Investigating the need for regulation of the South African Environmental Control Officer industry

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Abstract

Currently the entire South African industry of Environmental Control Officers (ECOs) is unregulated, yet ECOs have the important task of checking and verifying compliance to environmental regulatory and performance requirements. According to international best practice principles for Environmental Impact Assessment (EIA), the process should be made credible through independent checks and verification (IAIA, 1999:3). According to the Environmental Impact Assessment Management Strategy Subtheme 5, quality assurance can only be attained when practitioners fulfil competence and ethical practice criteria. In this document the South African Department of Environmental Affairs (SADEA) also noted that there is currently no home for ECOs, yet this is where effective monitoring and enforcement could significantly improve environmental outcomes. The central objective of this dissertation was to investigate the need for regulation of the South African ECO industry.

Data obtained from the questionnaires indicated that 100% of respondents were in agreement that there is a need for regulation of the South African ECO industry. One of the key motivational factors identified by respondents was quality assurance, which is important, as the environmental legislative regime changes constantly. Various other factors were identified other than quality assurance and were labelled “drivers”. These include establishment of minimum standards in respect of qualifications and/or experience (core competencies), establishment of a professional code of conduct and ethics that enhances accountability and professionalism, skills improvement through continual professional development (CPD), enhancement of credibility, independence of practitioners, enhancement of skills for capacity building, protection of clients against substandard work and overall lack of professionalism, and finally creation of a source of information support and interaction. It was important to determine what drives the regulation of an industry, in order to establish whether the South African ECO industry has similar drivers justifying regulation.

The establishment of qualification and competency requirements was an important objective of this research, as a set of these requirements is an essential toolkit for operating ECOs and key stakeholders of the industry. Various registration and competence requirements for ECOs were identified from the literature review and responses to the questionnaires and interviews.

With this research the author also intended to establish which current accreditation bodies could be considered for registration of ECOs and regulation of the South African ECO industry. The dissertation concludes by emphasising the importance of regulating

the South African ECO industry, as this will ensure that compliance monitoring takes place effectively.

Key words: ECO, compliance monitoring, regulation, motivational drivers, competence requirements, registration requirements, accreditation body.

Opsomming

Tans is die hele Suid-Afrikaanse Omgewings Beheer Beampte bedryf (OBB) ongereguleerd, al het OBBs die belangrike taak om nakoming van omgewingsregulasies en prestasievereistes te verifieer. Volgens internasionale beginsels van beste praktyk vir Omgewingsimpak Studies (OIS), moet die proses kredietwaardig gemaak word deur onafhanklike monitering en bevestiging (IAIA, 1999:3). Volgens die Omgewingsimpak Studie Bestuur Strategie Subtema 5, kan kwaliteitversekering slegs behaal word indien beamptes bevoegtheids en etiese praktyk vereistes vervul. In die dokument bevestig die Departement van Omgewingssake dat daar tans geen tuiste is vir OBBs nie, al is dit die arena waar effektiewe monitering en toepassing ‘n noemenswaardige verskil kan maak aan omgewingsuitkomste. Die doelwit van hierdie navorsing was om te bepaal of daar ‘n behoefte is vir regulering van die Suid-Afrikaanse OBB bedryf.

Data wat verkry is deur die vraelys het daarop gedui dat 100% van die respondente regulering van die Suid Afrikaanse OBB bedryf ondersteun. Een van die sleutel motiverings faktore was kwaliteitsversekering, wat belangrik is, aangesien omgewings wetgewing konstant verander. Heelwat ander faktore is uitgelig bo en behalwe kwaliteits versekering en is as sogenaamde “drywers” uitgewys. Hierdie dryfvere sluit in, ontwikkeling van minimum standaarde in terme van kwalifikasie en/of ondervinding (kernvaardighede), vestiging van ‘n professionele gedragskode en etiek wat verantwoordbaarheid en professionaliteit bevorder, ontwikkeling van vaardighede deur konstante professionele ontwikkeling, verbetering van kredietwaardigheid, onafhanklikheid van beamptes, bevordering van vaardighede vir kapasiteits ontwikkeling, beskerming van kliente teen werk wat sub-standaard is en algehele gebrek aan professionaliteit en laastens die skep van ‘n inligtingsbron wat ondersteuning en interaksie bied. Dit was belangrik om vas te stel watter dryfvere die regulering van ‘n bedryf ondersteun, om sodoende te bepaal of die Suid Afrikaanse OBB bedryf soortgelyke dryfvere het.

Die vasstelling van kwalifikasie en bevoegtheidsvereistes was ‘n belangrike doelwit van die navorsing, aangesien so ‘n stel vereistes ‘n noodsaaklike hulpbron is vir operasionele OBBs en sleutel rolspelers in die bedryf. Verskeie registrasie en bevoegtheidsvereistes is uitgelig deur die literatuur studie, asook terugvoer ontvang vanaf respondente. Met die navorsing het die skrywer ook gepoog om vas te stel watter huidige reguleringsliggame oorweeg kan word vir registrasie van OBBs en regulering van die Suid-Afrikaanse OBB bedryf. Die skripsie sluit af deur die noodsaaklikheid van regulering van die Suid-

Afrikaanse OBB bedryf te beklemtoon, aangesien dit die effektiwiteit van nakomingsmonitering waarskynlik sal verhoog.

Sluetel woorde: OBB, nakomingsmonitering, regulering, motiversingsdrywers, vaardigheidsvereistes, registrasievereistes, reguleringsliggaam.

Preface

Acknowledgements

To begin with the author wishes to thank his wife and two daughters for their patience and support throughout the past year, for without that finalisation of this dissertation would not have been possible. The author would also like to thank Jan-Albert Wessels for his continued support and guidance throughout writing up of this dissertation and the Centre for Environmental Management for their time provided during the ECO short course for completion of questionnaires by delegates attending. The author would also like to thank all the respondents who took part in completion of questionnaires sent out, as well as interviews conducted, as their inputs formed an integral part of the outcome of this research. Finally the author would like to thank his heavenly Father for the strength, insight and patience provided, in order to complete this task successfully.

List of Abbreviations and Acronyms

CEM	Centre for Environmental Management
CPD	Continual Professional Development
DWA	Department of Water Affairs
EA	Environmental Assessment
EAP	Environmental Assessment Practitioner
EAPASA	Environmental Assessment Practitioners Association of South Africa
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EIAMS	Environmental Impact Assessment Management Strategy
EM	Environmental Manager
EMP	Environmental Management Plan
EMS	Environmental Management System
ESSP	Environment Sector Skills Plan
IAIA	International Association for Impact Assessment
IAIAsa	International Association for Impact Assessment South Africa
IAP	Interested and Affected Party
IEC	Independent Environmental Checker
NCC	Nature Conservation Corporation
NEMA	National Environmental Management Act
SAATCA	South African Auditor Training and Certification Association
SACNASP	South African Council for Natural Scientific Professions
SADEA	South African Department of Environmental Affairs
SAICA	South African Institute of Chartered Accountants
SAIE&ES	Southern African Institute of Ecologists and Environmental Scientists

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Chapter 1: Introduction

Globally, Environmental Impact Assessments (EIAs) enjoy much more attention than the EIA follow-up process (Hulett & Diab, 2002:298), which implies that emphasis is placed on the prediction of impacts rather than concentrating on the actual environmental performance (Arts, Caldwell & Morrison-Saunders, 2001:178). Morrison-Saunders & Arts (2004:1) define EIA follow-up as the monitoring and evaluation of the impacts of a project of a project or plan (that has been subject to EIA) for management of, and communication about, the environmental performance of that project or plan (Arts *et al,* 2001:177). The EIA follow-up process entails four basic principles: monitoring, evaluation, management and communication (Arts *et al,* 2001). The various benefits associated with EIA follow-up are enhanced project management, feedback on EIA and tracking of environmental performance (Morrison-Saunders, Baker & Arts, 2003:44).

According to a report compiled by the Economic Commission for Africa (2005:47), implementation and follow-up of Environmental Management Plans (EMPs) are neglected in many African countries, although these have been made a legal requirement. Nationally, as well as internationally, a need exists for more consistent application of EIA follow-up, in order to ensure legal compliance (Morrison-Saunders & Arts, 2005:173), however Marshall *et al.* (2005:175) note that only recently there has there been an upsurge in interest in EIA follow-up internationally. Without follow-up, an EIA may be little more than a paper-based exercise undertaken to obtain project approval (Morrison-Saunders *et al.*, 2001:294), thus compromising sustainable development. During a presentation at an annual IAIA meeting Barker *et al*. (2000) stated that many developers do not yet understand the importance of EIA follow-up, this because they still perceive the process as merely a legal barrier.

According to international best practice for EIA follow-up, the process should be credible and as a result should be subject to independent checks and verification (IAIA, 1999:3); however, a recent article by Wessels & Morrison-Saunders (2011:1), states that currently an entire unregulated industry of Environmental Control Officers (ECOs) is operating in South Africa. Marshall *et al.* (2005:180) state that the development of formal procedures for EIA follow-up, as well as the development of guidelines that promote EIA follow-up, are necessary for enhancement of the follow-up process. Morrison-Saunders *et al*. (2004:1) also state that there is an increasing regulatory requirement for EIA follow-up around the world. However, what is important to establish is what drivers motivate the need behind this regulatory requirement.

In an IAIA branch committee meeting held in KwaZulu-Natal on 7 June 2012, it was mentioned that the ECO industry in South Africa is not regulated in accordance with the National Environmental Management Act, Act 107 of 1998 (NEMA) and the industry emerged as a result of authorities including the appointment of ECOs as a condition of environmental authorisations. In the meeting the important role to be played by ECOs within the post-authorisation phase in the future was emphasised. Delegates who attended the meeting were in agreement that a set of minimum standards and qualification requirements are needed for South African ECOs, which can only be accomplished via the establishment of an independent regulatory body. It was also argued that such a regulatory body will provide ECOs with the power needed to perform effective compliance monitoring (IAIAsa KwaZulu-Natal Branch, 2012).

As part of establishing the need for regulation of the South African ECO industry, it is important to define what the specific qualification, competency and skill requirements are in order to operate as an ECO. When considering the competency requirements necessary for operating as an ECO, it is important to distinguish between an Environmental Assessment Practitioner or an "EAP" and an ECO, as their core functions differ. According to the National Environmental Management Act (NEMA), an EAP can be defined as:

> "*the individual responsible for planning, management and co-ordination of environmental impact assessments, strategic environmental assessments, environmental management plans or any other appropriate environmental instrument introduced through regulations".*

Wessels & Morrison-Saunders (2011:26-27) define an independent ECO as:

> *"an independent competent person or body in a position to influence people's behaviour during the construction phase of a project, with selected environmental monitoring instruments, in order to assure and at times to ensure, record and communicate compliance to applicable environmental conditions and performance specifications."*

Each of the phases (planning and implementation) mentioned in the definitions calls for specific competency requirements and skills necessary for successful completion of that phase. The draft constitution of the Environmental Assessment Practitioners Association of South Africa (EAPASA) (SADEA, 2010b:36-37), includes a list of criteria or competency requirements needed for registering as an EAP. The current research investigated the core competency, skills and qualification requirements for operating as

an ECO, which will hopefully provide the main stakeholders in the industry with guidance regarding these requirements.

As the South African ECO industry is currently not regulated, no accreditation body is specifically tasked with regulating ECOs. Although operating ECOs register with different accreditation bodies, not one of these bodies was established for the regulation of ECOs. The current research was undertaken partly to establish which accreditation body is most suited for regulation of the South African ECO industry, as well as the registration requirements.

1.1 Problem statement

Wessels & Morrison-Saunders (2011:4) cite case studies undertaken by Ross (2003) and Au & Hui (2004), which shows that, internationally, provisions are made for independent EMP checkers to monitor implementation of mitigation measures and compliance to conditions required in environmental authorisations. In Canada, for example, regulators normally impose substantial follow-up requirements as a condition of environmental approval (Ross, 2003:5). In South Africa developers are at times legally required by permit conditions to appoint independent checkers (enforcement surrogates) in the form of ECOs. However, this is not always the case, as environmental authorisations do not consistently include conditions that stipulate the appointment of an ECO. Currently South African ECOs' mandate is included in regulation 37 (1) of the Environmental Impact Assessment Regulations, which states that "an authorisation must specify – (d) the conditions subject to which the activity may be undertaken including conditions determining – (ii) requirements for the management, monitoring and reporting of impacts of the activity throughout the life cycle" (Wessels & Morrison-Saunders, 2011). Although the mandate for ECOs is included in NEMA, the industry is not regulated by an external regulating body, as is currently applicable for EAPs.

1.2 Research aim and sub-questions

The research aim and research questions are detailed in the sections below.

1.2.1 Research aim

The following was the main research aim: is there a need for regulation of the South African ECO industry?

1.2.2 Research questions

The following research questions were addressed in order to provide more insight into the main research aim:

1) What are the drivers behind regulation of the South African ECO industry?
2) What are the qualification and competence requirements for ECOs that should be considered for registration?
3) What are the registration options for ECOs with regard to regulating bodies?

