

A critical historical review on protagonist¹ and proactive² environmental activism towards addressing acid mine drainage and remediation needs in some Gauteng goldfields

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To leave this world a bit better, whether by a healthy child, a garden patch, a redeemed social condition, to know even one life has breathed easier because you have lived – this is to have succeeded – Ralph Waldo Emerson³

Samevatting

Sedert 2006 is Jan Publiek toenemend meer bewus gemaak van degraderende omgewings en ontoeganklike omgewingsverslae aangaande die degraderende omgewingsstatus van die eertydse Verre Wesrand-gebied. As goudmyng gebied het die Verre WesRand vir baie jare internasionale aansien geniet, en is dit steeds 'n streek wat nasionaal en plaaslik as onontbeerlik geag word vir die goudmynbedrywighede aldaar. Omgewingsverslae het egter die vermoede van omgewingsbesoedeling (asook die gevaar van sommige impakte op mens en omgewing) uitgewys. Vandaar dat omgewingsaktiwisme in die verre Wesrand, veral onder leiding van die Federasie vir 'n Volhoubare Omgewing (FSE), en onder direkte aanvoering van hoofdirekteur Mariette Liefferink, meer aktief betrokke geraak het. Leiding is vanaf veral 2007 geneem om gemeenskappe sowel as die regering bewus te maak van die goudmynbedryf se verwringde omgewingsferporsie aan huidige en toekomstige geslagte. Hierdie bewusmakende benaderingsvorm van leiding neem, het aanvanklik op 'n protagonistiese wyse geskied. Enersyds is vereis dat die besoedelaar-betaal-beginsel gevolg moet word, wat inhou dat die besoedelaar ook

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- 1 Protagonist as an approach in this context is simply defined as a person or specific group of people, that shares a specific view and acts in a leading role to bring about a change of circumstances to benefit more than just himself/herself. Though the protagonist, in a typical literary, theatrical, cinematic or musical narrative may be labelled as a hero, real life for environmental activists most of times are labelled as that of the “antiheroes”.
 - 2 Proactive in this context is simply defined as an approach to an environmental concern through the means of whistleblowing the appearance of continuous destructive environmental related activities; and providing an easy access towards understanding scientific reporting as well as occasional scientific reporting by consultant companies. Proactive environmental activism (POEA) is also inclusive of helping to find solutions; organising awareness campaign opportunities as well as cooperative opportunities with the destructing parties as injurers. An aim through POEA is to be preventative, and not causing something to happen if it could have been timely responded to.
 - 3 As obtained from AM Ermer, “Development, implementation, and evaluation of an overseas program on environmental education for teachers”, (MSc.University of Wisconsin, 2006), p. ix.

'n verantwoordelikheid teenoor die individuele gemeenskaplid het wat grond (en moontlik selfs gesondheid) moes inboet tot voordeel van goudmynontwikkeling. Verskeie redes bestaan vir die aanvaarding van 'n proaktiewe omgewingsaktivistiese benadering tesame met 'n protagonistiese ondertoon. Beide benaderings vorm deel van die bespreking. Steeds voortgesette omgewingsongeregtighede teen 2010 in die vorm van suur mynwater verspillings, bemoeilik hierdie tweeledige benadering in omgewingsaktivisme ten opsigte van die Verre Wesrand. Aktiewe prosesse tot remediëring vir die rekening van die goudmyne en 'n ewe verantwoordelike regering blyk die vernaamste doelwit te wees in omgewingsaktivistiese bedrywighede rakende die Verre Wesrand. In hierdie opsig ondersteun die FSE die samewerking van meerdere kundigheid en rolspelers wat deurslaggewend is vir vooruitsigte op enige langtermyn sukses. Teen die agtergrond van omgewingsbesoedeling, en ingesluit 'n proaktiewe benadering van hoe om dit te hanteer, het "asemteue" van 'n "positiewe" omgewingsgerigtheid ook in akademiese kringe posgevat waaroor in die toekoms waarskynlik meer geskryf sal word, en waarby baanbrekerswerk ten opsigte van omgewingsaktivisme in die Verre Wesrand 'n verbintenis in benadering mag vind. Of 'n nog stewiger proaktiewe wending in omgewingsaktivisme die kalf van suur mynwater uit die spreekwoordelike put gaan trek, behoort die geskiedenis van die Verre Wesrand in jare vorentoe uit te wys.

Keywords: Protagonist; Proactive Environmental Activism; Far West Rand Gold Fields; Federation for a Sustainable Environment; Acid Mine Drainage; Environmental Pollution; M Liefferink.

Introduction

With more information on environmental research reports at the disposal of the general public, a new type of activism has been visible in South Africa since 2007. This "new type" of activism entails, amongst others, a more informed activist empowered with freedom of speech and a right to information (according to the rights provided as since the 1996 South African Constitution).

The formal founding of the Federation for a Sustainable Environment (FSE) for South Africa in October 2007 serves as an example of a protagonist progression towards environmental activism which eventually also included traces of proactive activism actions. In specifically the former West Rand and Far West Rand goldfields (known today as the part of the Gauteng Province) FSE activists, and some other environmental protagonists, have engaged with mines and the government: Either for immediate relief in over-utilised mined

land, or to address conditions of environmental injustice⁴ such as acid mine drainage. An objective of environmental activists was, and still is, to achieve tactical gains to change outdated mechanisms and ideologies regarding man in relation with environment.⁵ Also an incompetency by governments of the day to respond timeously to scientific warnings⁶ and community concerns as a result of capacity absences; a lack of skill and a conscious amnesia because of poor record management⁷ had to be addressed by environmental activists.

Other objectives were and still are to secure proper remediation to prevent the escalation of several environmental crises such as sinkholes, water pollution and dust fallouts. Environmental remediation also focuses on future land use sustainability and to ensure that precautions are in place to avoid the deterioration of health among local inhabitants in especially the poverty stricken areas.⁸ In this article some protagonist and proactive whistleblowing actions since 2007 are recalled, and its “success” deliberated on. This is done by also providing a nutshell glance (in table format) on the involvement of Government and the level of scientific reporting to be utilised by government since early years to understand why environmental activism has progressed to be protagonist-like, but to eventually also endorses a proactive approach recently. Against these ways of doing, thinking and acting regarding environmental pollution and the urge for positive action in the form of remediation, the protagonist and proactive environmental activism status by 2010 in the Far West Rand is critically reviewed.

Land degradation: A concise historical scenario of the Far West Rand

For so many decades, the gold mines in the so-called golden arch area,

4 Compare N Jacobs, *Environment, power and injustice: A South African history*.

5 Compare with A Alonso and D Maciel, “From protest to professionalization: Brazilian environmental activism after Rio-92”, *The Journal of Environment & Development*, 19(3), pp. 300-317; P Ho and RL Edmonds, “Perspectives of time and change: Rethinking embedded environmental activism in China”, *China Information*, 21, 2007, pp.331-344; ES van Eeden, “An historical assessment of NGO efficiency in progressing towards a sustainable environmental heritage focus with as case study the Wonderfontein Spruit Catchment, Gauteng”, *New Contree*, 53, May 2007, pp. 55-78.

