



# Factors that determine the facilitation of stakeholders in environmental management – some philosophical-historical thoughts with the Merafong area as example

E.S. van Eeden  
School for Basic Sciences  
Vaal Triangle Campus  
North-West University  
VANDERBIJLPARK  
E-mail: 10065016@nwu.ac.za

I. Brink  
Bigen Africa  
PRETORIA  
E-mail: Ilma.Brink@bigenafrica.com

## Abstract

**Factors that determine the facilitation of stakeholders in environmental management – some philosophical-historical thoughts with the Merafong area as example**

*In essence, the article covers some fundamental principles of stakeholder participation within a democratic process of environmental management. An effort is also made to point out several historical features of stakeholder participation within the Wonderfontein spruit (WFS) Catchment in the Merafong study area. Both these facets in the discussion accentuate stakeholder participation as being primary participants (especially organisations that are government directed) and secondary participants (especially non-governmental organisations) in which both groups can reflect sufficient historical evidence in this economic environment to identify them as either the injurers, the injured or the participants/interested parties. To meaningfully conclude the discussion of stakeholder participation in environmental management, some international and philosophical models and perspectives were also utilised to obtain a broader holistic perspective of a meaningful long-term stakeholder partnership. These applications, as reflected against a less fruitful awareness of the environmental practices in the past, can be applied efficiently in future stakeholder discussions regarding the WFS area as part*

*of an approach featuring environmental justice and environmental remediation, compensation and monitoring.*

### **Opsomming**

#### **Faktore wat die fasilitering van rolspelers in omgewingsbestuur bepaal – enkele filosofies-historiese gedagtes met die Merafong-gebied as voorbeeld**

*Die artikel handel in wese oor die fundamentele kenmerke van deelnemers binne 'n demokratiesgerigte proses van omgewingsbestuur. 'n Poging word aangewend om binne die Wonderfonteinspruit (WFS) opvanggebied in die Merafong-omgewing enkele historiese kenmerke van deelnemerskap uit te wys en te analiseer. Wat uit albei hierdie fasette van bespreking blyk, is dat deelnemerskap uit primêre deelnemers (veral regeringsgerigte organisasies) en sekondêre deelnemers (veral nie-regeringsgerigte organisasies) bestaan waarin albei groepe genoegsame historiese toeligting kan bied waarom hulle as die besoedelaars, die geaffekteerdes of deelnemendes/belanghebbendes rakende dié omgewingscenario beskou kan word. Om die bespreking rakende deelnemerskap aan omgewingsbestuur mee af te rond, is internasionale en filosofiese modelle en perspektiewe oor deelnemerskap ook ingebou vir die verkryging van 'n groter geheelbeskouing van wat deelnemerskap behels, en hoe dit oor die langtermyn betekenisvol toegepas kan word. Hierdie toepassings, gereflekteer teen wat in die verlede minder sinvol gedoen is, sou betekenisvol binne toekomstige gesprekke rakende die WFS-opvanggebied aangewend kon word as deel van 'n benadering van omgewingsgeregtigheid en sinvolle omgewingsremediëring, vergoeding en regulering.*

## **1. Introduction**

Over the last decade, African environmental issues within an international framework alerted historians of Africa to fresh subjects of investigation: issues relating to the exploitation or conservation of natural resources and the effects of climate and specific geographies. They also promoted thinking about new sources and evidence. In Africa, specifically, environmental history originated from a strong African social history paradigm that had much to do with environmental justice (Taylor, 1996:6-19; Beinart, quoted in Dovers *et al.*, 2003:215-226; Jacobs, 2003:1). Within this paradigm, the article aim reflects a focus on issues involving environmental justice as required for the Wonderfontein catchment area of the Merafong area in South Africa. Modern trends necessarily relate

environmental justice also to stakeholders, facilitation and ways of environmental management.

Since the 1950s, the WFS environmental issue snowballed as a hot spot of debate between the “injurer” or polluter and the perceived “injured parties”. The Government and the gold-mining companies were accused of being the polluters that infringed the area. In recent years, the conflict debate continued with the “injured” seeking acknowledgement of historical pollution, immediate remediation and compensation from companies. Within the paradigm of new government compensation and environmental legislation in South Africa since 1998, the “injured” and their supporters sought a protective relationship with the Government, calling for support and recognition of their plea – especially as based on oral and visible evidence over many decades (Van Eeden, 1992; Liefferink, 1988-2007).

With the environmental scenario of WFS in mind, the problem questions that will be addressed in this article are:

- the status of conceptual clarification in international and national environmental decision-making processes (which will include some general principles fundamental in negotiations, namely voice (participation) and procedural justice (agreement on the fairness of rules for collaboration));
- the immanence and variation of concepts of stakeholders and their agenda(s) from a historical perspective;
- the ethical and moral values in participation towards environmental decision-making and known and tested institutional models of participation towards environmental decision-making; and
- some principle of consensus and conflict-resolution alternatives in participation.

## **2. A case-based conceptual and theoretical clarification on participation semantics**

### **2.1 Concepts – an analysis**

#### **2.1.1 Stakeholders**

Injured parties, affected parties, interested parties, participants, stakeholders and role players are key concepts in academic and governmental literature that encapsulate the human element in the

process of participation. The concept of stakeholders is the more generally accepted and encompassing concept used in management literature. According to Ramirez (Buckles, 1999:101), the word *stakeholder* was first recorded in 1708 as “a person who holds the stake or stakes in a bet”. A current accepted definition of stakeholder is “a person with an interest or concern in something” (Bisset & Brink, 1998:1). Freeman (1984:iv) defines a stakeholder as “any group or individual who can affect, or is affected by, the achievement of a corporation’s purpose”.

Within the process of participation, stakeholders can vary in terms of primary and secondary positions. The stakeholder theory pertains to two main branches. The first is the managerial or positive branch and the second the ethical or normative branch. Under the managerial branch, organisations attempt to *manage* stakeholders who are considered to be powerful in that they control resources that the organisation needs. Under the ethical branch, the approach is that corporations should be accountable to all affected parties. This approach also regards environmental reporting as a mechanism to provide this accountability (Mitchell & Quinn, 2005:19).

Primary stakeholders may be acknowledged as “injured and directly affected parties” when their use of the natural resource or their immediate environment is adversely affected by a major activity without their consent. Glazewski (2005:17) explained that in the legal context of

litigants wishing to bring actions on behalf of the animate or inanimate environment ... the requirement [was] that a litigant must have legal standing or *locus standi*. In essence this means that a plaintiff must have a direct and personal interest in a matter over and above the ordinary member of the public to bring an action.