The dissertation is presented in five chapters, each of which deals with a specific part of the study, with the aim of answering the research questions. The following serves as a summary of the chapter division:

- Chapter 1 provides the background to and context of the topic, and the need for and logic behind the research. The aim and research questions are also set out in this chapter.
- Chapter 2 elaborates on the methodology used to address the aim and research questions. A list of the data sources used in the research is supplied in this chapter as is a summary of the questions included in the questionnaire and the interviews conducted. This chapter concludes with the limitations of the research.
- Chapter 3 presents the literature review conducted as part of this research. The chapter begins by describing the status of the South African ECO industry, and then presents international and national case studies where drivers behind regulation are identified and used to identify the drivers behind regulation of the ECO industry. The chapter also looks at the qualification, competency and skill requirements for an ECO. The chapter concludes with an evaluation of the accreditation bodies available to ECOs for registration.
- Chapter 4 presents the results and discussion of the research data acquired through the questionnaires distributed and interviews conducted.
- Chapter 5 summarises the outcome of the research and provides a final conclusion and reflection of the research.

Chapter 2: Research Methodology

This chapter examines the methodology used to address the research aim. The research questions posed were answered by analysing the data obtained through various data-collection methods. In this chapter the research strategy and approach are unpacked and the methods used to collect data are elaborated on.

2.1 Research strategy and approach

An inductive mixed research strategy and approach was followed, which included both quantitative and qualitative research methods. The reason for adopting a mixed research approach was the view advocated by Creswell (2003:22) and held globally, that quantitative and qualitative research should speak to one another. According to Leedy & Ormrod (2010:34), application of the scientific method typically involves both deductive logic and inductive reasoning. Leedy & Ormrod (2010:33) state that inductive (qualitative) research is initiated without an assumption or hypothesis, but instead with an observation, whereas deductive (quantitative) research entails the development of a hypothesis from theory (Leedy & Ormrod, 2010:34).

The mixed research approach was supported by a literature review regarding the drivers behind regulation of the South African EAP industry and the drivers behind regulation of South African tax practitioners. It was necessary to investigate drivers associated with regulation of South African tax practitioners in order to identify universal drivers behind regulation of different industries. Literature pertaining to the competence and qualification requirements for EAPs also formed part of the literature review. The literature review was conducted according to the methodology provided by Hart (1998:13) and Ridley (2012:3).

Qualitative data were obtained through interviews conducted with key stakeholders in the South African ECO industry. The interviews were designed and structured as stipulated by Kvale (1996:17) and Leedy & Ormrod (2010:182). Interviews were used as one of the data collection methods, as they were relatively flexible and a quick method of obtaining data. Questionnaires formed an integral part of the data collection and were developed as stipulated by Kothari (2004:100). They were distributed to operating ECOs across South Africa. The questionnaires included both qualitative and quantitative questions and were specifically used as a data collection method because of the benefits they provide as stated by Kothari (2004:100-101). Questionnaires were decided on as a data collection method, due to their impartiality, as respondents could answer the questions in their own words; due to their suitability for reaching the respondents in the

wide geographical area in which they were located; and due to the ample time provided to respondents by a questionnaire, which resulted in well thought out answers. Table 1 serves as a schematic reflection of the research questions asked, the data collection methods used to obtain data and the aim of each research question.

Table 1 Schematic representation of the research questions and the data collection methods used to obtain data

Research question	Data collection method/strategy used	Objective
1) What are the drivers behind regulation of the South African ECO industry?	Review of EAPASA's draft constitution (DEA, 2010b) and Swanepoel's (2006) dissertation on regulation of South African tax practitioners.	To identify the drivers behind regulation of the South African EAP industry and South African tax practitioners, in order to establish their relevance to the South African ECO industry.
2) What are the qualification and competence requirements for ECOs that should be considered for registration/regulation?	Questionnaires distributed to operating ECOs, interviews conducted with key stakeholders and a literature review of competence requirements.	To establish a set of minimum registration and competence requirements that must be met in order for ECOs to register with a registration body.
3) What are the registration options for ECOs with regard to regulating bodies?	Questionnaires distributed to operating ECOs, interviews conducted with key stakeholders and a literature review of registration requirements.	To establish which regulation body should be used for regulation of the South African ECO industry.

2.2 Research methods and data analysis

2.2.1 Data sources

The sources used to obtain data for this research varied from delegates who attended a short course at the Centre for Environmental Management (CEM) in Potchefstroom in

September 2012, dealing with the roles and responsibilities of ECOs, to operating ECOs throughout South Africa. All of the above respondents received questionnaires for completion. Key stakeholders within the South African ECO industry were also consulted and interviewed in order to collect credible data. Interviews were conducted with Shawn MacGregor and Robin Swanepoel from the private sector and Sibusisiwe Hlela and Sabelo Malaza from the Department of Environmental Affairs (DEA).

Data were also obtained by conducting a literature review of existing data pertaining to the topic. Hart (1998:13) defines a literature review as:

> "*the selection of available documents (both published/unpublished) on the topic, which contain information, ideas, data, and evidence written from a particular standpoint to fulfil certain aims or express certain views on the nature of the topic and how it is to be investigated, and the effective evaluation of these documents in relation to the research being proposed.*"

A variety of national and international literature was reviewed in order to gather data relevant to the research. This enabled the researcher to address the research questions not only through data obtained via questionnaires and interviews but also through published articles and papers on the topic.

2.2.2 Survey design

According to Punch (2009:3), qualitative research is a way of thinking or approach that involves a collection or cluster of methods and data in a numerical or qualitative form. The data collection methods used in this research included questionnaires and in-depth interviews with key stakeholders within the South African ECO industry. Quantitative data were obtained via questionnaires with the aim of acquiring input from operating ECOs. A total of 70 questionnaires was distributed, however not all of the respondents completed the questionnaire. 21 sets of the questionnaire were completed by delegates who attended a short course presented by the CEM in Potchefstroom during September 2012. The course dealt with the roles and responsibilities of ECOs. A further 13 sets of the questionnaire were distributed to presenters of the course and to ECOs operating across South Africa. Thus in total 34 sets of questionnaires were received back from respondents.

Qualitative data were obtained from questions 2.1; 2.3; and 3 (refer to Annexure A for a copy of the questionnaire), which requested participants to provide their input with regard to the need for regulation of the South African ECO industry, the qualification and

experience requirements needed in order to operate as an ECO and any further comments respondents wanted to raise, respectively.

The quantitative questions included in the questionnaire were questions 1.3; 1.4; 1.5; 2.2.1 and 2.2.2. These questions dealt with the involvement of participants in the South African ECO industry, the regulatory body opted for regulation of the industry and the need for registration of ECOs.

Likert scales were used in the questionnaire in order to determine to what degree respondents agreed with certain statements made. According to Allen and Seaman (2007), Likert scales contain a group of categories — least to most — and ask people to indicate how much they agree or disagree, approve or disapprove, or believe to be true or false. Likert scales were used for questions 2.2.1 and 2.2.2, where respondents had to provide their opinion by choosing an answer from a scale that ranged from "strongly agree" to "strongly disagree" or "unable to judge". The data obtained through analyses of this set of questions provided valuable information regarding the general feeling of respondents about which regulatory body should regulate the South African ECO industry and the need for registration of ECOs.

According to Richie & Lewis (2003:108), theoretical sampling is a particular kind of purposive sampling in which units are selected on the basis of their potential contribution to theory development. The sample of this research consisted of ECOs operating in the compliance monitoring field, as their contributions towards the aim of this research were deemed essential.

Box 1 contains a list of the questions included in the questionnaire distributed to key stakeholders; the full questionnaire is included in Annexure A. The questions consisted of questions that elicited demographic data about the practitioners, as well as qualitative and quantitative questions pertaining to the core competency requirements needed by ECOs, the registration of ECOs and the need for regulation of the ECO industry.

Box 1 Summary of the main survey questions regarding the need for regulation of the South African ECO industry

Demographic data

1. Approximately how much of your working time do you spend directly on ECO-related activities? None / Up to 25% / between 25% and 50% / between 50% and 75% / between 75% and 100% / 100%

2. How many years have you worked in the ECO industry? None / up to 5 years / between 5 to 10 years / between 10 and 15 years / more than 15 years
3. What best describes your role in the ECO industry?

The need for regulation

4. In your opinion is there a need for regulation of the South African ECO industry?
5. In your opinion the ECO industry should be regulated by EAPASA, IAIAsa, Self-regulated or Interested and Affected Parties?
6. Is there a need for the establishment of an alternative body for registration of ECOs other than existing bodies?
7. The regulation of the South African ECO industry will increase the credibility of the industry?
8. In your opinion what are the expected competence requirements required to act as an ECO?

Box 2 serves as a summary of the questions asked during the interviews.

Box 2 Summary of the main interview questions regarding the need for regulation of the South African ECO industry

A. Regulation

1) Do you think there is a need for regulation of the South African ECO industry? Motivate your answer.

B. Competence

2) In one sentence define competency.
3) In your experience what are the core competency and skills requirements needed in order to act as an ECO in South Africa?

C. Registration

4) In your experience, are ECOs registered with an existing body?

5) Will ECOs have to register with an existing accreditation body in South Africa like SACNASP, or would it be necessary to establish a new regulating body for this purpose? If you say ECOs must register with an existing accreditation body, which body will it be?

6) In your opinion what must the registration requirements be for registering as an ECO in South Africa with reference to qualification and experience?

2.2.3 Limitations of the research

The following limitations were experienced during this research:

- A total of 70 questionnaires were distributed; however, only 34 were returned to the author, which meant that the sample size was relatively small. According to Cohen *et al.* (2007:101), the appropriate sample size depends on the purpose of the study, however, generally speaking, a sample size of 30 is held by some to be the minimum number of cases if researchers plan to use some form of statistical analysis on their data.
- A large volume of literature is available regarding the competency needed for operating as an EAP; however, limited literature could be found that deals with the competency needed to act as an ECO. For this reason, the data included in this dissertation were obtained exclusively from questionnaires, interviews and lecture information presented at the CEM short course in 2012.
- Although the South African Auditor Training and Certification Association (SAATCA) was investigated as an option for regulation of the South African ECO industry as part of the literature review, this option was not included in the questionnaire, as its applicability towards this research was only realised after the survey was completed. However, SAATCA was mentioned as an option for regulation of the South African ECO industry during one of the interviews and should be investigated in more detail in the future.

Chapter 3: Literature Review

3.1 Introduction

This chapter presents a review of literature pertaining to the drivers behind regulation of specific industries both internationally and nationally. In addition literature that deals with the qualification and competence requirements for operating ECOs is also discussed. Finally literature that provides information about various accreditation bodies is reviewed in order to determine which body is most suitable for regulation of the South African ECO industry. The literature reviewed consisted of published articles, books, information booklets, national legislation and academic dissertations.

A presentation given at the 2012 International Association for Impact Assessment (IAIA) Conference by Bronwen Griffiths and Robin Swanepoel from BKS discussed the lack of integration between professional functions in the environmental field. The presentation made a case for the urgent registration of ECOs, environmental managers (EMs), and Environmental Officers (EOs), along with EAPs. In the presentation, Griffiths and Swanepoel (2012) argued that ECOs must be integrated into an appropriate certification and registration process, including an ethical framework. They also stated that ECOs must be held accountable to this set of requirements. Research conducted by Wessels & Morrison-Saunders (2011:20) indicates that one of the core needs for the ECO industry is to have an accredited body which ensures that: the ECO industry is recognised as, or made part of, a verification/professional industry; and adhere to high levels of ethics, integrity and professionalism.

3.2 International status quo

Both nationally and internationally, a need exists for more consistent application of EIA follow-up (Morrison-Saunders & Arts*,* 2005:173). Hulett & Diab (2002:298) also indicate that the absence of EIA follow-up seems to be a worldwide problem and point out that the regulatory authority indicates the need for EIA follow-up to become a mandatory procedure. These authors also emphasise that follow-up components could be a standard or general condition included in environmental authorisations, which would make them legally binding.

According to a report produced by the Alberta Environmental Monitoring Program (2011:28), world class environmental monitoring earns international credibility and delivers high quality information to government, regulators, industry and other stakeholders. This emphasise the importance of EIA-follow up on an international level and supports the notion that regulation enhances credibility of an industry. Examples of

international follow-up activities which is regulated include the Independent Environmental Checker system used in Hong Kong, ECOs operating in Singapore regulated by the National Environmental Agency of Singapore and the independent environmental monitoring agency used on the Ekati diamond mine in Canada. These examples will be further discussed in section 3.3.1.2 this chapter.

3.3 South African status quo

In recent research done by Wessels (2013:177) he states that developing countries such as South Africa a history of poor application and enforcement of environmental law, weak EIA follow-up frameworks and the lack of trust in self-monitoring measures has resulted in great emphasis being placed on the independence of EIA practitioners (including EIA follow-up verifiers). When comparing the international compliance monitoring arena with the South African ECO industry, the one thing that stands out is the lack of capacity of the South African government to administrate the process. This is reiterated in the statement made by Hulett & Diab (2002:298) stating that this is a global problem as emphasis is placed on the phases prior to the environmental authorisation and not on the EIA follow-up stage. According to Wood, as quoted by Wessels & Morrison-Saunders (2011:5), it is believed that the lack of regulations on EIA follow-up constitutes a retrograde step for environmental management in South Africa. Wessels & Morrison-Saunders (2011) also emphasise this fact by stating that one of the biggest challenges faced by the EIA industry is compliance monitoring and enforcement. The National Environmental Management Act stipulates compliance monitoring requirements on organs of state and in chapter 7 particularly, provides a range of regulatory mechanisms that can be used to support compliance and enforcement (SADEA, 2011a:8), however the challenge for compliance monitoring is severe and far exceeds the current compliance monitoring capacity (SADEA, 2011a:34).

