

# **RESOURCE WARS**

**BANE SINGH**

# Contents

*Dedication vii*

*Acknowledgements and References ix*

*Preface xvii*

*Introduction xxiii*

Greed Unlimited 1

Territorial Ambitions, Acquisitions and Annexations 24

Quest for Renewable Resources 43

Coal/Coke Galore, Clamour for More! 90

Coliseums of Water Wars 113

The Global Hankering for Gas and Gasoline 147

Avarice and Appetite for Perilous Fracking 170

Still Crazy for Nuclear Energy! 190

Sand Mining Mania 228

Avaricious Eyes on Forests 253

Tempting Sheen of Metals 278

Resources Limited–Contenders Uninhibited 310

Lust, Lure and Consequent Upheaval 318

*Abbreviations 329*

*Appendix-1 331*

*Appendix-2 336*

To Mother Nature with due apologies

# Acknowledgements

The author and the publishers acknowledge all the Open Source information used in this work.

This is a book upon natural resources of the world. Basically, it is a book on the sun, sea and the sands – ubiquitous resources that can never be fully defined. They cannot also be exclusively for the use of just one group of people. They are for the use of the entire world's people, rich or poor, black or white, privileged or under-privileged.

The definitions and descriptions of natural resources, minerals, rare earth elements, forest and water abound and nearly coincide, and therefore, cannot be copyrights of one or the other. There are umpteen standard definitions available on thousands of sites on the worldwide web; such information is for educational and mapping purposes, for the benefit of the world's student communities, inquisitive learners and workforces.

Our purpose of creating and putting in the public domain such a book is to make available to the lay reader, especially in India, one-point comprehensive reference to all the basic resources on Earth. It is a compendium of the world's physical assets and mankind's quest to acquire them, and we thank Creative Commons, Wikipedia, Wikimedia, Google Books and all other open information sources in the public domain.

Myriads of quality sources/references have been consulted while building up this mammoth work over a period of several years. Some sources have been duly credited in the various pages of this work and some are being acknowledged here also. Without consulting these highly reverential sources, this colossal work would not have been possible!

Our thanks are extended to:

Government of India and its pertinent ministry sites [mnre.gov.in](http://mnre.gov.in) (Ministry of New & Renewable Energy) and State nodal agencies, ONGC (Ministry of Petroleum & Natural Gas), Ministry of Coal, Coal India Ltd, National Research Development Corporation (NRDC), Ministry of Water Resources, Ministry of Environment and Forests.

Government of the USA and its resourceful sites USGS, USEPA, USEIA, US DOE (Department of Energy), NETL, USCC.gov, EveryCRSreport.com (Congressional Research Services).

Government of Iceland and their website NEA

Government of Germany and related websites, BGR; Eurocoal, Europa.eu.

Government of China and their various websites, [https:// www.gov.cn/english/](https://www.gov.cn/english/).

UN (United Nations) and its UNEP (United Nations Environment Programme), FAO (Food & Agriculture Organization) & UNCTAD (United Nations Conference on Trade & Development, World Investment Report), UN.org-sdg, UNESCO World Heritage Centre, World Bank.

Thanks are also extended to various media houses (print & electronic); National Geographic, BBC, Reuters, Economic Times, DW.com, the Telegraph, New York Times, CEPAL Review, Wall Street Journal, The Hindu, [downtoearth](http://downtoearth.com), [Shodhganga](http://Shodhganga.com), [guardian.com](http://guardian.com), Nuclear Engineering Handbook, [globalwitness.com](http://globalwitness.com), [MSN.com](http://MSN.com), [globalnewswire.com](http://globalnewswire.com), [theglobeandmail.com](http://theglobeandmail.com), South Asia Globe, Xinhua News Agency, China Today.

Our thanks further extended to various non-profits, global associations and groups.

International Rivers (USA), IHA (International Hydropower Association), WWEA (World Wind Energy Association), IGA (International Geo-thermal Association), REN Alliance (International Renewable Alliance), EIA (Environmental Investigation Agency) London/Washington DC, WGC (World Gold Council), WGA (World Gold Association), WPIC (World Platinum Investment Council), IPA (International Platinum Group Association), ICSG (International Copper Study Group), ICA (International Copper Association), WNA (World Nuclear Association), EWEA (European Wind Energy Association), IAEA (International Atomic Energy Agency) & WCA (World Coal Association), ICID.org, NCBI-Meltdown in Tibet, hrw.org, World Nuclear Association. Thanks are also due to country grouping sites OECD (Organisation for Economic Cooperation & Development) & OPEC (Organisation of the Petroleum Exporting Countries). Thanks further go to the organisations involved in forest-related research; WWF (World Wide Fund for nature), WRI (World Resources Institute), Sneca Creek Association, FAN

(Fundacion Amigos de la Natureleza), the Nature Conservancy & IUCN ( International Union for Conservation of Nature), National Centre for Environment Information-NOAA, New Energy Institute, International Copper Study Group, mining-technology.com, National University of Singapore.

