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**An Analysis and Assessment of the New National Environmental Management Act,
No. 107 of 1998, on Various Economic Sectors in South Africa**

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The shortcomings of past environmental legislation have been adequately addressed in the National Environmental Management Act, No. 107 of 1998. The strengths of the Act far outweigh the shortcomings of the Act.

Issues addressed by the Act such as pollution, waste management, environmental education, environmental impact assessments, public participation in environmental decision making, culture and technology were studied. The overarching objective amongst all these aspects was sustainable development.

Ten South African economic sectors were analyzed for environmental management. The economic sectors studied included: Mining; Forestry, Agriculture, Fisheries; Chemical Manufacturing; Chemical Processing; Energy/Petroleum; Transport and Cargo Handling; Food and Beverage; Health Care/Home and Industrial Cleaning Products; Construction and the Retail sectors.

It emerged that the Mining, Chemical Manufacturing, Chemical Processing and Energy/Petroleum sectors, are the ones actively implementing environmental legislature. Amongst these sectors, environmental management systems provided structure and purpose to these organizations' environmental policies. Aspects requiring greater implementation by these sectors are environmental management co-operation agreements, public participation, environmental research, toxic release inventories and waste management.

Between 40% to 59% of the Agriculture, Forestry and Fisheries, Food and Beverage and Health Care/Home and Industrial Cleaning Products sectors placed emphasis on environmental management. Areas requiring implementation by these sectors include environmental principles/systems, environmental impact assessments, environmental auditing, environmental education, environmental research and waste minimization.

The Transport and Cargo Handling and Construction sectors placed minor environmental emphasis on their activities and the Retail sector placed no emphasis on environmental issues.

Awareness and knowledge of the National Environmental Management Act was dominant in the Chemical Manufacturing, Energy/Petroleum, Mining, Food and Beverage and Chemical Processing sectors. This awareness was lacking in the Transport and Cargo Handling, Construction and Retail sectors.

INTRODUCTION

The Act establishes principles by which all matters concerning the environment should be resolved. The Act sets out the vision, guiding principles, supporting objectives, strategic goals and regulatory principles that the South African government will use for environmental management in South Africa.

The South African government recognizes that the environment and economic development are not in opposition to each other; but are in fact intricately linked. The Act maintains that environmentally sustainable development is essential to provide for people's environmental rights as well as to maintain their development needs. All development must adhere to socially, economically and environmentally sustainable practices and principles.

The industrial and agricultural sector has a key role to play in reconstruction and development. Its sophistication, with technological advancement in most areas has increased its contribution to Gross Domestic Product (GDP) and increased its contribution to the creation of employment.

Given the fragmentation of environmental functions throughout government institutions in the past; government is now forced to take reasonable measures to guide, arbitrate conflicts, supervise and monitor all organs of state in all aspects in order to achieve integrated and holistic environmental management. To meet this obligation, the National Department of Environmental Affairs and Tourism has been appointed as the lead agent responsible for the implementation of the Act.

ENVIRONMENTAL MANAGEMENT ANALYSIS AMONGST THE VARIOUS SECTORS

The key concepts endorsed by the National Environmental Management Act, were studied and analyzed in ten economic sectors. . The economic sectors studied included; the Mining industry, the Forestry, Agriculture and Fisheries sector, the Chemical Manufacturing Industry, the Chemical Processing Industry, the Energy/Petroleum Industry, the Transport and Cargo Handling sector, the Food and Beverage Industry, the Health Care/Home and Industrial Cleaning Products sector, the Construction sector and the Retail sector. Some of these concepts are discussed here.

Environmental Management Importance

Environmental management importance in an economic sector was measured primarily through the existence of environmental departments within the sectors studied.

