

Home > Journal > Earth & Environmental Sciences > JGIS

[Indexing](#) [View Papers](#) [Aims & Scope](#) [Editorial Board](#) [Guideline](#) [Article Processing Charges](#)

JGIS > Vol.4 No.1, January 2012

OPEN ACCESS

GIS Database Template for Environmental Management of Mining in Indonesia

PDF (Size: 2723KB) PP. 62-70 DOI: 10.4236/jgis.2012.41009

Author(s)

Sri Maryati, Hideki Shimada, Takashi Sasaoka, Akihiro Hamanaka, Kikuo Matsui, Hideaki Nagawa

ABSTRACT

Mining sector in Indonesia faces many challenges including needed to support national economy, compliance to central and local government regulations, local community empowerment and environmental impact management. Mining companies are mandatory to perform the environmental management efforts to minimize the negative impact to the environment and pursue sustainability of post-mining land use and as much as possible to restore land to the initial conditions. There are many challenges on management multi parameter and multi temporal spatial data of environmental management. The aim of this research is to design the GIS database template for environmental management in Indonesia's mining operation. This GIS database is designed using ArcCatalog ArcGIS 9.3 software, through following steps: inventory and assessment government regulations, inventory and assessment environmental quality standards, sorting and grouping parameters, design feature class and attribute, create GIS database, create GIS database dictionary. According to research result, GIS database template has many advantages for environmental management include integrated into a single database, avoid redundancy data, reduce volume data, uniformity data, easy to find and track data, integrated spatial and attribute data, can be used as an input for GIS analysis for decision-making and development strategies.

KEYWORDS

GIS; Spatial Database; Mining; Environmental Management

Cite this paper

S. Maryati, H. Shimada, T. Sasaoka, A. Hamanaka, K. Matsui and H. Nagawa, "GIS Database Template for Environmental Management of Mining in Indonesia," *Journal of Geographic Information System*, Vol. 4 No. 1, 2012, pp. 62-70. doi: 10.4236/jgis.2012.41009.

References

- [1] The Republic of Indonesia, "The 1945 Convention," Jakarta, 2002.
- [2] The Republic of Indonesia, "Law of the Republic of Indonesia Number 32 of 2009, Concerning Environmental Protection and Management, State Gazette of the Republic of Indonesia Number 140 of 2009," State Secretariat of the Republic of Indonesia, Jakarta, 2009.
- [3] The Republic of Indonesia, "Decree of the Minister of Mines and Energy number 1211.k/008/M.PE/1995 Concerning the Prevention and Remedy of Environmental Damage and Environmental Pollution in Business Activity of General Mining," Minister of Mines and Energy, Jakarta, 1995.
- [4] The Republic of Indonesia, "Decree of the Minister of Mines and Energy Number 1453.k/29/MEM/2000 Concerning Technical Guidelines on Government Duties in General Mining," Minister of Mines and Energy, Jakarta, 2000.
- [5] The Republic of Indonesia, "State Minister of Environmental Regulation No. 08 Year of 2006 Concerning Guidance for Arranging Environmental Impact Assessment," State Minister of Environmental, Jakarta, 2006.
- [6] P. A. Longley, M. F. Goodchild, D. J. Maguire and D. W. Rhind, "Geographical Information Systems, Volume 2, Management Issues and Applications," 2nd Edition, John Wiley and Sons. Inc, New York,

[JGIS Subscription](#)

[Most popular papers in JGIS](#)

[About JGIS News](#)

[Frequently Asked Questions](#)

[Recommend to Peers](#)

[Recommend to Library](#)

[Contact Us](#)

Downloads:	135,205
------------	---------

Visits:	287,642
---------	---------

[Sponsors, Associates, and Links >>](#)

1999.

- [7] J. Delaney and K. Van Niel, " Geographical Information Systems: An Introduction," 2nd Edition, Oxford University Press, Oxford, 2007.
- [8] M. A. Ready, " Textbook of Remote Sensing and Geo- graphical Information Systems," 3rd Edition, BS Publications, Hyderabad, 2008.
- [9] The Republic of Indonesia, " Government Regulation No 41/1999 on Air Pollution Control," Jakarta, 1999.
- [10] The Republic of Indonesia, " Decree of the State Minister of Environment No 48 of 1996 on Emission Standards for Noise Level," Jakarta, 1996.
- [11] The Republic of Indonesia, " Decree of the State Minister of Environment No 49 of 1996 on