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Implementing Government Regulation No. 23 of 2021 in the Conversion of Protected Forests into Plantation Areas: Evidence from Tonra District, Bone Regency

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ABSTRACT

Protected forests perform a strategic ecological function by regulating water systems, preventing erosion and floods, reducing landslide risks, and maintaining soil fertility. Their conversion into plantation areas therefore raises legal, environmental, and socio-economic concerns. This study examines the implementation of Government Regulation No. 23 of 2021 concerning Forestry Administration in the conversion of protected forests into plantation areas in Tonra District, Bone Regency. It addresses two questions: how the conversion mechanism is implemented under the regulation, and what impacts arise together with the measures undertaken by the local government. The study employed qualitative socio-legal research combining the analysis of statutory provisions with field observations, semi-structured interviews, and documentation. The fieldwork focused on Rappa Village and involved information from the village head and a forestry extension officer of the Ulubilah Forest Management Unit. The findings show that conversion is legally expected to proceed through layered administrative and technical stages, beginning with local proposals and spatial-planning review and ending with central-government approval. In practice, implementation remains suboptimal because regulatory requirements collide with community economic needs, supervision is limited, institutional authority is fragmented, and human resources are insufficient. Conversion has contributed to soil and water degradation, short-term income gains accompanied by the loss of traditional forest-based income, and declining forest-based social interaction. Government responses include law enforcement, inter-agency patrols, rehabilitation, reforestation, and community involvement, but limited funding, personnel, and public awareness constrain their effectiveness.

INTRODUCTION

Protected forests are legally and ecologically distinct areas whose principal function is to sustain life-support systems. They regulate water, prevent floods and erosion, control seawater intrusion, maintain soil fertility, and protect the stability of the surrounding environment. In an archipelagic state with many areas vulnerable to floods, landslides, drought, and other ecological disasters, these functions make protected forests central to environmental security. Forest cover also supports biodiversity, stores

carbon, and maintains the relationship between upland and downstream ecosystems. Consequently, the loss or weakening of protected-forest functions is not confined to the converted site but may affect settlements, agricultural land, water bodies, and communities located beyond the forest boundary (Soerianegara & Indrawan, 2008).

Despite this protected status, forest areas in Indonesia face sustained pressure from economic land use. Plantation expansion is especially significant because fertile soils and water availability make forested uplands attractive for cloves, sugarcane, fruit crops, and other commercial plants. Conversion may occur legally through formal changes in forest designation or function, but it may also occur through encroachment and land clearing without valid permission. These processes reduce vegetation cover and the soil's capacity to absorb and retain water. They also increase surface runoff, erosion, sedimentation, flooding, drought, and landslide risks while reducing habitat and biodiversity. Research on industrial plantation expansion in Indonesia similarly demonstrates the speed with which forest landscapes can be transformed when commercial pressure is not matched by effective control (Gaveau et al., 2016). The consequences are also social and economic. Communities living near forests may initially obtain new employment and plantation income, yet they can simultaneously lose access to timber, resin, food, water, and other forest products that previously supported household livelihoods. Changes in control over land may create disputes among communities, businesses, and government institutions. The unequal distribution of plantation benefits can deepen local vulnerability, while the decline of forest-based activities may weaken customary practices and collective relations. Protected-forest conversion therefore cannot be evaluated merely as a technical change in land use. It is a governance problem involving ecological protection, economic welfare, legal authority, public participation, and the distribution of costs and benefits.

Government Regulation No. 23 of 2021 concerning Forestry Administration provides the principal regulatory framework examined in this study. The regulation addresses forestry planning, forest management and utilization, changes in the designation and function of forest areas, forest protection, supervision, administrative procedures, and rehabilitation. It does not permit protected forests to be converted directly into plantation land by local actors. A lawful change must proceed through an authorized process involving changes in forest function and/or designation, technical and environmental assessment, compatibility with spatial planning, and a final determination by the central government. This structure reflects the exceptional character of conversion: protected forests are not ordinary land reserves that may be opened whenever economic demand increases.