The economic sectors with more than 66% of their organizations having environmental departments were the Energy/Petroleum, Mining, Chemical Processing and Chemical Manufacturing sectors respectively. The Health Care/Home and Industrial Cleaning Products and the Food and Beverage sectors had more than 50% of their organizations having environmental departments. 30% of the Agriculture, Forestry and Fisheries sector had environmental departments in place, while only 11.1% (or one organization per sector) from the Transport and Cargo Handling and Construction sectors had environmental departments in place. (Refer to Figure 1)

It is largely those sectors with the greatest environmental impacts arising from their processes and business activities that are placing emphasis on environmental management. It was also established that it was mainly the larger organizations within the Energy/Petroleum, Mining, Chemical Processing, Chemical Manufacturing, Health Care/Home and Industrial Cleaning Products and the Food and Beverage sectors that had environmental management departments in place and emphasized environmental management. The Transport and Cargo Handling, Construction and Retail sectors placed little or no emphasis on environmental management importance

Environmental Impact Assessments

The existence of written standards for environmental impact assessments (EIAs) was investigated. 75% of the Energy/Petroleum sector, 66.7% of the Chemical Manufacturing sector and 42.9% of the Chemical Processing sector, have written standards for EIAs. Between 20% and 37% of the Mining; Agriculture, Forestry and Fisheries; Food and Beverage and Health Care/Home and Industrial Cleaning Products sectors have written standards for EIAs. 11.1% of the Transport and Cargo Handling sector had written standards for EIAs, while the Construction and Retail sectors did not have written standards for EIAs. (Refer to Figure 2)

52.2% of all respondents across all the sectors performing EIAs used them as decision-making tools.

Despite, the increasing growth in EIAs, most of the parties involved in the EIA processes are relatively inexperienced. It appears that EIAs are often poorly carried out and presented and the resulting predictions may often be incorrect. EIAs need to be systematic and reproducible, hence the need for written standards for EIAs. A thorough scientific consideration of potential impacts on the physical, biological, cultural and socio-economic aspects of the environment must be undertaken.

Environmental Audits

Over 70% of the following sectors performed internal and/or external environmental auditing:

- Energy/Petroleum
- Chemical Manufacturing
- Mining
- Chemical Processing

The Construction and Retail sectors do not perform internal and/or external environmental auditing. (Refer to Figures 3 and 4)

Environmental auditing is a powerful managerial tool. However, this resource is not being effectively exploited by many organizations. Environmental audits evaluate the environmental performance of an organization by checking compliance with environmental legislation and assessing the effectiveness of existing environmental management systems. The greater use of management auditing would result in the identification of company risk resulting from environmental failure and therefore ultimately a reduction in costs.

Environmental Management Systems

The existence of environmental management systems across the various sectors was investigated. Over 50% of the following sectors were signatories of or striving for compliance for the ISO 14001 management system (mainly striving for compliance):

- Energy/Petroleum (87.5% of the sector)
- Chemical Processing (57.1% of the sector)
- Mining (54.5% of the sector)
- Chemical Manufacturing (50.0% of the sector)

Between 30 to 43 % of the following sectors were signatories of or striving for compliance with the ISO 14001 management system (mainly striving for compliance):

- Agriculture, Forestry, Fisheries (30% of the sector)
- Food and Beverage (36.4% of the sector)
- Health Care/Home and Industrial Cleaning Products (42.9% of the sector)

11.1% of the Transport and Cargo Handling and Construction sectors were signatories of or striving for compliance with the ISO 14001 management system, while the Retail sector did not have any environmental management systems in place.

58.3% of the Chemical Manufacturing and 37.5% of the Energy/Petroleum sectors were signatories of Responsible Care, some having this system in conjunction with the ISO 14001 management system. (Refer to Figure 5)

Awareness and Actions Regarding the National Environmental Management Act, No. 107 of 1998

Awareness of the National Environmental Management Act was dominant in the following sectors, with the percentage of the sector having read the Act enclosed in brackets:

- Chemical Manufacturing (83.3% of the sector has read the Act)
- Energy/Petroleum (75% of the sector has read the Act)
- Mining (72.7% of the sector has read the Act)
- Food and Beverage (63.6% of the sector has read the Act)