According to Youthed (2009:35), EIA follow-up should initially be driven by a regulatory authority, but acknowledge that there is room for the partnership and self-regulation models once the basics of the follow-up and the credibility of the enforcing agency have been established. Although several of the EAPs that operate as ECOs in South Africa are registered with different accreditation bodies, currently the South African ECO industry is not regulated, as no accreditation body is specifically aimed at regulation of ECOs. The Environmental Impact Assessment Management Strategy (EIAMS) Subtheme 5: Quality Assurance and Independence of Environmental Assessment Practitioners (SADEA, 2011b:41) notes that there is no home for ECOs (at the operational level), yet this is where effective monitoring and enforcement could

significantly improve environmental outcomes. Accreditation bodies where ECOs can currently register include the South African Council for Natural Scientific Professions (SACNASP), the Southern African Institute of Ecologists and Environmental Scientists (SAIE&ES), the International Association for Impact Assessment South Africa (IAIAsa) and SAATCA.

3.3.1 Options for regulation of specific industries – some case studies we can learn from

As part of the literature review the researcher reviewed case studies of certain industries to compare the drivers that motivated the need for regulation of these industries. First the researcher evaluated the different forms of self-regulation in order to determine whether self-regulation would be a viable option for the South African ECO industry. Next international case studies were reviewed. These involved the Independent Environmental Checker system used in Hong Kong, ECOs operating in Singapore, who register at the National Environmental Agency of Singapore and the independent environmental monitoring agency used on the Ekati diamond mine in Canada. Finally national case studies reviewed included a research study by Swanepoel in 2006, which investigated the need for regulation of South African tax practitioners, and the on-going proposal to regulate South African EAPs.

3.3.1.1 Self-regulation

One of the instruments of regulation surveyed was the option of self-regulation. Research conducted by Bartle & Vass (2005:1) from the University of Bath's school of management indicated that, in Britain and elsewhere, self-regulation is increasingly being promoted as an important form of regulation. The fact that Britain's Environmental Agency formed part of this research makes the study particularly relevant to the current research, which investigates the ECO industry. Bartle & Vass (2005:19) define self-regulation as the regulation of the conduct of individual organisations or groups of organisations by themselves, which are specified, administered and enforced by the regulated organisation(s).

According to Baldwin *et al*. (1999:139), arguments in support of self-regulation are usually based on expertise and efficiency. If one argues that expertise to enforce efficient self-regulation exists then self-regulation is a viable option; however, this is not always the case. Ogus (1994) and Baldwin & Cave (1999) also state that regulatory costs subsidised by the private sector through self-regulation make this type of regulation cost efficient and thus it is promoted by governments. According to Craigie *et*

al. (2009:50-51), industry in the South African context has failed frequently to comply with self-monitoring and reporting requirements, which defeats the purpose of self-regulation.

As with any type of regulation there are advantages and disadvantages associated with self-regulation. According to Bartle & Vass (2005:36), the advantages of self-regulation include improved knowledge and expertise of all parties involved, flexibility and adaptability, lower regulatory burden on business, more commitment, pride and loyalty within a profession or industry and lower costs to government. Bartle & Vass (2005:8) find that regulatory capture is one of the disadvantages of self-regulation. This entails control of regulation of the industry by parties that are not acting within the public interest, which results in little or no participation by outside interests. From the data obtained in the questionnaire, only 32% of respondents indicated that self-regulation should be considered as an option for regulation of the South African ECO industry.

3.3.1.2 International examples of regulation

According to Wessels (2012), quality assurance and impartiality became a major problem in Hong Kong in 1996, which inevitably had an impact on the credibility of the environmental management industry (also see Wessels, 2013:171). Subsequently the Independent Environmental Checker System was introduced, wherein the independent environmental checkers (IECs) audited compliance with the environmental programmes. Although IECs are not formally regulated, the Hong Kong Environmental Protection Department stipulates the minimum requirements for an IEC on their website (National Environment Agency, 2013). These requirements stipulate that an IEC is a person with at least seven years of experience in environmental monitoring and auditing. The department also stipulates that IECs may not be employed by the organisation that is performing the environmental monitoring and auditing, but must be completely independent; this is one of the drivers that motivated regulation of the South African EAP industry.

According to a news release issued by the National Environmental Agency of Singapore in 2011, there were approximately 1700 ECO's operating across Singapore in 2011, with an additional 900 added from 2011 to 2013. The Agency stated that it is important to enhance the pool of ECOs in order to ensure that residential and industrial areas with high human density do not give rise to health and pollution problems. This statement points to the fact that quality assurance and capacity building were considered as drivers that motivated regulation. According to the National Environment Agency of Singapore, construction sites are obligated to employ an ECO, either part time or full time as

determined by the construction project and contract (National Environment Agency, 2013). The Agency's website also states that for a person to register and operate as an ECO he or she must have the necessary qualifications and must successfully complete a training course presented by the Singapore Environment Institute and dealing specifically with ECO-related material. It is an offence to appoint an ECO who is not registered with the National Environment Agency or for an ECO to operate if he or she is not registered. EIAMS Subtheme 5 (SADEA, 2011b:12) highlights the importance of the independence of practitioners and states that independence and quality assurance are interlinked.

Ross (2003:5) states that Canada imposes substantial follow-up requirements as a condition of environmental approvals. One of the conditions of approval for the Ekati diamond mine in Canada, was the creation of an independent "watchdog" responsible for environmental monitoring (Ross, 2003:1). The mine had to perform various follow-up and compliance monitoring activities in order to ensure compliance with regulations. One of the main objectives of the monitoring watchdog was to measure to what extent the follow-up program could mitigate the impacts associated with the activity.

To summarise, the literature reviewed reveals that the main drivers behind regulation in these two international case studies were:

- Quality assurance.
- Enhancement of credibility.
- Independence of ECOs or environmental monitors.
- Enhancement of skills for capacity building.

The following sections will briefly look into regulation of industries within South Africa. These industries include the South African EAP industry, as well as the South African tax practitioner industry.

3.3.1.3 Regulation of South African Environmental Assessment Practitioners

In 2010 a final draft constitution of EAPASA was published as part of the initial phases of regulation of the South African EAP industry. The document revealed that the regulation of EAPs was proposed in order to ensure that the quality of environmental assessments (EAs) can be assured. The introduction of the draft constitution states that quality assurance and ethics in EA practice are a recognised prerequisite for effective governance towards sustainable development in South Africa (SADEA, 2010b:3).

According to EIAMS Subtheme 5 (SADEA, 2011b:7), the major drivers behind regulation of South African EAPs are the need for quality assurance and the independence of environmental practitioners. This document also stipulates that integrated environmental management will only be achieved if EAs are conducted by competent EAPs operating according to ethical values.

The draft EAPASA constitution (SADEA, 2010b:3) further states that the effective implementation of the environmental authorisation systems in South Africa relies directly on the competence and ethics of EAPs and that the objective of EAPASA is to promote the public interest through the advancement of the quality of EA practice in South Africa. EIAMS Subtheme 5 (SADEA, 2011b:11) also highlights that quality assurance is usually attained through a registration process, so that it is regulated by a regulatory body.

Another driving factor behind regulation of the South African EAP industry is the foreseen challenges with regard to environmental authorisation requirements. The final draft constitution (SADEA, 2010b:4) states that future environmental requirements will evolve into more strategic and proactive approaches such as strategic environmental assessments and sustainability assessments and as a result there will be a need for enhanced quality assurance and skills development. The enhancement of skills will increase capacity which is much needed for integrated environmental management. It is predicted that regulation of the South African EAP industry will evolve quality assurance over the next few years to such an extent that the professionalism, quality and skills of EAPs will match the future quality requirements needed to meet the challenges posed to the environmental assessment system. Part of the requirements for re-registration of an EAP is continual professional development (CPD), which is the systematic enhancement and development of an individual's skills on a continual basis. According to the final draft constitution (SADEA, 2010b:42), the benefits of CPD include retaining a level of competence, expanding the variety of skills, developing new expertise and promoting confidence in work. EIAMS Subtheme 5 (SADEA, 2011b:10) emphasises the importance of competence by stipulating that the regulation of the South African EAP industry includes a set of core competencies that is necessary for a full spectrum of environmental tools needed. This was also one of the driving forces behind regulation of the industry.

According to EIAMS Subtheme 5 (SADEA, 2011b:4), internationally, quality assurance, including the ethical conduct of EAPs, is enabled through a professional registration or certification process. The document also states that there will always be a need for quality assurance to adapt to changing demands (SADEA, 2011b:41). Another major

concern identified by EIAMS Subtheme 5 (SADEA, 2011b:4) is the independence and objectivity of environmental practitioners. The document states that the need for EAPs to undertake their work in an independent and objective manner has been one of the major drivers behind initiatives in South Africa that seek certification/registration processes.

To summarise, from the literature reviewed it can be stated that the main drivers used to motivate regulation of the South African EAP industry were:

- Quality assurance.
- Establishment of minimum standards in respect of qualifications and/or experience (core competencies).
- Establishment of a professional code of conduct and ethics in order to enhance accountability and professionalism.
- Skills improvement through CPD.
- Enhancement of credibility.
- Independence of environmental practitioners.
- Enhancement of skills for capacity building.

In the 26th annual IAIA conference held in Stavanger, Norway in 2006, Brownlie et al. (2006) chaired a discussion about the relationship between governance and quality assurance in impact assessment, where it was indicated that governance deals with aspects such as legal issues and enforcement, ethics and quality assurance and noted that a certification process will aid in promoting quality assurance.

3.3.1.4 Regulation of tax practitioners of South Africa

The researcher deemed it important to examine industries regulated outside of the environmental field in order to identify universal drivers applicable to regulation of an industry in general, Swanepoel's 2006 study in which he investigated the need for regulation of South African tax practitioners was reviewed. The drivers identified by Swanepoel (2006) behind regulation of South African tax practitioners pointed out which main drivers influence regulation of an industry.

Swanepoel (2006:1) states that, before regulation of the tax practitioner industry of South Africa, no minimum standards in respect of qualifications and/or experience existed. Swanepoel (2006:1) further notes that prior to regulation not all tax practitioners were subject to a code of professional conduct, which contributed to the industry's bad name as a result of poor quality work performed by some practitioners. If an industry is

regulated such complaints received will be investigated and should it be found that members did not keep to the code of conduct and acted unprofessionally they will face the consequences. Swanepoel (2006:12) quotes SAICA (South African Institute of Chartered Accountants) as stating that regulation of the South African tax practitioner industry will ensure that all tax practitioners are subject to the same rules of professional conduct and will provide some assurance to the general public with regard to professionalism.

Swanepoel provided a list of advantages associated with regulation of tax industries across the globe, which can also be said to be applicable to regulation of the South African ECO industry. The advantages of regulation include enhancement of credibility, operating to a specific code of conduct, setting of minimum standards for service delivery, and protection of clients against substandard work and an overall lack of professionalism. Swanepoel (2006:122) emphasises that regulation of an industry adds to the credibility of that industry. This is because SAICA members have to comply with rigorous minimum standards and qualifications and adhere to the set code of professional conduct.

Swanepoel (2006:13) states that regulation of the tax practitioner industry is achieved through preventing unsuitable and unqualified practitioners from entering the industry, administrating qualifying examinations for applicants wishing to enter the industry, investigating complaints about unprofessional conduct by its members and acting against such members.

To summarise, from the literature reviewed it can be stated that the main drivers used to motivate regulation of the South African tax practitioner industry were:

- Quality assurance.
- Establishment of minimum standards in respect of qualifications and/or experience.
- Establishment of a professional code of conduct and ethics.
- Skills improvement through CPD.
- Enhancement of credibility.
- Protection of clients against substandard work and an overall lack of professionalism.

Table 2 serves as a summary of the nine drivers identified behind regulation in the case studies discussed in the sections above. From the literature reviewed it appears that

quality assurance and the enhancement of credibility served as the two most important drivers behind regulation, as these drivers were identified in all the case studies reviewed. However, it must be noted that the other drivers discussed were also deemed important.

Table 2 Drivers behind regulation of specific industries

Drivers behind regulation	South African EAPs	South African tax practitioners	International ECOs/environmental monitors
Quality assurance	✓	✓	✓
Establishment of minimum standards in respect of qualifications and/or experience (core competencies)	✓	✓	
Establishment of a professional code of conduct and ethics in order to enhance accountability and professionalism	✓	✓	
Skills improvement through CPD	✓	✓	
Enhancement of credibility	✓	✓	✓
Independence of practitioners	✓		✓
Enhancement of skills for capacity building	✓		✓
Protection of clients against substandard work and an overall lack of professionalism		✓	
Creation of a source of information support and interaction		✓	

The drivers indicated in Table 2 may be considered applicable to the South African ECO industry. The following section takes a closer look at each of these drivers and its relevance to the South African ECO industry.

Quality assurance

According to EIAMS Subtheme 5 (SADEA, 2011b:50), quality assurance of specialists that contribute to EA processes or integrated environmental management tools is essential, as the environmental legislative regime changes constantly. Quality assurance of compliance monitoring reporting is important in order to promote sustainable development. Research conducted by Wessels & Morrison-Saunders (2011:20), indicate that quality assurance may be considered a motivational factor behind regulation of the South African ECO industry. Wessels (2013:171) also indicates that quality assurance was addressed through the introduction of the independent environmental checker system in Hong Kong in the early 1990's.

