH DESIGN AND METHODOLOGY

A quantitative methodology similar to that followed in Chapter 2 and Chapter 3 of this study was used. The questions for this section, however, focused on aspects relating to physical and human resource management and allocation by MHS towards milk monitoring in particular. The questions further focused on the approach followed by MHS in milk hygiene control, in support of the optimisation of available resources in the execution of duties relating to milk quality control.

4.4 RESULTS AND DISCUSSION

4.4.1 Status and affiliation of respondents

From the results it emanates that the average age of the respondents was 43 years, with minimum and maximum ages that varied between 31 and 59 years. The respondents had on average 19 years of experience in EHS, which varied from a few months to 38 years. A corresponding number (n=19 [39.6%]) of respondents were in possession of either a National Diploma (basic qualification) or a B. Tech in Environmental Health, with 8 (16.7%) of respondents indicating that they have a National Higher Diploma. Half (n=23) of the respondents indicated that they were responsible for coordinating or managing MHS within the metropolitan and district municipal area, of which 62.5% (n=30) of these respondents were at management level. A total of 76.7% (n=23) of the management cadre were metro and DM employees, while the remaining portion was either from the LMs or the PDoHs. The respondents reported that half (n=23) of the MHS managers/coordinators had additional management qualifications, suggesting that the respondents were relatively knowledgeable in the EH field (data not shown).

4.4.2 Availability and efficiency of municipal health services resources to monitor and control the informal milk-producing sector

A total of 68.1% (*n*=32) of the respondents stated that resources were not sufficient for the effective monitoring and control of milk hygiene (Table 4.1). Table 4.1 also shows that a corresponding number of respondents (*n*=15 [48.4%]) were of the opinion that funds and the number of EHPs were regarded as their key reasons for responding that resources were not sufficient, along with 35.5% (*n*=11) who were of the opinion that a lack of basic equipment was contributing to insufficient resources (Table 4.1).

4.4.2.1 *Financial resources*

More than one third (36.9% [*n*=17) of the respondents indicated that their budgets for sampling had decreased or remained stagnant over the previous three financial years (2003/04, 2004/05 and 2005/06) (Table 4.1).

The outcomes from this study with regard to the availability of resources concur with other studies in that the resources for MHS delivery are limited, which negatively affects the delivery and extension of the services to properly monitor and control milk hygiene. Haynes (2004:16) suggests that the average costing of EHS in South Africa per capita for delivering EHS at the time of the study was R8.78. This cost varied considerably among provinces, with three provinces (Eastern Cape, Limpopo and North West) recording averages below R5.00 per person, and the highest spending occurring in the Western Cape at just over R18.00 per capita. However, mindful of the mentioned study, the NDoH suggests that MHS be classified as a basic municipal service together with municipal functions like water, sanitation, electricity, and refuse removal. Seeing that EHS is normally not a priority service by municipalities, the competition for available funding becomes a challenge to sustain the service. Therefore, a more sustainable solution should be sought for the future funding of MHS.

Table 4.1: Availability of resources for the monitoring and control of informal milk-producing sources in South Africa

	Frequency	Percentage
Do you think the resources are sufficient for the effective monitoring and control of milk hygiene? (*n*=47)		
Yes	13	27.7
No	32	68.1
Don't know	2	4.3
If you think the resources are not sufficient, what are your reasons? (*n*=31) respondents could provide more than one reason.		
Not enough EHPs	15	48.4
Lack of finances	15	48.4
Lack of basic equipment (transport, sampling equipment)	11	35.5
Movement on the budget for sampling between the three financial years 2003/04 up to 2005/06? (*n*=46)		
Decreased	7	15.2
Increased	25	54.3
Stagnant	10	21.7
Don't know	4	8.7

The NDoH further suggests that MHS be funded at a rate of R13.00 per capita to initiate the budgeting process in preparation for the consolidation of MHS to metros and DMs (Haynes, 2004:16). Since April 2006, the National Treasury has made provision in the Division of Revenue Bill 3 (2006) for MHS to be part of the basic services component of the equitable share allocation to metros and DMs, at a rate of R12 per household per annum, which translates to R3.25 per capita (RSA: DoF, 2006:70-73; Balfour-Kaipa, 2007:43).

The study done by the Development Bank of Southern Africa (DBSA, 2007) to determine the extent to which MHS have been implemented by DMs in South Africa states that nearly all (97%) of the financial managers of DMs felt that funding was not sufficient to improve, or even maintain, existing levels of MHS provision (DBSA, 2007). In the same study, 11% of MHS managers interviewed reported that sufficient funding was available to improve existing levels of MHS delivery (DBSA, 2007). The respondents in the mentioned study also stated that almost one third of the DMs did not have a separate budget for MHS. This holds its own challenges when MHS have to compete for the same budget with other departments and activities within a district municipal area (DBSA, 2007).

However, various studies have also revealed that the budgets and expenditure patterns still reflect the old “inspector approach/model” in MHS delivery, as suppose to the new developmental approach that is the national and international tendency in EH (Mathee *et al*., 1999; DBSA, 2007). It is further highlighted by the DBSA study that almost half of the respondents indicated that they did not have programmes to render a service to their poor and underdeveloped communities. This has its own implications for the motivation for additional or sufficient funding for special projects such as the monitoring and control of the hygiene of milk from the informal sector and to develop standardised programmes and systems to support these initiatives (DBSA, 2007). This highlights the need for budgets to support such change.

4.4.2.2 *Human resources*

Table 4.2a shows that the median number of community members for each functional EHP was 42,021 per metro and DM area. The minimum and maximum number of community members per functional EHP varied between 10,339 and 148,832 respectively (Table 4.2a). Table 4.2b gives an indication of the number of community members per functional EHP distribution per province and a breakdown of the KwaZulu-Natal (KZN) Province's district municipalities. Figure 4.1 gives a graphical indication of the distribution (coverage) of community members per province for each functional-level EHP in South Africa. The figure also gives the national median distribution in comparison with the national norm of 1:15,000 EHP per population. The Western Cape, with a median of just over 13,600 population per functional EHP, is the only province achieving the national coverage goal, while the Eastern Cape has over the past few years moved closer to the national norm with a median of 22,479 population per functional EHP, because of provincial interventions to absorb bursary holders. Many previous studies suggested that the Eastern Cape had one of the highest EHP to population ratios (Mathee *et al*., 1999:284; Eales, Dau & Phakati, 2002:105; Haynes, 2004:11). The latest DBSA (2007) study is in agreement with the tendency that the Eastern Cape's EHP coverage has improved over previous years (DBSA, 2007).

Haynes (2004:16) stated that on average 77% of EHP posts in provincial and LG structures were filled. However, workers mentioned in this study (Mathee *et al*., 1999:286; Atkinson, Akharwaray, Fouche & Wellman, 2002:3; Eales *et al*., 2002:105; Haynes, 2004:16) highlight that this apparently satisfactory situation does not reflect that many EHPs in LG, and especially those at management level, fill EHP posts but are utilised in areas not related to environmental/municipal health services and are often neglecting their EH responsibilities (Mathee *et al*., 1999:286; Atkinson *et al*., 2002:3; Eales *et al*., 2002; Haynes, 2004:16).

Table 4.2a: Functional environmental health practitioner to population ratio in South Africa (senior environmental health practitioners included in calculations)

Functional and senior level environmental health practitioners (*n*=47)

Mean	Median	25th percentile	75th percentile	Std dev.	Min.	Max.
22	17	7	25	24	2	104

Population per functional / senior level environmental health practitioner (*n*=47)

Mean	Median	25th percentile	75th percentile	Std dev.	Min.	Max.
45 964	42 021	25 186	50 930	32 240	10 339	148 832

Table 4.2b: Population ratio to functional environmental health practitioner to population ratio in South Africa per province, with a breakdown of the KwaZulu-Natal Province to show variation per district municipality in the mentioned province (senior environmental health practitioners included in calculations)

Province	**Mean**	**Median**	**25th percentile**	**75th percentile**	**Std dev.**	**Min.**	**Max**	**Total number of functional EHPs**	**Population** (*2001 Census figures*)
Eastern Cape	27 252	22 479	20 451	39 610	15 734	18 492	55 883	216	5 886 359*
Free State	49 521	46 993	38 891	56 611	19 145	27 047	73 001	40	1 980 832*
Gauteng	39 267	45 136	44 145	79 944	48 337	28 185	148 832	157	6 164 925*
Limpopo	35 665	34 478	29 736	40 150	9 982	24 566	48 112	100	3 566 457*
Mpumalanga	30 241	34 593	28 272	40 914	17 878	21 951	47 235	61	1 844 707*
Northern Cape	39 372	54 053	34 981	54 871	13 260	29 527	58 967	25	984 296*
North West	30 569	30 397	28 939	31 856	4 126	27 480	33 315	34	1 039 345*
Western Cape	19 671	13 624	12 350	20 493	6 924	10 339	27 820	230	4 524 323*
KZN	**61 983**	**48 489**	**44 891**	**119 399**	**41 497**	**41 414**	**131 397**	**78**	**4 834 703***
DMs for KwaZulu-Natal (KZN)									
eTekweni Metro	-							-	3 090 117
Ugu DM	41,414							17	704 030*
u Mgungundlovu DM	-							-	927 842
Uthukela DM	131,397							5	656 983*
Umzinyathi DM	45,646							10	456 459*
Amajuba DM	117,010							4	468 038*
Zululand DM	50,278							16	804 446*
Umkhanyakude DM	-							-	573 341
uThungulu DM	126,566							7	885 963*
iLembe DM	46,699							12	560 390*
Sisonke DM	42,628							7	298 394*
* Population figures per participating municipality in each province were used for calculation purposes.								78	**4 834 703***

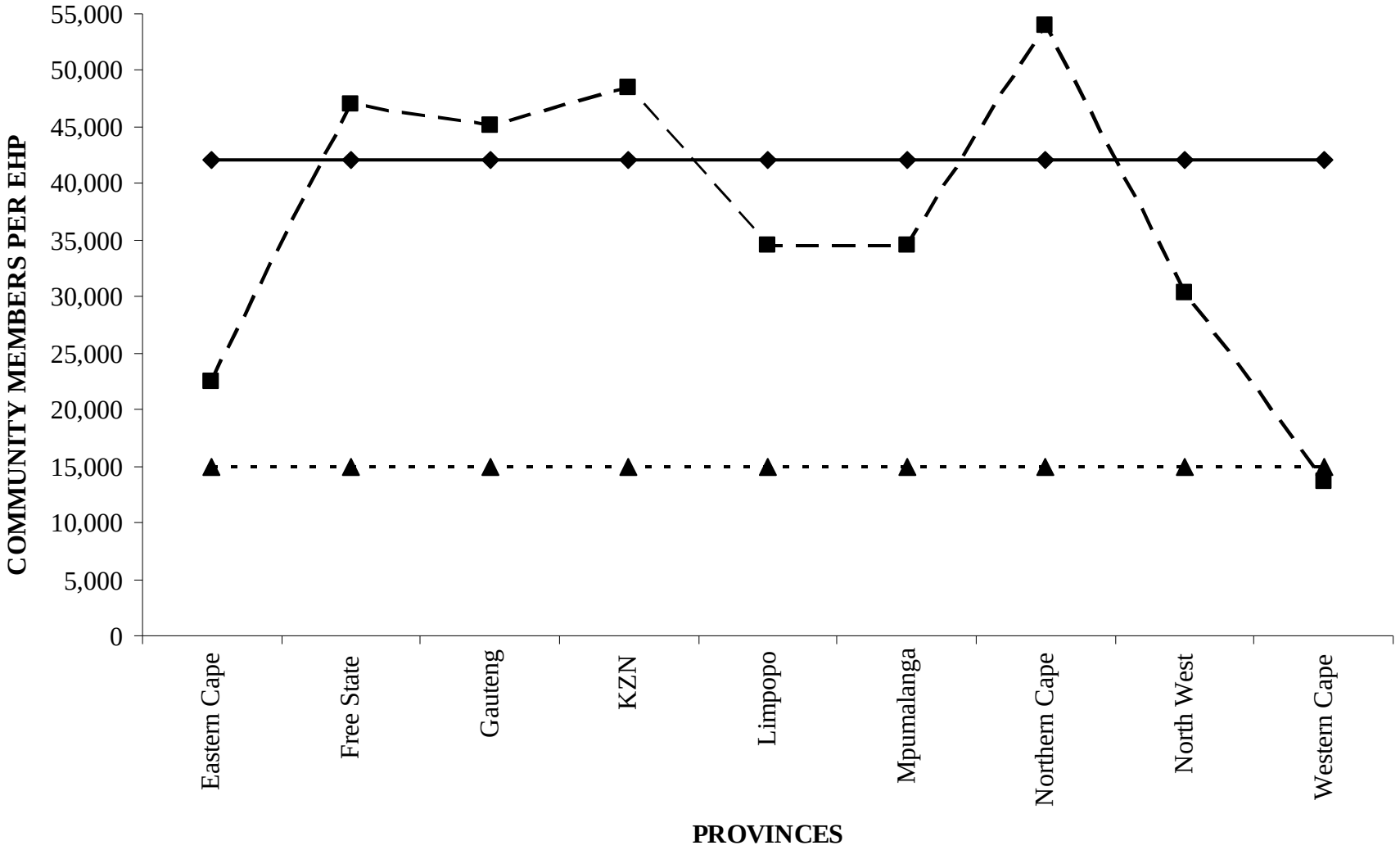

Figure 4.1: Inter-provincial comparison of the number of community members per functional (junior- and senior-level) category of environmental health practitioner (median) (broken line with squares). Included are the national environmental health practitioner per population norm (1:15,000) (dotted line with triangles) compared to the national median number of community members per functional environmental health practitioner in South Africa (solid line with diamonds).