6 ES van Eeden, EJ Nealer & M Liefferink, “A historiography on past scientific research and references to environmental health concerns in the Merafong gold mining region of South Africa”, *New Contree*, 58, November, 2009, pp. 37-57.

7 Personally experienced by the author when visiting several government departments for research on environmental issues in the Far West Rand.

8 See findings of F Winde, “Uranium pollution of water resources in mined-out and active Goldfields of South Africa - A case study in the Wonderfontein spruit Catchment on extent and sources of U-contamination and associated health risks”, *Proceedings, International Mine Water Conference*, 9-3 October 2009, pp. 772-781.

known as the West Wits Line,⁹ (currently situated respectively in the Western Gauteng and eastern parts of North West Province) had been the cornerstone on which the wealth of the country was “undisturbingly” built.¹⁰ Gold mining in the area under discussion is to be associated with initiatives since the early 20th Century. After years of difficulty to stabilize the water rich dolomite compartments to be able to exploit the gold faults in the so-called West Wits (Gold) Line, gold exploration eventually became a reality from the 1930s.¹¹

In a concise cryptic history as tabled (see Table 1),¹² an account is provided of specifically the South African government-of-the-day’s level of environmental awareness and involvement in actions which eventually has contributed to a destructive environmental scenario in the Far West Rand:¹³

9 ES van Eeden, “Die geskiedenis van die Gatsrand vanaf die vestiging van die Trekkergemeenskap omstreeks 1839 tot die proklamering van Carletonville in 1948”, (Verhandeling, PU vir CHO, Potchefstroom, 1988), Chapters 1,4.

10 ES van Eeden, “Whose environment? whose nature? – a trans-disciplinary discussion on some inhumane actions in the destruction and construction in nature – case study, the Merafong municipal region”, *The Journal for Transdisciplinary research in Southern Africa*, 2 November 2006.

11 ES van Eeden, “Die geskiedenis van die Gatsrand...”, Chapters, 4, 5.

12 This table was compiled from many sources. Amongst others the: Water Research Commission (WRC), WRC Report 1095/1/02, 2002. P Wade et al., “Tier 1 Risk Assessment of Selected Radionuclides in Sediments of the Mooi River Catchment”; Water Research Commission (WRC), Report No 1214/1/06, H Coetzee (compiler), “An assessment of sources, pathways, mechanisms and risks of current and potential future pollution of water and sediments in gold-mining areas of the Wonderfontein spruit catchment”, 2006, Pretoria; MinTails, Harmony Gold Mine and Durban Roodepoort Deep established the Western Basin Environmental Corporation (WBEC) to investigate possible solutions for the treatment and management of AMD. The WBEC entered into a management agreement with the Western Utilities Corporation (WUC) to develop a strategy for the containment, treatment and distribution of mine water. For more information see www.watermarkglobalplc.com. Information obtained from M Liefverink, December 2010; RSA, Department of Water Affairs, Pre-feasibility study to address the handling of underground mine water on the Witwatersrand: Request for proposals, BID W 0137 (WTE), 16 September 2010.

13 Compare ES van Eeden, “So long gold mines – long lives industries? A case study of Carletonville’s battle for economic survival”, *South African Economic History Journal*, 12 (1-2), September 1997, pp.103-127; ES van Eeden, AB de Villiers, H Strydom & EJ Stoch. “Mines, peoples and sinkholes – An analysis of the Carletonville municipal area in South Africa as a case study regarding policies of secrecy”, *Historia*, 47(1), May 2003; RA Adler, M Claassen, L Godfrey & A Turton, “Water, mining and waste: An historical and economic perspective on conflict management in South Africa”, *The Economics of Peace and Security Journal*, 2(2), 2007, pp. 33-34; A Turton, HJ Hattingh, GA Maree, DJ Roux, M Claassen & WF Strydom (eds.), *Governance as a Dialogue: Government – society – science in transition*, Berlin, Springer Verlag, 2007; A Turton, “Parliamentary briefing document. Three strategic water quality challenges that parliamentarians need to know about”, Report no. CSIR/NRE/WR/IR/2008/0079/C, 2008; EJ Stoch, F Winde and E Erasmus, “Karst, Mining and conflict – A historical perspective of consequences of mining on the Far West Rand”, Paper, Mine Closure Conference, . Australian Centre for Geomechanics, The University of Western Australia, 14 – 17 October 2008; ES van Eeden, “Weaknesses in environmental action in South Africa: A historical glance on the West Rand (Gauteng Province)”, *International Journal of Water Resources Development*, 24(3), September, 2008; F Winde, “Uranium pollution of water resources in mined-out and active Goldfields of South Africa - A case study in the Wonderfontein spruit Catchment on extent and sources of U-contamination and associated health risks”, Proceedings, International Mine Water Conference, 9-3 October 2009, pp. 772-781; B Walsh, “Heroes of the environment”, *Time*, 29, October, 2007.

Table 1: Government’s involvement in environmental issues in specifically the Far West Rand – a concise synopsis

Date	Governmental efforts to understand and manage the effects of mining activities on the environment
1960	Final Report of the Interdepartmental Committee on Dolomitic Mine Water: Far West Rand. Submitted to the Minister of Water Affairs by the Director of Water Affairs (JM Jordaan). Pretoria. November.
1963	South African Council for Scientific and Industrial Research (CSIR). “Commentary on the Final Report of the Interim Departmental Committee Regarding Dolomitic Mine Water: Far West Rand”. Dr. GJ Stander. Director of the National Institute for Water Research. Pretoria. 28.2.1963-10.2.1964.
1963	Establishment of the State Coordinating Technical Committee on Sinkholes and Subsidence at the Council of Geoscience.
1997	DWAF commences with the monitoring of radioactivity in the Wonderfontein Spruit Catchment, Far West Rand
1998	Pumping operations from some mined-out workings stopped (Western Basin).
1999	Promulgation of the National Nuclear Regulator and the Nuclear Energy Act, No 47 and 46 of 1999.
1999	Report, “Radioactivity Monitoring Programme in the Mooi River (Wonderfontein Spruit) Catchment”. Institute for Water Quality Studies. DWAF, April.
2002	First decant of acid mine drainage (AMD) in the Far West Rand. August.
2002	Publication of the “Radioactivity study on sediments in a dam on the Wonderfontein Spruit Catchment.” Conducted by the Council for Geoscience and commissioned by the DWAF.
2002	Coetzee <i>et al.</i> (2002) of the Council for Geoscience reported on “Uranium and heavy metals in sediments in a dam on the farm Blaauwbank”. This study confirmed the findings of Wade <i>et al</i> and used further sequential extractions to characterize the sediments in a dam downstream of mining activities in the Carletonville area.
2005	Publication of the WRC’s “Impacts of gold-mining activities on water availability and quality in the Wonderfontein Spruit Catchment.” Mining-related impacts such as large-scale land degradation associated with dewatering of karstic aquifers and widespread pollution of surface water and groundwater systems are discussed.
2005	Establishment of a Government Task Team (GTT) on Mine Closure and Water Management in August. The GTT is tasked with overseeing the establishment of a working group in each of the Basins but eventually failed to prevent and mitigate the environmental catastrophe within the Western Basin and the imminent catastrophe pertaining to the flooding of mining basins and the decant within the Eastern and Central Basins.
2005	First Directive issued by the DWAF to the mines in July to address decant of AMD from the Western Basin – the mines failed – grossly so - to comply with the Directive and DWAF failed to enforce the non-compliance with the Directive.
2006	Publication of a ground breaking assessment report which eventually triggered the establishment of the FSE and fierce activism in the Far West Rand.
2006	The publication of a “Vegetation and bio-monitoring status report: Inclusive of water quality improvement potential” by D van der Walt on the dispersion of treated mine water from Harmony Gold Mine Estate into the Wonderfontein Spruit drainage system.
2007	Report, JS du Toit, (Acting Manager: Environmental Manager, Mogale City Municipality). “Background Report on Communities at Risk Within Mogale City Local Municipality Affected by Mining Related Activities, with Special Reference to Radiation & Toxicity.” September.
2007	Report by PJ Hobbs (CSIR) on, “A Hydrogeological Assessment of acid mine drainage Impacts in the West Rand Basin, Gauteng Province.” Report No. CSIR/NRE/WR/ER/ER/2007/009’s7/C.