Establishment of minimum standards in respect of qualifications and/or experience (core competencies)

The establishment of a set of minimum standards regarding qualification, competencies and experience is needed in order to ensure that the industry is not flooded with ECOs who are unqualified to perform the work. According to EIAMS Subtheme 5 (SADEA, 2011b:11), competence also forms part of the main dimensions of quality assurance. Wessels & Morrison-Saunders (2011:20) indicate that ECOs currently operating believe that a set standard and list of skills and competencies is one of the core needs of the South African ECO industry, as this will create effective environmental monitoring and enforcement.

The establishment of a professional code of conduct and ethics in order to enhance accountability and professionalism

Swanepoel (2006:25) indicates that a code of conduct ensures that all tax practitioners are subject to the same set of rules regarding professional conduct and provides some assurance to the general public with regard to professionalism. The need for the establishment of a code of conduct is also highlighted by research conducted by Wessels & Morrison-Saunders (2011:20), which states that a core need of the ECO industry is to have an accredited body to ensure that ECOs are recognised and adhere to a high level of ethics, integrity and professionalism. Wessels (2013:177) states that the success of EIA depends largely upon successful implementation along with appropriate accounting for follow-up activities after the approval decision is granted.

Skills improvement through CPD

As the EIA follow-up industry changes from time to time as new trends and changes in legislation are adopted, improvement of ECO skills through CPD is essential for constant quality assurance. Without forced CPD the number of ECOs that improve their professional competence and knowledge on a constant basis is likely to be limited. Thus, in order for ECOs to adapt to changing legislation and best practice, CPD is essential and will be promoted through regulation of the South African ECO industry.

Enhancement of credibility

Wessels (2013:171) indicated that, in Hong Kong, credibility of EIA and EIA follow-up was enhanced through the implementation of the Independent Environmental Checker System. It is believed that this will also be the case with regulation of the South African ECO industry. According to a report produced by the Alberta Environmental Monitoring Program (2011:28), world class environmental monitoring earns international credibility and delivers high quality information to government, regulators, industry and other stakeholders. Wessels (2013:169) states that independent verification is an important aspect of practice for ensuring the credibility of an EIA, emphasising the importance of independence as a whole in order to promote credibility. Without credibility, substandard quality information and reporting might become a reality, which will hinder sustainable development. In the survey conducted in the current study, respondents also identified enhancement of credibility as one of the motivational factors behind the need for regulation of the South African ECO industry.

Independence of practitioners

As mentioned previously, independence and quality assurance are interlinked and without independence an industry is likely to find it difficult to assure its clients of the quality of work performed. The International Association for Impact Assessment (1999:3) states that one of the international best practices for an EIA is that the process should be subject to independent checks and verification. In a study done by Wessels & Morrison-Saunders. (2011:21), 93% of the respondents agreed that the South African ECO industry should be independent and this was identified as one of the core needs of the industry. In the same study practitioners identified independence as a critical ingredient for an ECO to operate successfully. In research done by Wessels (2013:177) he demonstrates that independence is broadly viewed as a cornerstone of various verification professions and is essential for the achievement of best practice and integrity (Wessels, 2013:178).

Enhancement of skills for capacity building

According to Wessels (2013:175) competency (or skill) is viewed as essential in almost all verification fields. The importance of competency is emphasised by Wessels (2013: 17) where he argues that a competent professional is less susceptible to influence than an individual that is not competent. According to EIAMS Subtheme 8: skills of EAPs and government officials (SADEA, 2011c:17-18), post-authorisation monitoring and post-implementation monitoring are skills that need to be developed in order to build capacity, as there are currently gaps in these skills. The document further states that skills development will ensure that authorities are sufficiently capacitated with skilled and experienced officials and practitioners (SADEA, 2011c:2). This stresses the importance of skills development within the South African ECO industry.

Protection of clients against substandard work and an overall lack of professionalism

Currently the absence of a set of minimum skills and qualifications, as well as the fact that there is no code of professional conduct or ethical behaviour that must be adhered to, increases the risk of ECOs' operating unprofessionally. Wessels (2013:169) states that the International Association of Impact Assessment (IAIA, 1999: 3) identify independent verification as an important component of the basic principle of a 'credible EIA' and state that 'a credible EIA process should be carried out with professionalism, amongst other characteristics.

Creation of a source of information support and interaction

Without a regulating body little support is available for operating ECOs. As mentioned by Swanepoel (2006:119), regulation creates a source of information support and interaction between practitioners, which results in knowledge sharing, which is important for an industry to keep up to date with best practice standards and opportunities for improvement.

3.4 Specific qualification and competency requirements needed for ECOs

Wessels & Morrison-Saunders (2011:26) and Wessels (2013:175) state that without competence ECOs will not be able to fulfil their role as independent verifiers effectively. This is emphasised by Subtheme 5 (SADEA, 2011b:12) directly linking quality assurance to competence. According to EIAMS Subtheme 8 (SADEA, 2011c) competence can be defined as the ability of an individual to perform a job properly and includes a combination of knowledge, skills and behaviour used to improve performance. Jennings (2011:58) notes that the conditions contained within South African environmental authorisations include terms such as "qualified" and "experienced". While some conditions state that a qualified ECO or a suitably experienced ECO must be appointed,

no definitions are provided within the authorisations to clarify what a suitably experienced or qualified ECO is. Jennings (2011:13) further notes that there are currently no formal standards against which the suitability of experience or qualification can be measured. As the establishment of a set of minimum standards regarding qualification, competencies and experience was identified as one of the drivers behind regulation of an industry, it is essential to establish the specific qualification and competence requirements needed by ECOs in order to be considered for registration. According to the Environmental Sector Skills Plan for South Africa (SADEA, 2010a:21), compliance monitoring was identified as a skill that needs development in the field of environmental management.

A set of the minimum qualification requirements, experience requirements and core competency requirements was compiled from the literature reviewed and from data obtained through the questionnaires administered and interviews conducted. Employment opportunities advertised for ECOs within the Department of Water Affairs (DWA) were also analysed in order to establish what competency requirements are expected by the DWA for ECOs. The requirements expected for an EAP and Control Environmental Officer were compared to those identified for operating ECOs. Academic requirements are summarised in Table 3, with experience requirements listed in Table 4 and competency requirements in Table 5.

Table 3 Academic qualification requirements

Environmental Assessment Practitioner (based on EAPASA)	Environmental Control Officer (based on interviews and survey results)	Control Environmental Officer (based on requirements stipulated by DWA)
A degree in environmental practice from a South African university or Technikon (or recognised equivalent) OR At least a degree from a South African university or Technikon (or recognised equivalent) AND A further postgraduate degree in environmental practice, from a South African university or Technikon (or recognised equivalent).	Minimum BSc Honours in Environmental Management or Environmental Science.	A four-year degree or equivalent qualification in Natural Science or equivalent qualification in one of the following fields: Earth Science, Environmental Sciences, Water Care or Engineering.

Table 4 Professional experience requirements

Environmental Assessment Practitioner	Environmental Control Officer	Control Environmental Officer (DWA)
Degree in Environmental Practice = 3 years of subsequent professional experience	3 years of on-site experience in compliance monitoring acting as an ECO, regardless of the post-experience qualification.	6 years of post-qualification experience in an environmental management field.
Degree and a postgraduate degree in environmental practice = 3 years of subsequent professional experience		
Degree and a short course or diploma in environmental practice = 5 years of subsequent professional experience		

Diploma in Environmental Practice = 6 years of subsequent professional experience		

Table 5 Core competencies/skills requirements

Environmental Assessment Practitioner	Environmental Control Officer	Control Environmental Officer (DWA)
Demonstrated ability to think holistically about the structure, functioning and performance of the environmental system, not simply focusing on maximising the efficiency of one of its elements.	The ability to think holistically about the structure, functioning and performance of environmental systems.	Innovative thinking.
Proven competence in analysing the affected environment in such a way as to identify significant issues, problems and/or characteristics, and distinguish between underlying causes and superficial symptoms.	Proven competence in the application of Integrated Environmental Management with regard to EIA.	Good presentation skills.
Proficiency in integrating and co-ordinating significant components of both the socio-economic and biophysical environments in such a way as to evaluate options and trade-offs, and facilitate sound decision making.	Good report writing skills.	Good report writing skills.
Demonstrated proficiency in interpersonal and communication skills, in both oral and written form.	People skills as well as communication skills.	Good communication and interpersonal skills.
A sound working knowledge of environmental legislation and policy.	Knowledge with regard to all environmental legislation, policies, guidelines and best practice.	Knowledge of National Water Act, Water Services Act and related policies and guidelines.
Demonstrated ability to manage competently an interdisciplinary team.	Project management.	Ability to work productively in an environment consisting of multidisciplinary stakeholders.
Demonstrated ability to make balanced judgements and	Enquiring mind.	

objectively evaluate alternatives.		
Proven competence in the application of scoping and public participation.	The ability to manage public communication and complaints.	
Systematic and explicit assessment and evaluation of environmental impacts.	Proven competence in the application of Integrated Environmental Management with regard to EIA and environmental auditing.	
Mitigation and optimisation of impacts.	Proven competence in the application of Integrated Environmental Management with regard to mitigation and optimisation of impacts.	
Monitoring and evaluation of impacts.	Proven competence in the application of Integrated Environmental Management with regard to the monitoring and evaluation of impacts.	
Understanding of environmental management plans/programmes.	Proven competence in the application of Integrated Environmental Management with regard to environmental management plans/programmes.	
A thorough understanding of the concept of sustainable development, embracing: • Ecological sustainability, recognised as the enabling factor for sustainable development.	Compliance monitoring is a multidisciplinary field that requires a broad knowledge of ecology.	
Social sustainability equity and environmental justice.	Record keeping skills.	
Economic efficiency.	Calm and persistent disposition.	
Proven ability to recognise when to involve specialists, to select and appoint appropriate specialists, and to draw up sound Terms of Reference for these specialists that address the particular needs of that project or piece of work.		

The objective of these set of academic, experience and competency requirements, was to establish a uniform set of requirements which must be adhered to in order to register and operate as an Environmental Control Officer. The following section will investigate the registration options available to ECO's.

3.5 Registration options available to ECOs with regard to regulating bodies

Various accreditation bodies were investigated for regulation of the South African ECO industry. The researcher focused mainly on accreditation bodies where South African ECOs can currently register. The following accreditation bodies were investigated as possible options for regulation of the South African ECO industry:

- Environmental Assessment Practitioners Association of South Africa (EAPASA)
- South African Council for Natural Scientific Professions (SACNASP)
- Southern African Institute of Ecologists and Environmental Scientists (SAIE&ES)
- South African Auditor Training and Certification Association (SAATCA)

The registration criteria evaluated for each of these accreditation bodies were selected according to research conducted by Woodley & Morgan in 2004, and included in the EIAMS: Subtheme 5 (SADEA 2011: 18-19) where the similarities of registration criteria used for registration of EAP's worldwide were evaluated. This set of criteria included:

- Education
- Professional experience
- Core competencies
- CPD
- Code of conduct or ethics tied to disciplinary process

Table 6 serves as a summary of the current registration bodies with some of their registration criteria within the environmental management field of South Africa.

Table 6 Current accreditation bodies and their registration criteria according to EIAMS Subtheme 8 (SADEA, 2011c) and SAATCA

Criteria	EAPASA	SACNASP	SAIE&ES	SAATCA
Professional representation	Members include representatives from 17 participating organisations from diverse fields and professions.	Members include scientific professionals in a range of scientifically orientated fields.	Members include scientific professionals in the ecological and scientific fields.	Membership is open to any person who has an interest in SAATCA's main objective, which is to serve the interests of the management systems auditing community.
Formal qualification	A degree in environmental practice from a South African university or Technikon (or recognised equivalent).	BSc Honours in Natural Science.	Honours degree (or equivalent) in an appropriate discipline, and a further postgraduate degree in ecology, environmental science or equivalent.	Degree/diploma equivalent.
Professional experience	3 – 5 years of subsequent experience in responsible charge, depending on qualification.	3 years.	3 years.	4 years of work experience relevant to field (e.g. quality, environment, safety etc.) 2 years relevant to scheme MS standard (e.g. ISO 9001, 14001 OHSAS 18001, ISO 22000, etc.). Can be concurrent with the 4 years of work experience.
Referees/Sponsors	2 registered sponsors.	2 registered sponsors.	2 registered sponsors.	Sponsor has personal knowledge of the applicant and has verified the applicant's CV.
Code of conduct	Yes	To be drawn up	Yes	Yes

Environmental Assessment Practitioners of South Africa (EAPASA)

EAPASA has various objectives and requirements that are similar to the competency and qualification requirements of ECOs. According to EAPASA's draft constitution (SADEA, 2010b:54), compliance with conditions set in the authorisations granted by competent authorities is one of the key performance indicators pertaining to the EAPASA objective of sustainable development. This opens the door for registration of ECOs, as compliance monitoring is one of their core functions. The draft constitution also states that EAPASA's code of ethical conduct and practice acts in the best interest of the environment, sustainable development and the public good, which conforms to the ethical conduct of ECOs (SADEA, 2010b:9). Data obtained from the questionnaires and interviews in the current study indicated that EAPASA was the most favoured option for regulation of the South African ECO industry.

