



## Performance of newly implemented Environmental Management Systems in primary schools in South Africa

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### ABSTRACT

Quantitative results from Environmental Management Systems (EMS) at primary schools have rarely been examined in literature. This paper presents the monitoring results of environmental care in 39 primary schools in Northern South Africa. During 2 years, after the EMS was implemented in the curriculum and in the school's management, the progress of environmental performances of the participating schools has been measured, by means of detailed questionnaires, related to four environmental aspects: water, waste, energy and greening. At the beginning of the project, 50% of the schools performed well on water-related environmental actions. Two years later it was 76%. For waste-related activities the improvement was even stronger: from 50% to 100%. The environmental performances of the schools improved also for greening-related actions, from 50% at the start of the project to 64% two years later. Only energy-related activities did not improve significantly with only 24% of all schools performing well at the end of the survey period.

In general, the introduction of an EMS succeeded in an improvement of the overall environmental performances of the schools, but cost-intensive activities were less successful than others.

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### 1. Introduction

One of the main outcomes of the World Summit for Sustainable Development (WSSD), held in Johannesburg in 2002, was the promotion of partnerships for sustainable development. The partnership, forged for the introduction of Environmental Management Systems (EMS) in primary schools in South Africa, can be regarded as a type II partnership that strives to achieve:

- Participation and ownership shared by the partners;
- Integration of economic, social and environmental dimensions of sustainable development (SD);

- A system of environmental accountability, including arrangements to monitor an environmental care process (Hens and Nath, 2003).

This paper addresses the methods and the results of a monitoring process of the implementation of an EMS in the highest years (grade 4–6, learners age 10–14 years) of 39 primary schools in South Africa.

At least according to this study, the implementation of EMS resulted in positive environmental performances.

#### 1.1. Environmental care for schools worldwide

The process to introduce sustainability issues in school programmes started only two decades ago. Chapter 36 of Agenda 21 (1992) advocates the introduction of education for sustainable development, both in formal and informal education. It states that "Education is critical for promoting sustainable development and improving the capacity of the people to address environment and development issues." (<http://www.un.org/esa/sustdev/documents/agenda21/english/agenda21chapter36.htm>).

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As a response to this statement, the international eco-school program was launched in 1994 ([www.eco-schools.org/aboutus/aboutus.htm](http://www.eco-schools.org/aboutus/aboutus.htm)). The eco-schools program is designed to encourage curriculum-based action for a healthy environment. It is an internationally recognized award scheme that accredits schools that make a commitment to continuously improve their environmental performance (<http://www.wessa.org.za/eduecoschools.asp>).

A wide range of environmental learning opportunities have been incorporated in the different learning areas in schools worldwide. But it is difficult to introduce environmental issues coursewise. More recently, strategies were investigated to build in environmental education in a transversal way in traditional programmes. One possibility to put environmental principles into practice is to use EMS in a format that is adapted to schools.

EMS was originally developed to determine and implement environmental policies in industry. When this is done according to international standards, the EMS can be certified. The most used certification system is ISO 14001 that defines an EMS as an “organizational structure, responsibility, practices, procedures, processes and resources for developing, implementing, achieving, reviewing, and maintaining the environmental policy” (Cascio, 1996, p. 26).

Studies on the performance of ISO 14001 certified industrial companies show inconsistent results. There are three performance outcomes from reviewed literature (Nguyen, 2009):

- Adopting an EMS will bring positive environmental performance
- EMS makes no tangible difference to a facility’s environmental performance
- Environmental performance could actually decrease following the introduction of an EMS.

Studies on the performance of schools implementing EMS are rare.