2007	Publication of the NNR – National Nuclear Regulator (NNR) Report – TR-RRD-07-0006 – “Radiological Impacts of the Mining Activities to the Public in the Wonderfonteinspruit Catchment Area.” 12 July, 2007.
2007	Publication of the “Status Report on the Actions Arising from the Study of Radiological Contamination of the Wonderfonteinspruit Catchment Area (WCA)”. 29 October.
2008	Establishment of a Regulators Task Team (RTT) and Team of Experts (TOX) to address the radiological contaminated areas within the Wonderfonteinspruit Catchment Area.
2008	Report by PJ Hobbs on “Situation analysis of hydrologic and hydrogeologic factors informing the Royal Engineering Groundwater Supply on Sterkfontein 173IQ, Krugersdorp (Report CSIR/NRE/WR/ER/2008/0107/, July).
2008	Western Utility Corporation solution proposed known as the ABC process (the CSIR’s Alkaline Barium Calcium process). The scoping phase of the project has been completed in 2009. There is no benefit as yet since Government did not approve the WUC solution.
2009	NNR Action Plan published in July.
2009	Publication of Draft Regional Mine Closure strategies for the West, Far West, Central and Eastern Rand Basins.
2009	Expiration of the Department of Water Affairs’ Directives to the mines in 2008. Issuing of new DWA Directives against mining companies. There has been no implementation of the recommendations at the time of writing and the Report is still in draft format.
2010	Intervention by the Minister of Department of Water Affairs on the 18 th of March to address AMD with no specific success by November year.

With time then a large historically rich environment transformed into a “disastrous, polluted and health concerned state”.¹⁴ Similar research activities by the South African government as indicated in Table 1, were sponsored or assigned by the gold mines. However, as also pointed out in Table 1, the wheel of real action by government against companies did not turn efficiently and fast enough to eventually avoid an acid mine drainage (AMD) disaster as environmental activists have witnessed, amongst others from 2008 and by late 2010. The AMD problem features at decants in the Far West Rand goldfields, which is an area also accommodating the Cradle of Humankind.¹⁵

Against all these dormant outcomes then as reflected in the environmental history of the Far West Rand,¹⁶ a route of proactive environmental activism nevertheless gained momentum through the FSE’s actions. In recent years (2007-2010) the creating of awareness on all community levels, and to

14 Compare N Jacobs, *Environment, power and injustice: A South African history*; ES van Eeden, EJ Nealer & M Lieferrink, “A historiography on past scientific research and references to environmental health concerns in the Merafong gold mining region of South Africa”, *New Contree*, 58, November, 2009; Anon. “100 Years of uranium pollution.” *Finweek*. 1 November 2007.

15 At the time of writing, AMD pollution already was seriously affecting the Cradle of Human Kind heritage site.

16 Compare L Fagan, “Randfontein tackles mine dust menace”, *Citizen*, 23 September, 2005.

support the activation of plans of action to remediate, became prime foci.¹⁷

Looking back at environmental activism

Protagonist and proactive environmental activism regarding the status of mined land in South Africa is a fairly new combined-like approach that somehow spontaneously developed to respond to negative environmental externalities of the past, and to some current environmental concerns.¹⁸ Until the 1960s, activism in South Africa country was notable for its subdued tone, though it was equally associated with an authoritarian system of government with a dominant economic focus, as was the scenario internationally.¹⁹ In the late 1970s, however, a new tone was eminent, supporting a strong Marxist²⁰ sense of justice, in which the environment played a subsidiary role and in which concerns about human exploitation and the health of humans in the workplace were accentuated more.²¹ Environmental activism, up to the 1990s, was notable for its sectionalist, elitist nature.²² It was mostly driven by self-interest and motivated, for example, by damages suffered by farmers, landowners and occupiers of land affected by pollution caused by local mining operations.²³ As a rule, the type of relief sought by the affected parties was an interdict compelling the polluting mining company to stop causing a nuisance, or face legal steps.²⁴ The mining companies merely responded in most cases

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- 17 ES van Eeden, & I Brink, "Factors that determine the facilitation of stakeholders and roleplayers in environmental management – Some philosophical-historical thoughts with the Merafong area as example", *Koers*, 4(3), 2007.
- 18 E Tempelhoff, "Inwoners moet weet van giftige gebied", *Beeld*, 10 Augustus 2004; M Liefierink, Personal Archive of documents and correspondence, 2006-2010.
- 19 See Phia Steyn en Andre Wessels, "The roots of contemporary governmental and non-governmental environmental activities in South Africa, 1654-1972", *New Contree*, 45, 1999, pp. 77-80; Alfred Crosby, "The past and the present of environmental history", *The American Historical Review*, 100, 4, 1995, pp. 1177-89; Donald Worster, "Transformations of the Earth: Toward an Agroecological Perspective in History", *Journal of American History*, 76, 1990, pp. 1087-1106.
- 20 Comp. are Dawn Nell, 'An historiographical overview of environmental history in South Africa', *History Compass*, 2, 1, 2005.
- 21 ES van Eeden, "An historical assessment of NGO efficiency in progressing towards a sustainable environmental heritage focus with as case study the Wonderfontein Spruit Catchment, Gauteng", *New Contree*, 53, May 2007, pp. 55-78.
- 22 ES van Eeden, "Whose environment? whose nature? – a trans-disciplinary discussion on some inhumane actions in the destruction and construction in nature – case study, the Merafong municipal region", *The Journal for Transdisciplinary Research in Southern Africa*, 2 November 2006.
- 23 Compare L Fagan, "Randfontein tackles mine dust menace", *Citizen*, 23 September, 2005; ES van Eeden, "Whose environment? whose nature? ...", *The Journal for Transdisciplinary Research in Southern Africa*, 2 November 2006.
- 24 ES van Eeden, JF Durand & M Liefierink, "Legal issues concerning mine closure and social responsibility on the West Rand", *The Journal for Transdisciplinary Research in Southern Africa*, 5(1), July, 2009; M Liefierink, Personal Archive of documents and correspondence, 2006-2010.

