# Article information:

Ethical opportunities in deep‐sea collection of polymetallic nodules from the Clarion‐Clipperton Zone - Katona - 2022 - Integrated Environmental Assessment and Management - Wiley Online Library  
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# Article summary:

1. The deep-sea collection of polymetallic nodules from the Clarion-Clipperton Zone (CCZ) in the eastern North Pacific Ocean presents ethical considerations and opportunities for the industry. These considerations include harm to sea life, recovery time, indigenous rights, animal rights, and intrinsic values.

2. Stakeholders involved in the nodule-collection industry include direct actors, ocean conservationists, companies, communities, interest groups, nations, and citizens globally. The article emphasizes the importance of incorporating ethics into strategic objective setting, engineering design optimization, commitments to stakeholders, democratization of governance, and fostering circular economies.

3. The International Seabed Authority is called upon to establish equitable and transparent distribution of royalties and gains from nodule collection. The article also highlights the need for collaboration among scientists, economists, and experts from various fields to optimize deep-sea mineral extraction for both humans and nature. Embracing ethical opportunities in this nascent industry can set an example for industrial-scale activities on land and sea and contribute to a sustainable future.

# Article rating:

Appears moderately imbalanced: The article provides some useful information, but is missing several important points or pieces of evidence that would be required to present the discussed topics in a balanced and reliable way. You are encouraged to seek a more balanced perspective on the presented issues by exploring the provided research topics and looking at different information sources.

# Article analysis:

这篇文章探讨了在深海收集多金属结核体（polymetallic nodules）时存在的伦理问题和机会。然而，文章存在一些潜在的偏见和不足之处。

首先，文章强调了从化石燃料向可再生能源转型所需的金属数量，并将深海多金属结核体作为满足这种需求的潜在来源。然而，文章没有提供关于其他替代方案或技术的信息，也没有探讨使用深海资源可能带来的环境风险和影响。

其次，文章提到了对海洋生物和生态系统造成的伤害，并提出了与人类生命价值、土著权利、自然权利、动物权利等相关的伦理考虑。然而，文章没有详细讨论这些伦理问题如何权衡和解决，也没有提供相关研究或证据支持其主张。

此外，文章还提到了参与价值链的各方应该在战略目标设定、工程设计优化、承诺利益相关者、治理民主化以及促进循环经济方面发挥道德作用。然而，文章未能具体说明如何实现这些目标，并未提供实际案例或建议。

最后，文章呼吁国际海底管理局（ISA）确立公平透明的版税和收益分配，并继续与科学家、经济学家和各领域专家合作，优化深海矿产开采对人类和自然的影响。然而，文章没有提供关于如何实现这些目标的具体建议或方法。

总体而言，这篇文章在探讨深海多金属结核体收集的伦理问题和机会时存在一些偏见和不足之处。它缺乏对其他替代方案和环境风险的全面考虑，没有提供充分的证据支持其主张，并未详细说明如何解决伦理问题和实现所提出的目标。因此，读者应该对文章中提出的观点保持审慎，并进一步研究相关问题。

# Topics for further research:

* 其他替代方案或技术
* 深海资源的环境风险和影响
* 伦理问题的权衡和解决
* 实现战略目标和工程设计优化的具体方法
* 公平透明的版税和收益分配的具体建议或方法
* 科学家、经济学家和各领域专家的合作方式

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