According to Eales *et al*. (2002:105) the National Department of Health (NDoH) has changed the ratio of EHP to population from the original 1:10,000 (World Health Organisation [WHO] norm for developing countries) to the current norm of 1:15,000, which also gives the impression of improved coverage. The results of the study are in agreement with other authors (Mathee *et al*., 1999; Eales *et al*., 2002:105; Agenbag & Gouws, 2004:4-7; Haynes 2004:16; Haynes, 2005:46-48; DBSA, 2007) who have concluded that the coverage of EHPs in South Africa does not meet the national target of 1 EHP per 15,000 population. Currently supervisory- and management-level EHPs are all included in the national norm calculations, as reflected in national studies done thus far. The latter method of calculating the EHP coverage provides a distorted picture, considering that the NDoH has already increased the number of community members per EHP, as mentioned above (Mathee *et al*., 1999; Eales, *et al*., 2002:105; Agenbag & Gouws, 2004:4-7; Haynes 2004:16; Haynes, 2005:46-48; DBSA, 2007). It is primarily the functional-level EHPs, and to a lesser extent the senior-level EHPs, who perform the daily tasks in the communities. Therefore, this study reflects the functional-category EHP to population ratio instead of all EHPs (functional and management echelons), in order to determine the coverage of MHS.

4.4.2.3 *Physical resources*

Of the 68.1% (n=32) of respondents who replied that resources were not sufficient for the effective monitoring and control of milk hygiene, 35.5% (n=11) ascribed this insufficiency to a lack of basic equipment (transport and sampling equipment) (Table 4.1). Table 4.3 shows that the median number of EHPs (junior, supervisory and management echelons, excluding community service EHPs) per metro and DM in South Africa was 18, while the number of dedicated vehicles available for MHS per metro and DM area was 12.5 (Table 4.3).

Table 4.3: Comparison between the number of environmental health practitioners and the availability of transport

How many environmental health practitioners (junior and management echelons) in your district or metropolitan municipal area? (*n*=42)

Mean	Median	25th percentile	75th percentile	Std dev.	Min.	Max.
27.6	18	9	35.5	27.4	3	120

How many dedicated vehicles do you have in your district or metropolitan municipal area? (*n*=42)

Mean	Median	25th percentile	75th percentile	Std dev.	Min.	Max.
22.1	12.5	8	24	26.8	0	116

How many environmental health practitioners in your area are dependent on pool vehicles that they have to share only amongst themselves? (*n*=40)

Mean	Median	25th percentile	75th percentile	Std dev.	Min.	Max.
4.5	1.5	0	7	6.3	0	10

How many environmental health practitioners in your area have to share pool vehicles with <u>other departments and sections</u>? (*n*=38)

Mean	Median	25th percentile	75th percentile	Std dev.	Min.	Max.
1	0	0	1	2.3	0	10

	Frequency	Percentage
If pool vehicles are used, how available have the vehicles been that the environmental health practitioners need to share with other departments outside environmental health services in the past month? (*n*=11)		
Always	1	9.1
Most of the time >50%	3	27.3
Sometimes <50%	6	54.6
Never	1	9.1
If pool vehicles are used, what is the working condition of the pool vehicles that have been used by environmental health services in the past month? (*n*=12)		
Always in good running order	1	8.3
Mostly in good running order (>50% of the time)	8	66.7
Mostly in poor running order (<50% of the time)	2	16.6
Always in poor running order	1	8.3

A small number of EHPs per metro and DM area was dependent on pool vehicles (Table 4.3). The majority of the EHPs making use of pool vehicles were sharing them mainly amongst themselves, as these pool vehicles had been allocated specifically to the various MHS sections per metro and DM area (Table 4.3). There were, however, EHPs that had to share pool vehicles with other departments and sections within the respective metro and DM areas (Table 4.3). From this latter category, just over half (54.6%) of the respondents replied that these pool vehicles were not always available (Table 4.3).

These results are in agreement with the DBSA (2007) study, which revealed that one fifth of all local municipal EHPs – 11% from DMs and 16% from the respective PDoHs – did not have access to transport at any time (DBSA, 2007). Haynes (2005) reports that some respondents mentioned an 80% unavailability of vehicles for MHS delivery from the PDoH vehicle pool (Haynes, 2005:37, 49). This affects the efficiency of the officials who must implement MHS and, in the context of understaffing, these findings are cause for concern. A further challenge to metros and DMs in implementing MHS is the fact that LG and the PDoHs prefer subsidised vehicle schemes above pooled vehicles (Haynes, 2005:37). Haynes (2005) found that most (91.4%) of the vehicles for MHS were being contributed by LG. This presents its own challenges for DMs when MHS is consolidated at the district municipal level, as some LMs indicated that they would not be transferring their vehicles with the MHS staff to DMs, while it is unlikely that “provincially-owned” or Department of Transport vehicles would be transferred to DMs either (Haynes, 2005:49).

The fact that there is limited transport for MHS poses a particular concern for service delivery for the monitoring, control and formalisation of the informal milk-producing sector, because target sites are predominantly widely dispersed (average distances are >150km to the furthest MHS service delivery points). It is evident that staff responsible for the implementation and delivery of MHS cannot be effective without vehicles and there is a definite need for EHPs to have access to dedicated transport. It is not only the number of vehicles that is important, but also the appropriateness of the vehicles for the particular purpose, especially in the remote rural areas where roads might not be tarred. The moving away from the “inspector model” in terms of MHS service delivery to that of a community

developer (do gap analysis, targeted community awareness and capacity building, behavioural change programmes [involving other role-players], followed by impact monitoring of programmes to direct future actions / interventions) places further pressure on the need for dedicated transport, while EHPs not in possession of a valid driver's license, and the allocation of community service EHPs without additional transport, only exacerbate the pressure on the available transport.

4.4.3 Organisational arrangements to monitor and control milk hygiene

Twenty-two percent (n=9) of respondents indicated that they were making use of dedicated units within their MHS sections for milk hygiene control, while 41.9% (n=18) were making use of dedicated individuals to coordinate the monitoring and control of milk hygiene in their respective areas (Table 4.4). Half of the metros (n=3) were making use of dedicated milk control units, while 54.8% [n=17]) of the respondents replied that all of their EHPs were monitoring and controlling milk hygiene as part of their routine duties (Table 4.4).

The fact that a notable number of metros and DMs were making use of dedicated units or individuals to monitor and control milk hygiene suggests that they have the skills and knowledge to effectively control milk hygiene, because such units or individuals create a focus around milk hygiene control, and as a result project management principles could be implemented relatively easily. It would, for example, be easier to develop a standardised risk- and audit-based approach to milk monitoring and control if the informal milk-producing sector were included in the respective metro and DM integrated development plans (IDPs).

Table 4.4: Municipal health services' approach to monitoring and controlling milk hygiene

	Frequency	Percentage
Metropolitan and district municipalities with a dedicated unit for milk hygiene control (*n*=41)		
Yes	9	22.0
No	32	78.0
Metropolitan and district municipalities with a dedicated individual for milk hygiene control (*n*=43)		
Yes	18	41.9
No	25	58.1
If No, above, what arrangements do you have for milk control? (*n*=31)		
Food control champion (dedicated individual or small group of environmental health practitioners) and "pool of knowledge" for district as a whole, also responsible for full-spectrum municipal health services in a specific geographical area	3	9.7
All environmental health practitioners in area are responsible	17	54.8
Sub-district manager in each local municipality coordinates the monitoring and control of milk	1	3.2
Other arrangements (Dairy Standard Agency, local municipalities and provincial environmental health practitioners)	8	25.8
No arrangement	2	6.5

4.4.4 Measures to ensure that milking parlour registration (certificate of acceptability) remains appropriate

It is the responsibility of the metros and DMs, on receipt of an application for a milking parlour, to issue the CoA or a provisional certificate of acceptability (PCoA), following a detailed inspection report from an EHP (RSA: DoH, 1986). It is also the responsibility of metros and DMs to monitor and control the compliance of milk-handling premises and milk products on a continuous basis to ensure that safe and wholesome milk and milk products are provided to the public. Therefore, routine follow-up inspections, sampling, health and hygiene education and awareness are important components of the EHP's tasks. However, the regulations do not specify the intervals between such follow-ups and there are no standardised procedures and guidelines available in South Africa to guide MHS staff with regard to milk hygiene control.

It was required of respondents to give an indication of how they were ensuring that the certificate of acceptability (CoA) that is issued by the relevant metro and DMs for their milking parlours remained relevant. A total of 83.7% (n=36) of respondents replied that they were regularly visiting milking parlours to perform evaluations and premises inspections, while respondents from six (14%) metros and DMs specifically indicated that they were paying quarterly visits to their premises. A total of 20.9% (n=9) of respondents were ensuring that their certificates remained relevant by sampling the milk, as shown in (Table 4.5). In addition, 16.3% (n=7) of the respondents indicated that they were integrating inspections and sampling to ensure that their milking parlours' CoAs remained appropriate, whilst the remainder indicated that they were doing so through either inspections or sampling. A limited number (n=7) of respondents indicated that they were applying a combination of premises inspections and sampling as a method to ensure that their CoAs remained appropriate.

Although a remarkable number of respondents indicated that they were performing regular visits to milking parlours, they were primarily doing so on an irregular basis, with only 14% doing so at fixed intervals. A limited number of respondents indicated that they were

combining premises evaluations and milk quality monitoring, which suggests the lack of a risk- and audit-based approach (management by project) to evaluating milking parlours.

Table 4.5: Measures to ensure that the registration of milking parlours remains appropriate

	Frequency (*n*=43)	**Percentage**
Ad hoc visits based on complaints or requests	2	4.7
Quarterly/regular inspections/evaluations	36	83.7
Sampling	9	20.9
No routine inspections/evaluations	1	2.3
Education/awareness	4	9.3
Milking parlours still under control of local municipalities (no records)	1	2.3
Take swabs	1	2.3
Producer must obtain introduction permit annually	2	4.7
Do nothing	1	2.3
Respondents combining inspections and sampling	7	16.3

4.4.5 Approach towards sampling, premises evaluation and education as methods to monitor and control milk hygiene quality

According to Griffith (2005) there is little value in inspections unless the quality thereof and the time set aside for this purpose are adequate and the inspections are outcomes driven. The purpose of performing visual inspections and sampling the end-products from premises that sell food is to detect any environmental risks that may contaminate foodstuffs and to highlight areas of concern, as well as to focus efforts to address the problems towards ensuring a safe and wholesome product. Studies performed in the United Kingdom (UK) to assess the effectiveness of visual inspections in comparison with microbiological assessments, as well as other related studies, have shown that unless inspections include a

specific measurement (such as temperature of storage) and other standardised procedures, they are largely ineffective in assessing the microbiological safety of foodstuffs (Griffith, 2005:134-135; Griffith, 2006:12-13).

Resulting from this background a further questions were posed to determine how MHS in South Africa were normally conducting their premises inspections, sampling, and health and hygiene education in order to monitor and control milk hygiene in the respective areas. The purpose was to establish whether use was being made of predefined programmes (a planned and managed process/project-based approach), or whether this was being done on an *ad hoc* basis. The results are shown in Table 4.6 and reveal that 63.6% (n=28) of respondents were collecting milk samples on an *ad hoc* basis, whereas 22.5% (n=9) disclosed that they were conducting premises evaluations (visits/visual inspections) by means of a walk-through evaluation based on a predefined plan to ensure that the premises were complying with requirements. A total of 78.8% (n=26) of respondents replied that they were performing health and hygiene education on an *ad hoc* basis whilst conducting walk-through evaluations on the premises. The results therefore suggest that MHS primarily do not plan their programme with regard to milking parlour inspection, sampling and education interventions, thus not supporting a risk- and audit-based approach to optimising the available resources.