When consent to a major activity is granted by them, their status changes from “injured” to that of “affected” (cf. also Markkula Centre for Applied Ethics, 2007). In turn, Mitchell and Quinn (2005:19) remark that stakeholder theory “assumes that, based on the principles of the political economy theory [mostly operative within the framework of corporations], corporations would not be allowed by society to continue to exist without the overwhelming approval of interested and affected parties”.

Apart from the “injured” parties, other stakeholders usually involved in environmental decision-making or participation processes are those soliciting the injured and affected parties to obtain consent,

increase transparency and even legitimise the infliction of a potential negatively perceived change to an environment.

Another primary category of stakeholders may, however, be those that are perceived by the "injured and affected" as the highly-influential, at-arm's-length, non-transparent "injurer" or artificial solicitors with their own protected interests in mind, obtaining silence or resource consent from the regulators or other affected parties by means of various incentives. The opposite is that such influential parties, usually industry and even the government, despite laws and acts in place, perceive the benefits of their actions larger than the superficially "injured" impact (non-health-related) on the immediate communities, individuals or environment. Such benefits are usually expressed in economic terms and rationalised as being to the benefit or welfare of the greater population. From a social dynamics angle, Dye and Harrison (2005:6, 9, 12, 197) regard this kind of institutional power in the economy, as the power to decide, for instance what will be produced, what profits will be made, how these will be distributed and how fast the economy will grow. Power is exercised in all societies, among others to rule and exploit subject peoples. As far as power and government are concerned, some define it as the "legitimate" use of physical force.

The concept *interested parties* defines the morally and ethically concerned environmentalists or persons acting on behalf of public interest as a category of stakeholders mainly in support of the injured or affected. According to Tesch and Kempton (2004:67), the meaning of "environmentalist" varies among individuals and shifts as the same individual uses it on different occasions. The term became popular only in the 1960s, denoting "people who were concerned about the physical environment and the pollution of our air and water". However, it is important to note that discord exists within the ranks of environmentalists "ranging from conservationism and preservationism to deep ecology and ecofeminism" (Tesch & Kempton, 2004). In their research, Tesch and Kempton (2004:81) concluded that they had established four distinct meanings for the term *environmentalist*: those who care but do not act in the public sphere, conservationists, activists (those taking civic actions), and radical environmentalists. In the recent years "interested parties" have been depicted as varying from common law associations or committees to the formal accredited NGO configurations. Innes and Booher (2001:4) describe these as bodies existing "informally in ad hoc groups around the edges of the formal institutions of

government ... with most of these methods ... not enshrined in legislation or in administrative practice”.

### **2.1.2 Role players**

The concept of *role player* is a less-known concept used mainly in South African governmental literature, providing basically a similar meaning to that of the concept of *stakeholder*. An online definition provided for the concept *role player* is, inter alia, a more literal translation of “one who assumes or acts out a particular role or one who engages in role-playing” (YourDictionary.com, 2007). In the context of participation, and within its literal meaning, the only real role player that may be identified is that of the facilitator or mediator in the process of participation. The facilitator usually enters a process of participation at a level where role-playing parties have decided to engage with each other.

### **2.1.3 Definition, valuing and calculation of loss**

Valuing and calculating the loss as perceived by both the injurer and the injured parties is a contentious and complex issue. To reach consensus on the definition, a valuation and calculation of loss requires a process of mediation between the primary parties to enable a conclusive, reconciled outcome. Part 4 of this article offers some thoughts on the issue of a consensus-driven process.

### **2.1.4 Remediation**

In general, remediation means providing a remedy. Environmental remediation deals with the removal of pollution or contaminants from environmental media such as soil, groundwater, sediment or surface water for the general protection of human health and the environment. In general, remediation is also subjected to an array of regulatory requirements and can also be based on assessments of human health and ecological risks where no legislative standards exist or where standards are advisory (Markkula Centre for Applied Ethics, 2007).

### **2.1.5 Environmental management and environmental reporting**

In a conceptual framework, environmental management or accounting in this context is understood as the combination of external or extrinsic physical conditions, and the way of handling or controlling the condition that affects and influences the growth and development of any living individual, plant or animal (Collins, 2004:523, 978; Grolier Enterprises, 1981a:438; 1981b:792, 926). Mitchell and Quinn

(2005:17-19) are of the opinion that environmental concern and pressure groups (e.g. NGOs) expect environmental reporting. In this regard, they actually rely on corporate reports for information on the environmental practices of companies. These reports on environmental information can assist in decision-making of whether investment in a company is feasible; whether to buy its products; or to seek employment and/or to deal with companies in any other way.

In countries abroad, it was found that most stakeholders and affected parties rely on environmental and social data of companies for assessment. Definite problems arose where environmental data enabling users to make meaningful decisions or report on them were insufficient. It basically boils down to the insufficient provision of information on what is actually required (Mitchell & Quinn, as quoted by Epstein & Friedman, 1994 and Deegan & Rankin, 1997). Stakeholder expectations with regard to environmental reporting by industry and the government all boil down to wanting more voluntary and compulsory environmental disclosures, especially specific environmental disclosures. Studies in the nineties pointed out the different expectations between the so-called preparers of environmental reports (or companies and environmental auditors as professional environmental consultants) and the users of such reports. In the past, the views of environment users, such as environmental professionals, environmental activists and pressure groups, were never considered but could foreseeably represent the entire South African population (Mitchell & Quinn, 2005:20-23) as based on the defined accounting framework of the International Accounting Standards Committee Foundation (IASCF, 2004).

The broader WFS catchment area as example – owing to a lack of sufficient environmental reporting by corporations and industries (such as annual statements and annual reports) and owing to the inaccessibility of several “strictly classified” or “confidential” reports – can largely be associated with the theoretical findings discussed in section 2.2.