by simply buying up the land.²⁵ They would then typically continue with their destructive operations.²⁶ Therefore environmental activism since this era up to 2010 still was under constraint by several elements of authoritarian domination by both government and mining companies as injurers.²⁷

A new Act provides freedom

With the newly adopted National Environmental Management Act (NEMA) in 1998, gold mines found it more difficult to merely continue their operations and environmental destructions unnoticed.²⁸ An awareness of research reports,²⁹ as well as a freedom to speak out, provided a platform for environmental activists to regularly whistleblow to make life for government and the mines intolerable.³⁰ These actions from especially 2007 supported the formal founding of the Federation for a Sustainable Environment (FSE) for South Africa in October of this year to strengthen the activist's voice countrywide.³¹ Its perhaps only with the birth of this movement that the concept "proactive environmental activism", though still with a protagonist tone in environmental concerns, gradually obtained some spontaneous momentum amidst fierce whistleblowing campaigns in South Africa.³² Though the concept of being proactive, is still new to activists and researchers in South Africa dealing with the environment, "proactive environmental activism" in literature dates

25 ES van Eeden, "Whose environment? whose nature? ...", *The Journal for Transdisciplinary Research in Southern Africa*, 2 November 2006.

26 Compare EJ Stoch, F Winde and E Erasmus, "Karst, mining and conflict – A historical perspective of consequences of mining on the Far West Rand", Paper, Mine Closure Conference, . Australian Centre for Geomechanics, The University of Western Australia, 14 – 17 October 2008.

27 An injurer in this context can shortly be defined as the person/group that affects the environment with power and decision making. See ES van Eeden, & I Brink, "Factors that determine the facilitation of stakeholders and roleplayers in environmental management – Some philosophical-historical thoughts with the Merafong area as example", *Koers*, 4(3), 2007.

28 Compare E Tempelhoff, "Groep plaas druk op regering oor spruit se water", *Beeld*, 4 Januarie 2007.

29 Compare F Winde's recent report on "Identification and classification of areas of intervention" (appendix D of the Wonderfontein spruit remediation project site identification report, May 2010 in which research data from the late 20th Century are utilized (obtained from M Lieferrink, December 2010).

30 Compare D Tesch & W Kempton, "Who is an environmentalist? The polysemy of environmentalist terms and correlated environmental actions", *Journal of Ecological Anthropology*, 2004, pp. 67, 81; ES van Eeden, "Is die regering omgewingsgroen of 'n boelie? 'n Beknopte perspektief op omgewingsbewaring in die eertydse Verre Wesrand (tans Gauteng)", *Word & Action/Woord & Daad*, 401/402, Spring/Summer, 2007.

31 M Lieferrink, Personal Archive of documents and correspondence, 2006-2010; ES van Eeden, "An historical assessment of NGO efficiency in progressing towards a sustainable environmental heritage focus with as case study the Wonderfontein Spruit catchment, Gauteng, *New Contree*, 53, May 2007, pp. 55-78.

32 Federation for a Sustainable Environment (FSE), "Non-Profit Organisation Annual Report", December, 2010, pp. 1-55; M Lieferrink, & ES van Eeden, "Environmental activism to promote the remediation of mined land and acid mine drainage: a success story from the South African goldfields", International Mine Water Symposium, Cape Breton University, Sydney, Nova Scotia, Canada, 6-9 September 2010.

back to at least the late 1990s.³³ The “users” of the concept mostly appear to be business oriented, though academic in approach if research efforts are required to find a variety of solutions for managing environmental problems or crises.³⁴

The FSE defines its “proactive” environmental intentions as essential answers to the call of environmental and social justice, morality and equity:³⁵

It is not motivated by narrow self-interest, but instead pursues objectives to protect the rights of indigent and sometimes ill-informed members of urban mining communities. It is built on the real voices and engagement of ordinary people.

In the Far West Rand, the FSE’s proactive environmental activism focus followed and still follows a grassroots route to:³⁶

...build capacity, to empower, to inform the disempowered, the marginalized, the disadvantaged and vulnerable members of communities, mostly resident in urban environments that originally had been developed by the mining companies. It is centred on the development of broad-based community involvement and participation.

To be able to progress towards following a proactive approach, a protagonist style towards environmental issues was spontaneously continued. Proper remediation to prevent the further escalation of environmental disasters such as sinkholes, water pollution and dust fallouts in the study area under discussion were for example continuously called for. Also the call for remediation efforts to ensure future land-use sustainability and to make certain that precautions are in place to avoid the deterioration of health among local

33 C Mikish, “Environmental activism”, Earth Day, 1999, Peace matters “, 1999 (available at <http://www.augsburg.edu/home/peace/riverkeepers.html>), as accessed on 25 October 2010.

34 See BA Martin, “Creating value with proactive environmental strategies”, *Environmental Quality Management*, 15(2), Winter 2005, pp. 21-25. Also compare the research and development of PERDI in a lead contaminated recycler’s world. PERDI is the acronym for Proactive Environmental Research and Development Inc. See <http://www.recycle.net/trade/rs190122.html>. Videos on “Proactive environmental protection” (developed on 20 Nov 2006 on TEDCO Brownfields development and 13 March 2008) is also available on the search engine Youtube.com .

35 Federation for a Sustainable Environment (FSE), “Non-Profit Organisation Annual Report”, December, 2010, pp. 1-55; B Walsh, “Heroes of the environment”, *Time*, 29, October, 2007; M Liefierink, Personal Archive of documents and correspondence, 2006-2010; E Tempelhoff, “Gifspruit”, *Beeld*, 3 Februarie 2007; E Tempelhoff, “Owerheid erken Spruit is besoedel”, *Beeld*, 8 Februarie 2007; E Tempelhoff, “Suur mynwater lei tot sinkgate. Vreet aan dolomietkompartemente”, *Beeld*, 24 April 2007.

36 ES van Eeden, M Liefierink & E Tempelhoff, “Environmental ethics and crime in the water affairs of the Wonderfontein Spruit Catchment, Gauteng South Africa”, *The Journal for Transdisciplinary research in Southern Africa*, 4(1), July, 2008; ES van Eeden, EJ Nealer & M Liefierink, “A historiography on past scientific research and references to environmental health concerns in the Merafong gold mining region of South Africa”, *New Contree*, 58, November, 2009; J Avni, “Lives at risk. State new about danger for 40 years”, *Sowetan*, 24 July 2007; E Tempelhoff, “Groep plaas druk op regering oor spruit se water”, *Beeld*, 4 Januarie 2007; N von Moltke, “Who’s to blame”, *SHEQ Management*. September- October, 2007.

inhabitants in especially the poverty stricken areas were, and still are, whistle blowing themes.³⁷ All the aforementioned historical and scientific aspects and actions are already widely researched and published, and will therefore not be discussed in the next sections, though some past environmental activist actions are statistically tabled (See Table 2).

Protagonist and proactive environmental activism in the Far West Rand

Strategies of protagonist and proactive environmental activism were developed from a knowledge-base of research done and a research process of collecting research reports, as well as systematically working through scientific academic and official reports.³⁸ A vast hoard of documents pertaining to the Far West Rand was thus assembled and augmented from time to time by fresh acquisitions.³⁹ In the case of the area under discussion, the role of the activist initially has been seen as basically having the leading responsibility to disclose the findings of reports⁴⁰ to the public in many formats and pathways, and to put pressure on the Government to act according to the approved NEMA.