Table 4.6: Municipal health services' approach to milk sampling, premises inspection, and education/awareness to monitor and control milk hygiene

	Frequency	Percentage
Milk sampling (*n*=44)		
Take samples on an *ad hoc* basis	28	63.6
Take samples by implementing a predefined / worked-out sampling programme (project-based approach)	16	36.4
Premises evaluations/visits/inspections (*n*=40)		
Walk-through visits/evaluations (inspections) on an *ad hoc* basis	31	77.5
Walk-through visits/evaluations (inspections) by a predefined/worked-out plan (project-based approach)	9	22.5
Health and hygiene education at milking parlours/dairies/sheds (*n*=33)		
Providing health and hygiene education (informal, whilst conducting a walk-through evaluation of premises) on an *ad hoc* basis	26	78.8
Providing health and hygiene education (informal, whilst conducting a walk-through evaluation of premises) according to a predefined / worked-out plan (project-based approach)	7	21.2

4.4.6 Prominence of food control as part of municipal health services' daily activities

In terms of the priority given to food control on the MHS agenda, the respondents had to give an indication on a scale of 1 to 4 (1=Most frequent activity; 2=Frequent activity; 3=Less frequent activity; and 4=Least frequent activity) of which activities (activities based on the MHS definition) were occupying most of the MHS section's time on a daily basis for the month prior to the survey. According to Figure 5.1, food control was the second most frequent activity of the MHS sections, with 43.2% (*n*=19) of respondents reporting accordingly, while 53.3% (*n*=24) were attending mostly to complaints.

With the “most frequent” and “frequent” activities grouped together, food control was indicated by 77.3% (*n*=34) of the respondents as the third most frequent activity taking up their time, while a similar 82.2% (*n*=37) were mostly attending to complaints and meetings. Figure 4.2 further shows that 62.2% (*n=2*8) of the respondents stated that, in their respective areas, MHS were conducting projects relating to food quality improvement, and 68.9% (*n*=31) were involved in sampling water and food as part of the “most frequent” to “frequent” activities during the month. These activities were being performed together with other MHS activities, for instance waste management (56.8% [*n*=25]), health surveillance of premises (64.4% [*n*=29]), environmental pollution control (64.4% [*n*=29]), and projects related to water and sanitation (55.6% [*n*=25]). It is evident from the results that food control featured relatively high on the agenda of MHS sections for the month prior to the survey. However, this also illustrates how the various activities of MHS compete for the time of MHS staff in addition to other resources such as finances and transport.

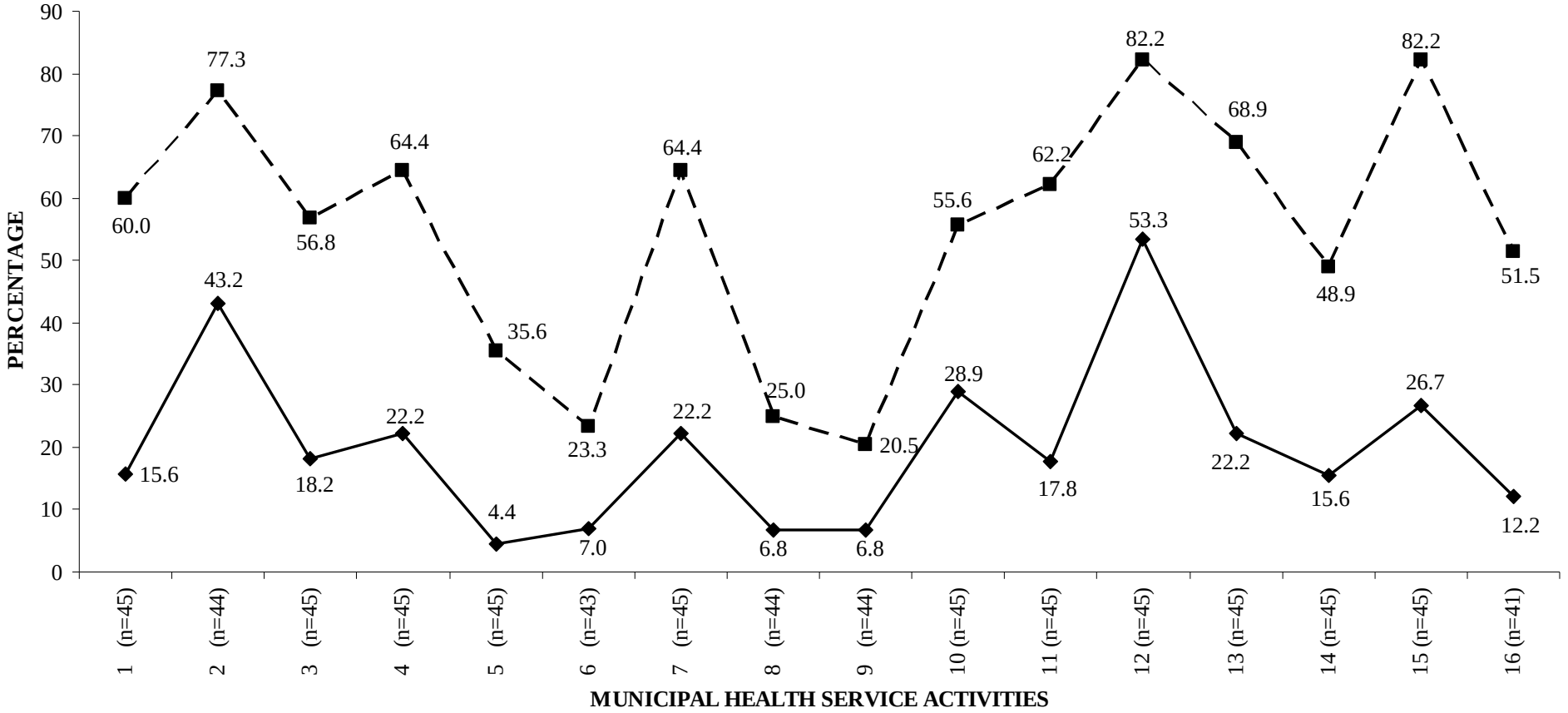

Figure 4.2: Activities that occupied the majority of municipal health services sections' time for a period of one month (the solid line representing the most frequent activities and the broken line a combination of the frequent and most frequent categories).

1=Water quality monitoring; 2=Food control; 3=Waste management; 4=Health surveillance of premises; 5=Surveillance and prevention of communicable diseases (ex. immunisations); 6=Vector control; 7=Environmental pollution control; 8=Disposal of the dead; 9=Chemical safety; 10=Projects related to water and sanitation; 11=Projects related to food quality improvement; 12=Complaints; 13=Sampling (water and food); 14=Awareness campaigns/education; 15=Attending meetings; and 16=Other activities indirectly related to environmental/municipal health services.

4.4.7 Perceptions regarding the ability of municipal health services to monitor and control milk hygiene

Table 4.7 shows that more than half (57.4% [*n*=27]) of the respondents were of the opinion that MHS were not applying effective monitoring and control of milk hygiene in their areas of jurisdiction from production stage to the consumer. Respondents could indicate more than one reason for their opinion in this section. In summary, the reasons of 69.1% (*n*=29) of the respondents revolved around a lack of systems, preventing MHS from properly monitoring and controlling milk hygiene in their respective areas, for instance lack of fixed programmes, no standardised approach or system to capture visits (evaluations/inspections) and sampling results, lack of a database in terms of milking parlours and distributors, as well as improper coordination amongst various role-players (LMs and DMs, provincial departments of health and the Dairy Standard Agency). Some respondents questioned the efficiency of control measures and the fact that the interventions were mainly based on a reactive approach rather than on prevention. A total of 64.3% (*n*=27) of respondents argued that they lacked resources (financial, staff and equipment). When all the inputs from the respondents with regard to their reasons for MHS not having proper control over milk hygiene are grouped in relevant categories, it can be seen that 96.8% (*n*=30) suggested that the reasons revolved around management-related issues.

Considering that the majority of the MHS sections were approaching their milk hygiene monitoring and control on an *ad hoc* basis (Table 4.6), this may lead to arbitrary decisions and a lack of information upon which to base management decisions. Informed management decisions should direct prioritisation of programmes, resource allocations and service delivery, which is supported by appropriate information. This is perhaps the reason why such a high number of respondents felt that management-related issues were the main contributor to their perceptions. Furthermore, half of the respondents indicated that they did not have appropriate management qualifications, which is likely to have an impact on the proper management of services and resources.

Table 4.7: Ability of municipal health services to properly monitor and control milk hygiene

	Frequency	Percentage
Do you think environmental/municipal health services are applying effective monitoring and control of milk hygiene from production to consumer? (*n*=47)		
Yes	18	38.3
No	27	57.4
Don't know	2	4.3
Reasons for your choice in deciding whether environmental/ municipal health services are applying effective monitoring and control (*n*=42) respondents could provide more than one reason.		
Lack of systems (fixed programmes, standardised approach, database, no coordination, reactive approach, effectiveness of approach) to support and guide successful control	29	69.1
Lack of resources (human resources, finances, equipment)	27	64.3
Lack of sufficient service delivery capacity (to many other activities, results show it, accessibility and capacity of laboratories, vast service areas, environmental/municipal health services a new function at district municipality in state of flux, low morale among environmental health practitioners because of devolution, environmental health practitioners show little interest in milk and lack practical experience)	15	35.7
Management-related issues: (lack of availability of transport and sampling equipment, lack of data-capturing systems to identify focus areas, lack of supervisory structures, environmental health practitioners lacking practical experience, respondents question effective use of resources, lack of implementation and integration of services, monitoring done by too many authorities, milk hygiene not a priority, and insufficient sampling)	30	96.8

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Chapter 5

CONCLUSION

5.1 INTRODUCTION

Milk safety in the informal sector is a worldwide public health concern. Milk safety is furthermore a shared responsibility among various role-players such as food producers, government, industry and consumers. Governments play an important role in this shared responsibility by, *inter alia*, providing reactive health services in order to treat the victims of food-borne illnesses and should also provide a proactive health service in this regard. Proactive or preventative measures that should be taken by government include providing advice to consumers to help them to prepare and handle milk safely. Other responsibilities include surveillance in terms of food poisoning statistics and outbreaks, and providing an appropriate legislative framework to safeguard all aspects of the production and processing of milk and the sale thereof to consumers. Many small businesses display an ignorance or absence of food safety knowledge and skills, which in turn leads to a lack of awareness of the hazards that their operations or products might pose. Challenges towards improving milk safety in the informal sector will, however, not primarily originate from within the informal milk-producing sector itself, but will rather be brought about by external drivers such as personal contact with municipal health services (MHS) staff and the formal industry (Fairman & Yapp, 2004:44). Another challenge facing government and industry at large in South Africa is the growing percentage of immune-compromised individuals that are more susceptible to infections. This study endeavoured to contribute to the understanding of the different role-players in milk hygiene control and to determining the status and capacity of local government (LG) to support government's mandate with regard to regulating, controlling and supporting the informal milk industry, and ultimately safeguarding the consumers.

5.2 SUMMATIVE REMARKS

Milk hygiene is currently enjoying a high profile within the milk industry in South Africa, and government and industry are placing much emphasis on the development of emerging milk producers. Legislative changes have assigned more responsibilities to

district municipalities (DMs) throughout the country, although national and provincial government structures have given these DMs little support and guidance when it comes to interpreting and performing their legal mandate fully with regard to the delivery of MHS. The milk industry at large has raised concerns about the ability and willingness of LG to monitor and control milk hygiene, especially in the informal sector. New legislation, for example the regulations pertaining to the application of the Hazardous Analysis and Critical Control Point (HACCP) system, which was recently promulgated under the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (54 of 1972), has brought about new responsibilities regarding the hygienic handling of food, which must be adhered to by the producers, processors and sellers of foodstuffs. It is, however, evident that the informal sector will not be able to manage such responsibility without external guidance and support. As reflected in Chapter 2, not all metropolitan municipalities (metros) and DMs are authorised by the Ministry of Health to be statutorily compliant to enforce the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 54 of 1972). It is emphasised in Chapter 3 that although there is a notable number of informal milk producers, most of the MHS sections within metros and DMs do not have programmes to develop and control the informal milk supply. It appears that MHS do not have sufficient resources to properly monitor and control milk hygiene, especially in the informal sector (Chapter 4). It is further evident from this study that MHS do not always perform their tasks such as premises inspections, awareness campaigns and sampling programmes in accordance with project management principles, but rather carry out these activities on an *ad hoc* and superficial basis, which places an additional burden on the limited resources. To support MHS and LG, a more active approach should be followed by the relevant role-players, including the Department of Health, to initiate programmes that can support and guide LG to standardise approaches and to build the municipalities' human and physical capacity.