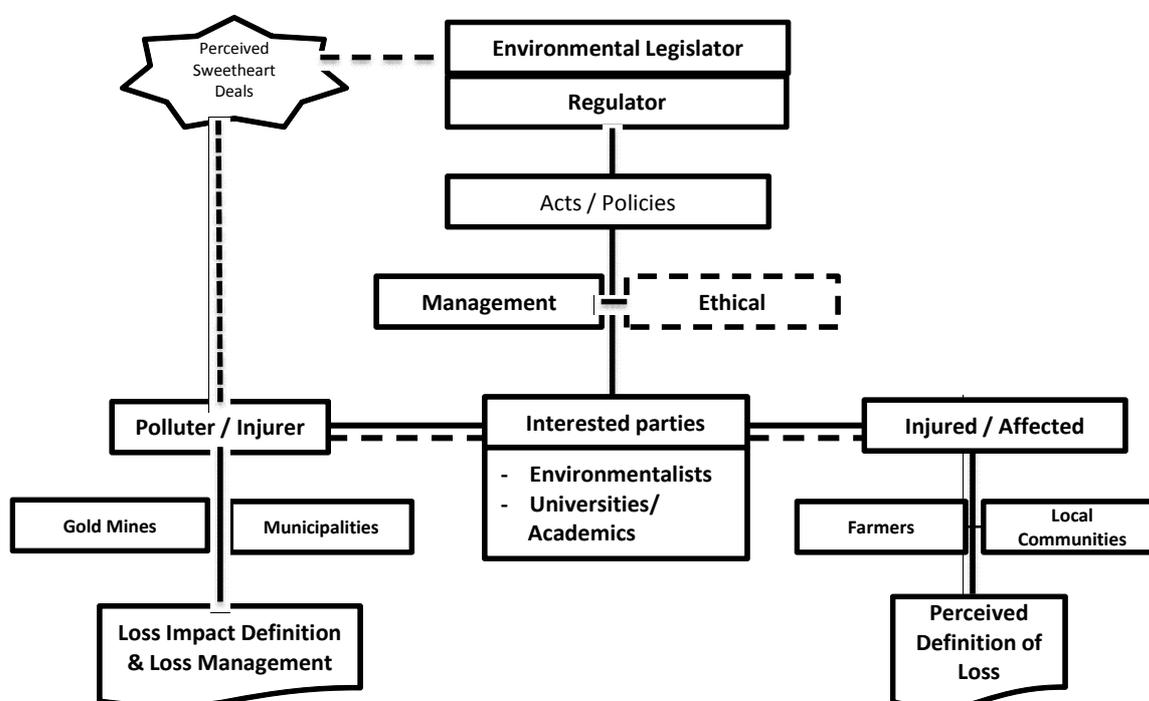
## **2.2 Stakeholder positions, interests and interrelated dimensions – a historical synopsis on the Wonderfonteinspruit catchment area**

Environmental awareness and conservation in the WFS area since the 1950s appear to have had a slow beginning of users being genuinely “aware”, but still not necessarily driven by “responsibility”. Though it is accepted that physical landscape manipulations are

inevitable in the process of meeting human needs, these alterations will produce (and have so in the past) biological consequences, of which some are unavoidable. Through the decades and years, the key challenge was that of controlling the side-effects of “something wanted by society” (Turton *et al.*, 2007:74).

Since the 1970s, as part of the international focus on environmental awareness, a variety of actions and activities by various stakeholders have developed to deal in some way with environmental issues, such as that of the Merafong environment.

**Diagram 1: Environmental management relationships in the WFS area pre-1994**



The sketch above depicts the pre-1994 relationships that will be explored below in terms of the WFS area.

### 2.2.1 Primary Stakeholders

- **Governments: national, provincial and local**

#### **Government as Environmental Legislator in the pre-1994 period**

In recorded history on the WFS area (currently known as part of the Merafong municipal region, previously known as the Carletonville area in the Far West Rand, and also known as the Gatsrand Wyk in

the days of the Potchefstroom District in the Zuid-Afrikaansche Republiek), local human activity (Van Eeden, 1998; 2007) occasionally resulted in controversial historical moments. A process of utilising the Wonderfontein springs for agriculture and for the needs of towns like Johannesburg was recorded from the late 19th century. In the process, the WFS environment was transformed to accommodate mining activities in particular (Van Eeden, 1992), together with a Dutch settlement on the farm Wonderfontein from the late 1920s. This further revived local economic activities into much more than merely farming.

As a result of mining development, several towns were founded in the area, which for years were managed by the Peri-Urban Areas Health Board. They were West Wits (1937), Oberholzer (1939), Bank (1940), Welverdiend (1942), Blybank (1947) and Carletonville in 1948 (Unie, 1950:34-35; 1953:19). On 1 July 1959, the Local or West Wits Area Committee's dream was realised when Carletonville became an independent municipality (Anon., 1959:6). The newly demarcated area roughly comprised 89 000 ha – and the length of the area from east to west was approximately 57 km with an average width from north to south of 17 km (Potgieter, 1978:4). After Carletonville had gained municipal independence, the mining sector gradually featured as the dominant role player, landowner and exploiter of the WFS environment.

The upper part of the lower WFS area in the former Far West Rand was reckoned to be the richest of all seven active goldfields of the Witwatersrand basin. It was an important asset to the Government's tax income in gold and uranium (cf. WRC, 2006). That income brought permanency to this primary stakeholder in the WFS environment. As a manager and an initiator of the formulation of laws and acts within Government departments, divisions, commissions, boards, associations, committees and forums, the National Government indeed acted, or could have acted, as a powerful role player.

The response of the local government of the Carletonville municipal area as part of the primary stakeholders during and after the turbulent environmental changes in the sixties, should also not be ignored. To some extent their public voice and actions in many ways echoed or saluted the economic sentiments of the Government and the mining industry (Van Eeden, 1992:2, 4, 5). From the nineties, some departments in local governments were exclusively tasked to manage environmental issues in their areas. In some way, they became more involved as primary stakeholders that managed and

controlled. The early 21st century status of this outcome still appears to be infant-like. Early in 2007, the Enforcement Directorate of the Department of Environmental Affairs and Tourism (DEAT) was approached to accentuate the responsibility of local governments with regard to environmental issues related to water and air pollution (Lieverink, 1988-2007).

As far as some departments in the Government are concerned, the Department of Minerals and Industries (DMI), earlier called the Department of Mines (DM) focused more on the management of the mining industry and the safety of their working force, rather than concentrated on the wellness of the work-force as representative of a broader community and the community's environment. The DMI also financially assisted expertise, especially in some departments of the Government, to survey various environments for explicit mineral exploitation for the sake of economic progress for all (DM, 1935:43, 66-70). Geological surveys were done on various areas in South Africa (Bunkell, 1902; DM, 1939 as well as the section on the academic community in this article).

