

# Transforming the Execution of Administrative Court Decisions through E-Execution: Digital Breakthroughs to Strengthen Environmental Justice in Indonesia

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**Abstract.** Environmental justice and sustainable natural resource management in Indonesia are weakened by the ineffective execution of State Administrative Court (PTUN) decisions in environmental cases. Manual execution procedures, frequent non-compliance by defendants, and the PTUN Chairperson's limited supervisory role reduce the practical impact of judicial rulings. This study proposes an e-execution mechanism integrated within the e-court platform as a digital breakthrough to strengthen the execution of administrative court decisions. Using normative legal research and case analysis—drawing on Supreme Court Cassation Decision No. 403 K/TUN/TF/2024 (Wawonii Island) and Judicial Review Decision No. 99 PK/TUN/2016 (Kendeng Hills)—the study finds that e-execution will significantly enhance effectiveness, efficiency, and transparency. Features such as electronic execution submissions, automated notifications, AI-assisted sanction enforcement, and blockchain-based transparency enable active oversight by the PTUN Chairperson while facilitating public monitoring through a digital dashboard. Compared to conventional manual execution, e-execution reinforces legal certainty, accelerates environmental protection, and supports Indonesia's commitment to the 2030 Sustainable Development Goals. The study recommends regulatory reform, institutional capacity strengthening, and public outreach to ensure the inclusive and effective implementation of e-execution as a foundation for environmental justice.

## 1 Introduction

Sustainable management of natural resources in Indonesia is a crucial foundation for supporting the achievement of the 2030 Sustainable Development Goals (SDGs), particularly Goals 13 (Climate Action), 15 (Life on Land), and 16 (Peace, Justice, and Strong Institutions). However, environmental law enforcement through PTUN decisions is often hindered by the manual process of execution, non-compliance from government

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officials as defendants, and the limited active role of the Head of the PTUN in overseeing the execution. The monitoring and evaluation data of the execution of PTUN decisions by the Directorate General of Military and State Administrative Judiciaries of the Supreme Court show that, as of November 20, 2025, only 2% of the total 18,164 decisions, or only 207 decisions (including environmental case decisions) that have permanent legal force, were carried out voluntarily by state administrative officials. This data supports Dory Reiling's research findings, which have identified three main problems faced by judicial institutions: slow case handling (delay), difficulty of public access, and the integrity of the court apparatus (judicial integrity) [1]. The Judicial Review of Supreme Court Decision No. 99 PK/TUN/2016 (Kendeng Hill case) and the Cassation of Supreme Court Decision No. 403 K/TUN/TF/2024 (Wawonii Island case) illustrate serious obstacles, where legally binding decisions fail to be implemented or are implemented very late, thereby worsening ecosystem damage and violating the rights of local communities. Non-compliance with the PTUN decision and postponement of execution are problems that must be solved since “Justice delayed is justice denied,” said the British Prime Minister William E. Gladstone [2].

The rapid development of digital technology necessitates the transformation of courts into modern judicial institutions that integrate information technology into their core functions. Court digitalization provides concrete benefits for court users and institutional stakeholders, including more efficient case administration, enhanced access to justice, increased transparency, and stronger institutional oversight [3]. Responding to these developments, the Supreme Court enacted Supreme Court Regulation No. 1 of 2019 on Electronic Case Administration and Trials in Court, which mandates the use of the e-court system in civil, religious, state administrative, and military courts. Pursuant to Article 3(1) in conjunction with Article 4 of the Regulation, procedural stages—from the electronic submission of claims and procedural documents to the pronouncement of judgments—are conducted through the e-court platform. However, the Regulation does not regulate the execution of State Administrative Court (PTUN) decisions, despite execution constituting a fundamental component of administrative procedural law. Under the State Administrative Court Law (Law No. 5 of 1986, as amended by Law No. 9 of 2004 and Law No. 51 of 2009), the settlement of state administrative disputes comprises three procedural stages: pre-examination, including administrative remedies and dismissal; examination, encompassing adjudication and legal remedies; and post-judgment, namely the execution of final and binding decisions. The absence of an electronic execution mechanism has consequently left the enforcement of PTUN decisions—particularly in environmental disputes—dependent on manual and fragmented procedures that operate outside the integrated digital judicial system, thereby undermining effectiveness, judicial supervision, and legal certainty [4].

