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Impact Assessment of Nanotechnology: A Methodology Proposal for Environmental Evaluation

Nanotechnology provides the perspective of great advances in production and process, mainly in agriculture and health areas, what undoubtedly will promote an improvement of life quality and reduce impacts on the environment. In spite of a progressive increasing in the use of nanotechnologies worldwide, their potential is still repressed in Brazil, due to the early stage of the local development and the lack of specific methodologies that make impact assessment into a current practice. Therefore, the development of a methodology for the assessment of nanotechnology impacts is an effective mitigatory measure to face the growing challenges pointed out by scientists and legislators related to environmental degradation, ethical and social issues. The present study aims at creating and validating an impact assessment methodology based on technical data available about technology usage found in the literature, which could be employed as a guide to ex-ante or ex-post evaluations of nanotechnology uses and its implication in the environment exposure. The identification of potential impacts indicators of nanotechnologies were based on a survey in the specialized literature, where the focus was to gather the most relevant information useful to general public and scientists and decision makers of the public sphere. One hundred indicators were selected, sorted into four scopes: a) Environmental and Health Scope; b) Social, Ethical and Institutional Scope; c) Economic and Political Scope and, d) Science, Technology and Innovation Scope. In order to validate those indicators, they were organized as questions according to the format of the Delphi Method of Specialist Consults [1]. In the current stage of this study we expect gathering information collected during the remote round and the methodology proposed in the face-to-face round. This methodology will enable developing the software Impacts-Nano, which will be an alternative to assess the impacts of nanotechnologies.

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