Since the Water Act of 1912, there were approaches by the Government through laws and amendments to acts to manage dolomitic water, and amendments thereof from the mid thirties (Funke *et al.*, 2007). Eventually, the powers of the Ministry of Water Affairs increased in the fifties when the new Water Act, no. 54 of 1956 stipulated that a permit was necessary if a mine wished to discharge dolomitic groundwater beyond its boundaries. In the meantime, the Director of Water Affairs also continued to investigate the merits of "total" dewatering in the WFS catchment area from 1956, and presented a report in this regard in November 1960 (see the discussion on the Jordaan report further down). A laxity, and in essence a reflection of the Government's abuse of its own stakeholder position, is found in the many historical events related to, for example, the disposal of the surplus dolomitic water by the mines (Swart *et al.*, 2003a:642). This was in spite of the fact that the Jordaan report of 1960 explicitly indicated destructive environmental possibilities in this regard and warned the mines to be prepared to bear the financial consequences (cf. the Jordaan Report, RSA, 1960).

A look at the other side of the coin also reflects the mismanagement of the Government as it did not enforce the issuing of dewatering permits since the mid-fifties, and indirectly gave the mines the go-ahead with the Jordaan report in 1960. In this way, it did not protect the water resources of the dolomite compartments. Irreversible damage had occurred that needed to be addressed. This did not

happen, because in 1963 the Secretary for Water Affairs observed the drastic lowering of the water table, but indirectly advised the responsible authorities that more was to be gained financially by continuing with dewatering than by enforcing attempts to reverse the damage already done (Swart *et al.*, 2003b:643).

In December 1963, another agreement was reached between the Government and the Chamber of Mines on the policy of dewatering and how to address the resulting damage. Two bodies were formed in 1964 to deal with the situation, namely the State Coordinating Technical Committee on Sinkholes and Subsidences (SCTC) and the Far West Rand Dolomitic Water Association (FWRDWA). The key function of the SCTC was to allay the fears of the public by delineating areas suitable for development, instituting regular ground movement monitoring through geophysical and geological investigations. The SCTC also had to advise the FWRDWA with respect to the compensation for dewatering-related damage (Van Eeden, 1992, ch. 4; Kleywegt & Pike, 1982:77-105).

As more sinkholes occurred, the function of the SCTC extended to include the dewatering of the Bank compartment in 1969 and the Gemsbok compartment in 1986. Together with the Venterspost and Oberholzer compartments, four compartments were then affected as a result of dewatering. As envisaged, it saved the mines millions to dewater and transport the water through a pipeline to the Boskop-Turffontein compartment (29 million US\$ by 1983) but it did not, environmentally, say much about the management abilities of Government departments that were as equally responsible as the gold-mining industry for the eventual process and outcome (Adler *et al.*, 2007:34-35; NASA, 1957).

Complaints by the United Party (UP) as the opposition party about the water pollution at the time were not sufficiently addressed by the MP of Carletonville, Cas Greyling, in Parliament. In fact, the researcher can be left with an impression of a rather nonchalant approach as if it were non-existent. The UP member, H.J. van Eck, queried the WFS status in 1972 (Greyling, 1950-1988):

... Dan wil ek praat oor die besoedeling in die mynbedryf en daarop wys dat op die Witwatersrand tussen Nigel en Randfontein daar omtrent 368 mynhope bestaan, waarvan 95 sandhope is en 237 slikdamme ... Ons weet ook dat hulle [mining companies] die steriele steil hellings met kunsmis moes bemes ... die reën loog nog steeds die soute, sure en ander chemiese stowwe van hierdie mynhope uit; hulle besoedel ons riviere ...

Though nothing came from this query, the Government at least took notice of the worldwide focus on environmental heritage (NASA, 1972c) in 1971 and the United Nation's Stockholm conference on environmental protection and heritage (NASA, 1972b).

In addition, some research reports at least resulted from the Government's desk prior to 1979, of which some – as in the case of reports conducted by the gold-mining industry – never were made available to the general public. One such example is the Jordaan report, which in many ways appears to fall into a category of being mendacious (RSA, 1960; Liefferink, 1988-2007). From the onset of the first Jordaan commission meetings, all discussions and findings were regarded as confidential and not for broadcasting purposes. At that point in time, the concept *stakeholder* was not a familiar word in the Government's vocabulary, so the primary *stakeholder* approach by the Government can be reflected only as an autocratic “holder of the stakes” (impressions of the authors based on a study of the Jordaan commission report).

### **Government as environmental legislator in the post-1994 period**

Long-standing connections between the mining industry and the Government were somewhat weakened by the turnover of governmental personnel after a new dispensation took office in 1994. In Rand value, the Government still benefits from the profits of the gold mines, and as far as the production of some mines is concerned, it even benefits more than in earlier decades (cf. the results of the Chamber of Mines, 2006). However, newly adopted acts (such as the Water Act of 1998, which is rated as being of the best in the world) and a new constitution, set the table for more stakeholder participation than just the top down approach that created disillusionment because of the traditional non-public participation models.

By 1998 the National Ministries, represented by the DEAT, DWAF and the DME as key role players in the process of environmental sustainability, could and should have been more proactive in the remedial process for the WFS area. This could have been done by initiating stakeholder participation and avoiding possible abuses of their managerial power (as indirectly part of the highest and most influential structure in the country and supported by acts) by accepting the role of a neutral facilitator. The success and/or failure of historical baggage like the DWAF Institute for Water Quality Studies (IWQS) and the DWAF Loopspruit Forum still remain absent. Other role players in forums like the Parliamentary Portfolio

Committee/Parliamentary Monitoring Group, the DEAT Portfolio Committee and the DME National Nuclear Regulator still have to earn credibility. Some critics feel that there is reason to believe that information at the disposal of these forums is not sufficiently distributed – once again this reference to insufficient environmental reporting that can seriously harm any process of stakeholder cooperation and facilitation. In essence, some stakeholders are abusing their powers in favour of one or more of the stakeholder participants, especially with regard to the survey outcomes in the WFS catchment area (cf. the findings of Mitchell & Quinn, 2005:17-19).

