



OPEN Author Correction: The influence of exploration activities of a potential lithium mine to the environment in Western Serbia

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Dragana Đorđević, Jovan M. Tadić, Branimir Grgur, Ratko Ristić, Sanja Sakan, Jelena Brezjanović, Vladimir Stevanović & Bogdan Šolaja

Correction to: *Scientific Reports* <https://doi.org/10.1038/s41598-024-68072-9>, published online 24 July 2024

The original version of this Article contained errors.

Original Ref 10 was not appropriate reference to support the statement where it was cited. It is therefore now replaced by a new Ref 10, and new Ref 11 and 12 are further added to support this statement. As a result, in the Introduction,

“The easiest and least environmentally damaging method of exploiting lithium is from brines, while exploitation from ore rocks has severe environmental consequences¹⁰”

now reads:

“The easiest and least environmentally damaging method of exploiting lithium is from brines, while exploitation from ore rocks has severe environmental consequences^{10,11, 12}”

and in References,

“10. Liu, W., Agusdinata, D. B. & Myint, S. W. Spatiotemporal patterns of lithium mining and environmental degradation in the Atacama Salt Flat, Chile. *Int. J. Appl. Earth Obs. Geoinf.* 80, 145–156 (2019)”

now reads:

“10. Songyan Jiang, Ling Zhang, Fengying Li, Hui Hua, Xin Liu, Zengwei Yuan, Huijun Wu, Environmental impacts of lithium production showing the importance of primary data of upstream process in life-cycle assessment. *Journal of Environmental Management* 262 (2020) 110253. <https://doi.org/10.1016/j.jenvman.2020.110253>”

New Ref 11 and 12 are:

11. Guozeng Gu, Tianming Gao, Sustainable production of lithium salts extraction from ores in China: Cleaner production assessment. *Resources Policy* 74 (2021) 102261. <https://doi.org/10.1016/j.resourpol.2021.102261>.

12. Shayan Khakmardan, Maximilian Rolinck, Felipe Cerdas, Christoph Herrmann, Damien Giurco, Robert Crawford, Wen Li, Comparative Life Cycle Assessment of Lithium Mining, Extraction, and Refining Technologies: a Global Perspective. 30th CIRP Life Cycle Engineering Conference. *Procedia CIRP* 116 (2023) 606–611. <https://doi.org/10.1016/j.procir.2023.02.102>.

All subsequent references were re-ordered accordingly.

Secondly, as a result of a mix-up with data sources the special coverage of the Jadar project was incorrectly estimated. Additionally, one of the numbers was given incorrectly due to a typo. This is now corrected using original Ref 28 (now Ref 30) as a sole source of information. In ‘Ecological risk assessment of the Jadar lithium mine in Western Serbia’,

“The preliminary estimated spatial coverage of the Jadar project is between 2031 and 2431 ha, with 533 ha of land expected to be destroyed during the initial phase of the project implementation. Of the land to be destroyed, 203 ha are forests, and 317 ha is arable land.”

now reads:

“The preliminary estimated spatial coverage of the Jadar project is 2031, with 533 ha of land expected to be destroyed during the initial phase of the project implementation. Of the land to be destroyed, 206.5 ha are forests, and 173 ha is arable land.”

Additionally, original Ref 27 was incorrectly used in the same section. It was now removed – original Ref 31 (now Ref 33) cited at the end of the paragraph supports it in its entirety. As a result, in ‘Ecological risk assessment of the Jadar lithium mine in Western Serbia’,

“The planned “Jadar” project is expected to cause significant habitat destruction and fragmentation, resulting in severe negative impacts on the living world, including several hundred plant and animal species. Among these species, 145 have protected and strictly protected status²⁷. The project would also threaten the isolated eastern enclave of *T. scorodonia*, a sub-Atlantic species located more than 600 km away from the nearest western population. Additionally, the rare fern *Dryopteris* and 20 other rare species would disappear from the site of the planned tailings lands, as reported by Krizmanić et al. in 2021³¹.”

now reads:

“The planned “Jadar” project is expected to cause significant habitat destruction and fragmentation, resulting in severe negative impacts on the living world, including several hundred plant and animal species. Among these species, 145 have protected and strictly protected status. The project would also threaten the isolated eastern enclave of *T. scorodonia*, a sub-Atlantic species located more than 600 km away from the nearest western population. Additionally, the rare fern *Dryopteris* and 20 other rare species would disappear from the site of the planned tailings lands, as reported by Krizmanić et al. in 2021³³.”

Incorrect annual production tonnages were used when discussing the previous feasibility study. In ‘Eco-chemical risk of jadarite mining and lithium extraction’,

“Based on a feasibility study⁴⁵, the annual production of Li_2CO_3 would be 50,000 t/year, and $\text{B}(\text{OH})_3$ production would reach 248,000 t/year.”

now reads:

“Based on a feasibility study⁴⁷, the annual production of Li_2CO_3 would be 58,000 t/year, and $\text{B}(\text{OH})_3$ production would reach 286,000 t/year.”

Additionally, in the same section,

“We predict that with the mine opening, in addition to the presented problems that will multiply, new problems would arise due to pond tailings the company plans to place next to the two torrential rivers Korenita and Jadar and also in Štavica River valley uphill from the lithium boron mine and ore processing plant.”

now reads

“We predict that with the mine opening, in addition to the presented problems that will multiply, new problems would arise due to tailings the company plans to place next to the two torrential rivers Korenita and Jadar and also in Štavica River valley uphill from the lithium boron mine and ore processing plant. The landfill in Štavica river would block river’s free flow and create a pond.”

In ‘Socio-environmental risks of Rio-Tinto’s jadarite mining project in Serbia’,

“During the initial stages of the proposed mining project, some residents allowed sample drilling on their properties without realizing that their land was located on the planned tailings pond.”

now reads:

“During the initial stages of the proposed mining project, some residents allowed sample drilling on their properties without realizing that their land was located on the planned tailings.”

In original Ref 31 (now Ref 33), an initial of one of the authors was incorrect: “Anđelković, A.” in the author list now reads “Anđelković, M”.

Finally, in the Supplemental Information 1, a methodological description of the sample collection and preparation, ICP-OES measurements, and calibration was also included (as a result, SI file contains new References 4–10; subsequent references were re-ordered accordingly).

The original version of this Article and the associated supplementary materials were corrected.

Additional information

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1038/s41598-024-75442-w>.

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