Indications of these disclosures to the public are listed in Table 2:⁴¹

37 Compare F Parker, “‘Don’t drink the water.’ Cancer plagues people living near Westonaria mine”, *Mail and Guardian*, 5-11 February 2010; S Tang, “Heavy mine metal sludge poisons land”, *City Press*, 6 June 2010; Transvaal Agricultural Union (TAU) SA, “SA’s poisoned water”, *Public Eye*. 21 May – 25 May, 2010.

38 Anon. “SA ‘Erin’ widens toxic water fight. Water too dangerous for farming”, *The Citizen*, 14 August 2007.

39 M Liefierink, Personal Archive of documents and correspondence, 2006-2010; ES van Eeden, EJ Nealer & M Liefierink, “A historiography on past scientific research and references to environmental health concerns in the Merafong gold mining region of South Africa”, *New Contree*, 58, November, 2009.

40 Typical examples of report disclosure were: WRC, Report No 1214/1/06, H Coetzee (compiler), “An assessment of sources, pathways, mechanisms and risks of current and potential future pollution of water...”, 2006; RSA, National Nuclear Regulator (NNR), “Radiological Impacts of the Mining Activities to the Public in the Wonderfontein Catchment Area”, Report TR-RRD-07-000, 2007 (Also known as the Brenk Report); NNR, R Barthel, G Deissman & W Leotwane (007), “Radiological impact assessment of mining activities in the Wonderfontein Catchment area”, Paper that was avoided to be presented at the Environment Conference, Pilanesberg, NWU, South Africa, 3-July, 2007. In this report the radiological risks of the mining activities for cattle being watered at polluted surface water bodies in the Wonderfontein Catchment area in the West Rand were extensively looked into; RSA, NNR, Status report on the actions arising from the study of radiological contamination of the Wonderfontein Catchment area (WCA), 29 October 2007.

41 J Avni, “Lives at risk. State new about danger for 40 years”, *Sowetan*, 24 July 2007; “Report exposes high water contamination”, *Sowetan*, 3 August 2007; “Poisoned by mines”, *Sowetan*, 20 August 2007. Also compare FSE, “Non-Profit Organisation Annual Report”, December, 2010, pp. 1-55.

Table 2: A classification of activism in the Far West Rand Region for the period 2007-2010

Method	Activist opportunities
<i>Workshops and site visitations</i>	252
<i>Academic symposiums, conferences and seminars</i>	84
<i>Distribution of pamphlets, brochures and questionnaires</i>	16 800
<i>News media reports, including radio interviews and television screenings</i>	750*
<i>Submissions to Parliamentary Portfolio Committees and Provincial Legislatures</i>	12
<i>Submissions to the South African Human Rights Commission and the Public Protector</i>	6
<i>Protest marches, Presentation of Petitions and picketing</i>	35

* In 2010 the FSE solicited extensive national and international news media coverage on AMD. More than 38 network systems reported (FSE, 2010, 8-38). The figure of 750 is only approximate. It actually is much higher.

A significant paradigm shift in environmental transparency, ethics and accountability has resulted from several years of environmental activism in the area under discussion that marked dedicated protagonist like activism; more cooperation with activists and an involvement of activists from various professional sectors.⁴² As such environmental activists have also gradually changed their whistleblowing strategy to also support intentions by injurer(s) to positively contribute towards efforts with a view to develop progressively towards achieving a sustainable environment.⁴³ Since 2007 lashes were not withhold through environmental activism if it was deemed necessary,⁴⁴ but equally progress towards any form of honest remediation by injurers was praised.⁴⁵ A few strides towards remediation, and some critical points on it, are worth mentioning.

42 ES van Eeden, M Loefflerink & E Tempelhoff, "Environmental ethics and crime in the water affairs of the Wonderfontein Spruit Catchment, Gauteng South Africa", *The Journal for Transdisciplinary research in Southern Africa*, 4(1), July, 2008.

43 Based on the correspondence by the FSE (through M Loefflerink) and the several newspapers used or informed to whistleblow.

44 A Ferreira, "SA running on empty", *Sunday Times (Business Times)*. 23 May 2010.

45 Anon. "Mining rehabilitation. Dirty miners will pay. Miners to face strong arm of law for rehab non compliance, govt warns." *Creamer Media's Mining Weekly*, 20 November 2009; S Bega, "Moral miners avert flooding disaster", *Saturday Star*, 12 June 2010.

Remediation processes gain momentum

Actions in progressing towards remediation after several whistleblowing efforts by environmental activists can be recalled. The first was the establishment of the Wonderfontein Regulators' Steering Committee (WRSC) in 2008; followed by the development of a Remediation Action Plan (RAP) for the area from April 2009, as well as the associated Public Involvement and Participation (PIP) process. This WRSC, consisting of officials of all the relevant government departments as well as local authorities and tertiary research institutions, has been at the helm of the process to steer the whole remediation process for the Far West Rand. The NNR of South Africa chairs the WRSC and, at the time of writing, exercised stricter control over discharges from the mines.⁴⁶

Also the Department of Water Affairs (DWA)⁴⁷ imposed stricter measures on mines from 2007 regarding the terms and conditions of all water use licenses in an effort to stop the potential contamination of for example the Wonderfontein Spruit (Stream) in the Far West Rand. Another progressive action from DWA was the appointment of a group, known as a Team of Experts (TOX) in 2008 to identify priority environmental hotspots, and in which they also involved FSE activists by 2009 on a high level. The mines were then asked to contribute financially towards the remedial work to be done, as per the findings and recommendations of the TOX.⁴⁸ In many ways this milestone approach from DWA to acknowledge the value and importance of environmental activists and activism endeavours in the area under discussion, reflects enormous progressive strides for valuing environmental activism in South Africa in general. The South African Minister of Energy also followed the same route by tasking Mrs Mariette Liefferink (as FSE representative) to act as Director of the Board of the NNR and so representing the interests and concerns of communities affected by nuclear activities, including mining.⁴⁹

From 2009 more progress was made with the developing of an implementation plan for the remediation of the Far West Rand. To the disappointment of NGO's and the public no remedial action was in sight at all by November

46 M Liefferink, Personal Archive of documents and correspondence, 2006-2010, E-Mail letter, RH Cohen/M Keet, "Draft notes regarding the meeting held on the 7th of July at the NWU in Potch [focussing on the "flawed" RAP document], 25 July 2009.

47 Before 2009 known as DWAF – Department of Water Affairs and Forestry.

48 Republic of South Africa, Dept. of Water Affairs and Forestry, Wonderfontein spruit Catchment Area, "Remediation Action Plan", April 2009, pp. 2010.

49 FSE, "Non-Profit Organisation Annual Report", December, 2010, pp. 1-55.

2010,⁵⁰ and also no immediate sign of action envisaged for early 2011.

