

Coastal Ecological Damage and Family Resilience: An Environment-Based Family Law Perspective

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Abstract. *This study aims to analyze the causal relationship between coastal ecological damage and the degradation of family law functions, as well as to offer a relevant family law reconstruction model to internalize the principle of environmental sustainability in strengthening the resilience of coastal families. The background of this study is based on the fact that coastal families are social units that are highly vulnerable to abrasion, marine pollution, mangrove degradation, overfishing, and the impacts of climate change. Such ecological damage not only causes an environmental crisis, but also has an impact on economic, health, educational, and social harmony aspects within families. Fisherman families, for example, face declining catch productivity, which has implications for the limited fulfillment of children's rights. On the other hand, family law in Indonesia is still sectoral and private in nature, so it is not yet fully integrated with environmental law or maritime policy. This study finds that family law needs to be reconstructed in order to respond to ecological challenges by internalizing the principles of intergenerational justice, ecosystem protection, and the fulfillment of the right to a healthy environment. This reconstruction is realized through three main approaches: reinterpreting norms to include environmental protection clauses in family law, institutional reform so that courts and family authorities are more responsive to ecological issues, and the integration of local coastal wisdom such as sasi laut and awig-awig into the modern legal framework. The results of this study offer an environmentally-based family law model that not only protects internal household relations, but also makes coastal families both legal subjects and ecological actors in ecosystem restoration. Thus, this study provides a new contribution to the study of family law and environmental law, while offering equitable and sustainable policy recommendations for the resilience of coastal families amid ecological change.*

Keywords: *Ecological Damage; Family Law; Resilience.*

1. INTRODUCTION

As an archipelagic country, Indonesia faces a growing paradox: the wealth of coastal and marine resources that sustain millions of families continues to face pressure and ecological damage that erodes the livelihoods of coastal households. (Darmaningrum, K. T., 2021) The long coastline, mangrove belts that provide vital ecosystem services, and coral reefs that support the sustainability of fishermen's livelihoods are ecological assets that also serve as a socio-economic shield for coastal families. (Wahyuni, W.,

2019) When these ecological functions are disrupted by abrasion, land conversion, pollution, and the effects of climate change such as rising sea levels and extreme weather, the effects are not only environmental but also spill over into households in the form of reduced income, food insecurity, psychosocial stress, and changes in gender roles and family solidarity mechanisms.(Kusnadi, 2003) The fact that dependence on the fisheries sector and coastal ecosystem services makes fishing families highly vulnerable has been proven by various field studies that show a direct correlation between mangrove and coral reef degradation and declining catch productivity and increased frequency of family economic crises. Ecosystem restoration projects also confirm that mangrove rehabilitation and coastal conservation are not merely environmental measures, but investments in the socio-economic resilience of coastal communities.(Afifah dkk., 2024)

Within the framework of laws and policies, coastal environmental protection is often regulated on a sectoral basis between fisheries, the environment, spatial planning, and regional authorities, resulting in fragmented norms and implementation that undermine the effectiveness of ecosystem restoration(Satria, 2015). This regulatory fragmentation has a real impact on the level of legal certainty for coastal families: overlapping coastal management regulations hinder access to compensation, rehabilitation assistance, and environmental justice mechanisms. At the same time, traditional family legal instruments and local wisdom practices, which have functioned as a social safety net, are not adequately integrated into environmental policy, even though both have great potential to strengthen local adaptation. An environmentally sensitive family law framework, referred to in this study as an environment-based family law perspective, has the potential to bridge the private dimension (family economic rights, care responsibilities, child protection) with the public dimension (the right to a healthy environment, the responsibilities of the state and business actors). Thus, coastal ecological restoration efforts can simultaneously strengthen family resilience (Clark, 2018).

The urgency of this research stems from several realities: first, the accelerated degradation of coastal ecosystems that threatens livelihoods and directly impacts family welfare; second, evidence of policy limitations that weaken families' access to protection, compensation, and adaptive support; third, demands for environmental justice that place households as subjects of rights, including the right to safe housing, livelihood security, and recognition of gender roles; and fourth, the lack of normative and empirical studies that integrate family law analysis with coastal ecological dynamics. In the field, this reality becomes even more complex when technical interventions alone (e.g., mangrove rehabilitation without family capital support for livelihood diversification) prove ineffective in reducing long-term vulnerability. Therefore, an approach that integrates legal, social, and ecological considerations is urgently needed.