The relevant legal framework extends beyond Government Regulation No. 23 of 2021. Law No. 41 of 1999 on Forestry defines protected forests and requires changes in forest designation and function to be determined by the government. It also limits non-forestry use of protected forests and prohibits use that damages their principal function. Law No. 18 of 2013 on the Prevention and Eradication of Forest Destruction prohibits plantation activities inside forest areas without ministerial authorization. Law No. 39 of 2014 on Plantations regulates plantation business and cultivation, while regional spatial-planning instruments determine the relationship between protected and cultivation zones. The Bone Regency Spatial Plan for 2013–2033 records approximately 40,067 hectares of protected forest in the regency, indicating the scale of the public interest affected by land-use decisions.

Legal certainty provides the conceptual basis for evaluating implementation. Legal certainty requires rules to be sufficiently clear, hierarchical, consistent, and enforceable so that both citizens and public officials can anticipate the legal consequences of their conduct (Fenwick & Wrbka, 2016; Mertokusumo, 2016). Mertokusumo emphasizes that certainty is realized when law is implemented according to its normative content rather than selectively applied. In administrative governance, certainty also protects communities from arbitrary or inconsistent state action. The issue in Tonra is therefore not limited to whether rules exist. It concerns whether the institutional process, supervision, licensing, and enforcement operate consistently enough to translate the rules into actual protection.

A rule must use clear concepts, occupy an identifiable place in the legal hierarchy, remain consistent with related provisions, and be implemented by institutions acting within their authority (Asikin, 2014; Putro, 2024). In protected-forest governance, these requirements are closely connected. Unclear boundaries or procedures create uncertainty for residents; inconsistent licensing weakens equality before the law; and delayed enforcement permits factual land use to displace the status established by legislation. Certainty must therefore be visible at each stage, from identifying the forest category and determining the competent institution to reviewing an application and responding to

unauthorized clearing. The Tonra case tests whether the statutory promise of a protected area is supported by an administrative practice capable of producing predictable decisions and effective ecological protection.

Qur'an 7:56 prohibits causing damage on earth after it has been set in order, while Qur'an 2:205 condemns conduct that destroys crops and living resources. These principles treat environmental destruction as both material harm and a moral failure to preserve the balance of creation (Al-Qurthubi, 2006; Ibn Kathir, n.d.). Although the empirical analysis is grounded primarily in positive law, this ethical dimension reinforces the proposition that economic utilization cannot be separated from responsibility for ecological and social consequences.

Tonra District presents a relevant case because protected and production forests coexist with communities heavily dependent on agriculture and plantations. Rappa Village, the immediate field site, is known for pine resin management, clove and fruit plantations, rice farming, and forest-buffer planting through farmer groups (Fahmi et al., 2024; Prasetyaningrum et al., 2024). The village had 1,033 residents and 273 households in 2021, distributed across two hamlets within an area of approximately 32.5–35 square kilometres. These characteristics create direct interaction between forest protection rules and everyday livelihood needs.

The local setting also explains why the procedure must distinguish between legitimate community welfare claims and the gradual normalization of unauthorized cultivation. Rappa Village contains both protected and production forest areas, while most households depend on farming and plantation activities. Its leading commodities include cloves, fruit crops, rice, and forest products such as pine resin. Farmer groups also participate in developing buffer plants. These activities show that the community is not external to forest governance; it is directly embedded in the landscape and depends on decisions about access, protection, and restoration. A purely prohibitive policy that ignores livelihoods may be difficult to enforce, but a policy that tolerates clearing merely because cultivation has already occurred can weaken the legal status of the entire protected area. The welfare principle must therefore be applied through lawful access, livelihood support, and community-based conservation rather than retroactive acceptance of every occupation. This interpretation is consistent with Article 33(3) of the 1945 Constitution, under which natural resources are controlled by the state for the greatest prosperity of the people. Prosperity in this context includes both present income and the preservation of ecological conditions required by future generations. It also reflects the sustainability principle in Law No. 41 of 1999, which links benefit, fairness, openness, integration, and forest conservation. The Tonra case thus requires an institutional response that combines procedural legality with credible economic alternatives.