5.3 RECOMMENDATIONS TO GOVERNANCE BODIES

Mindful of the role and responsibility of government, as enshrined in the Constitution of South Africa, 1996, to monitor, support and capacitate LGs to achieve their statutory mandate, the following suggestions are proposed:

- The national and provincial departments of health (NDoH and PDoHs) should institute a monitoring system to determine and ensure that all metros and DMs are authorised by the Ministry of Health to enforce the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 54 of 1972).

- The mentioned departments should conduct a survey to determine whether all municipalities that allow the sale of raw milk are actually listed in Annexure C of Regulation R1555 of 1997 and whether they have the necessary systems and resources in place, as well as the capacity to control the production and distribution of raw milk.

- Bodies such as the South African Local Government Association (SALGA) and Department of Provincial and Local Government (DPLG) should ascertain whether all metros and DMs have an approved Section 78 investigation report, compiled in accordance with Sections 76, 77 and 78 of the Municipal Systems Act, 2000 (Act 32 of 2000) (RSA, 2000), specifically undertaken for their MHS section to determine the municipality's current and future ability to render MHS and embracing food quality control.

- The NDoH and PDoHs should apply the information from the approved Section 78 investigation reports of individual metros and DMs to ascertain whether they have the current and future capacity to monitor and control informal milk hygiene in the respective municipal areas.

- In addition to the approved Section 78 investigation report the NDoH and PDoHs, and the national and provincial departments of provincial and local government (NDPLG and PDPLGs), together with SALGA, should monitor and ensure, where milk is produced, that the relevant metros and DMs include milk quality control of the informal sector as a focus area in their respective integrated development plans (IDPs) and service delivery and budget implementation plans (SDBIPs).

- Role-players such as government, together with SALGA, the South African Institute of Environmental Health (SAIEH), the Health Professions Council of South Africa – Professional Board for Environmental Health Practitioners (HPCSA-PB for EHPs), as well as tertiary institutions, should initiate training programmes for MHS managers to capacitate them with skills to apply project management principles and also to create an opportunity for MHS managers to share experiences and best practices. Such a capacity-building approach should be strongly based on a mentoring programme and peer review.

- Government, together with the above-mentioned institutions, should assist LG – in particular MHS – to develop standardised procedures, protocols, guidelines, registers and databases to support the proper monitoring and control of milk hygiene at LG level.

- Government and its partners should further assist in the funding of projects through local economic development (LED) initiatives for MHS, to develop the informal milk-producing sector, seeing as it is a focus area of government and the milk industry to increase and optimise informal milk production.

5.4 RECOMMENDATIONS TO INDUSTRY

- Industry, together with national and provincial government, should consider working closer with LG, especially with their MHS sections, when establishing emerging cattle owners as a source of milk provision.

- The milk industry and government should work together to establish communal milking facilities for groups of small-scale milk producers or cattle owners who produce milk to be provided for human consumption.

- Industry should partake in capacity-building projects at LG level, such as training programmes for student EHPs, as well as continuing professional development (CPD).

- Industry should support and combine milk quality monitoring initiatives with capacity development programmes at LG level in view of putting standardised systems in place.

- The current approach whereby industry coordinates, interprets and directs local authorities (LAs) as to where and when to act when sampling results does not comply with legislative requirements and should be closely monitored, as it may be regarded as subjective due to financial interest and competition.

5.5 FUTURE RESEARCH

As indicated by the results of this study, the following have been identified as possible future research projects:

- A study to monitor progress to establish the ability of LG to monitor and control milk hygiene in the informal sector over time.

- Developing standardised procedures, guidelines and protocols to properly monitor and control milk hygiene in the informal sector and allow for the measuring of effectiveness.

- A study to determine the effectiveness of the hygiene training of informal milk producers and distributors.

- Determining a cost-effective and practical way to establish communal milking parlours on commonages to the benefit of the emerging farmers.

- A survey of the actual number of informal milk-producing points per metro and DM area in South Africa and the volumes of milk they produce, together with the portion of milk that is sold to the public.

- Determining how the legislation requiring that all milk-producing points should have a certificate of acceptability (CoA) can be applied and enforced in practice in the informal sector.

- A risk assessment to determine the actual risk of milk distributed from and in the informal sector to establish the magnitude of the problem and how it could be alleviated.

- An assessment of the capacity and ability of MHS managers to apply management-by-project principles in their daily MHS activities and specifically in milk control.

- Investigating the progress that has been made regarding the development and implementation of standardised procedures, systems etc. to improve, monitor, control and manage milk hygiene in a standardised way, on a national basis.

- Determining the number of municipalities that have updated registers recording all active milking parlours with a CoA, as well as the number of such milking parlours being monitored through a combination of inspection and sampling (audit-based approach).

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APPENDIXES

APPENDIX A1

An assessment of the management and control of milk hygiene by Environmental Health Services in South Africa

QUESTIONNAIRE

(All information in this questionnaire will be treated as confidential)

Thank you for taking part in this survey. The aim of this survey is to determine your practices regarding the management and control of milk hygiene in your District Municipality (DM) or Metro Municipality (Metro) area. You are not reporting per Local Municipality (LM), but only from the DM level and perspective. However for some of the questions you need to consult your colleagues at the LM level. Your answers will be treated confidentially and will not be used against you. You are requested to mark your answer/s with "X" in the blocks provided, unless otherwise specified.

Official use

Questionnaire Number [ ][ ] 1-2

SECTION: A

This section refers to the affiliation of the individual reporting for the DM or Metro area

1. **Age:** _____ [ ][ ] 3-4

2. **Gender:** Male(1) | Female(2) [ ] 5

3. **Highest Qualification:** [ ] 6

	National Diploma (1)
	National Higher Diploma(2)
	B.Tech: Environmental Health(3)
	M.Tech: Environmental Health(4)
	D.Tech: Environmental Health(5)
	Other, please specify: _____
	_____

[ ][ ] 7-8

4. Additional tertiary qualifications: _____ [ ][ ] 9-10
_____ [ ][ ] 11-12
[ ][ ] 13-14

5. **For which District Municipality (DM) or Metro Municipality (Metro) area are you reporting?** *(Please give the name of the DM or Metro area).*
_____ [ ][ ] 15-16

6. **How many Local Municipalities (LM) are there within the area of jurisdiction of the District Municipality that you are reporting on?**
Total number of LMs _____ [ ][ ] 17-18

6.1 **Please list their names:**
a) _____ b) _____

c) _____ d) _____
e) _____ f) _____
g) _____ h) _____

7. **Do you have a dedicated unit/section or individual that is responsible for milk hygiene control?** *(You can mark more than once)*

	Yes(1)	No(2)	
Unit / Section			19
Individual			20

7.1 **If no, please specify if you have an arrangement with regard to milk monitoring and control in your DM or Metro area of jurisdiction:**

_____ 21-22
_____ 23-24
25-26

8. **Are you currently responsible for coordinating / managing Environmental Health Services (EHS) within your DM or Metro area as a whole?**

Yes(1)	No(2)	
		27

8.1 **If no, please give details of your role or position:** (*e.g. coordinating the milk function or food coordinator for the area etc.)*

_____ 28-29

9. **What is the <u>designation</u> and <u>employing authority</u> of the person who is responsible for coordinating / managing EHS in its totality in your DM or Metro?**

	LM(1)	DM(2)	Metro(3)	Province(4)	
Chief EHP / Head EHP / Asst. Dir. MHS					30-31
Regional EHP					32
Senior EHP					33
Junior EHP					34

If other, please specify: _____ 35-36

9.1 **For the designation that you chose in 9 above, is your current position full time or part time?**

Full time(1)	Part time(2)	Contractual (3)	
			37

9.2 **Does the person in charge of EHS / MHS in your DM / Metro area have additional management qualifications?**

Yes(1)	No(2)	Don't know (3)	
			38

9.3 **Please list the additional management qualifications:**

_____ 39-40
_____ 41-42
_____ 43-44

10. **For how long have you been practising as an Environmental Health Practitioner (EHP)? _____ years** 45-46

10.1 **For how many <u>years</u> of your professional career did you <u>practise as an EHP</u> at the following <u>authorities</u>?** (*Please indicate against each authority the time that you practised as an EHP*)

Local Municipality *(Municipalities / towns)*	_____ years	47-48
District Municipality *(Regional Serv. Councils)*	_____ years	49-50
Metropolitan Municipality *(Cities)*	_____ years	51-52
National / Provincial Department of Health	_____ years	53-54
Private / Consultancy	_____ years	55-56

SECTION: B

(Answer questions 11-27 as if you represent the DM or Metro as a whole, irrespective of whether equipment, staff or systems belong to the DM, Metro, LM or Province. These are seen as a pool of EHS resources)

RESOURCES / SYSTEMS

<u>Human resources</u>

11. **How many EH-related staff are employed in your DM or Metro area of jurisdiction on the different levels. Also give an indication of the employing authority.** (*In the case of support staff they have to spend >50% of their time on EHS to be regarded as support staff for EHS). Mark the appropriate blocks, e.g. if you have 19 drivers at the province you indicate it as illustrated in the example below.*

Example:

	LM(1)		DM(2)		Metro(3)		Province(4)	
Drivers							**1**	**9**

	LM(1)		DM(2)		Metro(3)		Province(4)		
Drivers									57-64
Secretaries / Administrative Assistants									65-72
Data capturers									73-80
Community Service EHPs									1-8
Pest Controllers									9-16
EH Assistants									17-24
Operational / Functional EHPs									25-32
Senior EHPs									33-40
Principal EHP									41-48
Chief/Head/Manager/Asst. Dir. MHS									49-56

If other, please specify: _____
_____ 57-58

12. **How many of your EHPs are involved in monitoring milk hygiene? _____** 59-61
Don't know (1) 62

13. **What is the functional / operational EHP to population ratio in your area of jurisdiction?** (*This includes all the line function EHPs in the DM or Metro area, irrespective of whether they are provincially employed or employed by an LM, DM or the Metro. It does not include management and supervisory level EHPs)*
Total number of functional EHPs in DM / Metro area: _____ 63-65
Don't know (1) 66

Total population for the DM / Metro area _____ 67-73

Transport

14. **How many dedicated vehicles do you have in your DM or Metro area for EHS?** *(Irrespective of Metro, DM, LM and Provincial vehicles - subsidized car scheme vehicles, official vehicles allocated for an individual are all regarded as dedicated vehicles)* _____ 74-76
Don't know (1) 77

15. **How many EHPs in your area are dependent on pool vehicles that they have to share only amongst themselves?** *(Pool vehicles that are shared between the EHPs)* _____ 78-80

16. **How many EHPs in your area have to share pool vehicles with <u>other departments and sections</u>?** _____ 1-2

16.1 **If pool vehicles are used, how available have the vehicles been that the EHPs need to share with other departments outside EHS in the past month?** *(Mark appropriate block)*

Always	(1)
Most of the time >50%	(2)
Sometimes <50%	(3)
Never	(4)

3

16.2. **If pool vehicles are used, what is the <u>working condition</u> of the pool vehicles that have been used by EHS in the past month?** *(Mark appropriate block)*

Always in a good running order	(1)
Mostly in a good running order (>50% of the time)	(2)
Mostly in a poor running order (<50% of the time)	(3)
Always in a poor running order	(4)

4

Equipment

17. **How many <u>functional EHPs</u> that are responsible for milk hygiene, possess their own <u>*thermometers*</u> to take temperature measurements at milking parlours and milk outlets?** _____ 5-7
Don't know (1) 8

18. **How many of the <u>functional EHPs</u> that are involved in milk hygiene have <u>*cool boxes*</u> to collect and send collected samples? _____** 9-11
Don't know (1) 12

19. **How available were sterile <u>*sampling containers*</u> to collect milk and water samples during the past 6 months?** *(Mark appropriate block)*

Always available	(1)
Mostly >50%	(2)
Sometimes <50%	(3)
Never	(4)

13

Finances

20. **Is provision made under a separate item in your budgets for sampling** (*LM, DM / Metro and Provincial budgets included*)?