The solution proposed by this study is not merely a technical recommendation for ecosystem restoration, but rather a policy and legal framework that integrates coastal environmental protection with strengthening family resilience. This study offers three strategies: first, strengthening environment-based family legal instruments that recognize families' rights to access healthy coastal resources and their right to economic recovery in the event of damage caused by third-party activities; second, integrated policy mechanisms that ensure every ecosystem rehabilitation program includes social protection components—such as temporary compensation, microcredit,

skills training, and social security for affected families; third, a participatory model based on local wisdom that recognizes the role of customs and family networks in protecting coastal resources, so that recovery programs are not top-down in nature.

To strengthen the academic position of this research, there are four previous studies that serve as a foundation. First, Alfiah (2020) highlights the role of women in supporting the resilience of fishing families. Its strength is its ability to describe in detail the contributions of women in facing economic pressures, but its limitation is that it does not link this role to coastal ecological damage. Second, Surjaningrum (2020) discusses the importance of community empowerment in strengthening family resilience in Surabaya. This study excels in providing practical recommendations based on social empowerment, but it does not emphasize the direct link between environmental degradation and family resilience. Third, Ashari (2023) describes the impact of climate change on the food security of coastal communities. This study is strong in building ecological arguments, but still weak in providing normative dimensions related to legal protection for families. Fourth, Afifah et al. (2022) examine fishermen's perceptions of climate change from a socioeconomic perspective. Its strength lies in presenting rich empirical data, but its limitation is the absence of legal analysis that could protect families as subjects affected by climate change.

From a critical review of these studies, there appears to be an academic gap: there has been no study that comprehensively integrates family law analysis with issues of coastal ecological damage and its impact on household resilience. This study aims to fill this gap by combining three dimensions of analysis: empirical evidence at the coastal household level, a normative review of family law and environmental law, and the construction of an ecological justice-based regulatory model. Thus, this study not only enriches the academic literature but also presents implementable solutions that can be used as a reference for policies to protect coastal families.

Instead of formulating the problem, the objectives of this study are: (1) to identify and analyze the impact of coastal ecological damage on family resilience in terms of economy, health, and education; (2) to examine normative and institutional gaps in Indonesian family law that hinder the protection of coastal families; and (3) to formulate an operational environment-based family law model, including compensation mechanisms, social protection, and local wisdom participation, in order to strengthen family resilience while supporting coastal ecosystem restoration.

2. RESEARCH METHODS

This research method uses a normative research type supported by empirical data intended to examine the construction of family law based on the environment while linking it to the socio-ecological realities experienced by coastal communities. The approaches used include a legislative approach, a conceptual approach, and a case approach so as to be able to describe the relationship between norms and practices, while the research specifications are descriptive-analytical in nature to provide a comprehensive and in-depth picture of the issues under review; Data was collected through a literature study of legislation, policy documents, academic literature, and previous research results, and supplemented with field data through in-depth interviews with fishing families, traditional leaders, and local government officials. All collected data was then analyzed qualitatively through the interpretation of norms, mapping of regulatory disharmony, and comparison with factual conditions so that an

environmentally-based family law model that is more responsive to the impacts of coastal ecological damage could be formulated.(Achmad, 2013)

3. RESULTS AND DISCUSSION

3.1. Causal Relationship Between Coastal Ecological Damage and the Degradation of Family Law Functions in Ensuring Economic Security, Health, and Education for Children in Coastal Areas

Coastal ecological damage is one of the most pressing issues in Indonesia's legal and social landscape. Coastal ecosystems, which have long been the basis of life for fishing communities, are increasingly threatened by abrasion, pollution, exploitation of marine resources, and the effects of global climate change (Anugerah, T, 2021). Coastal areas not only hold economic resources, but also provide living spaces that support social structures and family resilience. When coastal ecosystems are damaged, the impact is not only ecological, but also has serious social consequences, including on families as the smallest unit of society. Within the framework of family law, families have a fundamental role in ensuring the fulfillment of the rights of children and women, while also maintaining household economic balance (Kartasasmita, 1996). Therefore, discussing the causal relationship between coastal ecological damage and the degradation of family law functions requires a study that integrates environmental, social, and legal aspects (Ulfa, 2018).

