**Required content of Working Paper CLIO-INFRA**

***Please include the following elements into any working paper entered into the CLIO-INFRA system:***

1. Title

Total Zinc Mine production per decade and country

2. Author(s)

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3. Production date

2014-11-12.

4. Version

1

5. Variable group(s)

Environmental sustainability

6. Variable(s)

Total Zinc Mine production, in metric tons

7. Unit of analysis

Country

8. Keywords (5)

Zinc, Mine production, Zn

9. Abstract (200 words) Taken from Wikipedia:

Brass, which is an alloy of copper and zinc, has been used since at least the 10th century BC in Judea and by the 7th century BC in Ancient Greece. The manufacture of brass was known to the Romans by about 30 BC. They made brass by heating powdered calamine (zinc silicate or carbonate), charcoal and copper together in a crucible. The resulting calamine brass was then either cast or hammered into shape for use in weaponry. Some coins struck by Romans in the Christian era are made of what is probably calamine brass.

Zinc metal was not produced on a large scale until the 12th century in India and was unknown to Europe until the end of the 16th century. The mines of Rajasthan have given definite evidence of zinc production going back to 6th century BC. To date, the oldest evidence of pure zinc comes from Zawar, in Rajasthan, as early as the 9th century AD when a distillation process was employed to make pure zinc.

The Charaka Samhita, thought to have been written between 300 and 500 AD, mentions a metal which, when oxidized, produces pushpanjan, thought to be zinc oxide. Zinc mines at Zawar, near Udaipur in India, have been active since the Mauryan period. The smelting of metallic zinc here, however, appears to have begun around the 12th century AD. One estimate is that this location produced an estimated million tonnes of metallic zinc and zinc oxide from the 12th to 16th centuries. Another estimate gives a total production of 60,000 tonnes of metallic zinc over this period. The Rasaratna Samuccaya, written in approximately the 13th century AD, mentions two types of zinc-containing ores: one used for metal extraction and another used for medicinal purposes.

The isolation of metallic zinc was achieved in India by 1300 AD, much earlier than in the West. Before it was made in Europe, it was imported from India around 1600 CE. German chemist Andreas Marggraf normally gets credit for discovering pure metallic zinc even though Swedish chemist Anton von Swab had distilled zinc from calamine four years before. In his 1746 experiment, Marggraf heated a mixture of calamine and charcoal in a closed vessel without copper to obtain a metal. This procedure became commercially practical by 1752.

10. Time period

1705 -2012

11. Geographical coverage

Worldwide

12. Methodologies used for data collection and processing

Historical mining statistics

13. Data quality

Good.

14. Date of collection

See references

15. Data collectors

BGS, Mitchell, Schmitz, USGS.

16. Sources

* BGS, British Geological Survey. https://www.bgs.ac.uk/
* Mitchell, B.R., *International Historical Statistics – Africa, Asia & Oceania 1750-1993* (London, 1998).
* Mitchell, B.R., *International Historical Statistics – Europe* (London, 1998).
* Mitchell, B.R., *International Historical Statistics – The Americas 1750-1993* (London, 1998).
* Schmitz, Christopher J., *World Non-Ferrous Metal Production and Prices, 1700-1976* (London, 1979).
* USGS, <http://minerals.usgs.gov/minerals/pubs/commodity/zinc/>