Acid Mine Drainage (AMD)

Due to years of environmental negligence by mines in the Far West Rand,⁵¹ the problem of AMD became a fierce debate by 2008⁵² and an uncontrolled environmental crisis by 2010.⁵³ It required substantial time consuming inputs of activism to raise awareness on AMD from foot-soil communities to government spheres.⁵⁴

In response to a statement presented by civil society organisations on 3 December 2009 on the issue of AMD in the underground mining basins, the government – in its role as custodian of South Africa's precious and scarce water resources – was called upon to disclose the various options for dealing with the problem of AMD in the Witwatersrand Basin.⁵⁵

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- 50 M Loefflerink, Personal Archive of documents and correspondence, 2006-2010, Republic of South Africa, ED Peters, Minister of Energy/M Loefflerink (FSE) re appointment of Loefflerink to serve on the Board of the National Nuclear Regulator, 25 November 2009; Report, FSE, "FSE's Response to the Inter Ministerial Committee's (ICM) Press Statement on the Treatment of Acid Mine Drainage (AMD)" issued on 26 December 2010.
- 51 JE Cobbing, "Institutional linkages and acid mine drainage: The case of the Western Basin in South Africa", *International Journal of Water Resources Development*, 24(3), 2008, pp. 451-462; J Eybers, "Daar's (vuil) water!" *Rapport*, 21 September 2008; PJ Hobbs, "A hydrogeological assessment of acid mine drainage impacts in the West Rand Basin, Gauteng Province" CSIR/NRE/WR/ER/2007/0097/C, 2007.
- 52 Department of Mineral Resources (DMR), Regional Closure strategy for the Far West Rand Goldfields, Council for Geoscience Report No: 2008-0248, 2009; Report No: 2008-0253, 2008; D Fig, Acid mine drainage on the Witwatersrand: reluctant regulation, scavenger capitalism and the assault on health and the environment, draft presentation for the *New South African Review 2011*, pp. 1-18.
- 53 K Naicker, E Cukrowska & T.S. McCarthy, "Acid mine drainage arising from mining activity in Johannesburg, South Africa and environs", *Environmental Pollution*, 122(1), pp. 29-40; I Salgado, "Acid mine water is a ticking bomb." *Business Report*, 30 September 2009; Anon., "SA's toxic water. How our water is becoming unusable", *Financial Mail*, 28 November 2008; S Bega, "Living in fear of a toxic Tsunami.", *Saturday Star*, 12 April 2009; I Salgado, "Acid mine water is a ticking bomb." *Business Report*, 30 September 2009; L Prinsloo, "Acid Mine Drainage. Water Woe. Urgent decisions necessary to avoid environmental consequences", *Creamer Media's Mining Weekly*, 26 February – 4 March, 2010; S Masondo, "City faces acid deluge. Toxic minerals and acids at dangerous level", *The Times*, 12 March 2010.
- 54 N Funke, "Environmental lobbying in South Africa: The case of Acid Mine Drainage activism in Johannesburg", Draft chapter for publication, 2010; S Masondo, Acid Mine Drainage: What it is", *The Times*, 12 March 2010; "City faces acid deluge. Toxic minerals and acids at dangerous level", *The Times*, 12 March 2010.
- 55 WRC, Report No 1214/1/06, H Coetzee (compiler), "An assessment of sources, pathways, mechanisms and risks of current and potential future pollution of water...", 2006; PJ Hobbs, "A hydrogeological assessment of Acid Mine Drainage impacts in the West Rand Basin, Gauteng Province" CSIR/NRE/WR/ER/2007/0097/C, 2007; ES van Eeden, M Loefflerink & E Tempelhoff, "Environmental ethics and crime in the water affairs of the Wonderfontein Spruit Catchment, Gauteng South Africa", *The Journal for Transdisciplinary research in Southern Africa*, 4(1), July, 2008; JE Cobbing, "Institutional linkages and acid mine drainage...", *International Journal of Water Resources Development*, 24(3), 2008, pp. 451-462; H Coetzee, E Chirenje, P Hobbs & J Cole, "Ground and airborne geophysical surveys identify potential subsurface acid mine drainage pathways in the Krugersdorp Game Reserve, Gauteng Province, South Africa"; DMR, Regional Closure strategy for the Far West Rand Goldfields, Council for Geoscience Report No: 2008-0248, 2009; N Funke, "Environmental lobbying in South Africa: The case of Acid Mine Drainage activism in Johannesburg", Draft chapter for publication, 2010.

A media statement was released by the DWA on 11 February 2010. It detailed the management of AMD in the West and the Far West Rand region, and the need (that was already scientifically well researched and extensively reported on)⁵⁶ to take urgent steps to counter this threat posed to the environment. Some of the “urgent” steps that followed, that could also be associated with action-taking strides resulting from environmental activism but not always with success,⁵⁷ are:

- A public-private-partnership (PPP) has been formed between the Government and the mining houses to treat the mine water and to discharge treated water to meet Resource Quality Objectives, and to augment stressed water systems;
- On 18 March 2010, the Minister of Water and Environmental Affairs, Ms Buyelwa Sonjica visited the decant area in the West Rand basin and donated R6.9 million for the interim treatment of the AMD;
- The Deputy Minister of DWA, Ms. Rejoice Mabudafhasi, in her speech in parliament on the Environment Budget Vote delivered on 16 April 2010, acknowledged and recognized the urgency and seriousness of the AMD situation;⁵⁸
- 21 July 2010 – The Parliamentary Portfolio Committee (PPC) on Water and Environment invited the FSE to make an oral submission to its members on the situation on AMD within the West, Central and East Rand Basins;
- 27th and 28th July 2010 – PPC conducted an in-loco inspection of the Western and Eastern Basins;
- Appointment of a Task Team on AMD in 2010. The panel of experts tasked with compiling the report to assess the risk, was made up of individuals from the Council for Scientific and Industrial Research, the Water Research Council, the Council for Geoscience, the Chamber of Mines, as well as the Ministry of

56 H Coetzee *et al.*, “Ground and airborne geophysical surveys...”, DMR, 2009; K Naicker *et al.*, “Acid mine drainage arising from mining activity in Johannesburg, South Africa and environs”, *Environmental Pollution*, 122(1), pp. 29-40; ES van Eeden, “Whose environment? whose nature? – a trans-disciplinary discussion on some inhumane actions in the destruction and construction in nature – case study, the Merafong municipal region”, *The Journal for Transdisciplinary Research in Southern Africa*, 2 November 2006.

57 Compare S Bega, “Greens tackle Minister over mine leak risks”, *Sunday Star*, 13 March 2010; S Bega, “Acid crisis keeps flowing. Environmentalists say department’s plan to stop toxic pollution is like confetti at a wedding.” *Saturday Star*. 27 March 2010; S Bega, “Is river of acid threatening fossil treasures?” *Saturday Star*. 1 April 2010; M Liefierink, Personal Archive of documents and correspondence, 2006-2010, Document, Memorandum of agreement, The Federation for a Sustainable Environment (Association Incorporated under section 21) and Rand Uranium (Pty) Limited, 2009..

58 RSA, South Africa Government information (RSA, SAGI), “Speech by the Environmental Affairs Deputy Minister, Rejoice Mabudafhasi, during the tabling of 2010/11 Environmental Affairs budget vote, National Assembly, Parliament”, Cape Town at <http://www.info.gov.za/speeches/2010/10041616251001.htm>. as accessed on 31 May 2010.