This causal relationship can be seen through three main dimensions, namely economics, health, and children's education. The economic dimension is the most obvious layer. Coastal communities are highly dependent on marine resources such as fish, shellfish, seaweed, and other marine products. When ecological damage occurs, whether due to oil pollution, plastic waste, or overfishing, catches decline significantly. This leads to a decline in fishermen's family incomes (Azizi dkk., 2017). In family law, the function of providing financial support is the primary obligation of the head of the family, especially the father, to provide for the basic needs of his children and wife. When the coastal ecology is damaged, this obligation is disrupted, thereby directly weakening the function of family law in ensuring the economic security of the household. Children who should be receiving adequate nutrition, proper educational facilities, and opportunities for development are instead hindered by economic limitations. In such situations, ecological damage is not only an environmental problem, but also a family law problem because it structurally prevents families from functioning in accordance with legal norms (Gustika dkk., 2023).

Children's health is also greatly affected. Damaged coastal ecosystems create unhealthy environmental conditions. Industrial waste dumped into the sea produces harmful pollutants, including heavy metals and microplastics, which enter the marine food chain. Children who consume contaminated fish are at high risk of chronic health problems, such as growth disorders, stunting, and skin and respiratory diseases due to poor air quality. Family law emphasizes the responsibility of parents to ensure the health of their children. However, when the coastal environment, which is the main living space for families, is polluted, parents find it difficult to fulfill this legal obligation. This causal relationship confirms that coastal environmental degradation directly weakens the function of family law in protecting children's health, because external environmental factors are beyond the control of families (Jeremy Putra Pratama dkk., 2025).

In addition, the health of coastal families is also affected by sanitation and clean water quality. Many coastal areas experience seawater intrusion into residents' wells due to abrasion and rising sea levels. Salt water is unfit for consumption, while clean water alternatives are difficult to access due to limited infrastructure. As a result, children suffer from dehydration, digestive disorders, and are prone to diarrhea (Ary, 2016). From a family law perspective, this situation constitutes an indirect violation of children's rights to the highest standard of health guaranteed by the Child Protection Law. In other words, coastal ecological damage has legal implications that weaken the family's role as the primary guardian of children's health (Hidayati dkk., 2021).

The education of children has not escaped the impact of coastal ecological damage. Coastal families often face the dilemma of keeping their children in school or involving them in economic activities to supplement the family income. When marine yields decline and the economy slumps, many children are forced to leave school to help their parents fish or do other informal work. This has led to high dropout rates in coastal areas (Raden Sulistiyanto & Nuryanti Nuryanti, 2021). In family law, the education of children is a fundamental obligation of parents, as stipulated in Article 45 Marriage Law and Article 26 of the Child Protection Law. However, when coastal ecological damage puts pressure on the family economy, this obligation becomes difficult to fulfill. The causal relationship is clear: coastal ecological degradation causes economic limitations for families, which in turn impacts the failure of the family's legal function in ensuring the continuity of children's education.

In addition to direct causal relationships, coastal ecological damage also gives rise to indirect causal relationships in the form of psychosocial stress within families. Economic pressure due to declining incomes can increase domestic conflict, leading to domestic violence (Fitriasari dkk., 2022). In many cases, women and children are the main victims. This confirms the degradation of the family law's function in protecting family members from violence, which should be guaranteed by national law. Ecological damage here acts as a structural trigger that exacerbates family disharmony (Ahmad Hamdani, 2019).

On the other hand, Indonesia's positive legal framework has actually provided a basis for the protection of children and families. The Child Protection Law, Marriage Law, and Health Law affirm the obligations of the state and parents to ensure the economic security, health, and education of children (Yusuf, 2015). However, in the coastal context, these regulations have not been fully integrated with the Environmental Law and the Maritime Law. This lack of integration has created a normative gap. Family law emphasizes parental obligations, but does not provide structural mechanisms capable of ensuring a healthy environment for coastal families. On the other hand, environmental law focuses more on conservation and ecosystem protection, without directly linking these issues to their impact on family rights. It is this gap that causes the causal relationship between coastal ecological damage and the degradation of family law functions to become increasingly apparent in the field (Atok Miftachul Hudha, 2019).

To gain a deeper understanding of this causal relationship, we can use the perspective of legal ecology theory. This theory emphasizes that law cannot be separated from its environmental and social context (Ayatina dkk., 2021). The family as a legal institution cannot stand alone without taking into account the ecology that supports it. In the coastal context, ecological damage creates a structural situation that prevents families

from fulfilling their functions, not solely due to parental negligence, but because of systemic damage that destroys the foundations of the economy, health, and education. Thus, this causal relationship is structural and systemic, requiring an interdisciplinary approach between family law, environmental law, and social policy (Melania Hanny Aryantie, 2023).