As far as the researchers know, there has been a lot of research conducted related to the problem of execution of PTUN decisions in Indonesia, such as “Digital Transformation: Creating an Effective and Efficient Court in Indonesia by Amarini *et. al* in 2023[3] “Execution of State Administrative Judicial Decisions a Mirror of the Authority Court by Elvi Susanti Syam *et.al* in 2024 [5]. “Legal Administrative Review of Deviations in the Execution of State Administrative Court Decisions in Indonesia,” by Hayati and Setiyono in 2023 [6]. However, there has been no comprehensive research that offers e-

execution as an innovative solution to overcome the weaknesses of manual execution that have been present so far. Consequently, the development of an e-execution application based on the e-court platform represents an innovative solution utilizing digital information technology to overcome obstacles in the implementation of court decisions, particularly in environmental cases. By integrating digital technologies, such as blockchain, e-execution ensures transparency through secure and non-manipulated data tracking, thereby strengthening public trust in the decision-making process [7]. Blockchain is an innovative technology to improve authenticity, security, and risk management. Blockchain is essentially a distributed ledger of transactions that is shared among miners in a blockchain system, following a consensus protocol. Additionally, the use of artificial intelligence (AI) enables the automation of legal document analysis, scheduling, and the real-time monitoring of decision implementation. This approach not only reduces the potential for human error but also significantly speeds up case resolution, creating a more effective and accountable system.

## **2 Method**

This study employs a normative legal research method, incorporating statutory, case, and prescriptive approaches, to evaluate the effectiveness of the existing execution mechanisms for the Administrative Court's final and binding decisions. It offers e-execution as a means to overcome barriers to executing Administrative Court (PTUN) decisions, with special reference to environmental cases. It examines legal norms and regulations, including Law No. 51 of 2009, Supreme Court Regulation No. 7/2022, and court decisions like the Judicial Review of Supreme Court Decision No. 99 PK/TUN/2016 (Kendeng Hill case) and the Cassation of Supreme Court Decision No. 403 K/TUN/TF/2024 (Wawonii Island case). Data is collected through a literature review and analyzed qualitatively to propose the integration of blockchain and AI in e-execution, addressing issues of delays, non-compliance, and transparency.

## **3 Results and discussion**

### **3.1 Results**

This study introduces e-execution as a novel, technology-driven mechanism to overcome the long-standing ineffectiveness of executing State Administrative Court (PTUN) decisions, particularly in environmental cases. Designed as an integrated module within the Supreme Court's existing e-court system, e-execution transforms post-judgment enforcement from a fragmented manual process into a unified digital workflow. Its key innovation lies in combining artificial intelligence for automated verification, notifications, and sanction triggering with blockchain technology to ensure tamper-proof transparency and real-time public accountability. Through e-execution, litigants—including affected communities such as those in Kendeng and Wawonii—can electronically submit execution requests by uploading final and binding PTUN or Supreme Court decisions, which are automatically verified for completeness. The system issues electronic summonses to defendants, simultaneously notifies the Head of the PTUN

and supervisory bodies within the statutory 21-working-day compliance period under Law No. 30 of 2014, and automatically activates daily coercive fines (*dwangsom*) and public disclosure of non-compliance pursuant to Article 116 (5) of Law No. 9 of 2004. Execution measures, including the revocation of environmental permits, are displayed on a real-time public dashboard, enabling continuous social and institutional oversight while allowing the PTUN Chairperson to exercise proactive supervisory control. This research's novelty lies not merely in digitalizing execution, but in reconceptualizing enforcement as a transparent, automated, and accountable judicial ecosystem, thereby strengthening legal certainty, accelerating environmental protection, and repositioning execution as an integral component of Indonesia's modern electronic judiciary.

## 3.2 Discussion

### 3.2.1 Obstacles to the Execution of PTUN Decisions in Environmental Cases

The implementation of PTUN decisions in environmental cases in Indonesia faces several significant obstacles that hinder the sustainable management of natural resources. There are 2 illustrations of PTUN decision landmarks to illustrate the difficulty of executing PTUN decisions that have permanent legal force related to the environment, namely the Kendeng case and the Wawonii Island case.

First, the Kendeng case illustrates the systemic failure to execute final and binding administrative court decisions in Indonesia. In Judicial Review Decision No. 99 PK/TUN/2016, the Supreme Court annulled the environmental permit issued to PT Semen Indonesia for cement mining activities in the Kendeng karst area, thereby imposing a legal obligation on the Governor of Central Java to revoke the permit. Under the State Administrative Court Law (Law No. 5 of 1986 as amended by Laws No. 9 of 2004 and No. 51 of 2009), execution of such decisions relies on voluntary compliance by the issuing administrative authority, requiring the restoration of the legal situation to its pre-violation state. However, the Governor failed to execute the decision in good faith and instead issued a new environmental permit following a revised AMDAL process, effectively circumventing the substance of the Court's ruling. This non-compliance reflects structural weaknesses in the administrative execution regime, including the absence of effective coercive mechanisms, the lack of personal liability or contempt-of-court provisions for administrative officials, and the limited supervisory capacity of the State Administrative Court. Political and economic considerations surrounding the cement project further undermined judicial authority, allowing administrative discretion to prevail over legal finality. As a result, the Kendeng case exposes a critical enforcement gap in Indonesia's administrative justice system, where legally binding judgments remain vulnerable to delay, substitution, and non-compliance, ultimately weakening environmental protection and legal certainty [8].