South African Council for Natural Scientific Professions (SACNASP)

As indicated in Table 6, SACNASP mainly caters for scientific professionals with scientific qualifications and experience. Although its members can register as scientists in the field of environmental science, various ECOs do not come from a scientific background but rather a background in environmental management. SACNASP plays an important role as a regulatory body in the bigger picture of environmental management; however, it is deemed inaccessible for several operating ECOs.

Southern African Institute of Ecologists and Environmental Scientists (SAIE&ES)

According to the SAIE&ES website, the organisation is a lobby and networking organisation that relates to environmental and sustainable development issues and EAPASA will become the statutory regulating body for EAPs and associated professions. This indicates that the objective of the body is not to regulate an industry, but merely to provide professionals within the environmental sector with an opportunity to network with co-professionals. Although the qualification criteria needed for registration with this body are similar to those needed by ECOs, it is deemed that, as with SACNASP, this body is aimed at professionals with a more natural science background such as ecologists, geologists and botanists.

South African Auditor Training and Certification Association (SAATCA)

The idea of opting for SAATCA as the accreditation body that regulates the South African ECO industry was supported by Mr. Shaun MacGregor, who is a stakeholder in the industry. As SAATCA was established to act as the regulatory body for management of system auditors, auditing forms one of SAATCA's core activities. Wessels (2012:5)

note that environmental authorisation conditions often include requirements for an EMP to be implemented and independently audited by an on-site ECO. Research conducted by Wessels & Morrison-Saunders (2011:13) indicates that auditing is one of the key roles of ECOs. This overlap in responsibility and roles, as well as the similarities regarding qualification requirements, makes SAATCA a viable option for regulation of the South African ECO industry. Mr. Wessels from the University of North West, also indicated that the Nature Conservation Coorporation, which is one of the key stakeholders within the South African ECO industry, is beginning to register its ECOs with SAATCA.

The chapter provided four options for regulation of the South African ECO industry of which EAPASA or SAATCA may be viable options. However further research is recommended in order verify this. The next chapter will look at the survey results and analyse these.

Chapter 4: Survey and Interview Results, Analysis and Discussion

4.1 Introduction

The primary method of collecting data for this study was the distribution of questionnaires to practising ECOs and key stakeholders within the South African ECO industry. A total of 22 questionnaires were distributed to delegates that attended a short course presented by the CEM, which dealt with the roles and responsibilities of ECOs. Another 13 questionnaires were distributed to practising ECOs and key stakeholders within the South African ECO industry. Questionnaires were distributed in order to gather data and inputs with regard to the main aim, which sought to establish the need for regulation of the South African ECO industry. Finally interviews were held with key role players in the South African ECO industry in order to obtain their input with regards to the main research question.

4.2 Discussion of results obtained from questionnaires

As indicated in Chapter 2, the questionnaire was divided into three main sections that focused on the demographic data of the respondents, the need for regulation of the South African ECO industry and further comments. Section 2 formed the core of the questionnaire and its objective was to obtain input from respondents regarding the need for regulation of the industry, registration of ECOs at regulatory bodies, benefits added by regulation and finally the core competency requirements identified for ECOs.

4.2.1 Demographic data

Question 1 of the survey dealt with the demographic data of the respondents and is indicated in Box 3. The objective of the demographic section was to establish each respondent's function within the environmental sector, his/her experience within the field and his/her role. This was considered important for measuring to what extent respondents are currently contributing to the South African ECO industry. The results obtained from Section 1 of the survey are reflected in Figure 1 and Figure 2.

Box 3

Q 1.3 Approximately how much of your working time do you spend directly on ECO-related activities?

- None of my working time

- Up to 25%
- Between 25 and 50%
- Between 75 and 100%
- 100%

Q 1.4 How many years have you worked in the ECO industry?

- Up to 5 years
- 5 – 10 years
- 10 – 15 years
- More than 15 years
- None of my working time

Q 1.5 What best describes your role in the ECO industry?

- Academic research
- Consultant/EAP
- NGO
- Competent authority
- Developer/Proponent
- Practising ECO

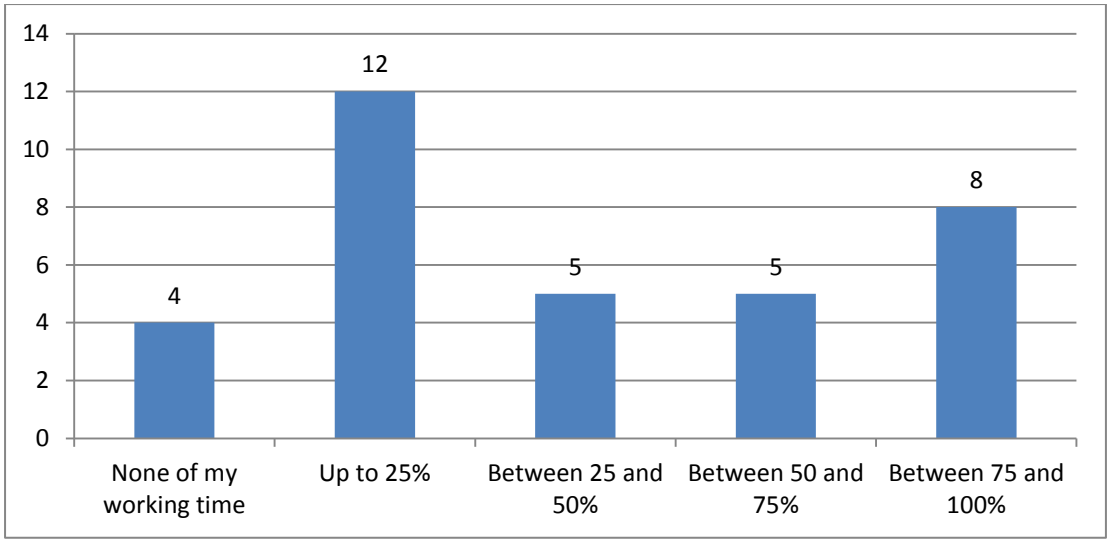

Figure 1 Indication of the percentage of work time spent on ECO-related activities

As indicated by Figure 1, only 11,4% of the respondents indicated that they do not spend any of their time on ECO-related activities, while 34,3% indicated that they spend up to 25% of their time on ECO-related activities. The largest number of respondents (37,1%) indicated that they spend more than 50% of their time on ECO-related activities, while 22.9% indicated that they spend more than 75% of their time on ECO-related activities. As mentioned previously, an overlap in skills required to perform EAs and ECO activities, as well as the fact that various environmental consultants that conduct EIAs perform ECO work for the same EIAs, is the most likely reason for this. Research conducted by Wessels & Morrison-Saunders (2011:21) found that 75% of respondents believed that ECO work should be independent of EAP work, which emphasises the importance of a clear separation of the roles of ECOs and EAPs. The author is of the opinion that an appointed ECO should be separate from the company who conducted the initial EIA.

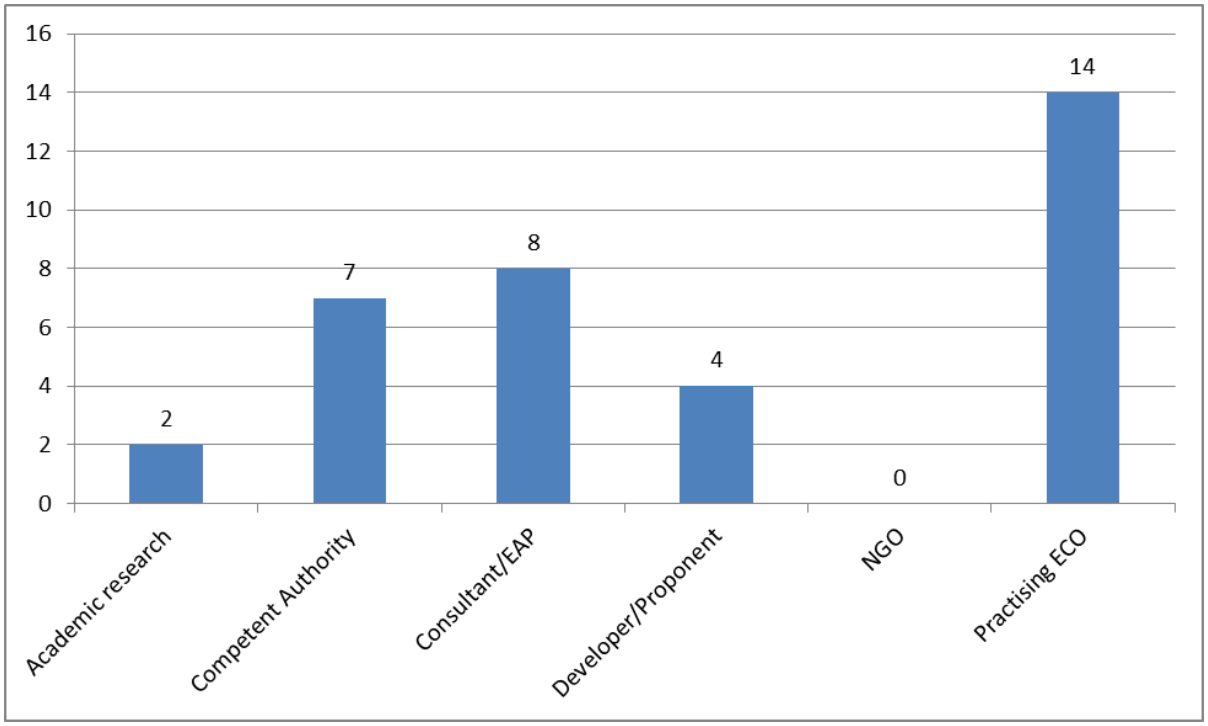

Figure 2 Indication of respondents' work involvement

The survey results indicated that 65,7% of the respondents specified that they have worked in the ECO industry for five years or less, with 17,1% indicating that they have been active in the ECO industry for more than five years. This finding demonstrated that the majority of respondents are relatively new to the South African ECO industry. This also indicates that the upsurge with regard to compliance monitoring in South Africa is relatively recent.

As indicated by Figure 2, 40% of the respondents indicated that they are currently practising as an ECO; this option recorded the greatest number of responses. Only 11,4% of respondents indicated that they are currently working for developers or proponents, 22,9% of the respondents indicated that they are practising as EAPs, 20% that they are working for government and 5,7% that they are involved in academic research.

4.2.2 Regulation

Question 2.1: In your opinion is there a need for regulating the South African Environmental Control Officer (ECO) industry? Please explain.

This section reflects on the key comments made by the survey respondents regarding the research aim, which is to establish whether there is a need for regulation of the

South African ECO industry. An overwhelming 100% of the respondents indicated that they believe that there is a need for regulation of the South African ECO industry, which suggests that South African ECOs feel that the time for regulation of the industry has arrived. The results obtained in response to this question are indicated in Figure 3.

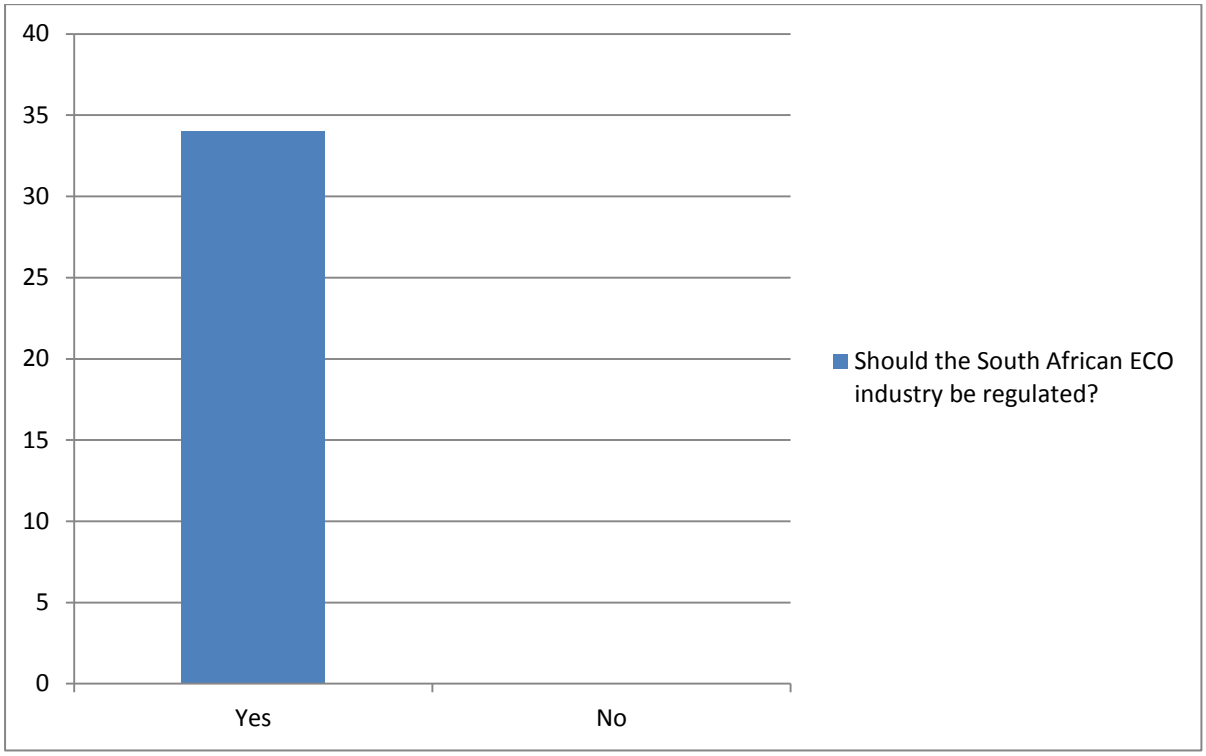

Figure 3 **Feeling from respondents regarding the need for regulation of the South African ECO industry**

The reasons provided varied and a range of the motivations for regulation are included in Box 4 below.