Yes(1)	No(2)	Don't know(3)

14

20.1 **If yes, do you have a separate allocation for food sampling?**

Yes(1)	No(2)	Don't know(3)

15

21. **Has your budget for sampling** (w*hich includes milk sampling*) **decreased, increased or remain constant during the 2003/04 to the 2005/06 financial years?**

Decreased(1)	Increased(2)	Stayed the same (stable) (3)	Don't know(4)

16

Information system / database

22. **Do you have a formal data capturing system** *(EHPs use data capturing forms that are summarised for a geographic area and a specific period to determine the situation at a point and time for a defined area, irrespective of whether it is a paper based system or computerised / electronic based system to capture data)* **to record the number of visits to premises, the conditions at these premises and sampling information for your area of jurisdiction as a whole?**

Yes(1)	No(2)	Don't know(3)

17

22.1 **If yes to the above, do you receive electronic feedback reports?** *(Computer print- outs)*

Yes(1)	No(2)	Don't know(3)

18

23. **Which level could provide feedback on the milk hygiene monitoring** *(Which level has an official information system)***?** *(Mark appropriate block/s)*

All the Local Municipalities in the DM area	(1)	19
Some (<50%) of the Local Municipalities in the DM area	(2)	20
Most (>50%) of the Local Municipalities in the DM area	(3)	21
District Municipality / Metro Municipality	(4)	22
Don't know	(5)	23

If other, please specify: _____ 24-25

_____ 26-27

24. **Can you determine within an hour the percentage of samples complying per milking parlour** *(point of production)* **in your area? (***Irrespective of a manual or electronic information system).*

Yes(1)	No(2)	Don't know(3)

28

25. **Can you determine within an hour the registration status of milking parlours?** (*The number of milking parlours with a Certificate of Acceptability - irrespective of whether a manual or electronic information system)*

Yes(1)	No(2)	Don't know(3)

29

26. **Can you determine within an hour the percentage of <u>samples</u> complying per <u>milk distributor / outlet</u>** *(Point of <u>distribution</u> to the public i.e. milk shops, cafés)* **in your area? (***Irrespective of a manual or electronic information system).*

Yes(1)	No(2)	Don't know(3)

30

27. **Can you determine within an hour the <u>registration status</u> of <u>milk distributors / outlets</u>?***(The number of milk <u>distributors / outlets</u> with a Certificate of Acceptability and a Business License)*

Yes(1)	No(2)	Don't know(3)

31

SECTION: C

*(This section focuses on the **production of milk** and the control thereof*

MILK PRODUCTION: <u>FORMAL</u> (*Please answer on behalf of the **DM** and **Metro** area **as a whole***)

28. **Does the DM or Metro or some of the LMs within the DM have admission requirements other than those legislative requirements before a person is allowed to produce milk in your area of jurisdiction?**

	Yes(1)	No(2)	Don't know(3)	
LM				32
DM / Metro				33

29. **Do you have an easily interpretable format of procedures for applicants** *(i.e. an accompanying guideline attached to your application that explains the procedures and requirements)* **who would like to apply for a Certificate of Acceptability to produce milk in your area?**

Yes(1)	No(2)	Don't know(3)

34

30. **Do you have a <u>register</u> of all your <u>milking parlours / dairies</u> recorded in your area of jurisdiction?**

Yes, we have a register for the DM / Metro as a whole	(1)	35
No, we do not have a register for the DM / Metro as such, but		
Yes, <u>all</u> the <u>LMs</u> have registers with milking parlours recorded	(2)	36
Yes, <u>most</u> (>50%) of the <u>LMs</u> have registers with their milking parlours recorded	(3)	37
Yes, <u>some</u> (<50%) of the <u>LMs</u> have registers with their milking parlours recorded	(4)	38
None of them have registers with their milking parlours recorded	(5)	39
Don't know	(6)	40

30.1 **How many of your registered milking parlours / dairies are operational?**

_____ 41-43

Don't know (1) 44

30.2 **How many of your registered milking parlours / dairies can be classified as follows? (***Please indicate the actual number behind each relevant category)*

Certificates of Acceptability issued _____ 45-47

Provisional Certificates of Acceptability issued _____ 48-50

None	(1)	51
Don't know	(2)	52

31. **Do you keep <u>records</u> regarding the <u>BM (Brucellosis) and TB (Tuberculosis)</u> status of cattle from which milk is obtained for human consumption, with regard to registered parlours in your area?**

Verified that all producers have BM&TB certificates for their milk producing cattle.	(1)	53
Verified that most (>50%) producers have BM&TB certificates for their milk producing cattle.	(2)	
Verified that some (<50%) producers have BM&TB certificates for their milk producing cattle.	(3)	
Have no proof of records of any producers BM&TB certificate status of their milk producing cattle.	(4)	

31.1 **If you verified that the producers have certificates, when last did you enquire and check from the producers or their veterinarians if they have updated BM and TB test certificates as confirmation that the herds in your area were tested and are "clean"?**

A month ago	(1)	54
A quarter ago	(2)	
Six months ago	(3)	
A year ago	(4)	
More than a year ago	(5)	
Never	(6)	

32. **Have you taken any other actions to determine the milk's BM and TB status, such as the milk ring test?**

Yes	(1)	55
No	(2)	

33. **How many of your registered milking parlours/dairies have their own quality control (QC) systems in place such as exporting dairies and those supplying to businesses that require the dairies to have a QC system** *(external auditing system)***?** _____ 56-58

Don't know	(1)	59

34. **How do you follow up on registered milking parlours to ascertain that the Certificate of Acceptability remains relevant?** *(To ascertain the level of compliance and the possible consistency of the premises and the practices based on good manufacturing practices. To be able to determine if the state of affairs is improving or deteriorating at the milking parlours / dairies with regard to milk hygiene practices).*

_____ 60-61

_____ 62-63

_____ 64-65

35. **At how many of your milking parlours / dairies has the HACCP system been implemented? _____** 66-68

Don't know (1) 69

36. **How many visits were made by EHPs to milking parlours / dairies in the past six months within the DM area? _____** 70-72

Don't know (1) 73

36.1 **At how many milking parlours / dairies was more than one (1) visit made over the past six months? _____** 74-76

Don't know (1) 77

37. **How many milk samples were taken from the milking parlours / dairies in your area of jurisdiction during the past six months? _____** 78-80

Don't know (1) 1

37.1 **At how many milking parlours / dairies was more than one (1) sample taken for the past six months? _____** 2-4

Don't know (1) 5

MILK PRODUCTION: INFORMAL

*(Please answer on behalf of the **DM** and **Metro** area **as a whole**)*

38. **Are there any unregistered sources of milk production in your area who sell / provide milk to the public?**

Yes (1) | No (2) | Don't know (3) 6

38.1 **If yes at 38 above, do you have any control over the distribution of milk from these informal sources?**

Yes (1) | No (2) | Don't know (3) 7

38.2 **If YES at 38.1, please specify what kind of control**

_____ 8-9

_____ 10-11

_____ 12-13

39. **How many informal milk production points do you estimate that there are in the community? _____** 14-16

Don't know (1) 17

39.1 **Do you try to detect other informal sources of milk production, for human consumption, by active surveillances?**

Yes (1) | No (2) 18

39.2 **If YES, please specify**: _____ 19-20

_____ 21-22

_____ 23-24

SECTION: D

*(This section focuses on the **distribution of milk** and the control thereof, please answer on behalf of the **DM** and **Metro** area **as a whole**)*

MILK DISTRIBUTION / OUTLETS: <u>FORMAL</u>

(Places where milk is sold directly to the public i.e. milk shops, chain stores, cafés, milk depots)

40. **How many of your LMs within the DM have additional admission requirements other than those legislative requirements for <u>milk distributors / outlets</u> before you issue a Certificate of Acceptability (CA) and a Business License? _____** [ ][ ] 25-26

Don't know (1) [ ] 27

40.1 **And does your DM / Metro have additional requirements?**

Yes (1) | No (2) | Don't know (3) [ ] 28

40.2 **If there is any authority (LM, DM / Metro) that has additional requirements please mention some of them:**

_____ [ ][ ] 29-30

_____ [ ][ ] 31-32

_____ [ ][ ] 33-34

41. **Do you have an easily interpretable format of procedures** *(i.e. an accompanying guideline attached to your application that explains the procedures and requirements)* **for applicants who would like to apply for a Certificate of Acceptability and Business License to distribute milk in your area?**

Yes (1) | No (2) | Don't know (3) [ ] 35

42. **Do you have a register of all your <u>formal</u> milk <u>distributors / outlets</u> recorded in your area of jurisdiction?** *(Such as chain stores, cafés, milk shops, producers who distribute milk direct to the public, etc.) (Mark appropriate block).*

Yes, we have a register for the DM / Metro as a whole (1) [ ] 36

No, we do not have a register for the DM / Metro as such, but

Yes, <u>all</u> the <u>LMs</u> have registers with their <u>distributors</u> recorded (2) [ ] 37

Yes, <u>most</u> (>50%) of the <u>LMs</u> have registers with their <u>distributors</u> recorded (3) [ ] 38

Yes, <u>some</u> (<50%) of the <u>LMs</u> have registers with their <u>distributors</u> recorded (4) [ ] 39

None (5) [ ] 40

Don't know (6) [ ] 41

42.1 **How many of your formal registered <u>milk distributors / outlets</u> are operational? _____** [ ][ ][ ] 42-44

Don't know (1) [ ] 45

43. **How many of your registered <u>milk distributors / outlets</u> can be classified as follows?** *(Please indicate the actual number behind each relevant category)*

Certificates of Acceptability issued _____ 46-48

Business license to sell perishable foodstuffs issued _____ 49-51

None (1) 52

Don't know (2) 53

44. **How do you follow up on registered <u>milk distributors / outlets</u> to ascertain that the Certificate of Acceptability or Business License remains relevant?** *(To ascertain the level of compliance and the possible consistency of the premises and the practices based on good manufacturing practices. To be able to determine whether the state of affairs is improving or deteriorating at the milking parlours / dairies with regard to milk hygiene practices).*

_____ 54-55

_____ 56-57

_____ 58-59

45. **How many of your milk distributors / outlets have their <u>own quality control (QC) sections</u> that monitor and keep control of milk hygiene on their premises** *(External auditing system)***? _____** 60-62

Don't know (1) 63

46. **How many of your milk distributors / outlets comply with statutory requirements? _____** 64-66

Don't know (1) 67

47. **How many <u>visits</u> were made to milk distributors / outlets in the past six (6) months? _____** 68-70

Don't know (1) 71

47.1 **At how many of the milk distributors / outlets was <u>more than one (1)</u> <u>visit</u> made in the past six (6) months? _____** 72-74

Don't know (1) 75

48. **How many milk <u>samples</u> were taken at the milk distributors / outlets during the past six (6) months? _____** 76-78

Don't know (1) 79

48.1 **At how many of the milk distributors / outlets was <u>more than one</u> (1) <u>sample</u> taken during the past six (6) months? _____** 1-3

Don't know (1) 4

49. **At how many of your milk distributors / outlets has the HACCP system been implemented? _____** 5-7

Don't know (1) 8

50. **How many of your authorities (LMs, DM / Metro) are authorised in accordance with section 23 of the Foodstuffs, Cosmetics and Disinfectants Act (FCDA), 1972 (Act 54 of 1972) to enforce the FCDA in their areas of jurisdiction? _____** 9-10

Don't know (1) 11

50.1 **How many of the EHPs in your area of jurisdiction are authorised by their authorities (LMs, DM / Metro) to enforce the Foodstuffs, Cosmetics and Disinfectants Act, 1972? _____** 12-14

Don't know (1) 15

51. **How many of the <u>authorities</u>** *(LMs and DM / Metro)* **in your area of jurisdiction are listed on annexure C in accordance with section 3(2) of Regulation 1555** *(21 November 1997)* **of the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 54 of 1972) to allow the sale of raw milk in your respective areas of jurisdiction? _____** 16-17

Don't know (1) 18

51.1 **How many of your authorities** *(LMs and DM / Metro)* **are listed on annexure C under the <u>latest names</u>** *(i.e. Ukhahlamba DM or Senqu LM)* **of the authorities? _____** 19-20

Don't know (1) 21

52. **How many of the authorities** *(LMs, DM / Metro)* **<u>formally</u>** *(according to a Council resolution)* **allow the distribution and selling of raw milk in your area of jurisdiction? _____** 22-23

Don't know (1) 24

52.1 **What <u>control mechanisms</u> do the authorities who allow the selling of raw milk, apply to ensure that the milk is "safe" for human consumption?**

_____ 25-26

_____ 27-28

_____ 29-30

53. **Are the authorities who are not listed on annexure C in your area of jurisdiction, aware that if they continue to allow the sale of raw milk without being listed, they can be accused of dereliction of duty, and may also be open to legal action by consumers who become ill due to the consumption of raw milk?**

Yes (1)	No (2)	Am not aware of their non-listing (3)

31

SECTION: E

*(This section focuses on the **general knowledge** of EHS about milk hygiene in SA)*

<u>GENERAL: KNOWLEDGE, ATTITUDES AND BELIEFS</u>

54. **Are you aware of a program on Carte Blanche** *(1 July 2001)* **where milk quality was highlighted as a concern in the Gauteng area, named "NOT QUITE MILK"?**