42.9% of the Chemical Processing and Health Care/Home and Industrial Cleaning Products sectors has read the Act. 40% of the Forestry and Fisheries sector has read the Act, 11.1% of the Transport and Cargo Handling sector has read the Act. None of the organizations within the Construction or the Retail sector has read the Act. (Refer to Figure 6)

Over 60% of the following sectors have or will be taking the necessary action in order to comply with legislative requirements set out in the National Environmental Management Act:

- Chemical Manufacturing (83.3% of the sector)
- Energy/Petroleum (75.0% of the sector)
- Mining (63.6% of the sector)

Between 40 to 46% of the following sectors have or will be taking the necessary action to comply with the Act:

- Food and Beverage (45.5% of the sector)
- Chemical Processing (42.9% of the sector)
- Agriculture, Forestry, Fisheries (40% of the sector)

11.1% of the Transport and Cargo Handling sector will be taking action to comply with the Act, while none of the organizations within the Construction and Retail sectors will be taking any action to comply with the Act. (Refer to Figure 7)

It is the general perception of the Transport and Cargo Handling, Construction and Retail sectors that these sectors do not have to be environmentally aware or active, as they have very little to do with environmental issues due to the nature of their business activities. These sectors believe that they do not negatively effect the environment in any way and therefore should not be environmentally conscious.

The Construction industry believes that it is up to the owners who contracted them to do the construction work, to perform any necessary environmental impact assessments or auditing of all construction activities.

It was concluded that the Mining, Chemical Manufacturing, Chemical Processing and Energy/Petroleum sectors; were proactively involved in adopting, implementing and actioning environmental legislature. The Agriculture, Forestry, Fisheries; Food and Beverage and Health Care/Home and Industrial Cleaning Products sectors placed an “average” amount of emphasis on environmental awareness and issues. The Transport and Cargo Handling and Construction sectors placed “minor” environmental emphasis on their activities, that is there was a minimal amount of awareness and interest among these sectors. The Retail sector places no emphasis on environmental issues.

Generally, the impact of the National Environmental Management Act on the various economic sectors has been minimal. Most environmentally active sectors indicated that most areas of the Act were covered in their environmental management systems, especially ISO 14001, which was being strived to attain. There have been no drastic changes in an attempt to incorporate the Act into environmental policies by most sectors.

Most sectors who indicated incorporation of the new legislation into environmental policies or environmental management systems, have not as yet done so, but will be implementing these changes in the future. There has been no drive by these sectors to improve on environmental standards or performance.

Major areas within the Mining, Chemical Manufacturing, Chemical Processing and Energy/Petroleum sectors that should be further pursued are:

- The adoption of environmental management co-operation agreements.
- Employee education with respect to work that is harmful to their health or the environment.
- Allocation of funds annually towards environmental research.
- Recycling of wastes and effluent.
- The implementation of toxic release inventories.
- Assessment of the immediate and long-term effects of emergency incidents on the environment and public health.

Environmental issues/aspects that need consideration and implementation by the Agriculture, Forestry, Fisheries; Food and Beverage, and Health Care/Home and Industrial Cleaning Products sectors include:

- The creation of environmental departments.
- The implementation of formal written environmental management principles and policies.

- EIAs should be formalized.
- Environmental auditing needs to be implemented in these sectors.
- The implementation of environmental management systems needs to be addressed.
- Incorporation of the requirements of the Act into business practices, to ensure compliance with legislation.
- Environmental education and awareness should be promoted.
- Greater commitment towards environmental research.
- Put in place control measures preventing the occurrences and recurrences of emergency incidents and assess the effects on these incidents on the environment and public health.