- **The injurer: the gold-mining industry**

Active mining in the WFS area accelerated from 1934 (Van Eeden, 2001:54-91). The establishment of the first three gold mines, Blyvooruitzicht (1937), West-Driefontein (1945) and Doornfontein in 1947 (Macnab, 1987:64-161) raised entrepreneurial expectations. By the 1960s, four more gold mines opened, of which the Western Deep Levels mine was the best known (Van Eeden, 1992: ch. 5).

From the early twentieth century, exploration for gold in the Far West Rand mainly had economic progress in mind. Examples of how the environment was managed in order to live up to expectations of mineral exploitation are numerous. However, the contrary, namely responsible management of the environment from its primary position to safeguard the environment against irreversible destruction did not exist up to the early 1990s (Van Eeden, 1992: ch. 5). Some of the major environmental interferences in the mining management process from the early twentieth century up to 2007 were the following:

- the process of cementation that was introduced by the goldmines in the dolomitic areas of South Africa to safeguard the underground mineworkers and to explore the rich gold ores to benefit the economy (cf. Pelletier, 1937; Walker, 1960; De Kock, 1964: 375; Macnab, 1987);
- to pump out the surplus water; this gradually destroyed the local water resources; in essence this approach only enabled the mine workers to work without difficulties, and did not explicitly safeguard them in every aspect of their personal life (that includes health; cf. WRC, 2006);
- to remunerate some selected “injured” stakeholders and remediate the area after sinkholes occurred in severe numbers

since the 1960s (Swart *et al.*, 2003a:647-648; Van Eeden, 1992: ch. 5; Greyling, 1950-1988);

- to manage accusations of water pollution in the WFS (cf. Tempelhoff, 2007:11; Avril, 2007:1, 4);
- to invest and embark on future strategic plans with the assistance of expertise acquired since the early days of environmental destruction; the transformation of the WFS into a possible game reserve (an idea of the early 1970s) comes to mind (RSA, 1973:7634; Potgieter, 1978: Introduction; Stoch & Van Eeden, 2007; Jacobs & Van Eeden, 2007).

A feature of stakeholder inclusiveness in the post-1994 democratic years in South Africa is the leading role of the mines as primary initiator and facilitator of stakeholder forums, and their appointment of consultants to facilitate these processes – compare the role of Bigen Africa in the Far West Rand area in this regard. Other affected or injured users/parties as stakeholders, as well as those soliciting the affected (environmental activists and individuals from a variety of professions), have difficulty in accepting this approach. This is so simply because users and their supporters have accepted it – after 50 years of raising concerns and pleading for acceptance of the fact that the mines are the primary polluters and the consequent acceptance of the responsibility to remunerate as well as remediate. In addition, requests for environmental reports from the local mines in the WFS were perceived as being silenced. Trust in this possibly well-meant initiative by the mines, who ironically possess the funds to do so and who are urged to remediate, will not be bred in a moment's time (Lieverink, 1988-2007).

- **The “injured and affected”:** in the agricultural industry

Though the agricultural sector in the WFS catchment area was regarded as the major sector before the 1934 gold-mining development, its position had declined by the 1960s. Sinkholes, related to aforesaid dewatering, manifested in the Venterspost area in the early 1940s, followed by a drop in the water table in the Oberholzer compartment in the 1950s that also decreased the flow of the springs and triggered further ground movement. Thus members of the Oberholzer Irrigation Board were alarmed. It was strongly felt that this geological fact had been denied by the affected members of the mining industry for decades. Key issues for alarm of the agricultural community during the early years of gold mining mainly related to their ability to maintain an economically sustainable future in farming and fears that their property would decline in value. Their

environmental management focus probably stretched as far as they could benefit from their crop production or livestock. From the sixties, an aspect that was added to especially the concerns of irrigation farmers was the effect of water quality on crops and animals. This happened after the mines had been tasked to distribute the pumped underground water through a channel pipeline to farmers (Van Eeden, 1992: ch. 3-5).

As a secondary stakeholder, the local agricultural community could seldom produce acceptable evidence to prove the validity of their observations of the deterioration of the water quality. A skill of experienced farmers that was ignored in the process was their ability to intellectually read their environment, its abilities and the obvious changes. An aspect that should also not be ignored because of a lack of available written reports is how valid evidence, more than once, was perceived to have been removed strategically from discussion tables of Government departments and the mining authorities. This was revealed in oral interviews that included historical accounts (Stoch, 1960-1970; Van Rooyen, 1966-2000).

Based on purely economic motives, farmers in 1948 already petitioned to the Secretary of Water Affairs with concerns in respect of the possible consequences of injecting cement to curtail the flow of water in the dolomitic fissures and the resulting failure of the springs that could be used for agricultural purposes (Stoch, 1960-1970; Van Eeden, 1988). Though the initial fierce debate between agriculturalists and the mines (the latter supported by the Government) on whether there was indeed pollution slacked down somewhat from the seventies (Van Eeden, 1992: ch. 4-5), concerns were louder again from the nineties. This time, scientific research done by academics accentuated the validity of past water pollution concerns (Barthel & Funke, 2007; Turton *et al.*, 2007:1-10; Adler *et al.*, 2007; NNR, 2007; WRC, 2006; Van Eeden *et al.*, 2003; Van Eeden, 1997), while a number of past research projects clearly reflected this possibility (cf. Matic & Mrost, 1964). In the most recent research by Barthel and Funke (2007: Abstract) and Barthel *et al.* (2007), conducted by the Government's National Nuclear Regulator (2007), the radioactivity risks of the mining activities for cattle being watered at polluted surface water bodies in the WFC area were investigated extensively. The researchers pointed out that the SeCa results at many sites were "to the order of 100 mSv per annum" instead of the restricted dose of 1 mSv. They say the following about the sediment in SeCa:

... This is due to the relatively high specific activities of sediments that contain also the most radiotoxic radionuclides (e.g. Po-210, Pb-210 and Ra-226) as compared to the activity concentrations of pure water ... which ... [can] contain these radionuclides ... in low concentrations...The pathway of sediment  $\Rightarrow$  cattle  $\Rightarrow$  meat  $\Rightarrow$  person ... can cause radioactive contamination of livestock products (milk, meat) resulting in effective doses of the public ...

At about 50% of the sites they investigated, the dose limit of 1 mSv was exceeded much more. Recent investigations on aspects of pollution confirmed the role of the mines as polluter (Wonderfontein Action Group, 2007: NECSA report; Heyl, 2007; Graham, 2007). In the past four years, farmers, as a secondary affected party, have joined hands with interested parties to handle their concerns and defend their situation (Lieverink, 1988-2007; EEPOG, 2007a; EEPOG, 2007b).