Box 4

Q 2.1: Do you think there is a need for regulation of the South African ECO industry?

"A regulating body prescribing the standards to which an ECO works will empower ECOs much more than they currently are empowered to enforce environmental compliance on sites."

"Compliance can be more effectively monitored if an ECO is required to report to both decision-making and enforcement authorities, and a regulating body tasked to uphold the standards of the industry. "

"Regulating ECOs will provide legally binding guidance to carrying out ECO work as this will provide them with requirements of what is legally expected from ECOs for carrying out their tasks."

"The ECO has the ability to give negative and positive spin on a project and as such there is a lot of pressure to remain independent and impartial. By efficiently regulating the ECO industry there is less pressure from the client on ECOs, and a more professional Environmental outcomes can be reached."

"The same general reasons as for any other regulating body or professional registration; to ensure consistency, competence, reliability, trust, etc. and to ensure that the goals and objectives for appointing an ECO are met."

"Currently the ECO position is unrecognised by professional bodies, but is a high level position that requires dedicated, learned and competent people. Regulating and recognising this may help to give credibility to the position."

"If the industry is regulated there will be more consistency in the quality of the individual that is appointed as an ECO, this will also make the position more credible as the individual can strive towards being an independent party on site with a clear mandate."

Quality assurance, competency, establishment of minimum standards, professionalism and independence are some of the answers provided by respondents. This emphasises that regulation of the ECO industry will add to quality assurance, which is essential for credibility of an industry. Quality assurance will be obtained via ensuring that operating ECOs comply with the minimum qualification and competence requirements for registration. This will also allow ECOs to know exactly what is expected of them. Respondents felt that regulation of the industry will also ensure that ECOs are independent, which forms an essential part of the credibility of an industry.

From the answers included in Box 4, it seems that respondents felt that government will ensure the competency of government officials and, essentially, ECOs through regulation of the South African ECO industry. This will be achieved via a set of minimum skills and competency requirements for registering and operating as an ECO in South

Africa. Another comment received stated that a need exists for regulation of the South African ECO industry, as a regulatory body will ensure consistency, competence, reliability and trust. Consistency will be provided through the establishment of a set of minimum standards, which is one of the characteristics of the regulation of an industry. This will ensure that all ECOs that operate in South Africa know what is expected of them and what product should be delivered, and that they reach the same goals and objectives.

Another important observation made is that regulation of the ECO industry will add to the credibility of the industry. This comment was made by several of the respondents and credibility was also identified by Swanepoel (2006:122) as a driver behind regulation of an industry. One of the respondents stated that the ECO industry is largely undefined, yet is a fundamental and key position in environmental management. This respondent mentioned that currently the ECO position is unrecognised by professional bodies, but is a high level position that requires dedicated, learned and competent people and that regulating and recognising this may help to give credibility to the position.

One of the respondents emphasised that regulation of the South African ECO industry will promote the credibility of the industry by ensuring minimum standards with regard to the level of experience and training needed to operate as an ECO. The respondent mentioned that implementation of these minimum standards through a regulatory body will increase the quality of work performed, which will increase the market's trust in the industry. Another interesting advantage of regulation of the industry was noted as being increased knowledge sharing among operating ECOs. Knowledge sharing will be enforced via a CPD programme and will add to the marketability of the ECO industry.

Regulation of the ECO industry will ensure that ECOs operate according to a code of professional conduct, which in turn will ensure that ECOs operate professionally. Another advantage of regulation highlighted by one of the respondents is that it will ensure that ECOs can be held accountable for any misconduct or unethical behaviour. This will also add to the credibility of the industry in the sense that potential clients will have the comfort of knowing that should the services they pay for be substandard the ECO can be held accountable.

Question 2.2.1: In my opinion the ECO industry should be regulated by:

a) EAPASA (Certification board of Environmental Assessment Practitioners)

b) IAIAsa (International Association of Impact Assessment South Africa)

c) Self-regulated – ECO industry regulates itself

d) Interested and Affected Parties

Respondents were provided with four options of regulatory bodies for the South African ECO industry. A major flaw in the question was that SAATCA was not provided as an option. At the time the survey was conducted the option of choosing SAATCA to regulate the South African ECO industry was not considered and consideration of SAATCA is recommended for future research. However, the researcher did investigate this option as part of the literature research. The options included EAPASA, IAIAsa, self-regulation and regulation by interested and affected parties. For each option provided, respondents had to indicate to what extent they support that option for regulation of the South African ECO industry.

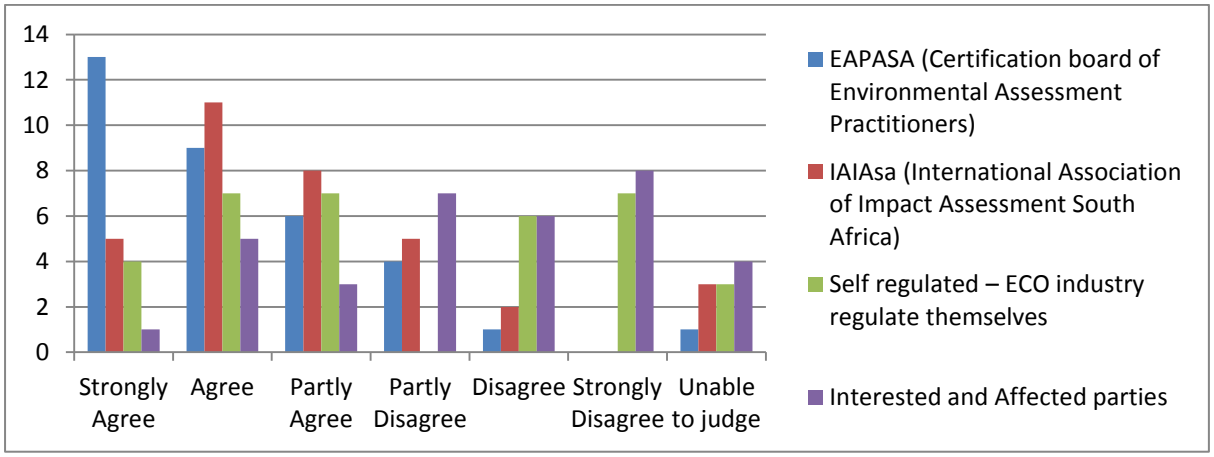

Figure 4 Indication of the support received from respondents regarding the options provided for regulating bodies

As indicated by Figure 4, an overwhelming 82,8% or 29 of the respondents indicated that they support the proposal to choose EAPASA as regulating body for ECOs, with 14 indicating that they strongly agree, 9 only in agreement and 6 in partial agreement. Of all the respondents 14,3% indicated that they do not agree with EAPASA being the body to regulate the South African ECO industry and 2,9% were unable to judge. The reason for the majority of respondents indicating that they are in support of EAPASA as regulating body for ECOs might be that there is a skills overlap between EAPs and ECOs. It may also be because most operating ECOs probably are or were EAPs earlier in their career. It may also be because ECOs relate to the minimum requirements and the code of professional conduct and ethical values stipulated by EAPASA, as many ECOs operated as EAPs previously.

With the option of IAIAsa presented for regulation of the South African ECO industry, 71,4% or 25 of the respondents indicated that they support IAIAsa as the first option for regulatory body, with 5 in strong agreement, 11 only in agreement and 9 in partial agreement. A total of 20% of the respondents indicated that they do not agree with IAIAsa as a regulating body for ECOs and 8,6% were unable to judge. The researcher is of the opinion that IAIAsa received so much support, as various EAPs are currently registered with IAIAsa and, with a large number of EAPs also acting as ECOs, they relate to IAIAsa, which registers EAPs. However, as discussed earlier the feeling is that EAPASA is better equipped for regulation of the South African ECO industry than IAIAsa.

Regarding the option of self-regulation 51,4% of respondents indicated that they support the idea of self-regulation for the South African ECO industry, with 11,4% of these in strong agreement, 20% only in agreement and another 20% in partial agreement. Some 40% of respondents indicated that they disagree with the proposal of self-regulation, while 8,6% were unable to judge. Interestingly self-regulation of the ECO industry was supported by more than half of the respondents; however, it is important to note that there are various disadvantages associated with self-regulation. According to Bartle & Vass (2005), one of the significant disadvantages of self-regulation is the fact that it can lead to uncompetitive behaviour. Bartle & Vass (2005) also state that self-regulation may lead to regulation by parties that are not pursuing the public interest. Thus, it is believed that while self-regulation does have its place, the South African ECO industry will be better off using a regulatory body.

With 35,7% of respondents choosing the option of regulation of the South African ECO industry by interested and affected parties, this option received the lowest support from respondents. A majority of 62,9% of respondents indicated that they do not agree with the option and 11,4% were unable to judge. The fact that 62.95 of respondents indicated that they do not support the notion of regulation by interested and affected parties, indicates that the feeling among the respondents is that the South African ECO industry should be regulated by some kind of regulatory body. Box 5 provides a range of comments received from respondents with regard to regulatory bodies for the South African ECO industry.

Box 5

Q 2.2.1: The ECO industry should be regulated by EAPASA, IAIA, self-regulated or by interested and affected parties; please explain.

"The regulation of the ECO industry may require its own body as a regulatory faction, but it needs to be affiliated to existing bodies, and tie in with professional bodies such as SACNASP. It cannot be a completely standalone organisation as it needs the support from existing sectors to make it a feasible and reputable endeavour. Interested and Affected Parties (I&AP's) should have no regulatory role to play in this."

"EAPASA could in theory add the regulation of ECOs to their functions, but registration with EAPASA even as an EAP is still voluntary at this stage, questioning the clout that this organization truly has."

"IAIAsa is not ideally positioned to become regulators of ECOs, as their primary function rests on impact prediction, and not management."

"Should the ECO industry be self-regulated, it would diminish the already limited capacity of ECOs (too few qualified ECOs as it is, and now one would have to remove even more of them from active ECO work and make them regulators)."

"While I&APs may certainly have valuable inputs into the matter, the public is generally not educated in environmental legislation, management and control measures that are effective, and also not educated in measures which could be practicable to implement on a site."

"The ECO's service is an extension of the EAP's work will be better facilitated under one umbrella, such as EAPASA."

Although different opinions were given about the choice of a regulatory body, the majority of respondents felt that EAPASA would be the best regulatory body for the South African ECO industry. This is mainly due to the related skills associated with EAPs and ECOs and that EAPs and ECOs often work closely together. For these reasons it would make sense for one regulatory body such as EAPASA to regulate both industries. An interesting comment received by one of the respondents touched on the financial implications of establishing a new regulatory body. The establishment of a new regulatory body has certain cost implications, which might make the enterprise not worthwhile in light of the fact that compliance monitoring is a specialised and upcoming field, with the result that the number of ECOs registered will initially be low. With an existing body such as EAPASA this will not be a major issue.

According to the final draft constitution (SADEA, 2010b), compliance checks form part of the framework for the proposed Environmental Assessment Practitioners Association of South Africa as the basis for the business plan and budget. This supports the notion of opting for EAPASA to act as the regulatory body for the South African ECO industry, as compliance monitoring is seen as one of the skills/functions needed by ECOs.

While most of the respondents indicated that EAPASA would be the best regulatory body for the ECO industry, IAIA was also considered a good alternative regulatory body. However, as noted by one of the respondents, IAIAsa primarily deals with impact prediction, whereas ECOs are more involved with impact management and mitigation. As mentioned earlier, IAIAsa's main objective is to advance the state of impact assessment and not specifically regulation of the industry.

Although a form of self-regulation was supported by the respondents, the majority agreed that South African ECOs should be regulated by a regulating body. This might be because the South African ECO industry is currently very small, which will make regulation by an existing external body a better option.

Question.2.2.2: The need for registration:

a) *There is a need for the establishment of an alternative body for registration of ECOs than existing bodies (see above).*

b) *The regulation of the South African ECO industry will increase the credibility of the industry.*

The next question included under this section dealt with the registration of South African ECOs. Although the majority of respondents indicated that EAPASA might be used as regulating body for ECOs operating in South Africa, 74,3% of respondents also agreed with the statement that there is a need for the establishment of a new regulating body for registration of ECOs other than the existing bodies. All the interviewees indicated that EAPASA can fulfil the function of regulating body for the South African ECO industry; however, it was noted that the function of ECO regulation should be slotted in as a separate function within EAPASA. Some 11,4% of respondents indicated that they do not agree with this statement and 14,3% of the respondents were unable to judge. Although respondents felt that a new regulatory body should be established, they believed that the integration of a separate ECO function within an existing accreditation body such as EAPASA might also suffice.

Of all the respondents, 88,6% indicated that regulation of the South African ECO industry will add credibility to the industry, with only 11,4% unable to judge. This

emphasises that operating ECOs do feel that regulation of the industry will add to its integrity.