Am aware (1)	Am not aware (2)

32

55. **Are you aware of a letter that was sent by the Milk Quality Panel (Prof. Piet Jooste) to Local Authorities, requesting them to conduct public awareness programmes because of risky milk that gets distributed to the public, dated 26 March 1993?**

Am aware (1)	Am not aware (2)

33

56. **Do you have the report by the National Department of Health: Directorate Environmental Health regarding a national survey called the "Hygiene of Fresh Milk Offered for Sale to the Consumer in South Africa," dated June 1995, in your possession?**

Yes (1)	No (2)	Don't know (3)

34

56.1 **If yes to question 56: What percentage of all milk samples** *(pasteurised and unpasteurised)* **of the above survey complied with the hygiene requirements?**

4% (1)	14% (2)	25% (3)	36% (4)	Don't know (5)

35

56.2 **If yes to question 56, did any of the authorities** *(LMs and DM / Metro)* **in your area of jurisdiction implement a project as a result of the above report's suggestions, to improve milk quality in your area of jurisdiction?** *(Mark appropriate block)*

Yes, for the DM / Metro as a whole	(1)	36
No, not for the DM / Metro as such, but		
Yes, for all of the LMs within the DM area	(2)	37
Yes, for most (>50%) of the LMs within the DM area	(3)	38
Yes, for some (<50%) of the LMs within the DM area	(4)	39
No projects were implemented at all in the DM / Metro area	(5)	40
Don't know	(6)	41

If other, please specify: _____ 42-43

_____ 44-45

57. **Are you aware that the Dairy Standards Agency (Section 21 company) is collecting milk samples nationally from Local Authorities to determine the quality of milk in SA and that they are conducting investigations to address milk quality where it is of concern?**

Are aware (1)	Are not aware (2)

46

58. **Do you receive regular updates of the results from the Dairy Standards Agency in your area of jurisdiction?**

Yes, within a month from the date of the sampling run	(1)	47
Yes, within two months from the date of the sampling run	(2)	
No results received to date	(3)	

If other, please specify: _____ 48-49

59. **Do you think EHS applies effective monitoring and control of milk hygiene in your area of jurisdiction from the production stage to the consumer?**

Yes (1)	No (2)	Don't know (3)

50

PLEASE ELABORATE ON YOUR ANSWER, IRRESPECTIVE OF YOUR CHOICE ABOVE:

_____ 51-52
_____ 53-54
_____ 55-56
_____ 57-58
_____ 59-60

60. **Do you think the EHPs are <u>sufficiently trained</u> to effectively monitor and control milk hygiene in your area of jurisdiction?**

Yes (1)	No (2)	Don't know (3)

61

61. **Do you think the <u>resources, services and infrastructure are sufficient</u> for the effective monitoring and control of milk hygiene in your area of jurisdiction?**

Yes (1)	No (2)	Don't know (3)

62

61.1 **If no, please give your reasons why not.**

_____ 63-64
_____ 65-66
_____ 67-68
_____ 69-70

62. **On a scale of 1-4, at <u>each of the following activities</u>, mark which have taken up most of EHS time on a daily basis <u>for the past month</u> in your area of jurisdiction.** *(Mark against each of the activities below in the appropriate block)*

Most frequent activity	Frequent activity	Less frequent activity	Least frequent activity
1	2	3	4

Using the definition of Municipal Health Services (MHS) as the basis

• Water Quality Monitoring	1	2	3	4	71
• Food Control	1	2	3	4	72
• Waste Management	1	2	3	4	73
• Health Surveillance of premises	1	2	3	4	74
• Surveillance and prevention of communicable diseases excluding immunizations	1	2	3	4	75
• Vector control	1	2	3	4	76
• Environmental pollution control	1	2	3	4	77
• Disposal of the dead	1	2	3	4	78
• Chemical safety	1	2	3	4	79

General Environmental Health Service functions

• <u>Projects</u> related to water and sanitation	1	2	3	4	80
• <u>Projects</u> related to food quality improvement	1	2	3	4	1
• Complaints	1	2	3	4	2
• Sampling (water and food)	1	2	3	4	3

• Awareness campaigns / education	1	2	3	4	4
• Attending meetings	1	2	3	4	5
• Other activities indirectly related to EH	1	2	3	4	6

If other, please specify: _____ 7-8
_____ 9-10

63. **What is the attitude of the producers with regard the services that your Council provides regarding milk quality control?** *(Mark appropriate block)*

Positive	(1)	11
Negative	(2)	
Concerned	(3)	
Does not matter	(4)	

If other, please specify: _____ 12-13

64. **Are you aware of the Hazardous Analysis Critical Control Point (HACCP) regulations – GNR. 908 of 27 June 2003, which are promulgated under section 15 of the Foodstuffs Cosmetics and Disinfectants Act (FCDA), 54 of 1972, page 4501 of FCDA regulations section?**

Am aware (1)	Am not aware (2)	14

65. **How many of the EHPs responsible for milk hygiene in your area of jurisdiction have received training on the HACCP system and the implementation thereof?** *(Irrespective their employing authority i.e. LM, DM, Metro or Provincially employed)* _____ 15-17

Don't know (1) 18

65.1 **When was the last HACCP training session conducted to your EHPs in your area of jurisdiction?**

Please indicate the date m m y y 19-22

Don't know (1) 23

65.2 **Did the HACCP training lead to any significant improvement in the monitoring, evaluation and control of milk hygiene in your DM / Metro area?**

Yes (1)	No (2)	Don't know (3)	24

66. **How do you normally conduct the monitoring and control of milk hygiene in your area of jurisdiction?** *(You can mark up to three choices to reflect on monitoring, visits and education)*

Take samples at the point of production and at outlets on ad hoc basis.	(1)	25
By implementing a predefined/worked out sampling programme (project based approach) at the point of production and outlets.	(2)	26
By walk-through visits (inspections) on ad hoc basis.	(3)	27

By walk-through visits (inspections) in accordance with a predefined / worked out plan.	(4)	28
By providing health and hygiene education (informal, whilst you are busy with walk-through evaluations at premises) on ad hoc basis.	(5)	29
By providing health and hygiene education in accordance with a predefined / worked out plan.	(6)	30
None of the above	(7)	31

If other, please specify: _____ 32-33
_____ 34-35
_____ 36-37

67. **Is it compulsory for a DM / Metro to do a section 78 assessment for Municipal Health Services in accordance with section 78 of the Local Government: Municipal Systems Act, 2000 (Act No. 32 of 2000)?**

Yes (1)	No (2)	Don't know (3)

38

67.1 **If yes above, has your DM / Metro <u>done or initiated a section 78 assessment</u> for Municipal Health Services in accordance with section 78 of the Local Government: Municipal Systems Act, 2000 (Act No. 32 of 2000).**

Section 78 assessment in planning stage	(1)
Section 78 assessment <50% completed	(2)
Section 78 assessment >50% completed	(3)
Section 78 assessment completed	(4)
Nothing has been done	(5)
Don't know	(6)

39

APPENDIX A2

Questionnaire Analysis: Summary of open questions

***For the questionnaire numbers under official use**, use point 3 – Question 5`s coding per DM & Metro*						
#	Question Number	Question detail				
1	Q-3	**Highest Qualification: Other, please specify:**				
		0	1	MM (HR)		
		0	2	BA		
2	Q-4	**Additional Tertiary Qualifications:**				
		0	1	IAC Diploma in Local Government: Administration		
		0	2	Project Management		
		0	3	Emerging Management Development Programme (SAMDI)		
		0	4	Municipal Management Development Programme		
		0	5	Management at Technikon SA		
		0	6	National Certificate: Water Pollution Control		
		0	7	National Certificate: Air Pollution Control		
		0	8	Primary Health Care Management		
		0	9	B.Admin		
		1	0	BA (Honours)		
		1	1	B.Tech Environmental Management		
		1	2	MBA (Masters in Business Administration)		
		1	3	National Certificate: Pest Control		
		1	4	District Management Certificate/Diploma		
		1	5	Transformation Leadership Certificate		
		1	6	Leadership Seminar Certificate		
		1	7	Certificate in Executive Development		
		1	8	Post Graduate Diploma in Health		
		1	9	Middle Management Certificate		
		2	0	Nat. Diploma in Public Management		
3	Q-5	**For which District Municipality (DM) or Metro Municipality (Metro) area are you reporting on?**				
		Code		**District Municipality & Metro Name**	**Province**	**Code**
	√	0	1	West Coast DM	Western Cape	WC
	√	0	2	Cape Winelands DM	Western Cape	WC
	√	0	3	Overberg DM	Western Cape	WC
	√	0	4	Eden DM	Western Cape	WC
	√	0	5	Central Karoo DM	Western Cape	WC
	√	0	6	Namakwa DM	Northern Cape	NC
	√	0	7	Pixley ka Seme (*Karoo*) DM	Northern Cape	NC
	√	0	8	Siyanda DM	Northern Cape	NC

	√	0	9	Frances Baard DM	Northern Cape	NC
	√	1	0	Cacadu DM	Eastern Cape	EC
	√	1	1	**Nelson Mandela Bay Metro**	Eastern Cape	EC
	√	1	2	Amatole DM	Eastern Cape	EC
	√	1	3	Chris Hani DM	Eastern Cape	EC
	√	1	4	Ukhahlamba DM	Eastern Cape	EC
	√	1	5	OR Tambo DM	Eastern Cape	EC
	√	1	6	Xhariep DM	Free State	FS
	X	1	7	Motheo DM	Free State	FS
	√	1	8	Lejweleputswa DM	Free State	FS
	√	1	9	Thabo Mofutsanyane DM	Free State	FS
	√	2	0	Fezile Dabi DM	Free State	FS
	√	2	1	Ugu DM	Kwa Zulu Natal	KZN
	√	2	2	u Mgungundlovu DM	Kwa Zulu Natal	KZN
	√	2	3	Uthukela DM	Kwa Zulu Natal	KZN
	√	2	4	Umzinyathi DM	Kwa Zulu Natal	KZN
	√	2	5	Amajuba DM	Kwa Zulu Natal	KZN
	√	2	6	Zululand DM	Kwa Zulu Natal	KZN
	X	2	7	Umkhanyakude DM	Kwa Zulu Natal	KZN
	√	2	8	uThungulu DM	Kwa Zulu Natal	KZN
	√	2	9	iLembe DM	Kwa Zulu Natal	KZN
	√	3	0	Gert Sibande DM	Mpumalanga	MP
	X	3	1	Nkangala DM	Mpumalanga	MP
	√	3	2	Ehlanzeni DM	Mpumalanga	MP
	X	3	3	Mopani DM	Limpopo	LP
	√	3	4	Vhembe DM	Limpopo	LP
	√	3	5	Capricon DM	Limpopo	LP
	√	3	6	Waterberg DM	Limpopo	LP
	X	3	7	Bojanala DM	North West	NW
	X	3	8	Central DM	North West	NW
	√	3	9	Bophirima DM	North West	NW
	√	4	0	Southern DM	North West	NW
	√	4	1	**Ekurhuleni Metro**	Gauteng	GA
	√	4	2	Sedibeng DM	Gauteng	GA
	√	4	3	Sisonke DM	Kwa Zulu Natal	KZN
	√	4	4	Alfred Nzo DM	Eastern Cape	EC
	√	4	5	**Joburg Metro**	Gauteng	GA
	√	4	6	**City of Tswane Metro**	Gauteng	GA
	√	4	7	Metsweding DM	Gauteng	GA
	√	4	8	West Rand DM	Gauteng	GA
	√	4	9	**eTekweni Metro (***Durban***)**	Kwa Zulu Natal	KZN
	√	5	0	Bohlobela DM	Limpopo	LP
	√	5	1	Sekhukhune DM	Mpumalanga	MP
	√	5	2	Kgalagadi DM	Northern Cape	NC
	√	5	3	**Uni-City of Cape Town Metro**	Western Cape	WC