- **Informal communities**

Though very limited research has been done on this specific affected group to date, several voices from NGOs have accentuated the urgency for sufficient research and protection of these people (Lieverink, 1980-2007). Therefore, for the purposes of this discussion, it will not be discussed in depth, but simply mentioned to register awareness of the secondary stakeholder position that these communities also are entitled to fulfill.

## **2.2.2 Stakeholders perceived as “interested parties” to assist the injured**

- **Academic-related professionals**

The stakeholder status of academic-related professionals/expertise in tertiary education or employees in the Government and in the private and public sector is huge and complex. Likewise, they may differ in their approach to standard accepted ethical commitments on reporting and making controversial findings and observations public, depending on who is responsible for their monthly salary or for the project funds. As such, it will always be a complex and difficult issue of what should and could have been done, e.g. in the WFS catchment area. There are tertiary educational institutions (NASA, 1978), the Water Research Commission (s.a.), the Council for Geo-Science (2005), the Council for Scientific and Industrial Research (CSIR) and the assistance of private research consultants even since the early days of the gold-mining industry.

Though not all the research reports were allowed to be exposed to the public eye, some researchers produced whistle-blowing articles or simply kept silent on critical issues (cf. Van Eeden, 2007). Some early research results that reflected the destructive possibilities of mining in dolomitic areas were perhaps not often accentuated from a 2007 perspective (Jennings *et al.*, 1965). From themes at international academic conferences, it was evident that worldwide concerns about mining trends in dolomitic compartments also existed (Enslin & Kriel, 1967:908-918; 1959:1-14; Bezuidenhout & Enslin, 1969:1-8; Enslin *et al.*, 1976:1-7; Wolmarans & Guise-Brown, 1978: 329-346; Vegter, 1987; Barthel & Funke, 2007: Abstract). Research on a wide spectrum of issues in the WFS catchment area has been prominent in the past twenty years (cf. Van Eeden, 1988; 1992). Examples from other areas in South Africa could also have served as a baseline for some of the concerns in the WFS, but somehow they were never even referred to (NASA, 1956a; NASA, 1956b). Ironically, the wheel of change for this interested party as stakeholder has turned slowly because of political and economical interests and ethical obligations towards primary stakeholders responsible for research funds.

- **Non-governmental organisations and environmental activists**

A number of organisations that directly or indirectly deal with environmental heritage or/and remediation exist in South Africa. Some can be traced back to even before the 1980s (NASA, 1972c). Among others, the Federasie van Sake- en Beroepsvroue (NASA, 1972b) and the Cape Town Chamber of Commerce (NASA, 1972c) had the following to say to Government departments:

There has been some criticism of the fact that South Africa lacks a body which would be responsible for the overall control of pollution in its various forms ...

... to co-ordinate all the factors involved in the protection of natural resources – the development areas, the conservation of wild life, public health both mental and physical – which should have full power to ensure immediate control for present and long term planning ... (NASA, 1972b).

NGOs with an indirect WFS focus and mainly active since the nineties are the following: The Chronicle Group; Green Cross; Groundwork; The Legal Resource Centre (LRC); Pelindaba Working Group; WESSA and Earthlife Africa. Relatively young NGO's with a direct WFS focus or involvement are the Public Environmental Arbiters

(PEA) and the Federation for a Sustainable Environment (FSE) (Lieverink, 1988-2007). From a historical perspective, some environmental actions that were specifically steered by the general public were apparently not always as highly regarded as those initiated by the government or highly respected industries or/and institutions. This perception has a historical tail, linked to people in governmental periods when the majority of the public was visible but not supposed to be heard (Lieverink, 1988-1907; Funke *et al.*, 2007). Examples are the Potchefstroom Petitioners (PP), the Randfontein Environmental Action Group (REAG) and the former Wonderfontein Action Group (WAG), though WAG was managed with mining funds.

### **3. Ethical and moral values in stakeholder participation**

Ethics, simply explained, can imply a moral principle or set of moral values held by an individual or group that are considered to be correct. This can be morals in relationships to the individual, the group and the nature (Collins, 2004; Grolier Enterprises, 1981a). Ethical principles can vary from culture to culture. Even so, the application of ethics relates to the environment. For example, the Christian conviction that man has been granted “dominion” over the earth and may therefore exploit and use nature for his own ends is interpreted in various ways. Among others, the allusion to ethics as a “moral dimension of nature” is pleaded for currently. In this way, a case for eco-ethics that will accommodate and respect the identity and purpose of nature, as well as the interests and purpose of human life, is stated. However, this present-day, postmodernistic focus was far from being practised and regarded as an accepted ethical model in the mid-twentieth century (Plumwood, 2006:167-195; Benton & Short: 2000:147-149; Du Plessis, 1998:1-7).

In essence, the dominant ethical thinking regarding nature up to the 1960s, and on some continents even later, was to utilise environment, not to preserve it. In this context, as naturally accepted as if it was undisputable, the South African Government, the capitalistic industries and the general scientific perspective of the day dealt with environment in no other way of ethical thinking but an exploitive way of thinking.

Though some social intellectuals, for example philosophers, wrote about some environmental ethics before the first Earth Day in 1970 (White, 1970; 1967; Leopold, 1949; Hardin, 1968), various others have further pointed out the negative sides of man-centred environmental ethics since then (Plumwood, 2006:167-195; Benton & Short, 2000).

Another pathway of discussing ethics in stakeholder participation is to answer the question of how John Citizen should choose among competing goals of policy. The most common framework for answering this question is seen as some version of policy analysis, namely cost-beneficial, cost-effective and risk-beneficial analyses. These draw on the moral framework of utilitarianism, though critics feel that this principle ignores how utility is located among individuals (Gutmann & Thompson, 2006:261-263).

In the case of the WFS environment, a policy analysis will reflect the classic choice between environmental protection and economic development. Many authorities under the Government's supervision operate under a legal mandate. An ethical approach, for example to decide what should be preserved, and how, is called a policy analysis. An analysis includes a quantification and comparison of many different values over time to estimate as many costs and benefits to quantification over time as are amenable. This helps in determining whether the environmental protection in question is more or less valuable than the economic development (Gutmann & Thompson, 2006:261-263). Marshall (1993) referred to this method or approach as part of conservation ethics because of the environment's worth in terms of its utility or usefulness (also known as *shallow* ecology and not *deep* ecology).