Water and Environmental Affairs and the Department of Mineral Resources;

- Appointment of an Interministerial Committee (IMC) on AMD in September 2009 by the Department of Water Affairs of Minister B Sonjica. Other ministers that were also coopted on the IMC were the Minister of Mineral Resources (S Shabangu), The Ministry of National Planning Commission (Mr T Manuel), the Ministry of Science and Technology (N Pandor) and the Ministry of Finance (Mr P Gordhan). The IMC was formed to investigate the issue of AMD;⁵⁹
- 16 September 2010 – DWA tender to address the handling of underground mine water on the Witwatersrand – Request for proposals (subsequently indefinitely withdrawn);
- 15 October 2010 – Submission of findings and recommendations of the Task Team to the Inter-ministerial Committee. The Ministers discussed the AMD-findings with experts, and asked the team to identify more options to resolve the AMD problem, as well as the cost implications of each. The IMC and the team intended to meet in 2011 again to decide on the way forward, based on recommendations from the new report. The Task Team's Report was not made public; and
- November 2010 – A sudden change of portfolios in the Cabinet by President J Zuma was called for. Ms Sonjica was replaced as Minister of Water Affairs and Environment by Ms E Molewa. The Director General of Water Affairs, Ms. Nobubele Ngele also was replaced by T Balzer.⁶⁰

By November 2010, government (especially the GTT on Mine Closure and Water Management and the DWA together with the Inter Ministerial Committee (IMC) on AMD and TOX – the latter, recently changed to the acronym TOE (Team of Experts)) was engaging with civil society organisations and activists to find an effective solution to the still growing AMD crisis.⁶¹ Though the intention is to act with a sense of urgency, no long-term solution has been decided on. Failure to invest in reliable long-term decisions is considered to be a choice in itself for which civil society would also be able to hold government accountable in future.⁶²

59 FSE, "FSE's Response to the Interministerial Committee's (ICM) Press Statement on the Treatment of Acid Mine Drainage (AMD)", 26 December 2010.

60 Compare Water Rhapsody Conservation Systems, "Summit tackles SA's water issues", 13 December 2010 as accessed in <http://www.capewatersolutions.co.za>, 17 December 2010.

61 M Loefflerink, Personal Archive of documents and correspondence, 2006-2010, Correspondence, M Oberholzer, Chairperson (Government Task Team)/ Mariette Loefflerink (CEO- FSE), 2 February, 2010.

62 An engagement by Civil Society Organisations with Government was done on the advise of Prof Tracy-Lynn Humby of the university of the Witwatersrand Law School. See M Loefflerink, Personal Archive of documents and correspondence, 2006-2010.

To environmental activists these more active responses (as listed above) from government, and a willingness to cooperate, are a welcome change of approach towards environmental crises but still not efficient, neither successful enough.⁶³ Excerpts of a recent response by Civil Society organisations and activists reflect their frustrations with government's lack of showing confident and a speedy input on the AMD matter:

...The... IMC was established with the purpose of determining a plan of action and to develop a government response to AMD. Since the establishment of the IMC, millions of litres of AMD continue to be decanted into streams connected to both the Vaal and Crocodile River systems, and groundwater systems with devastating consequences for communities and the environment. The heavy summer rainfall [of 2010] has greatly exacerbated the situation, resulting in the rapid rising of toxic water levels. The decant of untreated AMD into South Africa's surface and ground water system has devastating consequences that are both far-reaching and long-term. These consequences include the declining quality of our water supplies, poisoning of food crops, deterioration of human health and well-being and the destruction of wildlife and eco-systems, infrastructure and heritage sites...In light of the serious consequences of AMD...we raise the following concerns in regard to the State response to AMD to date, and in particular the IMC media statement dated 15 December 2010:

Lack of transparency and consultation: To date, the IMC has failed to make the team of experts' (TOE) interim and further reports publicly available. The IMC has not invited public comment on the TOE reports or public participation in its meetings...

Exclusion of civil society: The IMC has failed to engage with civil society in assessing the TOE reports and its decision to accept the report and recommendations...

Neutralisation of AMD as recommended solution: The Federation for a Sustainable Environment and Earthlife Africa Johannesburg have both issued statements raising concerns about the IMC's indicated preference for neutralisation as a short term solution for the treatment of AMD⁶⁴...

Inadequate State response: Recent events have revealed the unwillingness of government departments to take adequate measures in response to AMD impacts. In particular, the Department of Water Affairs has failed to take any adequate action in regard to the report of fish kills within the Cradle

63 M Liefverink, Personal Archive of documents and correspondence, 2006-2010, "Statement by Civil Society Organisations on the Issue of Acid Mine Drainage (AMD) in the Witwatersrand Basin – 10 December 2009".

64 M Liefverink, Personal Archive of documents and correspondence, 2006-2010, Federation for Sustainable Environment "FSE's Response to the Inter Ministerial Committee's (ICM) Press Statement on the Treatment of Acid Mine Drainage (AMD)" issued on 26 December 2010.

of Humankind World Heritage Site, merely stating that “the matter remains under investigation”⁶⁵...

This continual call, through a protagonist environmental activism approach, with a willingness to contribute to a long term remediation solution as part of a proactive focus, will remain in future FSE environmental campaigns to ensure that commitments and promises are kept.⁶⁶ These approaches also involve that communities are informed and warned in order to especially prevent that the health status of inhabitants from informal poverty stricken settlements further deteriorates.⁶⁷

Conclusion

In this article the level of success as achieved since 2007 in the former Far West Rand through protagonist and proactive environmentalism activism were deliberated on. Protagonist-like environmental activism started mainly from 2007 by the actions of the FSE after which a proactive approach was adopted too to help speed up the remediation of environmental crises in the Far West Rand. Environmental activism up to 2010 also was well based on research reports done over decades but was not made available to the general public in the past.

Though there are many regions in South Africa that suffer environmental constraints, the Far West Rand area serves as example of activism in its variety that also includes progress through in intrepid whistle-blowing (see Table 2) by environmental activists, based on extensive scientific reporting and support by scientists. After three years of continuous activism in the Far West Rand, several requests of activists were acknowledged. To proactively working among

65 M Loefflerink, Personal Archive of documents and correspondence, 2006-2010, Email from Bashan Govender, Gauteng Regional Office of the Department of Water Affairs dated 14 January 2011.

66 FSE, “Non-Profit Organisation Annual Report”, December, 2010, pp. 1-55; M Loefflerink, & ES van Eeden, “Environmental activism to promote the remediation of mined land and acid mine drainage: a success story from the South African goldfields”, International Mine Water Symposium, Cape Breton University, Sydney, Nova Scotia, Canada, 6-9 September 2010.