4	Q- 7.1	**If no, please specify if you have an arrangement with regard to milk monitoring and control in your DM or Metro area of jurisdiction:**		
		0	1	Have a Food Control champion and pool of knowledge for the District as a whole that are also responsible for a geographical area.
		0	2	All EHPs in area are responsible
		0	3	Sub-District Manager in each LM coordinate the monitoring and control of milk hygiene in each geographic area.
		0	4	No arrangement
		0	5	Linked with DSA (Dairy Standards Agency) sampling programme
		0	6	Some LMs / Sub-districts have their own programmes / Ad hoc sampling runs & education
		0	7	Arrangement with Provincial EHPs and DSA for monitoring of milk
		0	8	PDoH – Food Control Inspector
5	Q- 8.1	**If no, please give details of your role or position:**		
		0	1	Coordinating sampling runs in area of jurisdiction
		0	2	Senior EHP at the LM
		0	3	Was acting Sectional Head till Sept. 2005
		0	4	Located at LM (Marble Hall)
		0	5	Senior EHP = Functional
		0	6	Regional Manager – Food Coordinator
		0	7	Chief Health Services at LM (Hibiscus Coast LM)
		0	8	Senior EHP at the DM/Metro
		0	9	Coordinate food control in Metro / District
		1	0	Deputy Manager EH
		1	1	Coordinate milk hygiene in Metro
		1	2	Responsible for DM area
		1	3	Junior EHP - DM
6	Q- 9	**If other, please specify:**		
		0	5	Manager: Health & Safety – (No EH Qualification)
		0	6	Director Health - DM
		0	7	Manager Health Services
		0	8	Deputy Manager MHS – DM
		0	9	Manager MHS – DM/Metro
		1	0	Acting Head – Disaster Management – (No EH Qualification)
		1	1	Divisional Manager Health and Environment
		1	2	Director: City Health Department Metro
		1	3	Manager MHS- Post vacant report to Director Administration
		1	4	Executive Manager
		1	5	Nobody appointed as yet
7.	Q- 9.3	**Please list the additional management qualifications:**		
		0	1	IAC Diploma in Local Government: Administration
		0	2	Project Management

		0	3	Municipal Management Development Programme: Certificate UBS
		0	4	Management & Finance – Technikon RSA
		0	5	Primary Health Care (PHC) Management Certificate
		0	6	Management Practice as Module – Masters Degree / B. Tech Degree
		0	7	MBA – Masters in Business Administration
		0	8	Certificate in Environmental Management Programme
		0	9	Certificate in Introduction to Local Government - Municipality
		1	0	Executive Development Certificate – University Stellenbosch
		1	1	Executive Leadership – University Pretoria
		1	2	Public Administration
		1	3	National Diploma in Public Management
		1	4	Certificate in Municipal Administration
		1	5	Public Health Leadership Certificate – Post graduate
		1	6	Middle Management Certificate
		1	7	Masters in Public Health (MPH)
		1	8	Business Management Degree
		1	9	Waste Supervisors Course
8.	Q- 11	**If other, please specify:**		
		0	1	Manager
		0	2	All LMs have own staff who is responsible for function
9.	Q- 23	**If other, please specify:**		
		0	1	Province
		0	2	Results send from Lab. to Local Service Area (LSA)
10.	Q- 34	**How do you follow up on registered milking parlours to ascertain that the Certificate of Acceptability stays relevant?**		
		0	1	Ad hoc visits based on complaints and requests
		0	2	Quarterly / Regular inspections / evaluations *(Compare Q66 results)*
		0	3	Routine inspections / evaluations *(Compare Q66 results)*
		0	4	Walk through visits / evaluations *(Compare Q66 results)*
		0	5	Sampling
		0	6	No routine inspections / evaluations
		0	7	PDoH / LM do visits / inspections / evaluations
See Q13- combined		0	8	Education / Awareness
		0	9	Milking parlours still under control of LM's (no records)
		1	0	Take swabs
		1	1	Producer must obtain introduction permit yearly
		1	2	Did nothing
		1	3	Communicate with Local Authority where milking parlour is situated
11.	Q- 38.2	**If YES at 38.1, please specify what kind of control**		
		0	1	Education
		0	2	Sampling

		0	3	Regular inspections
		0	4	Court cases/ Legal action
12.	Q- 39.2	**If YES, please specify**:		
		0	1	Routine inspections
		0	2	Area surveys / Surveillance of tuck shops
		0	3	Follow up of complaints
		0	4	Information from communities / Word of mouth
		0	5	Adverts in local newspapers
		0	6	Meetings with communities
		0	7	Backtrack from retailers *(trace back)*
	2nd part was part of 01	0	8	Wait for producers at distribution points / Investigations at selling points
		0	9	Sampling
13.	Q- 40.2	**If there is any authority (LM, DM / Metro) that have additional requirements please mention some of it:**		
		0	1	LM request that all suppliers in there area must be visited and sampled by the LM itself not only by the Local Authority where supplier / distributor is situated
		0	2	By-laws
		0	3	Pasteurised milk
		0	4	Requirements regarding Personnel/Structural/Transport
		0	5	Licensing of premises
14.	Q- 44	**How do you follow up on registered <u>milk distributors / outlets</u> to ascertain that the Certificate of Acceptability or Business License stays relevant?**		
		0	1	Ad hoc visits based on complaints and requests
	(DM 29)	0	2	Milk distributed in DM area is pasteurised & bottled outside and controlled by the relevant authorities e.g. DM and Metro
		0	3	Regular inspection / visits / surveillance
		0	4	Sampling / Swabbing
		0	5	No follow ups
		0	6	Checklist / Temperature control variation monitoring
		0	7	Distributors must renew licenses annually
		0	8	Health Education
		0	9	Lack of staff
		1	0	Certificate of Acceptability (COA) is a permanent issue
	Q- 50	**Idea is to determine if Metro / DMs are authorised and if things continues unchanged prior to demarcation and responsibility allocation.**		
		Maybe coding of question need to be as follows:		
		0	1	DM
		0	2	Metro
		0	3	LMs
		0	4	No authority authorised

15.	Q- 52.1	**What <u>control mechanisms</u> do the authorities, who allow the selling of raw milk, apply to ensure that the milk is "safe" for human consumption?**		
		0	1	Education / Awareness
		0	2	Ad hoc sampling and visits
		0	3	No raw milk distributed / No raw milk allowed within the district
		0	4	Routine / Regular inspections
		0	5	Regular sampling / Swabbing
		0	6	Don't know
		0	7	Nothing
		0	8	Labeling
		0	9	Certified TB & Brucellosis free
		1	0	Use by laws & regulations – not properly enforced because of capacity
		1	1	Enforce the availability of cold storage tanks
		1	2	Unofficially TB+BM free Certificate
		1	3	Legal action
16.	Q- 56.2	**If other, please specify:**		
		0	1	DSA (Dairy Standards Agency) project
		0	2	Metro consist of 37 previous Local Authorities – Results showed higher % compliance – Continued with Monitoring/Sampling & Action as routine
		0	3	Does it on a regular basis
17.	Q- 58	**If other, please specify:**		
		0	1	Not registered with Dairy Standards Agency (DSA)
		0	2	Samples were never collected from DM
		0	3	Some LMs within DM participated in project
		0	4	Never saw them in area
18.	Q- 59	**PLEASE ELABORATE ON YOUR ANSWER, IRRESPECTIVE OF YOUR CHOICE ABOVE**:		
		0	1	No fixed programme for routine investigations and sampling
		0	2	No standardised approach or system to capture visits & sampling results
		0	3	To many other activities
		0	4	No indicators and coordination from higher levels (Prov. and National)
		0	5	Routine inspections – monitor cold chain
	DM 03	0	6	**Milk safety part of IDP project (Project based approach)**
		0	7	Shortage of staff
		0	8	Shortage of resources
		0	9	Sampling results shows it
		1	0	No database in place – Milking parlours & Distributors
		1	1	LM`s, PDoH and DM continues each with their own control and DSA / to many authorities sampling
		1	2	Regular sampling
		1	3	Laboratories not accessible
		1	4	Delay in laboratory results

		1	5	Extend of areas of jurisdiction to big
		1	6	Monitoring and control need attention
		1	7	New function at DM, took over staff etc. from LM – in progress
		1	8	Milk control specialised function – EHPs shows little interest in milk hygiene / EHPs do not have practical experience
		1	9	Sampling done according to formal milk sampling programme
		2	0	Lack of knowledge and experience
		2	1	Not effective control
		2	2	Low morale of EHPs because of devolution of MHS *(Dragging of process & lack of clarity)*
		2	3	Systems based on re-active approach and not preventative
Original paper- was 23		2	4	Lack of Finance and no management of Budgets
		2	5	Need dedicated EHPs who focus on milk to maintain focus
		2	6	No dairies in area of jurisdiction
		2	7	Own laboratory
19.	Q- 61.1	**If no, please give your reasons why not?**		
		0	1	Not enough of EHPs
		0	2	Lack of supervisory structures (very flat organisational structures)
		0	3	Lack of basic equipment
		0	4	Lack of suitable and dedicated transport
		0	5	Lack of data capturing systems to determine problem areas
		0	6	Lack of specialised laboratories in close proximity- long distances / Accessibility
		0	7	EHPs not practical experience
		0	8	Lack of finances
		0	9	Effective use of resources are questionable
		1	0	Milk needs to be done by specialists / dedicate staff – do not have the luxury
		1	1	Laboratories without dedicated personnel
		1	2	Implementation necessary
		1	3	Monitoring done by to many authorities
		1	4	EHS to much focus on unrelated issues / To many functions *(Compare Q62)*
		1	5	Not effective control
		1	6	Milk hygiene not a priority
		1	7	Lack of integration of services
		1	8	Insufficient sampling
20.	Q- 62	**If other, please specify:**		
		0	1	PSNP – Primary School Nutrition Programme
		0	2	Attending Courses / Training
		0	3	Environmental Management activities
		0	4	Attend to community complaints / workshops
		0	5	Attend to animals and overgrown properties

		0	6	Community development
		0	7	Integrated pollution control
		0	8	Other issues: Intersectoral Collaboration / Policy setting
		0	9	Tourism & Disaster Management
21.	Q- 63	**If other, please specify:**		
		0	1	Don't know
		0	2	Not working for council / Not in service of DM Council
		0	3	Not applicable – don't have any milking parlours in area of jurisdiction
22.	Q- 66	**If other, please specify:**		
		0	1	Take samples of bottled milk
		0	2	New registration
		0	3	Follow up after sampling
		0	4	Court cases
		0	5	Complaints
		0	6	Don't know
STATS REGARDING QUESTIONNAIRES RECEIVED:				
	26/01/06	52	24	46.2%
	13/02/06	52	30	57.7%
	14/02/06	52	36	69.2%
	18/02/06	52	44	84.6%
	21/02/06	52	45	86.5%
	22/02/06	52	48	92.3%

APPENDIX B1

Mr. M.H.A. Agenbag
Private Bag X102
Barkly East
9786

13 April 2005

Attention: Dr. T. van de Venter

The Director
National Directorate: Food Control
National Department of Health
Private Bag X828
PRETORIA
0001

Dear Sir

RE: SUPPORT FOR MAGISTER TECHNOLOGIAE: ENVIRONMENTAL HEALTH- "AN ASSESSMENT OF MILK HYGIENE, ITS MANAGEMENT AND CONTROL BY ENVIRONMENTAL HEALTH SERVICES IN SOUTH AFRICA"

I am using this opportunity to seek the blessing and support from the National Department of Health, Directorate: Food Control for my master's study in Environmental Health. Below is the background and the motivation why I decided to do a study in this regard.

I am registered at the Central University of Technology, Freestate (Former Freestate Technikon) (registration number 9736360) since 2004 for my Masters in Environmental Health. The aim of my study is to do "**AN ASSESSMENT OF MILK HYGIENE, ITS MANAGEMENT AND CONTROL BY ENVIRONMENTAL HEALTH SERVICES IN SOUTH AFRICA"**.

The reason why I am interested in it is because Environmental health services are mainly concerned with the hygiene monitoring and control of foodstuffs to ensure that it does not pose a health risk to the consumer. Nevertheless, if one looks at the milk hygiene quality in South Africa based on the survey that was done by the Department of Health (1995) to determine the hygiene of fresh milk offered for sale to consumers in SA, it may be seen that only 25% of all the milk samples (918 samples, pasteurised and unpasteurised) complied with the relevant national standards. In another study done in the Pretoria area, it was established that 87% of the 135 milk samples from selected "milk-shops" were not fit for human consumption, with 38.5% of these indicating probable inadequate pasteurisation (O'Ferrall-Berndt, 2003). A study in the Free State (1998) revealed that pasteurised and raw milk of poor bacteriological quality is sold to the public (Greyling, 1998). A survey during 1996 in the former Drakensberg District Council area revealed that only 9% of milk at the point of production on the farm (from the bulk tanks) complied with the legislative requirements (Agenbag, 1997; 2004).