When considering specifically the WFS scenario, some analytical studies, as mentioned earlier, were conducted in the past, but usually under the direct authority of government departments or/and the mining industry and not an independent analyst with ethical expertise.

### **3.1 Cooperation, decision-making and participation**

Ethical decision-making processes require sensitivity to weighing the considerations that should impact on the choice of a course of action that will produce the most good and do the least harm. In this process, the stakeholders involved should cooperate. A healthy process in cooperation and decision-making is only possible if all involved stakeholders, to a greater or lesser extent, accept responsibility for the status quo and do not find the solution in only pointing fingers at one another (see the reason for this argument further below).

Aspects of sensitivity and best practice in all circumstances of governance are indirectly embedded in South Africa's newly developed constitution. In a recent study by the Council for Scientific and

Industrial Research (CSIR), the following norms and values, as part and parcel of practising ethical and moral principles, in management were identified (Turton *et al.*, 2007:14-15):

- Coordination of land and water in the broadest sense
- The maximisation of economic and social welfare
- The notion of equity or feelings of fairness
- Informed decision-making
- Quality environmental objectives required as broad parameters for sustainable development

The approach to these aspects of norms and values is inextricably related to how the Government, for example perceives governance ideologically and administratively. Therefore governments and the subjects they serve differ in their application of norms and values. Though a more adequate study is required to fully understand the why's, what's and how's in governance practices, e.g. cooperation and regulation, of the South African government before the democratic dispensation in 1994, a few remarks can be made from cooperation and regulation practices in the history of the WFS area (see Diagram 2).

Efforts to apply managerial control in water practices in the former Zuid-Afrikaansche Republiek (ZAR) effectively are discernable in many local histories. As far as water laws are concerned, these were also in place and amended from time to time. It is Government's explicit autocratic decision to rather follow the economic road to wealth first with all its secondary possibilities, which also included an upliftment of especially white people in South Africa. This allowed for a distortion of ethical and moral principles, e.g. as far as environmental practices including scientific practices in service of the government foci and human welfare are concerned.

Mineral wealth has historically been translated into the justification of unethical practices in the name of profits or job creation, wholesale destruction of the natural environment and accountability only to shareholders, whose sole criterion was dividends. Community health and the natural ecosystems were sacrificed to keep gold-mining companies profitable. Because Government continued, as it had in the past, to profit from the industry by collecting approximately 57% of all mining profits in the forms of taxes and levies, it can be

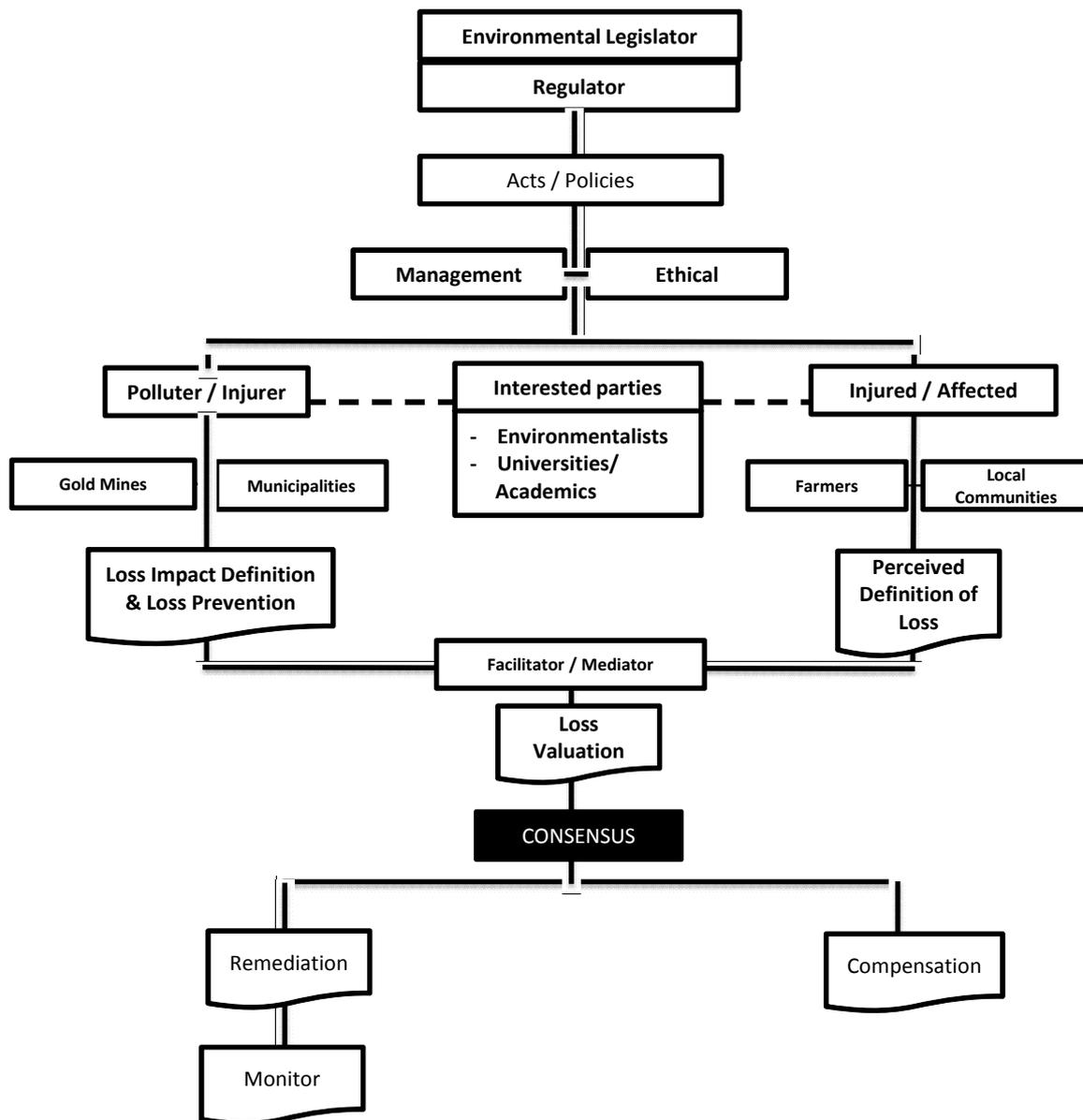
assumed that the ethical interests of the large mining houses merged with those of Government (Adler *et al.*, 2007:33-44).