The conversion question must also be placed within sustainable development. Forest resources contribute to national and local economies, but their use must preserve the environmental conditions on which future welfare depends (Salim, 2010; Salim HS, 2013). Indonesian forestry governance has long involved competing claims by government agencies, communities, farmers, and commercial actors, making institutional coordination as important as the wording of the law (Nurrochmat, 2017). Plantation expansion can intensify land-tenure disputes when access, control, and benefits are not transparently allocated (Colchester et al., 2011). These concerns are directly relevant to Tonra. The legal issue is not whether communities may pursue economic improvement, but whether that improvement is achieved through procedures and land uses that preserve water systems, soil stability, and continuing access to forest resources. A decision that raises income briefly while transferring environmental risk to other residents or future generations does not satisfy the welfare and sustainability principles contained in forestry law.

The research accordingly asks: first, how is the mechanism for converting protected forest into plantation areas implemented in relation to Government Regulation No. 23 of 2021 in Tonra District? Second, what environmental and socio-economic impacts have emerged, and what measures have been undertaken by the government?

RESEARCH METHODS

This study used qualitative socio-legal research. The approach combined analysis of law in books with an examination of law in action, enabling the regulatory structure of protected-forest conversion to be compared with its implementation in Tonra District. Primary legal materials included Law No. 41 of 1999 on Forestry, Law No. 18 of 2013 on the Prevention and Eradication of Forest Destruction, Law

No. 39 of 2014 on Plantations, Government Regulation No. 23 of 2021 concerning Forestry Administration, and relevant spatial-planning provisions. Secondary materials consisted of books, journal articles, reports, and previous research on forestry law, forest conversion, sustainability, and legal certainty.

Field research was conducted in Rappa Village, Tonra District, Bone Regency, South Sulawesi. Data were collected through direct observation, semi-structured in-depth interviews, and documentation. Observation focused on local land-use conditions and planting activities, including the types of crops cultivated by farmers. The interview guide addressed administrative and technical requirements, the stages of conversion, environmental and social impacts, and government responses. The principal informants reported in the thesis were Busra, Head of Rappa Village, interviewed on 21 April 2026, and Fitriyani M., a forestry extension officer at the Ulubilah Forest Management Unit (KPH), interviewed on 22 April 2026. Notes, a mobile phone, and a prepared question list were used to record and organize field information. The data were analysed descriptively and qualitatively by organizing the empirical findings, comparing them with the legal framework and the theory of legal certainty, and drawing conclusions and policy recommendations.

The study used both primary and secondary data. Primary data consisted of observations and statements obtained directly at the research site, while secondary data included legislation, books, journal articles, official reports, and earlier studies contained in the thesis. The research instruments were a semi-structured question list, written notes, and a mobile phone used for documentation. Interview questions were developed around the two research problems rather than treated as a fixed questionnaire, allowing the researcher to pursue explanations concerning procedures, supervision, livelihood dependence, environmental change, and rehabilitation. The material was then grouped thematically into the regulatory mechanism, implementation obstacles, resulting impacts, and governmental measures. Each empirical theme was compared with the applicable forestry provisions and the concept of legal certainty. The analysis remained descriptive: it systematically explained the field findings and their relationship to the legal framework without converting the study into a purely doctrinal assessment.

RESULTS AND DISCUSSION

1. The Regulatory Mechanism and the Principle of Public Welfare

Government Regulation No. 23 of 2021 places forestry planning, management, utilization, protection, supervision, and rehabilitation within an integrated administrative system. In this framework, protected-forest conversion is not a direct transaction between land users and a local authority. It requires a legally recognized change in forest function and/or designation, and the ultimate authority lies with the central government. The layered procedure is intended to ensure that local economic interests do not override the ecological function of protected areas without technical review and legal authorization.

The regulation also incorporates a principle of benefit and public welfare. Forestry resources are expected to contribute to the prosperity of communities in a fair and sustainable manner. This principle recognizes that forests are both ecological assets and economic resources. For communities near forest areas, access to land and forest products can be essential for subsistence, employment, and local revenue. Busra explained that conversion to plantations had stimulated employment, local income, and economic activity, but he also warned that some community members prioritized immediate economic returns without adequately considering the possibility of future disasters (Busra, personal communication, April 21, 2026). The field evidence therefore shows that welfare cannot be reduced to short-term plantation income. A legally sound interpretation must include the continuing availability of water, fertile soil, forest products, and protection from environmental hazards.