Second, The Wawonii Island case exemplifies the persistent difficulty in executing final and binding State Administrative Court (PTUN) decisions in environmental disputes involving powerful administrative and economic interests. In Supreme Court Cassation Decision No. 403 K/TUN/TF/2024, the Court annulled the Forest Area Borrow-and-Use Permit (*Izin Pinjam Pakai Kawasan Hutan/IPPKH*) issued to PT Gema Kreasi Perdana for

nickel mining activities on Wawonii Island, a small island ecosystem legally protected under Indonesian environmental law (Law No. 1 of 2014 concerning Amendments to Law No. 27 of 2007 concerning the Management of Coastal Areas and Small Islands). Once the decision obtained permanent legal force, the Ministry of Environment and Forestry (KLHK), as the issuing authority, was legally obliged to revoke the permit and ensure the cessation of mining activities. However, execution was not carried out effectively, as mining operations continued despite the annulment of the permit. This failure highlights structural weaknesses in Indonesia's administrative execution framework, which relies predominantly on voluntary compliance by administrative authorities and lacks effective coercive instruments. The absence of real-time monitoring, limited coordination between central and local government institutions, and the lack of personal accountability mechanisms for non-compliant officials further compounded the execution gap. Moreover, the economic significance of the nickel mining sector—often framed as part of national strategic interests—created political resistance to compliance, undermining the authority of the judiciary. Consequently, the Wawonii Island case demonstrates how legally binding PTUN decisions in environmental matters can remain unenforced in practice, resulting in continued ecological harm, legal uncertainty, and the erosion of community trust in administrative justice.

There are several lessons that can be learned from the two case illustrations above related to the weak execution of PTUN decisions that have permanent legal force. First, the manual execution process causes significant delays, high operational costs, and difficult access, especially for local communities such as people in the Kendeng Hill or residents of Wawonii Island, who often lack the resources to navigate complex procedures. Therefore, introducing modern technologies (AI) to the system of court execution orders will increase the effectiveness of the law system enforcement in terms of transparency and accessibility [9]. Second, non-compliance by defendants, such as the Governor of Central Java in the Judicial Review of Supreme Court Decision No. 99 PK/TUN/2016 or the Ministry of Environment and Forestry (KLHK) in the Supreme Court Decision No. 403 K/TUN/TF/2024, is often triggered by political pressure, economic interests, or the absence of firm sanction mechanisms, such as provisions for contempt of court. Third, the passive role of the Chief Administrative Court (PTUN) in overseeing executions exacerbates the situation, with minimal proactive action to ensure the implementation of the decision. Fourth, the lack of coercive power of PTUN decisions, which depend on the defendant's awareness (self-respect), means that decisions such as the revocation of environmental permits are often ignored, as seen in the cases of PT Semen Indonesia in Kendeng and PT Gema Kreasi Perdana in Wawonii Island above. Moreover, the condition was exacerbated by minimal coordination with relevant agencies, such as the Ministry of Environment and Forestry, which often lacks real-time access to the status of decisions and the Chief Justice of PTUN tends to play a passive role in monitoring and enforcing the execution of decisions,[10] resulting in a lack of pressure on defendants to comply.

This failure not only damages ecosystems, such as the Kendeng karst area and the biodiversity of the small island of Wawonii, but also violates the rights of local communities to a healthy environment, as guaranteed by Article 28H of the 1945

Constitution and the 2030 Sustainable Development Goals (SDGs) goals 13 (climate action), 15 (terrestrial ecosystems), and 16 (accountable institutions).

