

INDONESIA'S PROGRAM FOR POLLUTION CONTROL, EVALUATION, AND RATING (PROPER)*

I. Abstract

Indonesia's Program for Pollution Control, Evaluation, and Rating (PROPER) is a national-level public environmental reporting initiative. The objective of this novel regulatory tool is to promote industrial compliance with pollution control regulations, to facilitate and enforce the adoption of practices contributing to "clean technology," and to ensure a better environmental management system. This program is built on the premise that the mechanisms of public disclosure and accountability, transparency in operations, and community participation will empower local communities to achieve effective and sustained pollution control practices. The program uses a color-coded rating, ranging from gold for excellent performance to black for poor performance, as well as "reputational incentives." PROPER has had a significant effect in shifting factories from noncompliance to compliance. Over two years (June 1995–March 1997), the compliance level of the pilot program factories, selected from the three river basins, increased from 35 percent to 51 percent. PROPER has also contributed to voluntary participation by factories in conducting compliance ratings and has increased awareness regarding environmental issues. Additionally, PROPER helped promote an integrated control system of nongovernmental organizations (NGOs), local community groups, the Government of Indonesia's Environmental Impact Management Agency (BAPEDAL), and the media. Finally, PROPER exerted pressure on BAPEDAL to improve its rating methodology and refine its process to ensure that its ratings are trustworthy for initiating action against noncompliance.

II. Background

The Program for Pollution Control, Evaluation, and Rating (PROPER) was an innovative attempt to mitigate the problems associated with pollution under the umbrella of the Government of Indonesia's Environmental Impact Agency (BAPEDAL). PROPER was launched in June 1995 with support from the World Bank, USAEP/USAID, and Canadian and Australian development agencies. The program's objective is to act as a regulatory mechanism which can promote and enforce compliance with pollution control standards, encourage pollution reduction, introduce the concept of "clean technology," and promote an environmental management system through the use of incentives and transparency. PROPER endeavors to raise awareness among people regarding waste management regulations, as well as encouraging business communities to comply with pollution control standards.

The need for such an effort arose from Indonesia's inability to handle environmental crises because of industrial expansion and BAPEDAL's limited capacity in terms of monitoring and enforcement abilities. The success of programs prior to BAPEDAL, like ADIPURA (President's award for cleanest cities) and PROKASIH (wastewater

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management), gave significant credibility to the implementation of the environmental performance rating system operationalized as PROPER. Public disclosure is key to PROPER's effort to control pollution. PROPER's operations are not an alternative strategy to environmental regulation, but are aligned with the activities of JAGATIRTA (regulatory monitoring and enforcement activity), ADIPURA, and PROKASIH. PROPER primarily targets companies and plants participating in PROKASIH. BAPEDAL's experience in handling water pollution made PROKASIH participants (water polluters) the initial focus for the implementation of PROPER, which then widened its scope to include air and toxic pollution. In the pilot study conducted in early June 1995, BAPEDAL rated 187 plants, including medium- and large-scale polluters from several river basins on the islands of Sumatra, Java, and Kalimantan. By 1998, the program expanded to cover 350 factories. There are currently 28 sectors and 14 provinces covered by PROPER nationwide.¹

A color-coded rating scheme was developed under PROPER to grade factories' performance against the regulatory standards. The color coding system is based on five colors—gold, green, blue, red, and black. These colors correspond to the different levels of performance in terms of pollution control. A gold rating is awarded to facilities that demonstrate excellent performance by going beyond the requirements of regulatory standards, and also by exhibiting similar results in control of air pollution and hazardous waste. A green rating implies that the factories' environment management procedures go beyond the expected compliance level, while a blue rating signifies compliance with national regulatory standards. A red rating indicates a poor performance level, in which the factories display some sort of pollution control effort but do not comply with the regulatory standards in absolute terms. A black rating ranks lowest in the performance level. Factories are assigned a black rating if they do not make any attempt to control pollution, thereby being major contributors to serious environmental risks. The policy objective associated with the gold and green ratings is encouragement of clean technology adoption while for blue, red and black ratings it is creation of a compelling force for compliance. The incentive associated with factories rated gold and green is public praise, which would enable them to gain a competitive edge in the market, whereas the deterrents for factories rated blue, red and black are public pressure and legal enforcement.²

The public disclosure process incorporates three distinct steps: data collection and verification from different sources at the participating plants, data analysis, and assigning ratings with subsequent public disclosure. The performance rating process includes the following steps:

- select the polluters;
- gather data through mail surveys;
- verify and inspect plants ;
- develop a pollution database;
- analyze data at BAPEDAL;

¹ <http://www2.worldbank.org/hm/pollmgt/0026.html>

² http://www.worldbank.org/nipr/work_paper/PROPER2.pdf

- verify data at BAPEDAL;
- obtain rating from the advisory board;
- obtain rating approval from the Environment Minister;
- report ratings to the President, and finally;
- release the information to the press.³

This ensures that the data gathered goes through a process of rigorous scrutiny before it is released to the public since any error in rating would result in BAPEDAL losing its credibility. There is no information about how long this process takes on average.

After the first round of ratings in June 1995, anticipating a strong reaction against the plants rated black, BAPEDAL adopted a strategy of rating nondisclosure until December 1995. This provided an opportunity for the poor performers to move up the performance ladder. Owners of the red and black rated factories, realizing their managers' misrepresentation of their plant's compliance status and recognizing the threat of public disclosure, created strict vigilance mechanisms and made sufficient investments in pollution abatement. This resulted in a leap from a lower rating level to a higher category during full disclosure in December 1995.

III. Impact/Results

A number of forces operating together have contributed to a significant change in the compliance behavior of factory owners, as well as an improvement in the environmental performance of factories. In the initial phase of implementation (June 1995), 65 percent of the 187 rate factories showed signs of noncompliance. Five factories were assigned a green rating while six received a black rating. None of the participants was awarded the gold rating. Twenty new companies had joined the program by December 1995, and there was a 50 percent drop in the number of facilities that were rated black. In a year's time compliant plants grew from a third to half of the sample. Eighteen months after full disclosure there was a 40 percent reduction in pollution. This demonstrates how seriously the companies perceived PROPER ratings. As the level of compliance of low-rated factories significantly improved, the green and the gold rated plants maintained their high performance. This clearly indicates that complacent behavior is stronger in the lower-rated factories.

There was a remarkable performance difference between factories owned by Indonesian nationals, multinationals, or the state, as well as differences between the factories for various products (such as sugar, paper, plywood, textile, and rubber). Seventy percent of facilities owned by Indonesian nationals were assigned black ratings, whereas multinationals proved to be the best performers. Owing to their business in developed countries, multinationals were more inclined towards cleaner technology, whereas state-owned factories had equal numbers in the compliant and noncompliant categories. In terms of product facilities, paper and sugar factories showed signs of greater compliance than rubber, textiles, and palm oil industries. PROPER provides insights into the

³ http://www.worldbank.org/nipr/work_paper/PROPER2.pdf

performance status of these industries, thereby allowing them to make informed attempts to comply with regulatory standards. There have been solid increases in the compliance levels of all types of facilities, thereby demonstrating that legal action is not the only way to exercise pressure for pollution abatement.

PROPER has proved to be cost-effective and has reduced transactional costs by mobilizing external agencies for support, as well as by leveraging their power to control environmentally deviant behavior. Additionally, public recognition has both encouraged performance beyond the regulatory standards and has allowed factories to evaluate the costs of abatement against the benefits accrued through compliant behavior. PROPER has also been instrumental in informing factory owners about the performance of their factories, about which many were previously ignorant. PROPER thus has raised the environmental awareness of owners, managers, and employees. While the program enables firms with good ratings to publicize their status and reap market benefits, it also allows regulators to better use their limited resources by concentrating on the worst offenders.

PROPER has also had an impact on BAPEDAL. Because of PROPER's information disclosure strategy, BAPEDAL exposes itself to public inquiry, thus enhancing its technical capability and improving its operations. Therefore PROPER has had an impact at two levels. The promotion of clean technology through the use of reputational incentives has caused BAPEDAL to improve its data collection and analysis.