The administrative process described by the forestry extension officer begins from the local level. Where land formally classified as protected forest has already been cultivated, a proposal may first be discussed in the village and then submitted through the district, regency, and provincial levels before reaching the competent ministry. At the village level, deliberation provides a channel for community participation and records the reasons for the proposal. The district government conducts initial verification, while the regency assesses spatial compatibility, environmental implications, and conformity with applicable law. Provincial institutions, including the forestry service and KPH, operate

within the distribution of governmental authority, but the final determination remains with the ministry (Fitriyani M., personal communication, April 22, 2026).

This sequence illustrates the difference between local factual use and lawful conversion. The fact that residents have cultivated an area does not automatically alter its legal status. Local proposals must be examined against spatial planning, ecological conditions, and the public interest. Articles 135–140 of Government Regulation No. 23 of 2021 emphasize supervision, control, and enforcement over forest utilization, while the provisions concerning changes in forest designation and function require governmental determination. The process is therefore both administrative and substantive. Documents and recommendations are necessary, but they cannot replace an assessment of whether conversion would undermine the forest's principal protective function. The legal protection of the area also requires a distinction between a change of forest function, a change of forest designation, and the use of a forest area for non-forestry purposes. These mechanisms have different legal consequences and cannot be collapsed into a general claim that land has been "converted." Forestry law places the authority to determine changes in the government and requires attention to environmental, social, and economic balances (Salim HS, 2013). Government Regulation No. 23 of 2021 further treats conversion as an exception subject to review, not as an automatic response to local cultivation. The layered route described by the informant should therefore operate as a control system: each administrative level verifies facts and legal compatibility rather than merely forwarding a request (Wibowo & Santoso, 2023).

Legal certainty requires this sequence to be applied consistently. Communities need to know which activities are permitted, which authority receives an application, what technical evidence is required, and which institution can issue a final decision. Government bodies also require a clear division of competence. When cultivation expands before the process is completed, or when different levels of government respond inconsistently, the legal status of the land becomes uncertain. This uncertainty may encourage further clearing because existing cultivation appears to create an expectation of eventual legalization. It can also produce unequal treatment between residents who follow formal procedures and those who occupy or clear land without authorization.

2. Implementation Gaps in Tonra District

The field findings indicate that the regulatory mechanism has not been implemented optimally. The central difficulty is a continuing collision between forestry rules and the economic dependence of residents on plantation land. Protected-forest rules require strict limits, environmental assessment, and supervision, whereas local livelihoods create pressure to maintain cultivated areas and allow additional access. According to Busra, weak supervision left some areas increasingly bare, yet removing cultivators would reduce local income and affect many households. This placed village authorities in a difficult position: continued cultivation constituted a violation, but immediate enforcement could create significant economic disruption (Busra, personal communication, April 21, 2026). This conflict has practical effects on licensing and control. The problem is not that Government Regulation No. 23 of 2021 lacks procedural provisions, but that the institutions responsible for implementing them have limited capacity. A large and difficult forest geography, insufficient personnel, weak coordination, and restricted enforcement authority reduce the frequency and effectiveness of field supervision. As a result, the formal sequence of authorization can be overtaken by factual occupation and cultivation.

The Ulubilah KPH conducts patrols and may identify illegal logging or land clearing. However, the forestry extension officer explained that field personnel do not always possess authority to impose decisive sanctions. They may seize evidence, provide guidance for minor conduct, or refer serious cases to the Directorate General of Law Enforcement within the forestry ministry (Fitriyani M., personal communication, April 22, 2026). This fragmented authority creates a gap between detection and enforcement. Patrol officers can observe violations, but further action depends on coordination with institutions located elsewhere and operating under different mandates.

The implementation problem can be assessed through legal certainty. The internal clarity of a regulation is insufficient when institutional practice does not provide predictable outcomes. A resident who clears protected forest may encounter guidance, confiscation, referral, or no immediate response depending on the availability of personnel and the seriousness attributed to the conduct. At the same time, local authorities may hesitate to act because they lack forestry competence or fear the social consequences of strict enforcement. Such inconsistency weakens the deterrent function of law and makes the protected status of the forest less effective in practice.