“An EMS in a school is a systematic, coherent set of measures and provisions intended to: quantify, prevent and, where possible, limit the amount of pollution generated by the school” (Van Volsem et al., 1997, p. 47)

The word *system* refers to the integrated aspects of an organization. When an EMS is implemented at a school, it ensures that the environment is taken into account in management decisions of the school, as well as in decisions regarding the implementation of the curriculum. The EMS should

- provide insight in the school’s real impact on the environment,
- show how the school can reduce its impact on the environment,
- identify aspects that could have an impact on the environment,

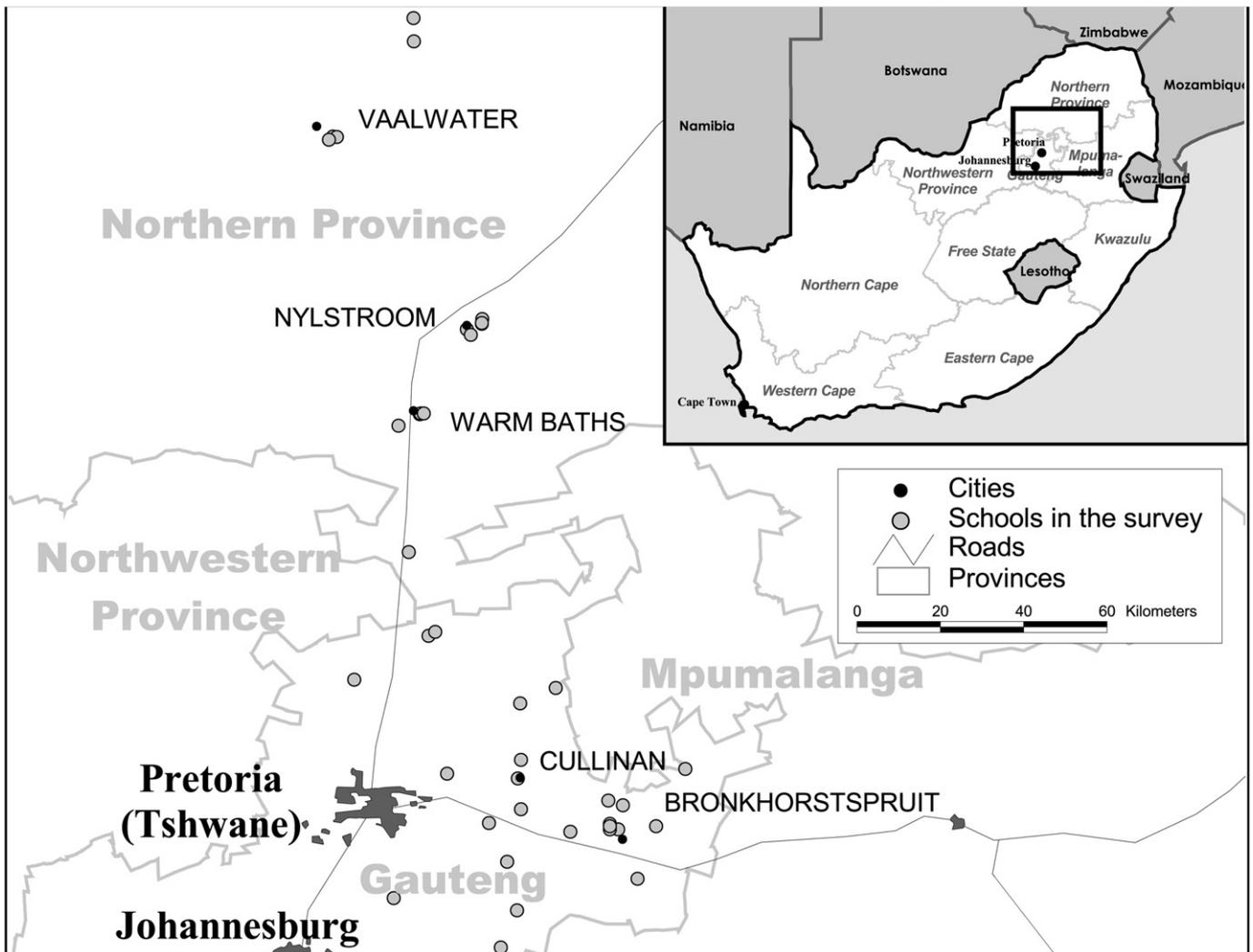


Fig. 1. Location of the participating schools.

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