IV. Key Elements of Empowerment

Access to Information

By resorting to public help for environmental protection through access to information previously denied, BAPEDAL has succeeded in empowering the community. By ensuring high-quality, reliable information, it has generated greater community awareness about the poor performance of the firms and the environmental threat they pose. This helps stakeholders (local communities, NGOs, and the press) to establish strong grounds upon which to challenge polluters, and also provides them with greater negotiating power to pressure polluters to comply with regulatory standards. This is evident from the movement of factories from a noncompliant to compliant status. From the market perspective, information availability provides firms with a clear framework from which to make investment decisions. This poses a threat to the polluters and motivates them to adopt cleaner technologies in order to move up in the performance-rating ladder and ensure their stability in the market. The public disclosure strategy has also resulted in BAPEDAL ensuring that the entire process is free of error by adopting sound data-analysis methodology. This has contributed to the elimination of skepticism, thus enabling the stakeholders to act without any hesitation. In doing this, BAPEDAL has also strengthened its operations and has been able to work collaboratively with external agencies to promote environmentally friendly behavior, the result of which is compliance with regulatory standards.

Finally, by providing information that is both accessible and in a form that can be understood by the community, BAPEDAL limits the ability of plants with strong links to the government to misconstrue the information.

Inclusion and Participation

The transition from a single regulatory body to a collaborative regulatory mechanism has resulted in giving a substantial degree of responsibility to the community stakeholders—the local community groups, NGOs, and the media. A sense of ownership has emerged among the stakeholders as a consequence of having gained substantial power and negotiating ability in the challenging and complex domain of pollution control. Additionally, the increased availability to citizens of information about the effects of pollution, and encouragement by BAPEDAL to negotiate with the facilities has enabled local communities to voice their opinion and become a part of the decision-making process. For instance, allowing the local community to exert pressure for compliance indicates an effort towards increasing partnership as well as the promotion of transparency.

Not only have the stakeholders participated as a regulatory mechanism, but they have also helped to raise awareness regarding pollution control and compliance. This in turn has encouraged voluntary participation of factories in PROPER. For instance, the number of factories voluntarily participating in PROPER doubled from June to December 1995 (from 11 to 23).

Accountability

The information disclosure strategy has led to good governance practices by integrating the efforts of the community groups, NGOs, the media, and BAPEDAL. This strategy has been operationalized as a process of imposing accountability on both the regulators and the regulated. While regulating agencies have been able to exert pressure for compliance and improvement in the factories' performance level, transparency in the control system makes it mandatory that the agency to subject itself to public scrutiny. As a result, BAPEDAL has to review the rating process and ensure that their data is reliable and well-tested. Furthermore, factories are accountable for their performance level. Any slacking in pollution control would reveal them to be misfits in the business community, thus making them potential losers in the market.

V. Issues and Lessons

The implementation of this new paradigm faced credibility challenges. Credibility was critical to sustain public trust, the lack of which would have undermined the entire initiative. BAPEDAL responded to this challenge by evaluating information received and subjecting it to multiple rounds of scrutiny. Computerized modeling techniques, group-based analysis (instead of solely relying on individual incidents), and historical pollution data minimized the risk of errors in the ratings and ensured greater accuracy.

Another challenge was the uncertainty regarding the business community's reaction to the performance rating strategy. There was a possibility that the stakeholders as well as the factories being rated would disagree with the conversion of the environmental regulations into a color-coded scheme. BAPEDAL anticipated this challenge and countered it by integrating the design efforts of a technical team from Australia, Canada, and the World Bank to create rigorous protocols for translating the ratings into a color-coded scheme.

Selection of facilities to be incorporated in the rating system also posed a challenge that needed attention. BAPEDAL dealt with this challenge by selecting facilities about which it had sufficient data to rate. It surveyed 350 facilities participating in PROKASIH and settled for only 176 facilities.

Furthermore, it is reasonable to believe that lack of adequate media coverage of the worst performers has the potential to erode the impetus of such an initiative. Only five percent of the names of the worst performers are reported in the newspapers. Since ratings are not widely publicized in the print media, there is a possibility of the program's momentum being lost.

The implementation strategy is a success due to opportunities leveraged by BAPEDAL in terms of strong political support for the program, willingness of the community to participate in this endeavor, and building on the experiences gained in the PROKASIH initiative. Other factors that contribute to PROPER's widespread popularity and success are information quality and the dissemination mechanism, provision of incentives for good performance, and market pressure.