The gap is reinforced when the institution that first observes a violation lacks the authority or resources to complete the enforcement process. Village officials possess local knowledge but cannot determine forest status. KPH personnel can patrol and document conditions but may be limited to guidance, evidence seizure, or referral. Provincial and ministerial bodies hold broader forestry authority, yet their physical distance reduces the speed of response. This division is not inherently defective, but it becomes problematic when reporting, verification, and follow-up are uncertain. In such circumstances, enforcement depends on institutional availability rather than a predictable sequence. Legal certainty is weakened whenever residents cannot distinguish tolerated conduct from prohibited conduct because official responses vary across time, location, or institution rather than following a consistent transparent standard. Economic pressure also affects the precautionary principle. Plantation activity produces visible and immediate benefits, whereas ecological damage may emerge gradually or downstream. This temporal imbalance encourages decision-makers and land users to discount future risks. In Tonra, the possibility of employment and income can obscure the costs of reduced infiltration, soil erosion, landslides, sedimentation, and declining water quality. The regulation's sustainability requirements are intended to correct this imbalance, but they can only do so when environmental review and supervision occur before and during land-use change rather than after damage becomes apparent.

3. Environmental and Socio-Economic Impacts

The first major impact identified in the field is degradation of soil and water systems. Natural vegetation stabilizes soil, slows surface runoff, promotes infiltration, and maintains the structure and fertility of the land. Clearing forest vegetation exposes soil to direct rainfall, accelerates erosion, and reduces its capacity to store water. In sloping areas, these changes increase the possibility of landslides. Sediment carried into rivers raises turbidity, alters water flow, and can reduce water quality for households and agriculture.

Busra stated that forest conversion had reduced the capacity of the soil to absorb water. During periods of heavy rainfall, the land became more susceptible to landslides, and sediment affected river water. Because waterways originating in Rappa are connected to downstream areas, the effects could extend towards Mare District below the village slopes (Busra, personal communication, April 21, 2026). The finding demonstrates that administrative boundaries do not contain ecological harm. Decisions made in an upland village can impose risks and costs on downstream communities that do not participate in or benefit from the conversion. These effects are legally significant. Article 38(2) of Law No. 41 of 1999 requires the use of forest areas not to damage their principal function, while Article 45 requires reclamation and/or rehabilitation where use causes damage. Law No. 18 of 2013 also provides a basis for action against unauthorized destructive activities. Soil erosion, reduced infiltration, and declining water quality therefore cannot be treated merely as unfortunate externalities. They indicate that land use may have departed from the protective objectives attached to the area's legal status.

The second impact concerns household income. Conversion produces a dual economic effect. In the short term, plantations can create work, increase commercial activity, and provide higher-value crops. Landowners and labourers directly involved in cultivation may experience increased earnings. Nevertheless, the same process can remove older sources of income. Busra noted that residents previously obtained wood, resin, and other products from the forest, but those resources had become less available. Plantation income did not fully replace the diversity of forest-based livelihoods (Busra, personal communication, April 21, 2026). Long-term income is also dependent on ecological stability. When erosion, landslides, declining soil quality, and water shortages reduce plantation productivity, the initial economic gains may not be sustained. Households that lose access to non-timber forest products become more dependent on a narrower range of crops and market prices. The conversion can therefore increase income for some residents while simultaneously reducing livelihood resilience for the community as a whole.

The third impact is social. Forest-based livelihoods previously involved collective activities that brought residents together. As the forest became plantation land, work became more individualized, and direct interaction declined. The conversion also threatened local knowledge and practices associated with the use and care of forest resources. Differences in access to land and plantation benefits created potential tension among residents, particularly where some obtained economic advantages while others lost traditional agricultural land or forest access. The social costs were therefore not separate from the economic transition; they arose from changes in livelihood structure, land control, and the distribution of benefits.