A third party in this process, the economically active population working at the respective mines or benefiting as a result of the mine's presence in the past and at present, has also bluntly, unethically followed the stream of environmental ignorance. Therefore, though the Government has applied taxpayer money in the past and present to assist in the environmental remediation of the WFS and in other surrounding areas affected after dewatering, which was followed by sinkholes (cf. Van Eeden, 1992), this approach may very well be the future scenario to which all who gained and those concerned will have to comply in order to reverse some environmental consequences.

Past research in cooperation, decision-making and participation has resulted in the development of several ethically-focused measurement instruments from which stakeholders must choose if all of them are willing to work on an equal level of cooperation. This level of cooperation must not be based on position because of a money sufficiency or a power ability because of the constitution or position in governance, et cetera, but must be based on cooperation and participation for the sake of a healthier human environment and an improved environment. In this regard, the ethically-focused measurement instrument called the Utilitarian Approach, in which the consequences of some decisions are regarded as both negative and positive, is a feasible option. In the Utilitarian Approach, an effort is made to increase the good done and to reduce the harm done.

**Diagram 2: A possible post-1994 stakeholder interaction process**

This diagram is a reflection of a possible post-1994 stakeholder interaction process, as a form of the Utilitarian Approach, for applying in the WFS catchment area:



Some of the elements of the post-1994 approach, as indicated in Diagram 2, are presented as the ideal collaboration model for stakeholder facilitation in the 21st century.

Other ethically-focused measurement instruments that should to some extent also be borne in mind in the environmental remediation scenario in the WFS are the following:

- The Rights Approach (implies decision-making based on the “rights” approach) focuses primarily on the protection of and respect for moral rights – dignity, right to choice, to be told the truth, not to be injured and degree of privacy – of those affected – human or non-human.
- The Fairness of Justice Approach (implies decision-making based on the equal treatment of human beings, and if treated unequally, fairly based on some standard that is defensible).
- The Common Good Approach (implies decision-making based on the intrinsic value of interlocking relationships of society to the benefit of everyone’s welfare).

### **3.2 Alternative participatory models**

The participatory models that were developed in recent years in essence evolved from simpler into more developed and complex models, capturing “interactive collaborative methods of discourse allowing multi-way communication around tasks and issues, involving the public directly with planners and decision-makers, and allowing real learning and change to take place on all sides” (Innes & Booher, 2001:4; Hunter, 1999).

## **4. Principles of consensus towards conflict resolution**

Expertise of research in the process towards creating consensus suggests the following key steps (O’Leary, 2007:1; Bingham, 1986; Susskind, 1985:19-22):

- Purpose-driven – people need a reason to participate in the process.
- Inclusive, not exclusive – all parties with a significant interest in the issues should be involved in the consensus process.
- Voluntary participation – the parties who are affected or interested participate voluntarily.
- Self-design – the parties design the consensus process.
- Flexibility – flexibility should be designed into the process.

- Equal opportunity – all parties must have equal access to relevant information and the opportunity to participate effectively throughout the process.
- Respect for diverse interests – acceptance of the diverse values, interests, and knowledge of the parties involved in the consensus process is essential.
- Accountability – the parties are accountable both to their constituencies, and to the process that they have agreed to establish.
- Time limits – realistic deadlines are necessary throughout the process.
- Implementation – commitment to implementation and effective monitoring is an essential part of any agreement.

The biggest concern raised in literature on government as possible mediator is the “fear of sweetheart deals between polluters and government”. This may very well be applied to the gold-mining industry in the WFS area. Although the Government can act as mediator, it is further accepted that the platform is not necessarily designed to establish or implement policy and standards efficiently (O’Leary, 2007).

## **5. Conclusion**

Key aspects that were discussed are the characteristics of different stakeholders, and how the absence of fundamentals like efficient governance and ethical and moral values in the facilitation or mediation process (as in the WFS area) can be constraints in working towards an efficient model of finding consensus. The process of consensus as such has not been discussed in length and will be dealt with in another article.

From the discussion it also seems evident that a government’s definition of cooperation within a specific political system and ideology in the pre- and post-1994 environmental history of South Africa in many ways determines the historical status of environmental controversies like that experienced in the WFS catchment. Though government leaders in South Africa will be able to accentuate some features in past decision-making that relate to democracy, the present and past government and governance systems directly related to efficient water management and pollution control appear to have been “fledgling-like” democracies rather than “mature” democracies (Turton *et al.*, 2007:344, 348). This simply

means that the past and the present governments, as referred to, were and still are acting infant-like on certain crucial environmental issues. The idea that the country cannot sufficiently grow without gold mines allows room for the implementation of ideas that appear more autocratic for the sake of economic benefits – even if the decision involved secrecy measures and a “keep quiet” approach. An absence of efficient governance and trustworthy government practices in environmental issues actually leads nowhere as far as stakeholder participation in any forum is concerned.

Thus, success ingredients for stakeholder facilitation, participation and consensus start somewhere, and that is efficient governance, especially facilitated by a body that is not related to any stakeholder in a specific forum. Neatly embedded in this process, though very intellectual and philosophical, is the ethical code that is followed. The more mature a democracy appears to be, the more efficient the process of governance will be, with values and norms as inclusive features, and the more effective participatory models for stakeholder inclusiveness (cf. Diagram 2) will be to balance ecosystems and social needs. Without a genuine will or effort to work towards efficient governance, all other secondary efforts for stakeholder participation that flow from governance or extensive studies as to what exactly are key ingredients for successful facilitation, consensus and mediation may just as well be abandoned (Turton *et al.*, 2007:94). In the past, the fact that natural resources in the WFS area are “public goods” with the government as custodian has resulted in impressions of ignorance against public pleas of remuneration after these “public goods” eventually destroyed lives and reasonable living conditions.

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**Key concepts:**

ecosystem  
environmental ethics  
environmental pollution: gold mines  
Merafong: water  
stakeholder facilitation  
Wonderfontein Spruit catchment area

**Kernbegrippe:**

ekostelsel  
Merafong: water  
omgewingsbesoedeling: goudmyne  
omgewingsetiek  
rolspelerfasilitering  
Wonderfonteinspruit opvanggebied

**The Wonderfonteinspruit catchment area, Merafong  
(Carletonville)**