### 3.2.2 E-Execution: Technology-Based Innovative Solutions

E-execution is proposed as a technology-based solution to overcome structural barriers in enforcing State Administrative Court (PTUN) decisions, particularly in environmental cases. Integrated as a dedicated module within the Supreme Court's e-court system pursuant to Supreme Court Regulation No. 7 of 2022, e-execution transforms the post-judgment phase from a passive, manual process into an automated and supervised digital framework. Litigants may electronically submit execution requests by uploading final and binding PTUN or Supreme Court decisions, which are verified through artificial intelligence to ensure procedural completeness and timely processing. The system simultaneously issues electronic summonses to defendants [11] and notifies the Head of the PTUN and relevant supervisory bodies within the 21-working-day execution period mandated by Law No. 30 of 2014. In cases of non-compliance, e-execution automatically activates coercive fines (*dwangsom*) and public disclosure mechanisms in accordance with Article 116(5) of Law No. 9 of 2004. Execution measures, including the revocation of environmental permits, are immutably recorded using blockchain technology and displayed on a real-time public dashboard, enabling continuous public and institutional oversight [12]. By providing real-time execution data to the PTUN Chairperson, e-execution strengthens active judicial supervision while enhancing effectiveness, efficiency, and transparency in administrative law enforcement.

### 3.2.3 Challenges and Solutions

The implementation of electronic execution (e-execution) of State Administrative Court (PTUN) decisions in Indonesia, particularly in environmental cases, faces interrelated structural, institutional, and regulatory challenges. Limited digital infrastructure—especially in remote areas such as Wawonii Island—constrains real-time monitoring and effective operation of the e-court system. This challenge is compounded by low digital literacy among judges, court staff, legal practitioners, and civil society actors, as well as resistance from some government officials who remain reluctant to abandon manual procedures or submit to heightened transparency.

Addressing these barriers requires a multi-layered strategy. First, the state must prioritize digital infrastructure development [13] through expanded broadband access, satellite connectivity, and high-capacity e-court servers, supported by public-private partnerships and the Universal Service Obligation (USO) program. Second, sustained capacity-building programs [14] are essential to enhance digital competence and institutional trust in emerging technologies such as artificial intelligence and blockchain. Finally, regulatory reform is indispensable.

Amendments to the State Administrative Court Law and Supreme Court regulations are needed to formally recognize e-execution as a binding enforcement mechanism, introduce automated sanctions and contempt-of-court provisions, [15] and mandate system integration with external oversight bodies. Only through the alignment of

infrastructure, human capacity, and legal frameworks can e-execution evolve into an effective, transparent, and enforceable instrument of environmental justice.

Despite the absence of fully developed e-execution mechanisms within e-court platforms in technologically advanced judicial systems, Indonesia has demonstrated an unexpected institutional innovation through the Jakarta State Administrative Court. In June 2023, the Jakarta PTUN launched *Jak-Aksi*, a pilot application designed to facilitate the electronic submission of execution requests and to enable basic monitoring of the execution of administrative court decisions. Although still limited in scope and functionality, *Jak-Aksi* represents a significant legal and technological breakthrough, evidencing the practical feasibility of digital execution within Indonesia's administrative judiciary. However, the application remains procedurally incomplete, as it lacks automated notifications, AI-driven compliance monitoring, and coercive sanction mechanisms essential for effective enforcement. Scaling and enhancing *Jak-Aksi* into a comprehensive e-execution module—integrated with the national e-court system and implemented across all PTUNs—would substantially strengthen judicial authority and execution effectiveness. Such development is consistent with the Supreme Court Blueprint for Judicial Reform 2010–2035 and directly supports Sustainable Development Goal 16 by promoting accountable, transparent, and inclusive access to administrative justice.

## **4 Conclusion**

E-execution will offer a revolutionary approach to upholding environmental justice, supporting the 2030 SDGs and the Supreme Court Blueprint 2010-2035 through speed, effectiveness, and transparency. The e-execution application will be based on the e-court platform, offering an innovative solution to overcome obstacles in the execution of State Administrative Court (PTUN) decisions, particularly in environmental cases in Indonesia. With features such as electronic execution submission, automatic notifications, AI-based sanctions, blockchain transparency, and a public dashboard, e-execution will enhance the effectiveness, speed, and transparency of decision implementation. This system addresses non-compliance by the defendant, slow manual processes, and the passive role of the PTUN Chairperson, while empowering local communities and NGOs through real-time access to information. The development and implementation of e-execution through digital innovation supports the achievement of the 2030 SDGs, particularly Goals 13, 15, and 16. Successful implementation requires regulatory revisions (Administrative Court Law and Supreme Court Regulation No. 1 of 2019 and No. 7/2022), an improved technological infrastructure, and effective public outreach. E-execution will not only strengthen environmental justice but also serve as a model for digital transformation in administrative law enforcement in Indonesia, in line with the Supreme Court's Blueprint for Judicial Reform (2010-2035). Further research could examine the effectiveness of e-execution in other environmental cases and the impact of public transparency on official compliance.

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