Environmental issues that need to be considered in the Transport and Cargo Handling and Construction sectors, include:

- While it may not be necessary to institute environmental departments, environmental management policies should be considered by larger organizations having detrimental effects on the environment.
- These sectors should study the National Environmental Management Act in greater detail, in order to determine what actions they can take to meet the requirements of the Act.
- There should be greater employee education and protection within these sectors.
- Benefits to both the organization and the environment can arise from environmental research.
- Monitoring of the quantity or composition of their waste products.
- Assess the effects of emergency incidents on the environment and public health.

While it is true that the Retail sector does not have as much an impact upon the environment as the Mining or Chemical Manufacturing sectors, for example, there are various environmental aspects that the Retail sector can be involved in. These include:

- The impact of their activities on the environment can be assessed via environmental impact assessments.

- The National Environmental Act should be studied to determine what actions should be taken in order to comply with the legislation.
- There should be a greater amount of recycling amongst these organizations.
- Control measures preventing the occurrences and recurrences of emergency incidents should be introduced.

An area that has to be better addressed in South Africa is waste management. All waste streams must be identified; and the composition of the wastes analysed. Dilute and disperse into a waste stream should no longer be acceptable.

As yet, as evidenced by the survey, there has been no determined drive by the Department of Environmental Affairs and Tourism to increase awareness of the National Environmental Management Act. It has been left to the organization to implement the Act. However, it was evident that apart from mostly the larger organizations; who had environmental departments, 54.3% of all respondents had not read the Act. The Department of Environmental Affairs and Tourism should be more actively promoting awareness of the Act. They should also be more actively involved in the implementation of the Act by the various economic sectors.

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FIGURE 1. PERCENTAGE OF ECONOMIC SECTORS HAVING ENVIRONMENTAL DEPARTMENTS

