NOVIRIANTI
& PARTNERS

POLICY BRIEF (JULY, 2020)

**THE IMPACT OF INFORMATION TECHNOLOGY DEVELOPMENT ON THE
MAKING OF ENVIRONMENTAL IMPACT ASSESSMENT IN INDONESIA**

1.   Background

Development in information technology has brought disruptions for public administrators.[1] It is done through the development of big data analysis coupled with the 'internet of things' phenomenon which democratized public participation through data mining and analyzing.[2] Big data analysis and artificial intelligence have been known to be used in various government policies. Information technology is vital in environmental decision making, mainly in environmental impact assessments run through Artificial Intelligence (AI) support.[3] One of the concrete implementations of AI for decision making is the usage of MEXSES for water resources development projects in the Lower Mekong[4] as a rule-based expert system for environmental impact assessment at a screening level.[5] However, the implementation of complex data analysis in environmental decision making has redefined the essence of public participation in environmental management. Public participation in environmental management primarily aims to understand community perceptions regarding the proposed activity and to resolve conflicts and reach consensus regarding that activity.[6] These changes have also taken their toll in Indonesia. However, the development of machine-driven policy-making has backlashed against public participation goals to eliminate public scepticism of the complex, uncertain, and impactful nature of environmental decision-making.[7] This writing aims to discuss the impact of information technology on public participation and transparency in environmental decision making in Indonesia.

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[1] Agarwal, P.K., Public Administration Challenges in the World of AI and Bots, 2018

[2] Tenney, Matthew, and Renee Sieber. "Data-Driven Participation: Algorithms, Cities, Citizens, And Corporate Control". *Urban Planning*, vol 1, no. 2, 2016

[3] Cortés, Ulisses et al. *Advanced Agent-Based Environmental Management Systems*. Birkhäuser, 2009

[4] Fedra, Kurt et al. *Expert Systems For Environmental Screening*. International Institute For Applied Systems Analysis, 1991

[5] Cortés, Ulisses et al, *op cit*

[6] Del Furia, Luca, and Jane Wallace-Jones. "The Effectiveness Of Provisions And Quality Of Practices Concerning Public Participation In EIA In Italy". *Environmental Impact Assessment Review*, vol 20, no. 4, 2000

[7] Richards, Caspian et al. *Practical Approaches To Participation*. 1st ed., Macauley Institute, 2004

2. Potential Usage of Information Technology for Environmental Issues Public Policy Making in Indonesia

The concrete form of public participation for environmental issues in Indonesia can be seen through the making of Environmental Impact Assessments/*Analisis Mengenai Dampak Lingkungan Hidup* (Amdal). Amdal is also one of the requirements to obtain an environmental permit that is used to obtain a business permit. Article 9 of Indonesian Government Regulation 27/2012 on Environmental Permit regulates all people and government agency who are responsible for the operating business and/or future projects to include the community who might be affected by the business and/or future projects; environmental experts; and/or other stakeholders who might be affected by the issuance of the Amdal as the public participation. Public participation, as regulated in Minister of Environment Regulation 17/2012 regarding Public Participation in Environmental Impact Analysis and Environmental Permit Making Process, is conducted through a public consultation which allows the community to provide suggestions, opinions, and/or responses. The public consultation's form is feedback-giving regarding the information on environmental conditions and various businesses and/or activities around the area of the business plan and/or activities, community aspirations, and their assessment of environmental impacts. This public consultation might be impacted by AI support in the decision-making process. AI Support brings advantages in the decision-making process, which comprises of: (1) increasing effectiveness at the operational and tactical decision levels with limitations at the strategic level; (2) assisting users to make better decisions, depending on the users, al all decision-making levels; and (3) improving the efficiency of decision making.[8]

3. The Disadvantage of Information Technology Usage in Environmental Issues' Policy-Making

Although there are some advantages regarding the usage of information technology in decision making, there is also an underlying advantage. The transformation of public participation in the industry 4.0 era makes public participation as something that is not obvious. It might lead to an obnoxious process since the data gathered from the public through AI processing management is not transparent enough. The example is the data sample was gathered from social media's user data. This kind of data is nor representative yet the public cannot track the data validity easily. Public participation shall be seen as deliberative and democratized through the representation of the community's aspiration. This way can ensure stronger policies both socially and scientifically. Moreover, the government within the framework of a democratic state places public access to information as an important thing. Besides, government management that is responsible and responsive to public aspirations requires the government to disclose information regarding government activities and processes to the public. Thus, the implementation of this is a regulation related to information disclosure. In Indonesia alone, constitutionally, every Indonesian citizen has the right to communicate and obtain information in the context of personal development and social environment, as well as seeking, obtaining,

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[8] Edwards, John et al. "An Analysis Of Expert Systems For Business Decision Making At Different Levels And In Different Roles". *EJIS*, vol 9, no. 1, 2000

possessing, storing, processing, and conveying information using all available types of channels. Thus, there is a justification that Indonesian citizens have the right to information. The usage of information technology through AI might harm the public's right to information because the government might exclude public participation. This exclusion might be justified by the argument that public participation per se is already included in the AI's processing variables.

4. Conclusion and Recommendation

To sum up, the usage of technology information through AI does not necessarily shift the paradigm of public policymaking especially when it comes to environmental issues in Indonesia. The reason is public participation in its traditional form cannot be easily replaced since the usage of AI might distort the transparency needed by the public since it is difficult to track the validity of the data gathered. This results in the violation of the public's right access to information. Also, the traditional way of public participation's leakage can be repaired and enhanced to achieve better public policies regarding environmental issues in Indonesia.

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