We also sincerely acknowledge various other sites for highly useful information: steelguru.com, anl.gov, Powergen International, Wave Water Works, BGR Germany, allconferences.com, leadersedge.com, Sciencedirect.com, Brookings Institute, brookings.edu, Farmlandgrab.com & CO2.earth, Foodandwaterwatch.com.

If we have left anyone out, it is not intentionally, there are countless numbers we owe our gratitude to for the mine of information available to us on the www.

## REFERENCES

- 1 A Guide to Shale Gas, Energy Institute, England, 2015,
- 2 Antarctic Environmental Protocol (Madrid Protocol), 1991.
- 3 ARI, Advanced Resources International Report, June 2013.
- 4 BGR Germany Reports.
- 5 Bombay High Court order, September 2010 on sand ban.
- 6 British Petroleum Statistical Review, 2011.
- 7 CIA World Factbook.
- 8 CO2.earth.
- 9 Coastal Care, report on world beaches and sand mining.
- 10 C-WET (Centre for Wind Energy Technology) India Report on Wind Power.
- 11 EC (European Commission) Directives on CDW (construction & demolition waste).
- 12 Environmental Investigation Agency (EIA) report, 2012.
- 13 European Forest Institute, Finland.
- 14 European Photovoltaic Industry Association (EPIA) report on wind energy.
- 15 FAN (Fundación Amigos de la Naturaleza) report.
- 16 FAO Report on Coping with Water Scarcity, 2007.
- 17 Forest Certification standard, Sustainable Forestry Initiative (SFI).
- 18 Forest Trends Report, Washington DC.
- 19 GEA (Geothermal Energy Association) Report, 2016.
- 20 Global Energy Statistical Book, 2019.
- 21 Global Forest Resources Assessment reports, FAO, UN.
- 22 Guardian report through Greenpeace on illegal felling in Brazil, May 2014.
- 23 IAE (International Energy Agency) Report, Paris, 2013.

- 24 ICA (International Copper Association) report on copper.
- 25 ICSG (International Copper Study Group) reports, various years.
- 26 Indian Wind Energy Association.
- 27 Indus Water Treaty 1960, MEA (Ministry of external affairs) India.
- 28 Inter Governmental Panel on Climate Change (IPCC) Report, 2013.
- 29 International Atomic Energy Agency (IAEA) Report, 2017 on International Status and Prospects of Nuclear Power.
- 30 International Atomic Energy Agency Reports, various years.
- 31 International Rivers, report on China dam building.
  
- 32 IWCC (International Wrought Copper Council) report on copper use.
  
- 33 Madras High Court order, December 2010, prevention of illegal mining.
- 34 Mekong River Commission, Phnom Penh.
- 35 National Institute of Wind Energy India.
- 36 National Oceanic and Atmospheric Administration (NOAA).
- 37 Nuclear Energy Agency (NEA) reports, various years.
- 38 OECD (Organisation for Economic Co-operation & Development), Paris.
- 39 OSINFOR (Agency for the supervision of forest resources) Peru, Report on forests.
- 40 PriceWaterhouseCoopers reports on various emerging countries.
- 41 Production of Palladium, 2017, worldatlas.
- 42 Riding a Wave of Growth-Global Wealth 2014, BCG.
- 43 Rise of Renewable Energy, REI (Renewable Energy Institute), Feb 2019.
- 44 RRF, Resources for the Future, Washington DC Report on Fracking.
- 45 Russia TV report on Romanian Resistance against Fracking.
- 46 Sand & Sustainability, UNEP Report 2019.
- 47 Savcor Indufor Oy Report on Forests.
- 48 Seneca Creek Associates reports on forests.
- 49 Southern Africa Resource Watch.
- 50 The Global Wealth Report 2018-Credit Suisse.
- 51 The National Green Tribunal (NGT) order, August 5, 2013 banning sand mining.
- 52 The Supreme Court of India order, February 2012, on sand mining.
- 53 UN Convention on Non-navigational uses of International WCs, 1997.
- 54 UN law of Trans-boundary Aquifers.
- 55 UNCTAD-Commodities at a glance – Shale gas, 2018.
- 56 UNEP-IRP Global Resources Outlook, 2019.
  
- 57 USEIA (US Energy Information Administration), various years reports.
- 58 USEPA, US Environmental Protection Agency.
- 59 USGS (United States Geological Survey), various reports, Reston, US.
- 60 World Coal Association, various years reports.
- 61 World Gold Council, UK reports on gold.
- 62 World Nuclear Association(WNA), various years reports.
- 63 World Platinum Invest Council report on Platinum.
- 64 World Population Review, US Census Bureau.
- 65 World Wide Fund for Nature (WWF), various reports.
- 66 WRI (World Resources Institute), various reports.
- 67 [www.gsma.com](http://www.gsma.com), mobile subscribers.
- 68 [www.worldatlas.com](http://www.worldatlas.com) countries with most natural resources.