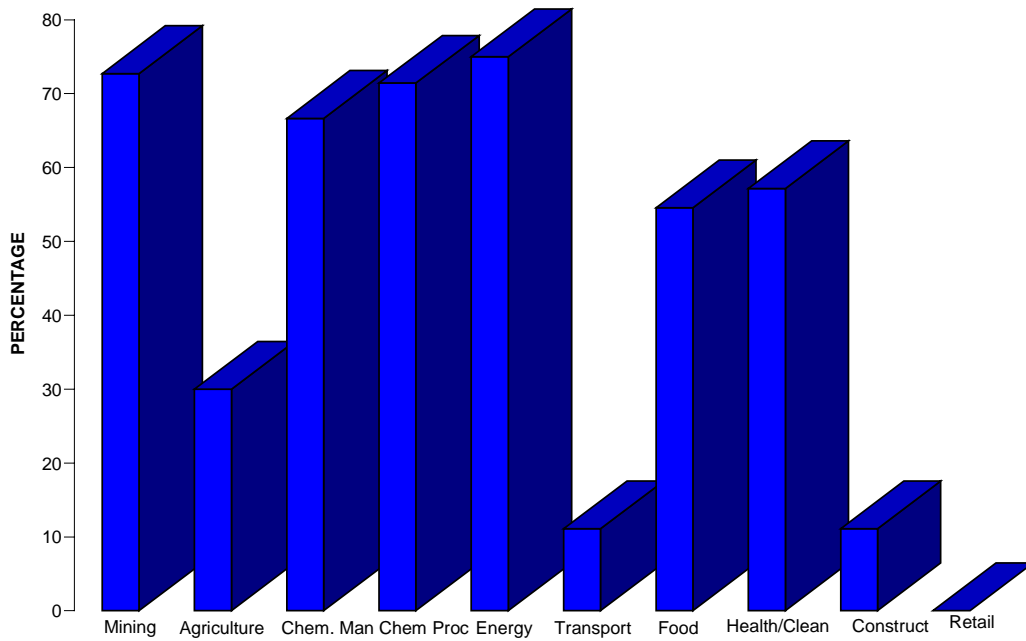


FIGURE 2. ENVIRONMENTAL IMPACT ASSESSMENTS: EXISTENCE AND AS A DECISION MAKING TOOL

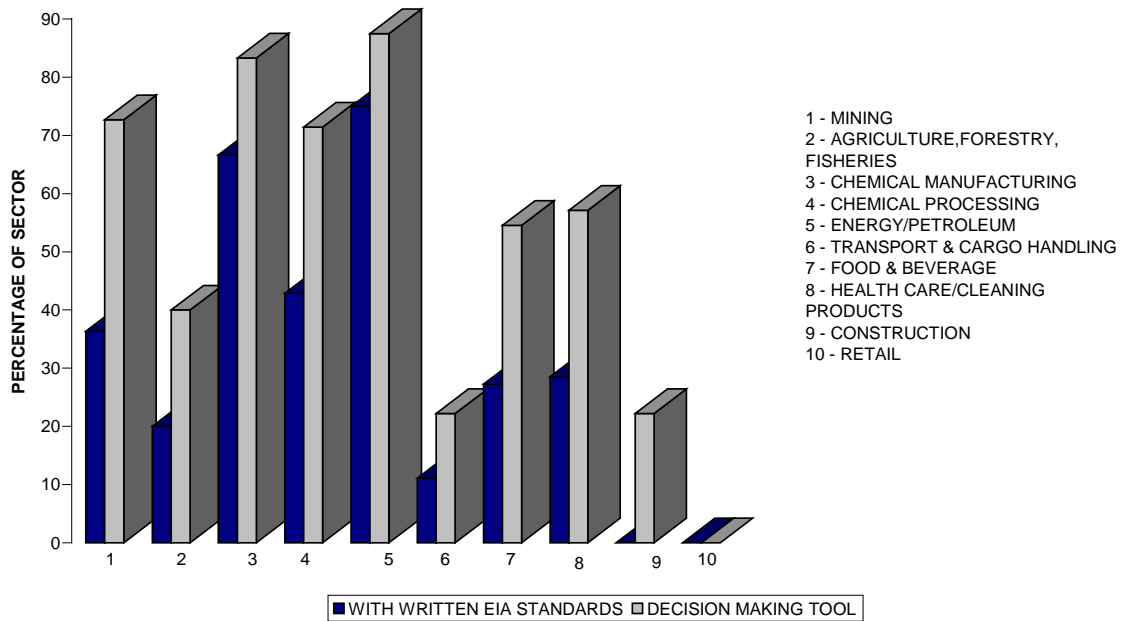


FIGURE 3. FREQUENCY OF INTERNAL ENVIRONMENTAL AUDITS