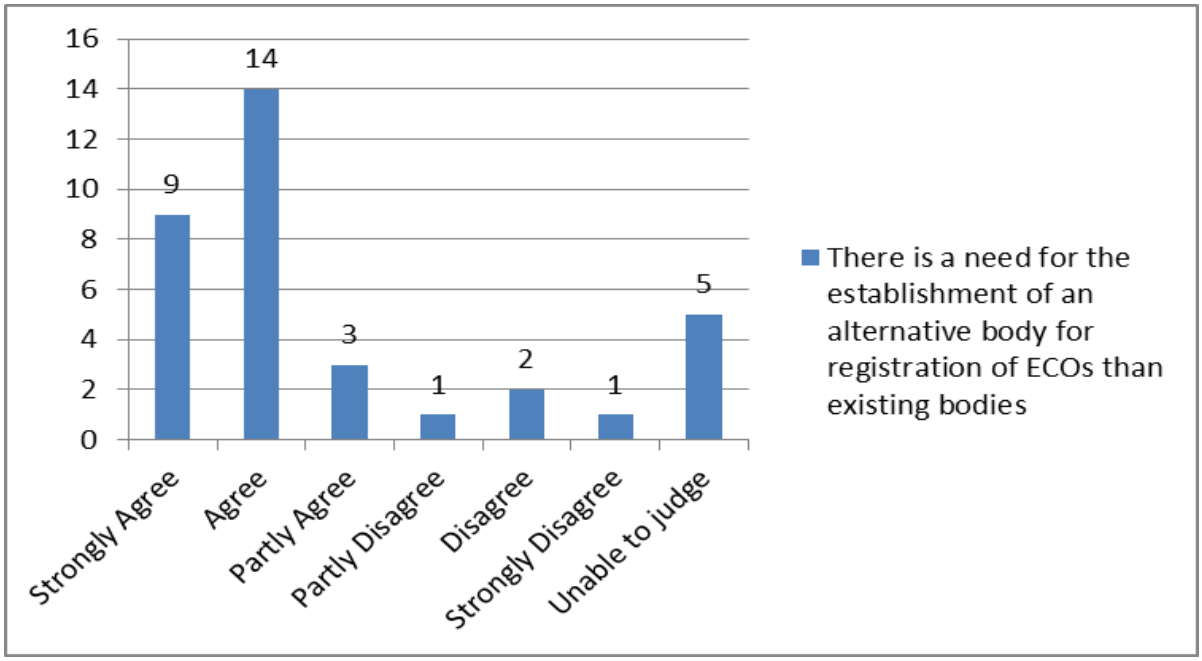

Figure 5 **Indication of the need for regulation of the South African ECO industry**

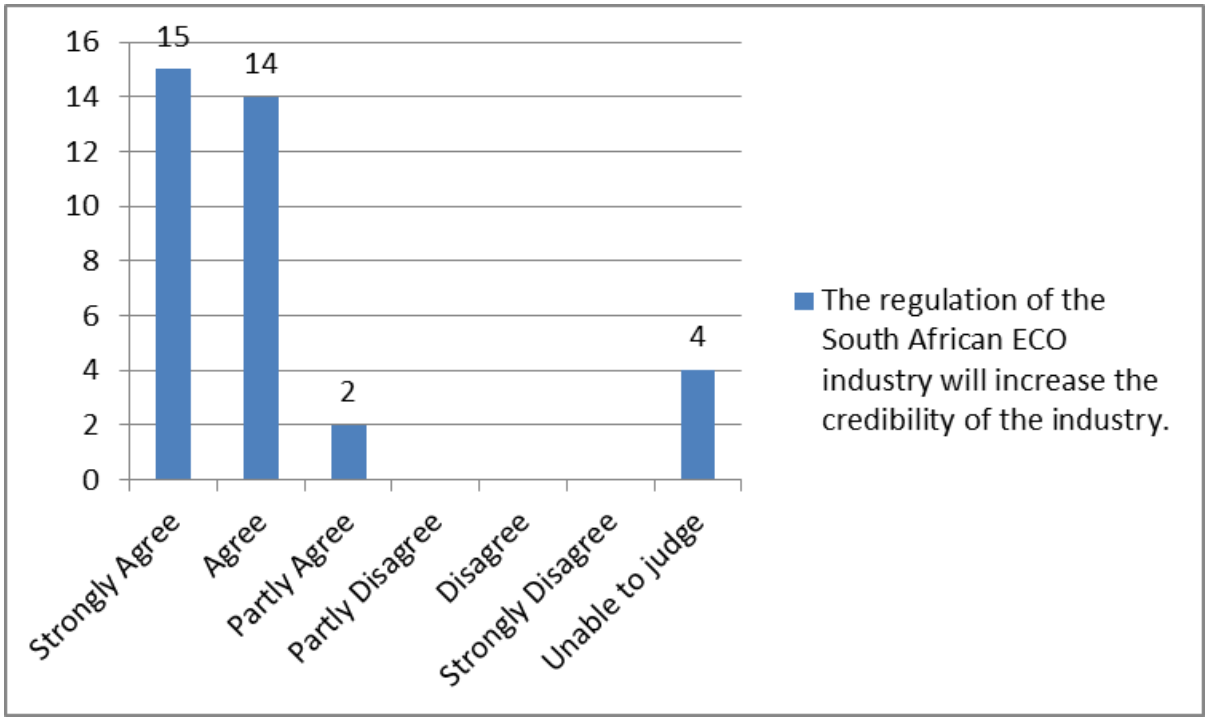

Figure 6 **Indication of operating ECOs' feeling about the credibility of the ECO industry**

Question 2.3: In your opinion what are the expected competence requirements (qualification and experience) required to act as an ECO?

The final question in this section dealt with the competence requirements necessary to act as an ECO in South Africa. Diverse comments were received; however, most of the respondents agreed that ECOs should possess an Honours degree in Environmental Management as a minimum requirement. A large portion of the respondents indicated that experience as an environmental officer within the construction industry is required, with the amount of experience suggested ranging from two to five years. Box 6 serves as a summary of the comments received with regard to expected competency requirements. These competency requirements are also included in Table 5.

Box 6

Q 2.3: In your opinion what are the expected competence requirements (qualification and experience) required to act as an ECO?

"Diploma in Environmental Sciences/Management with a proven track record and 2 years' experience in the field"

"Honours degree with a minimum of 3 years' experience"

"Relevant qualifications in the fields of environmental management, ecology, environmental engineering, etc."

"Environmental degree or higher"

"Anything within the field of Environmental Sciences/Management with 2-3 years' experience as an Environmental Practitioner"

"Tertiary environmental qualification of at least an honours with at least 2 years work experience as an Environmental Officer"

"Minimum BSc (Honours) rooted in Environmental Management or Environmental Science with a broad knowledge of ecology, legislation, project management, auditing, etc."

"An Honours degree or higher, with at least 3-5 years of applicable experience"

"An understanding of how the ecology functions is important, so a science/biology background (to understand the impacts that are being mitigated/need to be rehabilitated) combined with a good understanding of SA environmental legislation,

with exposure to major construction sites."

"4 year degree in environmental sciences with 1 ½ years' experience working with a registered ECO"

4.3 Discussion of results obtained from interviews

Four telephonic interviews were conducted with key stakeholders within the South African ECO industry in order to gain insight into the need for regulation of the industry. The questions asked were formulated according to the aim of this research and are indicated in Box 2 of the research methodology. The four interviewees were selected according to their background and experience within the South African ECO industry, as well as the current role they play in the industry. The researcher decided to interview two stakeholders currently involved within the private sector regarding compliance monitoring and two stakeholders involved in government.

Mr. Shawn MacGregor, managing member of Eco Ledges Environmental Consultants, of the stakeholders interviewed. His wide involvement in the South African ECO industry, his experience with compliance monitoring and the fact that ECO ledges specialises in ECO-related activities made his inputs valuable to this research. Mr. Robin Swanepoel, chief scientist at Aecon's construction environmental compliance monitoring section, was also one of the interviewees. During the 2012 IAIA conference, Mr. Swanepoel and Mr. Griffiths presented a paper that dealt with the lack of integration between professional functions in the environmental field in which they argued that a need exists for urgent registration of ECOs, EMs and EOs, along with EAPs. Mr. Swanepoel's experience and involvement within the ECO industry made his inputs important.

From government's side Mrs. Sibusisiwe Hlela, director at the SADEA's Environmental Impact Management – Capacity and Support Section, was interviewed. Her role within government and her previous experience with integrated environmental management made her inputs valuable. Finally Mr. Sabelo Malaza, director at the SADEA's Environmental Quality and Protection – Compliance Monitoring Section, was interviewed. His current involvement and role within compliance monitoring as a government official made his inputs significant.

The following section provides the inputs received from the four interviewees per question and presents a short discussion and conclusion after each question.

1) *Do you think there is a need for regulation of the South African ECO industry? Motivate your answer.*

Mr. Shaun MacGregor

Mr. MacGregor indicated that he definitely thinks there is a need for regulation of the South African ECO industry. He stated that the main reasons for regulation are: to control the ECO industry and to ensure a consistent delivery of quality service and work, like any other professional service, similar to the role of SACNASP and IAIA. He also mentioned that regulation of the industry will set boundaries and rules with regard to ECO services, as currently there are ECOs operating in the field who do not meet the requirements or have adequate experience to operate as an ECO. He also noted that there are international companies that are getting away with conducting an EIA for a certain project and conducting ECO activities for the same project within the construction phase, which means that the ECO activities are not independent. Mr. MacGregor further motivated the need for regulation by stating that regulation will set a code of professional conduct, of which independence will form part. He also stated that regulation of the industry will prevent conflict of interest between the environmental consultant and the ECO on a project. Mr. MacGregor closed off by noting that poor quality ECO services provided at an affordable price will be something of the past with regulation of the industry.

Mr. Robin Swanepoel

Mr. Swanepoel reacted to the question by stating that he is of opinion that there is a need for regulation of the South African ECO industry as there are currently no regulations, standards or minimum qualifications in place with which ECOs must comply. According to him this has resulted in, particularly, EAPs undertaking ECO type work. He condemned this by emphasising that EAPs are pre-environmental authorisation specialists, who spend much of their time undertaking desk top studies or interpreting specialist reports, with limited on-site practical experience. Mr. Swanepoel went on to state that limited experience may negatively impact on technical and best management practices on a construction site. He concluded by noting that, internationally, environmentalists are registered (in a similar manner to lawyers and doctors) and when they act unethically their licences are revoked.

Mr. Sabelo Malaza

Interestingly Mr. Malaza stated that he does not necessarily think that the South African ECO industry should be regulated; however, he believes that government must clearly

state how it interprets the roles and responsibilities of ECOs. He also mentioned that government should set up strict guidelines with regard to who should be performing ECO work. Mr. Sabelo closed off by stating that he is of the opinion that ECOs are fulfilling government's role, as government does not have the capacity to perform these duties.

Mrs. Sibusisiwe Hlela

Mrs. Hlela indicated that there is a need to regulate the South African ECO industry, as ECOs are professionals who need to conduct themselves in a professional manner with certain skills required.

Discussion

Three of the four stakeholders interviewed indicated that there is definitely a need for regulation of the South African ECO industry. The interviewees indicated that regulation of the ECO industry will ensure that the services provided are of good quality and will set minimum standards and qualification criteria that operating ECOs must comply with. This will subsequently eliminate substandard work conducted by ECOs that do not possess the necessary skills and qualifications. Finally, it was indicated that regulation of the industry will ensure that a code of professional conduct is established with which ECOs must comply and which will provide the ECO industry with accountability.

2) *In one sentence define competency.*

Mr. Shaun MacGregor

Mr. MacGregor defined competency as a combination of qualification and experience.

Mr. Robin Swanepoel

Mr. Swanepoel indicated that "competency" refers to the capability and ability of a person. With regard to a competent ECO he stated that this refers to a person who is well versed in all regulatory aspects associated with the environment and who has an understanding of construction requirements and techniques. Mr. Swanepoel went on to say that an incompetent, but independent ECO is problematic as greater damage can be created than by having a competent and capable, but non-independent ECO.

Mr. Sabelo Malaza

Mr. Malaza noted that "competency" refers to whether somebody has requisite skills and the qualification to carry out a particular task.

Mrs. Sibusisiwe Hlela

Mr. Hlela indicated that “competency” refers to one’s skills, but in addition a person needs to have certain qualities and skills other than technical skills, such as personality, communication skills and educational skills.

Discussion

All the interviewees were in agreement with regard to the definition of competency. They indicated that competency can be seen as a combination of qualification, experience and skills needed by an individual to carry out a specific task. It was also noted that personal qualities form part of the competency of an individual.

3) *In your experience what are the core competency and skills requirements needed in order to act as an ECO in South Africa?*

Mr. Shaun MacGregor

Mr. MacGregor indicated that skills requirements include good planning skills, which are critical; auditing skills; follow-up with clients; interpretation of impacts (like smells leading to discovering of an impact); communication with a contractor; client and government liaison; and clear and understandable report writing.

Mr. Robin Swanepoel

Mr. Swanepoel replied by saying that building up experience as the contractor’s environmental officer through implementation of the Environmental Management Plan (EMP) on a day-to-day basis should be set as a basis. Once this has been mastered, an individual should move up to engineer’s EM, building up experience and managing projects or components of projects. After this route has been followed a person can become an ECO with vast experience behind him or her with regard to various aspects of construction site environmental compliance monitoring.