4. Government Responses and Their Limitations

The government response in Tonra consists of law enforcement and supervision, inter-agency cooperation, and rehabilitation. The first measure is periodic monitoring of forest use and action against unauthorized clearing. Government Regulation No. 23 of 2021 provides the administrative framework, while Law No. 41 of 1999 and Law No. 18 of 2013 support the protection of forest functions and enforcement against illegal destruction. In practice, the local government, forestry extension personnel, KPH, and community members exchange information and participate in field monitoring. Serious cases may be referred to the ministry's law-enforcement directorate. The effectiveness of supervision depends on cooperation because no single local institution possesses sufficient personnel, territorial coverage, and legal authority. Joint patrols may involve the forestry service, KPH, environmental agencies, regional government, and the police. Fitriyani explained that the institutions coordinate because Bone Regency's forest area is too extensive for one unit to patrol frequently. Patrols may occur only about once a month rather than weekly (Fitriyani M., personal communication, April 22, 2026). Cooperation improves the use of limited resources, but infrequent patrols still leave opportunities for unauthorized clearing between monitoring visits.

A stronger response requires a clearer operational division of responsibility. Village and district governments are closest to land-use changes and can identify new clearing at an early stage, but forestry authority largely rests at higher governmental levels. KPH personnel understand forest conditions but may have limited sanctioning power. Police and ministerial enforcement bodies possess stronger coercive authority but are not continuously present. Coordination should therefore establish reporting channels, response deadlines, evidence-handling procedures, and joint follow-up obligations so that detection leads predictably to investigation and enforcement.

Rehabilitation and restoration form the third component. Articles 41 and 42 of Law No. 41 of 1999 treat rehabilitation as a shared responsibility of central government, regional government, and society. Articles 273–281 of Government Regulation No. 23 of 2021 further regulate forest and land rehabilitation through reforestation, planting, maintenance, and soil and water conservation. In Rappa, programs have included reforestation and greening of damaged areas. These measures seek to restore ecological, economic, and social functions rather than merely replace the number of trees removed.

The results remain limited. Busra reported that rehabilitation faced shortages of funding and labour, while some planted trees were not adequately maintained because community awareness remained low (Busra, personal communication, April 21, 2026). Planting without post-planting care reduces survival and may create the appearance of restoration without producing lasting ecological recovery. Effective rehabilitation therefore requires maintenance budgets, monitoring of plant survival, appropriate species selection, conservation techniques suited to slopes and waterways, and community responsibility for protecting restored sites. Public education and participation are essential to both prevention and rehabilitation. Residents are more likely to support forest protection when they understand the relationship between upland vegetation, water availability, landslide risk, and long-term plantation productivity. Participation should not be limited to attending meetings or receiving seedlings. Community members should be involved in mapping vulnerable areas, reporting new clearing, selecting restoration sites, maintaining plants, and evaluating whether livelihood programs reduce pressure on protected forests. This approach aligns the benefit and welfare principle with ecological sustainability rather than treating them as competing objectives.

CONCLUSION

The implementation of Government Regulation No. 23 of 2021 in the conversion of protected forests into plantation areas in Tonra District remains incomplete. The legal framework requires a layered process involving public proposals, spatial and environmental review, administrative and technical verification, intergovernmental coordination, and final central-government determination. In practice, community dependence on plantation land, limited supervision, insufficient personnel, fragmented authority, and weak coordination allow cultivation and land clearing to proceed outside or ahead of the prescribed procedure. This gap undermines legal certainty and reduces protected-forest status to a rule that is not consistently realized.

The conversion has produced interconnected environmental, economic, and social effects. Soil erosion, reduced water infiltration, landslide risks, sedimentation, and declining water quality threaten both Rappa and downstream areas. Plantation activity may increase short-term income and

employment, but residents lose forest products and become more vulnerable to long-term ecological decline. Social interaction based on collective forest use also weakens, while unequal access to plantation benefits can create tension. Government measures through supervision, joint patrols, enforcement, reforestation, and rehabilitation are appropriate but constrained by limited budgets, personnel, authority, and public awareness. Stronger licensing control, predictable enforcement, sustained inter-agency coordination, maintenance-based rehabilitation, and meaningful community participation are required to reconcile public welfare with the continuing ecological function of protected forests.

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