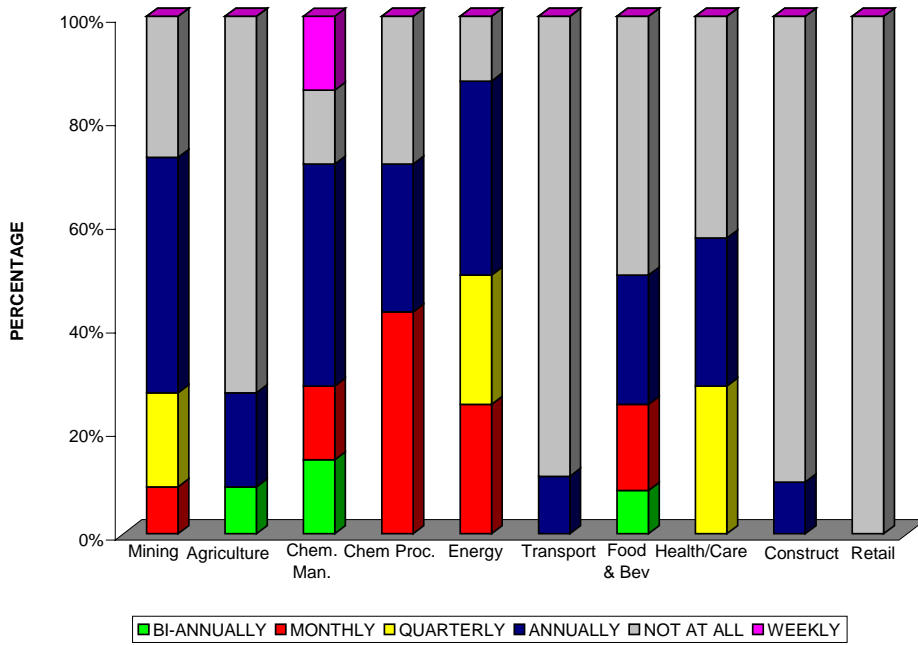


FIGURE 4. FREQUENCY OF EXTERNAL ENVIRONMENTAL AUDITS

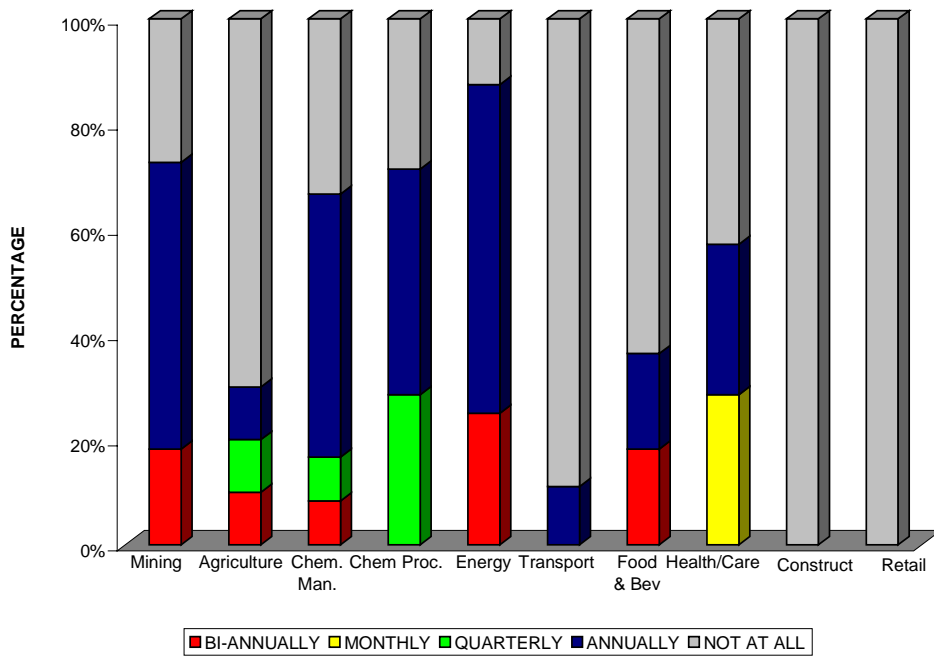


FIGURE 5. ENVIRONMENTAL MANAGEMENT SYSTEMS

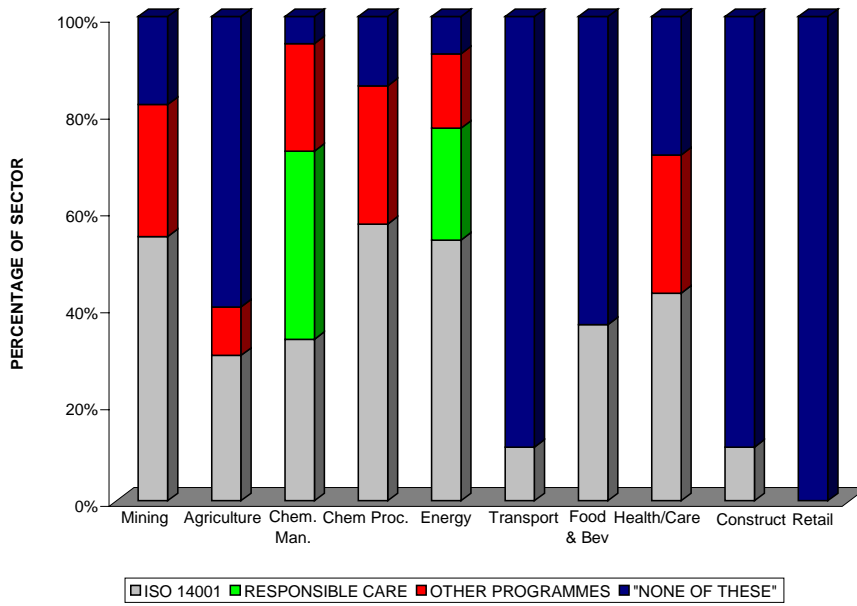


