**Supplementary**

**Potential implications of gold-mining activities on some environmental components: a global assessment (1990 to 2018)**

Table S1: WOS main information data on GMIs

|  |  |
| --- | --- |
|  Documents | 115  |
|  Sources (Journals, Books, etc.) | 91  |
|  Keywords Plus (ID) | 376  |
|  Author's Keywords (DE) | 296  |
|  Period | 1990 - 2018  |
|  Average citations per documents | 11.06  |
|  |  |
|  Authors | 408  |
|  Author Appearances | 436  |
|  Authors of single-authored documents | 22  |
|  Authors of multi-authored documents | 386  |
|  Single-authored documents | 23  |
|  |  |
|  Documents per Author | 0.282  |
|  Authors per Document | 3.55  |
|  Co-Authors per Documents | 3.79  |
|  Collaboration Index | 4.2  |
|   |  |
|  Document types  |  |
|  Article | 100  |
|  In collection | 4  |
|  In proceedings | 11  |

Table S2. Twenty most productive authors

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| SN | Authors |  Art. | Authors | Art. Fractionalised |
| 1 | Brewer DT | 3 | Akcil A O | 2.0 |
| 2 | Marrugo-Negrete J | 3 | Cidu R | 1.3 |
| 3 | Akcil A | 2 | Olivero-Verbel J | 1.3 |
| 4 | Angeyo HK | 2 | Avila JC | 1.0 |
| 5 | Armah FA | 2 | Brosnan KA | 1.0 |
| 6 | Betancourt O | 2 | Clements EI | 1.0 |
| 7 | Cidu R | 2 | De Lacerda LD | 1.0 |
| 8 | Coetzee M | 2 | Duker AA | 1.0 |
| 9 | Cukrowska EM | 2 | Durand JF | 1.0 |
| 10 | Dennis DM | 2 | Gulley AI | 1.0 |
| 11 | Diez S | 2 | Hilson G | 1.0 |
| 12 | Donkor AK | 2 | Ingwersen WW | 1.0 |
| 13 | Flachier A | 2 | Jordaan DEJ | 1.0 |
| 14 | Grimaldi M | 2 | Jorgensen D | 1.0 |
| 15 | Guedron S | 2 | Mann R | 1.0 |
| 16 | Nartey VK | 2 | Marrugo-Negrete J | 1.0 |
| 17 | Obiri S | 2 | Na NA | 1.0 |
| 18 | Olivero-Verbel J | 2 | Roberts B | 1.0 |
| 19 | Patel JJ | 2 | Rousseau N | 1.0 |
| 20 | Pinedo-Hernandez J | 2 | Shovers B | 1.0 |

Table S3. Top twenty articles per citations

|  |  |  |  |
| --- | --- | --- | --- |
| SN | Paper | TC | TC per Year |
| 1 | Gibb H, 2014, Environmental Health Perspectives | 95 | 19.00 |
| 2 | Tarras-Wahlberg NH, 2001, Science of the Total Environment | 79 | 4.39 |
| 3 | Ogola JS, 2002, Environmental Geochemistry And Health | 64 | 3.76 |
| 4 | Schueler V, 2011, Ambio | 61 | 7.62 |
| 5 | Marrugo-Negrete J, 2008, Archives of Environmental Contamination and Toxicology | 54 | 4.91 |
| 6 | Durand JF, 2012, Journal of African Earth Sciences | 52 | 7.43 |
| 7 | De Lacerda LD, 2003, Environmental Geology | 49 | 3.06 |
| 8 | Thorslund J, 2012, Journal of Environmental Monitoring | 48 | 6.86 |
| 9 | Hilson G, 2002, Geographical Journal | 42 | 2.47 |
| 10 | Kim KW, 1998, Environmental Technology | 40 | 1.90 |
| 11 | Lobo FI, 2015, Remote Sensing of the Environment | 37 | 9.25 |
| 12 | Bruce SI, 2003, Toxicology Letter | 37 | 2.31 |
| 13 | Lacerda LD, 1997, Journal of Geochemical Exploration | 35 | 1.59 |
| 14 | Ingwersen WW, 2011, Journal of Industrial Ecology | 34 | 4.25 |
| 15 | Dambacher JM, 2007, Environmental Science & Technology | 33 | 2.75 |
| 16 | Stubblefield A, 2005, Integrated Environmental Assessment and Management | 33 | 2.36 |
| 17 | Akcil A, 2002, Minerals Engineering  | 33 | 1.94 |
| 18 | Pinedo-Hernandez J, 2015, Chemosphere | 32 | 8.00 |
| 19 | Tarras-Wahlberg NH, 2000, Ambio | 29 | 1.53 |
| 20 | Donkor AK, 2005, Soil and Sediment Contamination | 25 | 1.79 |