Some lessons that can be drawn are listed below:

- Public opinion can be leveraged effectively to monitor and enforce regulations. When citizens are given the right to voice their opinion and are assured of their position in influencing the decision-making process, they can be a viable alternative to the formal control structures exhibiting the same degree of enforcement effects.
- Reliable data is a prerequisite for an effective pollution management endeavor. Stakeholders need accurate and timely information to make an appropriate appraisal of the environmental performance of the factories. Moreover, the degree of community influence may vary depending on the nature of the community.
- Heterogeneity of communities must be recognized and customized regulatory sanctions must be developed, instead of applying uniform standards of control. For instance, less educated communities may manifest less control and bargaining strength than their more educated counterparts.
- The control model based on the interaction of the state, market, and the community can realign the consumer, market, investor, and plants to a binding factor, "compliant behavior." The pervasiveness of information access can potentially affect the product, capital, and labor markets. Information access gives consumers the option of choosing environmentally friendly products, and gives the capital market the option to invest more in companies with good ratings, as

these companies would have greater stability in the market economy. Finally, in the labor market, companies with a “greener” attitude would attract employees who recognize their financial viability and steadiness.⁴

The paradigm shift in the regulatory approach to pollution control and enforcement mechanisms clearly demonstrates that civil society, when empowered with access to information and the capacity to use it, can effectively monitor deviations and aberrations in performance, and can encourage good performance. This program has influenced other developing countries to adopt similar strategies. In April 1997, the Philippines Department of Environment and Natural Resources initiated “EcoWatch” based on the experiences of PROPER. Mexico has also started “PEPI” (Public Environmental Performance Index), which is an environmental management initiative using pollution reports provided by the new national environmental licensing program.

VI. Further Information: References and World Wide Web Resources

- Afsah, Shakeb, “PROPER: A Model for Promoting Environmental Compliance and Strengthening Transparency and Community Participation in Developing Countries,” International Resources Group Limited, Washington D.C. URL: http://www.worldbank.org/nipr/work_paper/PROPER2.pdf
- Afsah, Shakeb, Benoît Laplante, and David Wheeler, “Controlling Industrial Pollution: A New Paradigm,” Policy Research Working Paper 1672, World Bank, Policy Research Department, Washington, DC, 1996. URL: <http://www.vista.gov.vn/moitruong/INFOWEB/ifov61.html>
- Afsah, Shakeb, Benoît Laplante, and N. Makarim, 1996, “Program-Based Pollution Control Management: The Indonesian PROKASIH Program,” Policy Research Working Paper 1602, World Bank.
- EPIQ Technical Advisory Group, “Environmental Policy Dialogue: Lessons Learned,” USAID. URL: <http://www.usaid.gov/environment/envpolicydll.pdf>
- Japan International Cooperation Agency, “The PROPER: Indonesian Success Story,” URL: http://www.jicaus.org/doc/Annex11-PROPER-su_1AD.doc
- Makarim, Nabriel, and John Butler, “Information Sharing as an Environmental Policy Tool: The Indonesian Experience.” URL: <http://www.inece.org/4thvol2/makarim.pdf>
- Pargal, Sheoli, and David Wheeler, 1995, “Informal Regulation of Industrial Pollution in Developing Countries: Evidence from Indonesia,” Policy Research Department, Environment, Infrastructure, and Agriculture Division, The World Bank, February. URL: http://www.worldbank.org/nipr/work_paper/1416/index.htm

⁴ http://www.worldbank.org/nipr/work_paper/ecoenv/confpap.pdf

- Resources for the Future (RFF), "Searching for Creative Solutions to Pollution in Indonesia." URL: <http://www.rff.org/books/chapterpdfs/RockChap4.pdf>
- Tietenberg, Tom, and David Wheeler, 1998, "Empowering the Community: Information Strategies for Pollution Control," *Frontiers of Environmental Economics Conference*, October 23-25, Airlie House, Virginia. URL: http://www.worldbank.org/nipr/work_paper/ecoenv/confpap.pdf
- United States-Asia Environmental Partnership (US-AEP), US-AEP Activities in Indonesia. URL: <http://www.usaep.org/indonesia/activities.htm#1>
- Wheeler, David and Shakeb Afsah, "Going Public on Polluters in Indonesia: Bapedal's *proper prokasih* Program," Environment, Infrastructure, and Agriculture Division, Policy Research Department, World Bank. URL: http://www.worldbank.org/nipr/work_paper/proper/index.htm
- World Bank, 1996, "Controlling Pollution—A New Approach," *World Bank Policy and Research Bulletin* 7(4). URL: <http://www.worldbank.org/html/dec/Publications/Bulletins/prb7,4.html>
- World Bank, "Information in Action: Two Cases." URL: http://www.worldbank.org/nipr/work_paper/ninfo/ninfo2p5.htm#T7