Mr. Sabelo Malaza

Mr. Malaza mentioned that any audit-related function against any legislated requirements, as well as compliance monitoring for a period of approximately five years, should equip a person with the necessary skills needed in order to act as an ECO.

Mrs. Sibusisiwe Hlela

Mrs. Hlela mentioned that currently there is no set of skills according to which ECOs should operate so it is difficult to say; however, there is definitely a need to establish a set of skill requirements.

Discussion

Various skills needed in order to operate as an ECO were mentioned by the stakeholders. Some of the most prominent skills identified were planning skills, auditing skills, communication and report writing skills, interpretation of impacts, knowledge and skills associated with construction site environmental compliance monitoring and a comprehensive knowledge of environment-related legislation.

4) *In your experience, are ECOs registered with an existing body?*

Mr. Shaun MacGregor

Mr. MacGregor indicated that ECOs operating in South Africa are currently registered with bodies such as SACNASP, IAIAsa, SAATCA and EAPASA, although these accreditation bodies are not specifically aimed at regulating ECOs.

Mr. Robin Swanepoel

Mr. Swanepoel noted that there are currently no bodies where ECOs can register as the existing bodies are mainly aimed at registering EAPs.

Mr. Sabelo Malaza

Mr. Malaza also mentioned that there is no body where ECOs can register; however, he stated that it would make sense to have a regulatory body.

Mrs. Sibusisiwe Hlela

Mrs. Hlela replied by stating that the majority of ECOs register with EAPASA; however, she emphasised that this regulatory body caters more for EAPs than ECOs.

Discussion

Although ECOs can register at bodies such as SACNASP, IAIAsa, SAATCA and EAPASA, the interviewees mostly indicated that there is a need for an accreditation body specifically aimed at ECOs, as currently there is no body like this. The interviewees suggested that a new accreditation body be formed or registration of ECOs be incorporated as a separate function in an existing accreditation body.

5) *Will ECOs have to register with an existing accreditation body in South Africa like SACNASP, or would it be necessary to establish a new regulating body for this purpose? If you say ECOs must register with an existing accreditation body, which body will it be?*

Mr. Shaun MacGregor

Mr. MacGregor indicated that this could be a new body but the function could also be incorporated into EAPASA as ECO work leads from EIA work, which is a vital link between EIA and implementation, and thus this would be an advantage. Mr. MacGregor noted that, from experience, if EAPs perform ECO work as well, they can see which mitigation measures do not work on site and include improved measures in future EIAs. He also mentioned that SAATCA could be considered as a regulating body, as ECO work is very similar to the work of an auditor; however, the two roles must not be confused as there are some differences.

Mr. Robin Swanepoel

Mr. Swanepoel replied by stating that if the proposed regulatory body has to be established within existing frameworks there is a potential that EAPs will sit on the ECO board, thus compromising the role played by ECOs. Mr. Swanepoel also raised a concern with regard to EAPs who are registered with EAPASA or SACNASP and practise as ECOs. He asked the question: should such an ECO make a serious mistake on a construction site, what will the consequences be? In this case will EAPASA or SACNASP suspend their registration/certification, or will the regulatory bodies claim ignorance and state that they are not ECO regulatory bodies. Mr. Swanepoel concluded by stating that the EIA process is supposed to be a cradle to grave process and as a result ECOs should slot into the existing EIA process structures. However, this must be as a separate and independent entity that is managed by ECOs for ECOs.

Mr. Sabelo Malaza

Mr. Malaza indicated that a regulatory body will be important and that he is of the opinion that EAPASA should fulfil this role.

Mrs. Sibusisiwe Hlela

Mrs. Hlela replied by stating that there have been talks of expanding EAPASA in order to include ECOs, as there is an overlap of skills between EAPs and ECOs.

Discussion

All the stakeholders indicated that EAPASA could be considered as the accreditation body for regulation of the South African ECO industry, as there is a vital link between the work conducted by EAPs and ECOs, so the logic would be to make use of the existing regulatory structures. However, some of the stakeholders mentioned that, should

EAPASA be considered as regulating body for the South African ECO industry, it must be as a separate and independent entity that is managed by ECOs for ECOs.

6) *In your opinion what must the registration requirements be for registering as an ECO in South Africa with reference to qualification and experience?*

Mr. Shaun MacGregor

Mr. MacGregor indicated that the basic foundation for registration of an ECO should be a Bachelor's degree or a Master's degree within the environmental management field, or something equivalent. He also stated that new ECOs should enter the industry as interns and build their way up with experience gained. Practical experienced gained on site is also an essential requirement, which must be considered as part of registration requirements. He mentioned that CPD is an important part of competency requirements and should be a part of certification or registration.

Mr. Robin Swanepoel

Mr. Swanepoel mentioned that an ECO should possess of a degree in environmental management with experience as an environmental officer on a construction site. He also indicated that ECOs with limited experience should be allowed to work on smaller projects such as on projects worth less than R 5m. As they gain more experience and become more competent, they should progress to another level of projects, varying in value from R 5m to R 100m. (This condition also applies to IECs that operate in Hong Kong.) Finally ECOs should be certified on projects with a value of greater than R 100m and allowed to work at all levels. Mr. Swanepoel also mentioned that this is in line with SACNASP's Cand Nat Sci, Cert Sci Nat and Pri Nat Sci.

Mr. Sabelo Malaza

Mr. Malaza replied to the question by stating that experience within the auditing field and compliance monitoring regarding environmental legislation will be important registration requirements. He also mentioned that an individual wishing to register should be in the field for over five years. He continued that a degree in environmental management or work experience within the environmental sector will be essential. Mr. Malaza mentioned that one of the concerns is the fact that people from other sectors such as engineering act as ECOs on site, as these people do not necessarily have the right experience.

Mrs. Sibusisiwe Hlela

Mrs. Hlela mentioned that a set qualification and professional experience will be a very important registration requirement. An environmental management degree will be essential for registering as an ECO.

Discussion

All the stakeholders indicated that an individual wishing to register as an ECO should have obtained, as a minimum, a degree in environmental management. On-site practical experience within the compliance monitoring field is also an essential requirement for registration as an ECO.

Chapter 5: Conclusion

The central aim of this research was to establish the need for regulation of the South African ECO industry. Compliance monitoring is an essential component of sustainable development, as this is the arena where the effectiveness of mitigation measures should be monitored in order to minimise the predicted impacts, thus promoting sustainable development. The importance of the role of ECOs in compliance monitoring was emphasised in research conducted by Wessels and Morrison-Saunders (2011) and Wessels (2013). They state that the SADEA has set a goal of ensuring that compliance monitoring and enforcement procedures within the organisational structure of Integrated Environmental Management are adequate and effective (Wessels & Morrison-Saunders (2011: 2). Evidently the South African ECO industry has an important role to play; nevertheless, the industry is currently unregulated. All of the respondents that took part in the survey felt that there is indeed a need for regulation of the South African ECO industry. They provided various reasons for their opinion, of which quality assurance was one of the main factors.

One of the objectives of this research was to identify the drivers behind regulation of the South African ECO industry. Through a comparative literature review of international verification functions and other sectors in South Africa, it was established that the regulation of an industry holds various benefits. The drivers for regulation of the South African ECO industry were determined through reviews of literature relating to South African EAPs and South African tax practitioners. From the literature review the researcher identified nine drivers that can be considered as the main motivational factors behind regulation of the South African ECO industry. These drivers were quality assurance, establishment of minimum standards in respect of qualifications and/or experience (core competencies), establishment of a professional code of conduct and ethics for enhancing accountability and professionalism, skills improvement through CPD, enhancement of credibility, independence of practitioners, enhancement of skills for capacity building, protection of clients against substandard work and overall lack of professionalism, and finally creation of a source of information support and interaction. It is believed that each of these drivers will advance the South African ECO industry. After each of these drivers was investigated, the conclusion was made that they are applicable to the South African ECO industry and provide the justification for regulation of this industry.

The next objective was to establish the qualification and competence requirements for ECOs that should be considered for registration. The literature review and survey data

indicated that the main qualification requirement for an ECO is a BSc Honours degree in Environmental Management or Environmental Science. As regards the competence requirements for registration as an ECO, respondents identified various core elements, which included the ability to think holistically about the structure, functioning and performance of environmental systems; proven competence in the application of Integrated Environmental Management with regard to EIA; good report writing skills, people skills and communication skills; knowledge of all environmental legislation, policies, guidelines and best practice; project management skills; an enquiring mind; the ability to manage public communication and complaints; environmental auditing, monitoring and evaluation of impacts and application of EMPs; broad knowledge of ecology; record keeping skills; and a calm and persistent deposition. The qualification and competence requirements identified should be used as a guideline by key stakeholders and operating ECOs.

The final objective was to establish which accreditation bodies could be considered for regulation of the South African ECO industry. The majority of respondents indicated that EAPASA should be considered as the accreditation body for regulating the South African ECO industry. However, one of the major limitations of this research was that SAATCA was not included as an option in the survey; thus, it is recommended that this option be investigated in future research. From the information obtained on SAATCA's website, it seems that SAATCA may also be a viable option for regulation of the industry, as its members are environmental auditors and auditing is one of the core functions performed by ECOs. The similarity with regard to qualification requirements also makes SAATCA a preferred option for regulation of the industry. It must also be noted that 88,6% of respondents indicated that the establishment of a new regulatory body could be considered for regulation of the South African ECO industry. The research conducted indicated that SACNASP, SAIE&ES, IAIAsa and self-regulation are not preferred options for regulation of the South African ECO industry.

From the data presented in this dissertation, the researcher concludes that an immense need exists for regulation of the South African ECO industry, as regulation will enable the industry to take its rightful place within the South African environmental management field and thus promote sustainable development.

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Annexure A Questionnaire sent out to operating ECOs

NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT
POTCHEFSTROOM CAMPUS

QUISTIONNAIRE: The Role of Environmental Control Officers (ECOs)

I am currently busy with my Masters in Environmental Management and Analyses candidate at the Department of Geography and Environmental Management (North-West University) under the supervision of Mr. Jan-Albert Wessels and gained an interest in the ECO topic while studying and working as an ECO.

The document presented to you is a survey designed to determine the opinion of South African environmental practitioners on the need for the regulation of the ECO industry.

In terms of the National Environmental Management Act (107 of 1998) (NEMA) a developer has to apply for an Environmental Authorisation (EA) for listed activities. As part of this authorisation the competent authority may require the developer to appoint an ECO with specific competencies.

As an environmental practitioner involved with or interested in the ECO industry, your input is extremely valuable to this research and I thank you for the time that you spent on this questionnaire.

Sincerely
Ruan Mostert
Ruan.Mostert@exxaro.com
Masters candidate
North-West University

PART 1: DEMOGRAPHIC DATA

1.1 Name: _____

1.1 Organisation and position in the organisation: _____

_____

1.3 Approximately how much of your working time do you spend directly on ECO-related activities

None of my working time	❑	Between 25 and 50%	❑	Between 75 and 100%	❑
Up to 25%	❑	Between 50 and 75%	❑	100%	❑

1.4 How many years have you worked in the ECO industry (choose 1 only)

Up to 5 years	❑	10 to15 years	❑	None of my working time	❑
5 to 10 years	❑	More than 15 years	❑		

1.5 What best describes your role in the ECO industry (choose 1 only)

Academic research	❑	Consultant / EAP	❑	NGO	❑
Competent authority	❑	Developer / Proponent	❑	Practising ECO	❑

PART 2: THE NEED FOR REGULATING ENVIRONMENTAL CONTROL OFFICERS

2.1 In your opinion is there a need for regulating the South African Environmental Control Officer (ECO) industry. Please explain?

_____
_____
_____

2.2 Please state to what extent you agree with the following statements:

	Strongly Agree	*Agree*	*Partly Agree*	*Partly Disagree*	*Disagree*	*Strongly Disagree*	*Unable to Judge*
<u>2.2.1 In my opinion the ECO industry should be regulated by:</u>							
a) EAPSA (Certification board of Environmental Assessment Practitioners)	❑	❑	❑	❑	❑	❑	❑
b) IAIAsa (International Association of Impact Asssessment South Africa)	❑	❑	❑	❑	❑	❑	❑
c) Self regulated – ECO industry regulate themselves	❑	❑	❑	❑	❑	❑	❑
d) Interested and Affected parties	❑	❑	❑	❑	❑	❑	❑

Please explain?

_____
_____
_____

	Strongly Agree	*Agree*	*Partly Agree*	*Partly Disagree*	*Disagree*	*Strongly Disagree*	*Unable to Judge*
2.2.2 The need for registration:							
a) There is a need for the establishment of an alternative body for registration of ECOs than existing bodies (see above).	❑	❑	❑	❑	❑	❑	❑
b) The regulation of the South African ECO industry will increase the credibility of the industry.	❑	❑	❑	❑	❑	❑	❑

Please explain?

_____
_____
_____

2.3 In your opinion what are the expected competence requirements required to act as an ECO?

2.3.1 Qualifications?

_____
_____
_____

2.3.2 Experience?

_____
_____
_____

PART 3: ANY FURTHER COMMENTS

3. Do you have any other comments related to the registration of ECOs in the South African post-decision environmental monitoring and enforcement effort?

_____

_____

_____

_____

_____

_____

_____