Table S4. Annual Scientific Production

 Year Articles

 1990 1

 1994 2

 1995 1

 1996 1

 1997 4

 1998 2

 2000 3

 2001 3

 2002 4

 2003 7

 2004 3

 2005 7

 2006 2

 2007 3

 2008 1

 2009 4

 2010 3

 2011 5

 2012 8

 2013 5

 2014 6

 2015 10

 2016 8

 2017 9

 2018 13

Annual Percentage Growth Rate 11.27928

Table S5. Total citations per country

|  |  |  |  |
| --- | --- | --- | --- |
| SN | Country | TC | AAC |
| 1 | USA | 238 | 11.33 |
| 2 | South Africa | 153 | 12.75 |
| 3 | United Kingdom | 137 | 22.83 |
| 4 | Brazil | 114 | 16.29 |
| 5 | Colombia | 97 | 19.40 |
| 6 | Australia | 89 | 17.80 |
| 7 | Sweden | 77 | 38.50 |
| 8 | Germany | 75 | 25.00 |
| 9 | Canada | 57 | 7.12 |
| 10 | Korea | 40 | 40.00 |
| 11 | Turkey | 34 | 11.33 |
| 12 | France | 22 | 5.50 |
| 13 | Spain | 18 | 9.00 |
| 14 | China | 15 | 3.00 |
| 15 | Ghana | 9 | 2.25 |
| 16 | Japan | 9 | 9.00 |
| 17 | Suriname | 9 | 9.00 |
| 18 | Egypt | 7 | 7.00 |
| 19 | Indonesia | 7 | 7.00 |
| 20 | Malaysia | 7 | 7.00 |

NB: TC is total citations, AAC is Average Article Citations

Table S6. Twenty most relevant sources

|  |  |  |
| --- | --- | --- |
|  | Sources | Articles |
| 1 | Ambio | 3 |
| 2 | Applied Geochemistry | 3 |
| 3 | Environmental Science and Pollution Research | 3 |
| 4 | Journal of Geochemical Exploration | 3 |
| 5 | Abstracts of Papers of the American Chemical Society | 2 |
| 6 | Archives of Environmental Contamination and Toxicology | 2 |
| 7 | Chemosphere | 2 |
| 8 | Environmental Geology | 2 |
| 9 | Environmental Science & Technology | 2 |
| 10 | Gold Mining Journal | 2 |
| 11 | International Journal of Environmental Research and Public Health | 2 |
| 12 | Journal de Physique IV | 2 |
| 13 | Journal of the Southern African Institute of Mining and Metallurgy | 2 |
| 14 | Marine Pollution Bulletin | 2 |
| 15 | Minerals Engineering | 2 |
| 16 | Resources Policy | 2 |
| 17 | Toxicological And Environmental Chemistry | 2 |
| 18 | Toxicology And Industrial Health | 2 |
| 19 | Toxicology Letters | 2 |
| 20 | Water Air And Soil Pollution | 2 |
|  |

Table S7. Top 20 corresponding author's countries

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| SN | Country |  Articles |  Freq | SCP | MCP | MCP\_Ratio |
| 1 | USA | 21 | 0.19091 | 17 | 4 | 0.190 |
| 2 | South Africa | 12 | 0.10909 | 8 | 4 | 0.333 |
| 3 | Canada | 8 | 0.07273 | 6 | 2 | 0.250 |
| 4 | Brazil | 7 | 0.06364 | 6 | 1 | 0.143 |
| 5 | United Kingdom | 6 | 0.05455 | 3 | 3 | 0.500 |
| 6 | Australia | 5 | 0.04545 | 5 | 0 | 0.000 |
| 7 | China | 5 | 0.04545 | 5 | 0 | 0.000 |
| 8 | Colombia | 5 | 0.04545 | 1 | 4 | 0.800 |
| 9 | France | 4 | 0.03636 | 4 | 0 | 0.000 |
| 10 | Ghana | 4 | 0.03636 | 3 | 1 | 0.250 |
| 11 | Germany | 3 | 0.02727 | 1 | 2 | 0.667 |
| 12 | Turkey | 3 | 0.02727 | 3 | 0 | 0.000 |
| 13 | Ecuador | 2 | 0.01818 | 0 | 2 | 1.000 |
| 14 | Italy | 2 | 0.01818 | 2 | 0 | 0.000 |
| 15 | Mexico | 2 | 0.01818 | 2 | 0 | 0.000 |
| 16 | Spain | 2 | 0.01818 | 0 | 2 | 1.000 |
| 17 | Sweden | 2 | 0.01818 | 0 | 2 | 1.000 |
| 18 | Argentina | 1 | 0.00909 | 1 | 0 | 0.000 |
| 19 | Brunei | 1 | 0.00909 | 0 | 1 | 1.000 |
| 20 | Czech Republic | 1 | 0.00909 | 0 | 1 | 1.000 |

SCP: Single Country Publications; MCP: Multiple Country Publications