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The WRC operates in terms of the Water Research Act (Act 34 of 1971) and its mandate is to support water research and development as well as the building of a sustainable water research capacity in South Africa.

POLICY BRIEF

Water and the economy

The regulatory landscape vs the restoration of natural capital

A completed WRC-funded project points to the implications of the regulatory landscape for the restoration of natural capital.

Introduction

The principle that the person or the organisation responsible for pollution or environmental degradation should be responsible for the restoration of the relevant affected ecosystem has been established in South African legislation by the National Environmental Management Act (NEMA, Act 107 of 1998). This principle is also applied in other acts, such as the National Water Act (NWA, Act 36 of 1998) and the Conservation of Agricultural Resources Act (CARA, Act 43 of 1983).

However, what constitutes successful restoration remains a contentious issue as distinct criteria needs to be applied to distinct situations. The lack of regulation of the restoration process may lead to failure in minimising and addressing the adverse environmental impacts as intended in the legislation.

This would be a failure to protect the environment. Therefore, the restoration process must be regulated through appropriate legislation and policies, and the capacity to implement existing legislation must be developed.

Existing legislation

One principle stated in the NEMA, which applies to all environmental management areas in South Africa is 'The costs of remedying pollution, environmental degradation and consequence adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment'. This is known as the 'polluter pays' principle, and is also applied in the CARA and the NWA.

CARA gives the Minister of Agriculture, Forestry & Fisheries the power to publish regulations that force land users to restore land that has been eroded, disturbed or denuded at cost to the land user. It also gives executive officers of the department the power to direct a land user to comply with such a prescription or to carry out a specific action. The Act also states that any land user refusing to comply is guilty of an offense.

The NWA requires that the person responsible for the pollution of water must minimise and remedy such pollution as well as the effects of disturbance to the ben and banks of a watercourse. The Act also gives catchment management agencies (CMAs) power to order the responsible person to carry out such measures or to do it themselves and retrieve the costs from the polluter.

Although it is implied in these Acts that measures to minimise and remedy adverse environmental effects should be successful, appropriate policies to guide the processes by which the affected ecosystem is restored do not exist; therefore successful restoration is not assured.

Since the action of restoration is required by law, but the means are not specified, an opportunity exists for polluters to take shortcuts to decrease the cost of restoration and thus increase their profits. A more thoroughly regulated restoration process would help ensure that restoration achieves the appropriate objectives. This would include regulation of the planning, execution and monitoring and evaluation phases of the restoration process.

A good example of an Act that does regulate the restoration process is the Mineral and Petroleum Resources Development Act (MPRDA, Act 28 of 2002). An example of restoration at Namakwa Sands follows

Namakwa Sands

The Exxaro Namakwa Sands mine on the west coast of South Africa extracts mineral-containing ore on a large scale by strip mining. Mined-out sites are backfilled and then revegetated by replacing topsoil, reseeding and transplanting nursery-grown cuttings and mature plants.

Restoration at Namakwa Sands

The aim of these restoration measures is to return the capacity of the land to support small stock farming. The progress of restoration is continuously monitored and evaluated. This is an example of how regulation of the restoration process can ensure that the responsible party carries out restoration to achieve the required objectives.

However, research on this site also pointed out a number of gaps in the regulation of restoration. Firstly, there are no incentives for mining companies to comply beyond the minimum requirements of licences. At Namakwa Sands there are currently no requirements to return the diversity of plants that will buffer the ecosystem against disturbances such as drought when the land-use capability has been restored.

Although there is no incentive, Namakwa Sands is one of the few mining companies that do so regardless. However, many other mining companies only meet the minimum requirements so as to increase their profits, often leaving the ecosystem in a vulnerable state.

Secondly, there is a need to include phased end-points in the regulatory process where restoration takes a long time. Development of the diversity at some restoration sites at Namakwa Sands has stagnated, and, although land use capability is restored, these sites will not reach the diverse and resilient state desired by the mining company without active intervention. This illustrates how easily restoration sites can stagnate if they are not properly managed.

Thirdly, licensing systems are not flexible enough to respond appropriately to the findings of monitoring and evaluation. At the time of writing Namakwa Sands was developing suitable requirements relating to vegetation diversity and cover of restored ecosystems. However, the process to change requirements in the environmental management plan is time-consuming and bureaucratic.

Conclusion

The principle that a person or the organisation responsible for pollution or environmental degradation needs to pay for the restoration of the affected ecosystem has been established in South African legislation by a number of acts. However, this alone does not ensure successful restoration and the need exists to further develop existing legislation to regulate the restoration process.

This will help ensure that adverse environmental impacts are successfully remediated to protect the environment. One way of doing this would be to regulate the process in the relevant act for each sector. Alternatively, guidelines for restoration could be developed separate and the use of these made a requirement in each Act.

Recommendations to ensure that successful restoration takes place in future are:

- To ensure that restored sites are resilient, incentives should be developed to comply beyond minimum requirement of licenses.
- The regulatory process should include phased end-points where restoration takes a long time and continues until the desired end-points are met. This will ensure that restored sites continuously develop towards the desired end-points and that restoration that takes a long time will ultimately be successful.
- A monitoring and evaluation requirement should be included to ensure restoration is progressing as planned and that restoration is ultimately successful.
- Licensing systems must be flexible in order to respond appropriate to the monitoring and evaluation findings.

The suggested regulations can help the state, as custodian, to protect the natural environment for present and future generations, and to ensure that all South Africans live in an environment which is not adverse to their health or wellbeing, as required by the Constitution.

Further reading:
To obtain the report, ***Determining the economic risk/return parameters for developing a market for ecosystem goods and services following the restoration of natural capital: A system dynamics approach*** (**Report No: 1803/1/13**) contact Publications at Tel: (012) 330-0340; Fax: (012) 331-2565; Email: orders@wrc.org.za or Visit: www.wrc.org.za to download a free copy.