67 Compare F Parker, “‘Don’t drink the water’. Cancer plagues people living near Westonaria mine”, *Mail and Guardian*, 5-11 February 2010; Several papers as exchanged during an NWU Forums on “‘Toxic’ bodies? – ‘Toxic’ environments? – some multi-disciplinary perspectives: Academic discussions and experiences on the effect of pollution on human health through multi-disciplinary perspectives”, Leriba Lodge, Pretoria, 29 November 2010 and 26 November 2010, NWU Vaal Triangle Campus, Vanderbijlpark (organised by the School of Basic Sciences). M Loefflerink, Personal Archive of documents and correspondence, 2006-2010, Reports from communities living in Kagiso, Khutsong, Leeuwspruit, Randfontein and the Tudor Shaft Informal Settlement also confirms the issue of a deterioration of health.

the poor to, amongst others, inform them about the environmental pollution and to assist in finding ways to work towards a constructive environmental remediation in this area, all form part of an approach in maintaining a protagonist but proactive environmental view.

Gold mining companies have aligned themselves with the FSE and other activist bodies in the region. Some companies are even sponsoring awareness campaigns in communities where they have operations. They came to realise that environmental activists can act as watchdogs as well as partners. Because activists consisting out of a wide network of professionals as well as informed and passionate environmentally concerned supporters, they can use their inside knowledge of the partnership to ensure that the agreed partnership objectives are being met and that the partnership is taking full account of local community needs and expectations.⁶⁸

Protagonist and proactive environmental activism actions in the area under discussion have resulted in several policy changes, and activists still continue to contribute in this regard. Examples are the promulgation of the National Environmental Laws Amendment Act, 44 of 2008, which provides for the retrospective application of the “polluter pays principle”. The pursuit of the necessity of remediation obligations by gold mines before their future closure, was indirectly brought about by protagonist environmental activism.⁶⁹ Also a greater co-operation in vertical and horizontal spheres (local, provincial and national), between different organs of state, indirectly was as a result of environmental activism. A need for community reporting and an awareness making of ill practices by environmental polluters such as the goldmines in the Far West Rand, gradually also included an activist approach to proactively be involved in finding solutions. This change, or addition to the protagonist approach by especially the FSE on environmental matters since 2007, mainly appears to have been as a result of the responses of acknowledgement as well as a willingness to cooperate, brought forth by government and the gold mines. These include a willingness to organise meetings with community members and provide the funds to environmentally educate communities;⁷⁰ government’s adoption of directives

68 See Business Partners for Development. 2000. www.barefootguide.org.

69 DMR, Regional Closure strategy for the Far West Rand Goldfields, Council for Geoscience Report no 2008-0248, 2009; Report No: 2008-0253, 2008.

70 ES van Eeden, “An historical assessment of NGO efficiency in progressing towards a sustainable environmental heritage focus with as case study the Wonderfontein Spruit Catchment, Gauteng”, *New Contree*, 53, May 2007, pp. 55-78; M Liefverink, Personal Archive of documents and correspondence, 2006-2010.

against the mines and an appointment of activists in either key positions of remediation directed committees or as equal members in these committees.

Up to 2010 the FSE probably has been the most active role player among the environmental activist and civil society organisations in the Far West Rand, with guru Mariette Liefferink taking the lead, supported by a huge community, professional and scientific network of environmentally concerned FSE members and non-members. Whether government and the goldmines would have been so concerned if it was not for the whistleblowing “nuisance” of the FSE and Liefferink’s particular role in the process, can be a very interesting debate.

Despite years of whistleblowing the reality by November-December 2010 was that the Far West Rand (in which the Cradle of Human Kind is situated) has reached an irreversible stage in its environmental status due to ill considered management that can be pointed out through its reach environmental history since gold mine exploration.⁷¹ AMD and other environmental pollution crises make it difficult for environmental activists to still follow a cooperative approach (thus proactive). A slow rate of progress through environmental activism in a fast deteriorating environment is unfortunate. The dormant status necessarily leads to a continuation of activism in which the focus is to take the lead (thus a protagonist approach or style). Therefore, by November 2010 hopes for a possible “success story” soon for environmental activism in the Far West Rand remained vague against the foreseeable AMD disaster erupting all future intentions of progressive proactive thinking and allowing for protagonist environmental actions to dominate in the whistleblowing process. Time, and an ongoing combination of being protagonist in approach but also proactive towards finding solutions and offering constructive assistance, should perhaps witness a growing degree of “success” in at least the monitoring of the decades’ long environmental impacts. Hopefully to see some form of remediation resulting from solutions in process from being considered.⁷²

At the time of writing *The Environmental Management Framework of Mogale City and the West Rand District Municipality* was under review.

71 An wide-ranging number of sources has been produced on this environment and human activity in this environment.

72 M Liefferink, Personal Archive of documents and correspondence, 2006-2010, E-mail Note M Liefferink/ES van Eeden, December 2010.

Current research trends among some disciplines in the Humanities are to explore the possibilities of addressing environmental crises and crisis areas with more hope and with a positive attitude.⁷³ Among business communities the environmental proactive focus revolves more around the very positively perceived “re” factor of offering technology to for example “recycle, remediate, reuse, recover” etc. Both these positive like trends towards environmental issues have associations with the proactive approach of environmental activists as historically exercised in the Far West Rand. Probably none of them will be able to make a summer on their own if the broader communities they represent think and react as if the environment will never fail them. Then the attempt to find sustainable remediation solutions in mining areas, and to support affected communities as well as securing future land use will be in vain. The role of governments is pivotal in supporting a mind shift that’s pro-environment and pro a sustainable future for all the generations to come. More action and Acts should be enforced to cultivate a South African community that’s more environmentally aware and pollution sensitive. In this regard the environmental activism in the Far West Rand indeed has thus far, in protagonist and proactive ways, focussed on the government to make the first move so that others (especially the mines)⁷⁴ can follow.⁷⁵

73 Compare D Stokols, S Misra, M Gould Runnerstrom and JA Hipp, “Psychology in an age of ecological crisis”, *American Psychological Association*, 64(3), 2009, pp. 181-193; B Wynne, “Risk and environment as legitimacy discourses of technology: Reflexivity inside out?”, *Current Sociology*, 50, 2002, pp. 459-477.

74 An ironical note about the mines and the specific leadership of Gold Fields Group in the late 20th Century (with the former senior vice president of Gold Fields, Willie Jacobz, in the forefront), was their willingness to invest millions to the Scholarship Trust Fund at the University of Rhodes regarding Environmental and Sustainability Education. Several heritage focussed organisations in especially South Africa’s coastal areas benefited from this investment and research. Yet Gold Fields never invested that much in its own operating area in the Far West Rand to remediate it from its destructed AMD status. Compare Rhodos 16(1) no 1342005 in <http://www.skymem.com/sourcedocument.aspx?name=document2010-3-6-00-02-11.9710> p. 4, 2005, as accessed on 14 December 2010.

75 Perhaps environmental activism and activists should also become more involved in Environmental Education practises in South Africa to share their concern, activities and suggestions to a younger audience that will be willing to listen and to be more sensitive towards environmental crises and perhaps to offer possible solutions that may stir Government to action and responsibility. See M Laing and MJ McNaughton, Environmental Education “should go further”, *Scottish Educational Review*, 32(2), November 2000, pp. 168-179. Also compare Steyn’s notes on government’s role in P Steyn, “The lingering environmental impact of repressive governance: the environmental legacy of the apartheid era for the New South Africa”, *Globalizations*, 2(3), December 2005.