FIGURE 6. AWARENESS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT

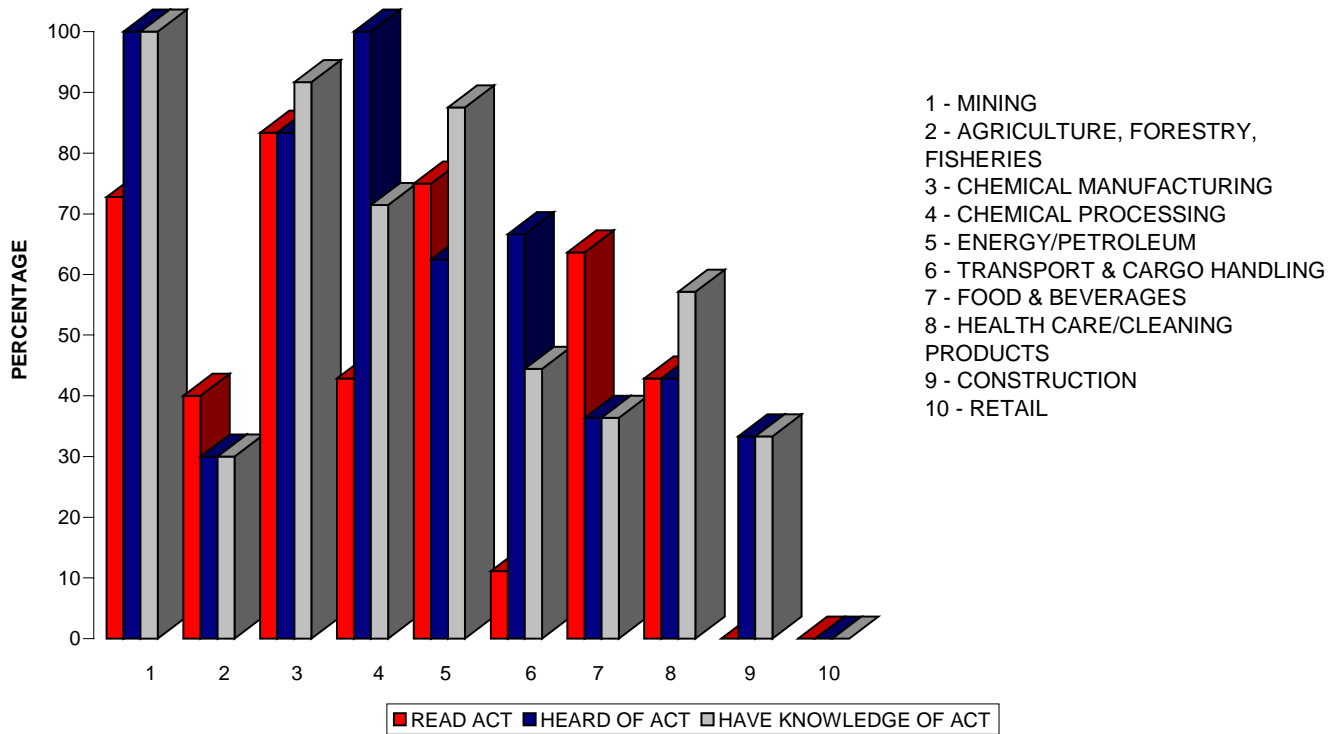


FIGURE 7. PERCENTAGE OF SECTORS TAKING ACTION TO ENSURE COMPLIANCE WITH THE ACT

