International Association for Impact Assessment

Special Publication Series No. 16
February 2025

Principles for use of AI in IA

HOW TO CITE THIS PUBLICATION
Bingham, C., Bond, A., et al. (2025) Principles for Use of AI in IA. Special Publication Series No. 16. Fargo, USA: International Association for Impact Assessment.

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Purpose

These principles for the use of artificial intelligence (AI) in impact assessment (IA) are intended to (i) inform all those engaged in all aspects of impact assessment (e.g., developing, conducting, reviewing, commenting, monitoring and evaluating, training and teaching, etc.) and (ii) serve as guardrails in the ethical and responsible use of AI technology. Because of the rapidly expanding capabilities of AI, the intent is to revise these principles at least every two years, until there is sufficient experience and proficiency in applying the principles that they can become best practice principles. These principles are not intended as a guidance document on how to apply them, nor are they intended to be principles on how to develop AI models.

Background

The IAIA Emerging Technology Section (now the Artificial Intelligence and Emerging Technology Section) identified at IAIA23 in Kuching the need to develop a set of principles for the use of AI in IA and named a small team to develop a draft for discussion at IAIA24 in Dublin. Feedback from 14 facilitators summarizing the discussions of approximately 125 participants at a World Café workshop in Dublin provided the basis for revisions by a volunteer team. The raw data from the facilitators were used to synthesize the discussion summary, with output from three AI tools (Copilot, ChatGPT and Claude.ai) being used to triangulate the findings. The final synthesis was undertaken by human beings to prepare a second draft of the principles. The Artificial Intelligence and Emerging Technology Section then solicited comments on the second draft through the IAIA Hub. The Section submitted the final text of the principles to the IAIA Board of Directors for their review and adoption in order to present them at the IAIA25 conference on Impact Assessment in the Age of Artificial Intelligence.

Definition of AI

After the European Union AI Act, we define AI as: "...a machine-based system that is designed to operate with varying levels of autonomy and that may exhibit adaptiveness after deployment, and that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments" (https://artificialintelligenceact.eu/article/3/). Tools such as satellite imagery, drones, or monitoring devices are not AI, but AI can be used to interpret what they record.

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Principles

Principle 1: Responsibility

Humans must bear full responsibility and accountability for the application of AI to all IA processes from inception through to completion, e.g., the decision as to the appropriateness of applying AI in the first place, oversight and management of AI application, including content, analyses, verification of sources and data, accuracy, regulatory authority review, public comment, responses to comments and revisions, conclusions, recommendations for actions, mitigation, monitoring, evaluation, etc.

Principle 2: Transparency

In disclosing, reporting, or discussing any phase or aspect of impact assessment, users of an AI tool or system must disclose in an open and transparent manner how AI was used, specifically, the name of the tool or system, date, and manner of use. Transparency encompasses how AI is used in producing a final IA, and, also, in generating data analyzed in specific stages, such as conducting both formal and informal consultations and public engagement. Those responsible for soliciting comments must oblige those providing comments to disclose their use of AI tools. Compliance with the AI policies of an institution, government standards, or other standards must be declared.

All human participants who are providing opinions, information or advice, or are involved in any form of consultation or engagement, must be advised if AI will or may be used in the future to analyze their input and be offered the opportunity to withdraw their participation following standard ethical engagement protocols.

Principle 3: Integration with Regulatory, Standardized, or Approved Methods

AI tools and systems employed may supplement or complement but should not replace, supersede, or breach recommended or regulatory processes (e.g., scientific principles, standardized calculations and modelling techniques, or data protection rules), unless they have been certified by regulatory authorities to ascertain scientific validity considering method, assumptions, and uncertainty. All IA processes must comply with any AI policies or requirements of the country in which the IA is conducted and with the policies and standards of any organization that is funding or supporting the IA.

Principle 4: Expertise and Oversight

AI tools and systems can potentially replace, supplement, or improve field collection studies, impact analyses, and monitoring, or reduce time and costs. AI's advantages in situations that are difficult to access, hazardous, or dangerous are significant and valuable. However, professional oversight is essential; experts, specialists, and researchers with professional expertise should conduct independent verification of the outputs of AI tools used in these situations.

Principle 5: Awareness of Limitations and Risks

AI users are expected to use human oversight to prevent errors and ensure accurate representation. All actors involved in IA processes must ensure that they look for and address limitations of AI tools and systems, such as bias; AI hallucinations (where false or misleading information is presented); incomplete data, especially information for remote places and settings; topics and locations with sparse non-digitized knowledge; inattention to cultural values, beliefs, or tacit knowledge; ambiguous criteria to judge impact significance; and lack of knowledge of the source and credibility of data.

Principle 6: Vulnerability and Privacy

The information and data provided by AI tools may be insufficient or fail to represent accurately Indigenous, vulnerable, conflict-affected, or marginalized groups. Therefore, AI tools should be validated (see Principle 3) or treated as supplementary—AI should not replace direct communication with those affected or the judgment of experts. Personal information gathered during resettlement plans and social or health assessments is sensitive and subject to privacy and safety concerns. To ensure trust in IA, AI must be used responsibly, recognizing that AI might inadvertently release private or secure information and, therefore, needs oversight of data protection. AI should be used in IA only when respecting the rights of those affected, and only when privacy, safety, non-discrimination, cultural and Indigenous beliefs, and intellectual property are protected.

Principle 7: Competence in AI

Effective, efficient and ethical use of AI systems and tools requires competence, which IA specialists need to gain in order to apply AI. AI should only be used in IA contexts by those with appropriate AI competence, i.e., professional knowledge and experience.

Principle 8: Model Collapse

Efforts should be made to prevent AI-generated output used in IA from becoming part of a dataset used to train generative AI tools—a process that could otherwise lead to inaccurate output, known as model collapse.

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