In Pretoria it was found that milk shops had increased from none in January 1996 to over 55 in January 2000. The sampling of the "milk shops" by EHPs in the mentioned city was reduced from 3 times a week in 1997 to once a week in 2000, due to budgetary constraints (O'Ferrall-Berndt, 2003). There are however certain individual local authorities that have their own initiatives to improve the milk quality in their respective areas, but this is more often the exception than the rule. Some Metro municipalities have their own milk units and monitor milk on regular basis, while some smaller municipalities have initiated individual educational and milk monitoring programmes to measure and improve the milk quality within their areas (Agenbag, 2004; 1997; Mienie, 1999). These are unfortunately ad hoc initiatives and are normally dependant on the individual who is driving the programme. The studies done in Johannesburg and Pretoria have highlighted the fact that there is now less control by municipalities because of a lack of sufficient staff and budgets (O'Ferrall-Berndt, 2003; National Agricultural Marketing Council, 2001; Greathead, 1991).

In accordance with the latest legislative developments in SA, EHS are now defined as Municipal Health Services (MHS) in the latest National Health Act, 2003 (South Africa, National Health Act, 2003). According to the Municipal Structures Act, 1998 (South Africa, Local Government: Municipal Structures Act, 1998) section 84(1)(i) and a MINMEC decision of 21 August 2001 it is the responsibility of District Municipalities and Metros to render MHS.

Municipal Health Services (MHS) are now defined as including a list of EHS activities namely:

- Water quality monitoring
- ***Food control***
- Waste management
- Health surveillance of premises
- Surveillance and prevention of communicable diseases excluding immunisations
- Vector control
- Environmental pollution control
- Disposal of the dead
- Chemical safety

Milk hygiene quality monitoring is part of ***food control*** and is therefore mainly the responsibility of municipalities where EHS/MHS will be fully responsible for the monitoring and control thereof from a hygiene quality perspective. There is however an informal public private partnership between the National Department of Health, Municipalities and the National Dairy Standard Agency (section 21 company from the Milk Producers Organisation) for the monitoring of milk on an ongoing basis.

PROBLEM STATEMENT

Milk production in South Africa has followed the same trends as in other parts of the world where producers get less but the production volumes increase (Coetzee, 2004; Ruegg, 2004; Greathead, 1991; Herman 1984). Nevertheless with deregulation after 1994, more smaller producers supply milk directly to the communities through bulk tanks (Gitten, 1996; Greathead, 1991). This milk is generally not of good quality because only volume is important and there are no penalties for poor quality (O'Farrell, 2003; Greathead, 1991). The milk quality in South Africa is a matter of concern, as has been shown by studies that have been done thus far (South

Africa, 1995; O'Ferrall-Berndt, 2003; Jansen, 2003; Greyling, 1998; Agenbag, 1997; Jooste, 1993; Burri, 1993; Greathead, 1991; Davel, 1932). The concerns about the milk quality in South Africa were echoed by the National Agricultural Marketing Council (NAMC) in their report on the "Investigation into the effects of deregulation on the dairy industry" (2001). Personal experience, discussions with colleagues and investigations of other studies have indicated that for various reasons there is no proper control over milk hygiene quality by EHS in their respective areas of jurisdiction (O`Ferral-Berndt, 2003; Payne, 2003; National Agricultural Marketing Council, 2001; Winterbach, 1992; Gitten, 1996; Greathead, 1991; Coetsee, 2001; Herman, 1984). A study with regard to the quality and control of milk from small scale farmers on the Monyakeng municipal commonage highlights the fact that the milk quality from informal sources is also very bad and that a proportion of the milk gets sold to the public as fresh milk (Jansen, 2003). The latter was confirmed by the study that was done by the Department of Health during 1995. The study in the Monyakeng area (2003) further highlighted the fact that there is no control by EHS in the informal milk sector.

Consumers are entitled to expect that the foods they purchase and consume will not harm them. (Rural Ni, 2001; Brown, 2000; Gitten, 1996). The public has little or no understanding of antibiotic use or mastitis problems in dairy production. Therefore an obligation is placed on the milk-producing sector and the authorities who control the quality of milk. It is important that there should be no cause for the consumer public to become concerned over these issues (Brown, 2000). High hygienic standards are essential to support and protect the status of milk for consumers. This also has a direct effect on the economy of the country. International studies proved that children in district schools who receive off-flavoured products consume up to 30% less milk than children in the same district who regularly receive good tasting milk (Boor, 2003)

All national and international food quality control legislation is basically aimed at ensuring that food for sale should not be unfit or unsafe for human consumption (South Africa. Department of Health, [s.a.]; Hong Kong, [s.a.]). A poor quality of milk affects everybody, including all the milk farmers (Coetsee, 2001). Milk hygiene includes all the necessary measures to guarantee food which is clean, safe, sound and wholesome (Teufel,[s.a.]). Milk is perceived as wholesome and it is used to feed newborns, infants and young children. High risk people who may be particularly susceptible to infections include immune-compromised people whose immune systems are affected by diseases or because of treatment with certain drugs. These would include pregnant women, transplant recipients, AIDS and cancer patients, very young infants, steroid users and patients with chronic renal diseases. South Africa has a high prevalence of HIV-positive people and milk of a poor quality should pose a risk to their health. There is however a statutory obligation as well as an expectation on the part of the consumers on local authorities to control the quality of the milk that gets distributed to the public in their respective areas of jurisdiction (O`Ferral-Berndt, 2003; Greathead, 1991; Pienaar, 1987; South Africa. Foodstuffs, Cosmetics and Disinfectants Act, 1972).

The ability of municipalities to control the milk quality in the country is questionable when one considers the study that was done by the Human Sciences Research Council during 2002 in the Northern Cape. They established that the rendering of health services in the Karoo area is unco-ordinated as there is staff from the Provincial Department of Health, the District Municipality and the Local Municipalities working in the same area. The study suggests that EHPs at local municipal level perform many other jobs that are unrelated to a typical Environmental Health

(EH) job description. More often than not their EHP job description tasks are neglected and often only performed when there are public complaints about certain shops, factories, etc. For example in the past few years the EHPs have been acting as heads of administration, human resources, technical services / public works and finance departments while they are appointed as the only EHP`s in their respective areas to perform EHP tasks (when they can). (Atkinson & Akharwaray, 2002; Mathee, et al, 1999).

An informal survey done during 1996 in the former region B of the Eastern Cape revealed that there was no standardised approach in the rendering of core EH activities. For example one of the municipalities had its own laboratory and sampled water and milk on a weekly basis, whereas others sampled monthly, others on an ad hoc basis and some did not take a single sample for the year under review. (Eastern Cape Department of Health, 1996).

Presently EHS relies mainly on visual inspections with sampling on an ad hoc basis: this is not interrelated and therefore cannot "tell a story". Sometimes health and hygiene education are given to workers but its effectiveness is not monitored. Studies have been performed in the United Kingdom to assess the effectiveness of such interventions in comparison with microbiological assessment. The results in these cases showed that, unless the inspection included specific measurements i.e. temperature of storage of food and complex standardised procedures, it would be ineffective in assessing the microbiological sterility of the food (Powel & Attwell, 1995; Tebbutt, 1991; Tebbutt & Southwell, 1989). Currently EHPs are performing their inspections in a very simple and unstandardised way. Therefore arbitrary decisions are taken based on such inspections.

With the above in mind and the fact that Local Authorities were exposed in the past and currently still are for not properly controlling milk hygiene within its areas of jurisdiction we have decided to focus my studies accordingly to establish the situation on the ground in order to suggest solutions to the situation. Therefore we would like to inquire from the Directorate: Food Control if they will be interested to give their blessing and support to this study.

We hope that your directorate will favourably consider the support of this study.

We look forward for your reply.

Yours faithfully

MHA Agenbag
HI 0031127
MHA/mha

APPENDIX B2

DEPARTMENT OF HEALTH
DEPARTEMENT VAN GESONDHEID
Private Bag X828
Pretoria, 0001
Republic of South Africa

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LEFAPHA LA MAPHELO
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Faks/Fax : (012) 3123162
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Navrae/Enquiry : Dr T van de Venter
Verw/Reference : 5/3/7/3/6

Mr MHA Agenbag
Private Bag X102
BARKLY EAST
9786

Dear Mr Agenbag

SUPPORT FOR MAGISTER TECHNOLOGIAE: ENVIRONMENTAL HEALTH – "AN ASSESSMENT OF MILK HYGIENE, ITS MANAGEMENT AND CONTROL BY ENVIRONMENTAL HEALTH SERVICES IN SOUTH AFRICA"

Thank you for your letter dated 13 April 2005.

As mentioned in your letter, the safety of milk continues to be a problem that threatens the health of all the consumers in this country. In this regard it is important to take into account that infants and children often consume substantial amounts of milk.

Although much attention has been given to this matter over recent years, the problem largely remains unresolved. It also appears that law enforcement by some local authorities is not of the required standard, with the current process of transformation and its accompanying uncertainties to some extent contributing to the situation.

The Department of Health has no hesitation in indicating its support for the intended masters study. It is trusted that the study will result in practical recommendations on measures that can be taken by local authorities and other stakeholders to improve the situation and to ensure a supply of safe milk to all the people of the country.

The Department of Health cannot offer financial assistance, but if within its means, will endeavour to support the study where such other assistance is requested.

Regards

DIRECTOR-GENERAL
DATE: 2005/04/14

APPENDIX B3

06/29 '05 12:30 NO.164 01/01

UKHAHLAMBA DISTRICT MUNICIPALITY
29 JUN 2005
UKHAHLAMBA DISTRIK MUNISIPALITEIT

UKHAHLAMBA DISTRICT MUNICIPALITY
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PROFESSIONAL BOARD FOR ENVIRONMENTAL HEALTH PRACTITIONERS

Mr M Agenbag
Environmental Health Manager
Ukhahlamba District Municipality
P/ Bag X102
Barkly East
9786

Department: PROFESSIONAL BOARDS
SENIOR MANAGER: MR J H COETZER
Manager: R M MSIBI
My Ref: 25/4/6

28 June 2005

Dear Mr Agenbag

REQUEST FOR SUPPORT AND FUNDING FOR RESEARCH: "AN ASSESSMENT OF MILK HYGIENE, ITS MANAGEMENT AND CONTROL BY ENVIRONMENTAL HEALTH SERVICES IN SOUTH AFRICA"

The Professional Board for Environmental Health Practitioners at its last meeting noted your request for support and funding for research on the topic above.

The Professional Board resolved that you be informed that the Board is in full support of the research. Further, the Professional Board is considering your request for funding and you will be informed of the outcome in due course.

Yours sincerely

MR RM MSIBI
MANAGER: PROFESSIONAL BOARD

FAX TO: Mr M Agenbag
COMPANY: PAGE: 1 OF: 1
FAX NO: (045) 979 2226 DATE: 28 June 2005
FROM: Colleen
COMPANY: HPCSA PHONE NO: (012) 338 9404
FAX NO: FAX PAD 7551

APPENDIX B4

SAIEH

South African Institute of Environmental Health

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Tel: 011 861 2269
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Cell: 082 454 7090

17 June 2004

Mr M.H.A Agenbag
Private Bag X 102
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9786

Dear Sir

SUPPORT FOR MASTER OF TECHNOLOGY: ENVIRONMENTAL HEALTH DISSERTATION 'AN ASSESSMENT OF MILK HYGIENE, ITS MANAGEMENT AND CONTROL BY ENVIRONMENTAL HEALTH SERVICES IN SOUTH AFRICA

The South African Institute of Environmental Health hereby give support for your Masters Degree study in Environmental Health and in particular, for your research project on the assessment of milk hygiene, its management and control by Environmental Health Services in South Africa. The study will certainly benefit the profession in dealing with day to day problems related to milk hygiene from the point of production to the point of exposure for sale to the public.

This letter of support may not be used for any other purpose other than the purpose for which it is intended.

Wishing you the best in your endeavour to finding new information that will be beneficial for the profession.

Yours Faithfully,

J.S Chaka
President : SAIEH

APPENDIX C

Informal milk production on a smallholding

The researcher came across an informal (unregistered/unauthorised/illegal) milk producer on a smallholding outside a relatively large town, where the informal (unregistered/unauthorised/illegal) milk producer yields approximately 105 litres of milk per day (±45 litres of milk in the evening and 60 litres in the morning) from 12 cows. The informal milk producer runs a road stall where people buy milk in 2-litre plastic cooldrink containers. Some people collect between 20-30 litres of milk per day to raise calves, while others purchase approximately 45 litres twice a week to resell to other consumers. According to the manager they have been running this business for the past two years without being registered by the relevant district municipality. (*Researcher visited the location on 31 January 2007*.)

Figure 4.3: Unregistered milking shed in a structure that does not comply with the minimum statutory requirements in accordance with regulation 1256 of 27 June 1986, where milk is produced for human consumption as described above and sold at their roadside stall as depicted in Figure 4.4.

Figure 4.4: Roadside stall on the smallholding as described above, where milk is sold for human consumption to the public in 2-liter plastic cooldrink containers. The milk that is sold here originated from the above unregistered milking shed as depicted in Figure 4.3.