Table 7.1: Summary of recommendations for stakeholder contributions to sustainable development.

Issue	Recommendation	Responsible Stakeholder(s)	Suggested Time Scale	Origin	Example
Control of acid mine drainage in coal mines located in the upper Olifants basin	The COALTECH 2020 Project should be fully supported by all stakeholders	• Each mining company • Relevant Departments in Government • Local authorities • Water user associations	Continuous with 5 year timeframe for evaluation	Section 5.3	Sections 5.3 and 6.1.1
Control of acid mine drainage in Zambian copper mines	Strict attention must be paid to dealing with seepage from tailings dams, and relocation of tailings dams	• Each mining company operating on the Zambian Copperbelt	5 – 10 years	Section 3.12	Sections 3.12 and 6.1.1
Control of acid mine drainage and associated arsenic problems	Strict attention to be paid to reducing acidic seepage and treating effluents to eliminate arsenic	• Mines operating in the Giyani and Murchison Greenstone Belts in South Africa • Mines operating in Greenstone belts in Zimbabwe	5 – 10 years	Sections 3.25, 3.29, 3.34, 3.35, 4.5, 5.7, 5.8, 6.1.1	Sections 6.1.1
Control of potentially toxic metals released from mining and mineral processing operations	• Eliminate chrome and vanadium from seepage • Provide alternatives to mercury for concentration of gold in alluvial mining • Treat all effluent from Greenstone mining operations • Improve seepage collection and treatment at Zambian copper mines • Reduce seepage from waste rock dumps at lead and zinc mines	• All chrome and vanadium mine operators and smelter operators • Mining R&D organizations and Government Departments • Mining R&D organizations and Government Departments • Copper mine operators • Zinc and lead mine operators	5 – 10 years 2 – 3 years 2 – 3 years 5 years 5 years	Sections 4.14, 5.5, 6.1.2 Sections 3.19, 3.20, 3.21, 3.25, 3.29, 3.37, 6.1.2 Sections 3.20, 3.25, 3.34, 3.37, 6.1.2 Sections 3.12, 6.1.2 Sections 3.12, 6.1.2	Section 6.1.2
Control of potentially toxic substances with special reference to cyanide in gold mines	Ensure that all gold mines implement the latest directives on cyanide management developed by the Chamber of Mines in South Africa	• All gold mine operators • Dept of Mineral and Energy Affairs	3 – 5 years	Sections 3.1.6, 4.1.6, 5.1.6, 6.1.3	Section 6.1.3
Control and reduce high salinity effluent seepage and discharges	Design and implement effective seepage collection systems and effluent treatment systems	All coal mine operators All gold mine operators Department of Mineral and Energy Affairs Department of Water Affairs	3 – 5 years	Sections, 3.1.6, 4.1.6, 5.1.6, 6.1.4	Sections 6.1.1 and 6.1.4
Control releases of suspended solids	Implement effective runoff control systems Minimize loss and/or washoff of tailings from improperly sited dams Reduce alluvial gold mining impacts	Collaborative efforts involving all stakeholders in the mining sector	5 – 10 years	Sections, 3.1.6, 4.1.6, 5.1.6, 6.1.5	Section 6.1.5

Minimize demands for water	Implement cost-effective water management systems Design and operate tailings dams to minimize water use	All mining operators National Departments of Water Affairs and Mining Affairs Consulting Engineers	5 – 10 years	Sections 1.4.5, 3.1.5, 4.1.5, 5.1.5, 6.1.6	Sections 1.4.5, 6.1.6
Reduce impacts caused by small-scale (artisan) miners	Provide cost-effective and efficient technologies to small-scale miners Reduce use of mercury	Mining R&D organizations Relevant Government Departments	5 – 10 years	Sections 2.5, 3.37, 3.40, 6.1.7	Sections 2.5, 6.1.7
Harmonize legislation within SADC	Ensure that relevant pieces of national legislation are congruent and relevant, without unnecessary inconsistencies	All relevant Government Departments All mining operators	3 – 5 years	Section 6.2.1	Section 6.2.1
Improved stakeholder participation in decision-making	Ensure full participation of stakeholders in relevant decisions	All mining operators All relevant Government Departments	2 – 3 years	Section 6.2.2	Section 6.2.2
Availability of treatment technologies for specific effluents of concern	Ensure wider appreciation of available effluent treatment technologies Exchange technical information freely between mine operators and mining R&D organizations Publicize available treatment technology manuals	Water Research Commission All mining operators All relevant Government Departments	2 – 3 years	Sections 2.8, 2.9, 2.10, 6.2.4	Section 6.2.4
Implement effective environmental management systems on all mining operations	Ensure that operating mines agree to implement appropriate management systems (e.g. ISO14000+ series) Publicize benefits of EMS	All mining operators, All relevant Government Departments All mining R&D organizations	2 – 3 years	Sections 2.8, 2.9, 2.10, 6.2.5	Section 6.2.5