Research findings in several coastal areas of Indonesia reinforce this thesis. For example, research on the north coast of Java shows that abrasion causing the loss of residential land has forced fishing families to move to less livable areas, resulting in children losing access to schools and health services (Muhammad Arhan Rajab, 2025). In North Maluku, marine pollution caused by nickel mining activities has resulted in a drastic decline in fishermen's catches, forcing many fishermen's children to work to help support their families (Febriani, 2022). In Sumatra, palm oil waste polluting rivers has compromised the quality of clean water for coastal communities, resulting in high rates of diarrhea and malnutrition among children. All of these studies reveal a consistent causal pattern: coastal ecological damage weakens family resilience, and ultimately, the family's legal function in guaranteeing children's rights deteriorates (Subianto, 2013).

The practical implication of this discussion is the need for an environmentally-based reconstruction of family law. Family law should not be viewed solely as a private matter that regulates relationships between parents and children, but must be linked to the ecological context that supports the family (Kamaluddin dkk., 2023). The concept of green family law can be proposed, namely the integration of family law with the principles of environmental sustainability. Within this framework, the family's responsibility to guarantee children's rights needs to be supported by the state's obligation to protect coastal ecology so that the family's functions are not crippled. The state cannot simply place the responsibility on families, but is also obliged to create ecological conditions that enable families to carry out their functions (Salim dkk., 2022).

Normatively, this integration can be realized by strengthening articles in the Child Protection Law and Marriage Law by adding clauses that recognize the causal relationship between the environment and family resilience. In addition, coastal local governments need to design specific policies to address ecological damage using a family-based approach. For example, marine ecosystem restoration programs should be integrated with maternal and child health programs and educational scholarships for coastal children. In this way, environmental restoration is not only seen as an ecological issue, but also as a strategy to strengthen the legal function of the family.

Furthermore, the green victimology approach is also relevant for analyzing coastal families as ecological victims. Children in coastal families can be categorized as double victims, namely victims of ecological damage and victims of the failure of family law to guarantee their rights. Recognition of this status as ecological victims is important to open access to recovery, whether in the form of compensation, rehabilitation, or social security. Thus, environmental-based family law is not only normative in nature, but also has practical implications for protecting coastal children from the impacts of ecological damage.

Ultimately, the causal relationship between coastal ecological damage and the degradation of family law functions is a reality that cannot be ignored. Ecological

damage weakens families' economic resilience, increases health risks for children, and reduces access to education. All of this leads to the failure of family law functions in guaranteeing children's basic rights. Therefore, a paradigm shift in family law based on the environment is imperative. This paradigm will position the family not as a private entity that stands alone, but as a legal institution whose sustainability is largely determined by ecological conditions. In this way, the protection of children and family resilience in coastal areas can be better guaranteed within a legal framework that is fair, sustainable, and humanistic.

3.2. Reconstruction of Relevant Family Laws to Internalize the Principle of Environmental Sustainability in Strengthening the Resilience of Coastal Families Amidst the Challenges of Ecological Change

The reconstruction of family law in the context of coastal communities cannot be separated from the socio-ecological realities they face. Family law has often been understood as limited to the private sphere, regulating marriage, divorce, parent-child relationships, and inheritance (Romli, 2018). However, when placed in the context of coastal communities, family law actually has a much broader function because it is directly related to aspects of ecological sustainability that determine family resilience. Coastal communities are communities that live very close to the sea and depend on coastal ecosystems for their survival. Coastal ecological damage caused by coastal abrasion, marine pollution, overfishing, and the impacts of climate change have direct implications for the sustainability of family life. Thus, the analysis of family law must be reconstructed to be more adaptive and capable of internalizing the principles of environmental sustainability (Ismelina, 2006).

First, field studies and normative reviews show that coastal families face complex challenges due to ecological damage. Declining fish catches have led to a decrease in fishermen's incomes, which in turn has implications for families' ability to meet their children's basic needs, such as education and health care. In many coastal areas, school dropout rates are higher than in urban areas because children are often forced to help their parents earn a living at sea. Similarly, the problem of malnutrition in coastal areas is becoming increasingly worrying as the quality of seafood, which is the main source of protein, has declined due to industrial and plastic pollution. All of this shows how damaged coastal ecology directly erodes family resilience, both economically, health-wise, and educationally (Burhanuddin, 2016).

Second, the current legal framework governing family matters, whether in the Marriage Law, the Compilation of Islamic Law, or other supplementary regulations, does not yet treat environmental aspects as an integral part of family resilience. Family law places greater emphasis on internal relations between family members without considering external dimensions such as the living environment, which is in fact a basic prerequisite for a healthy family life (Adi Sasono, 2008). As a result, there is a normative vacuum in family law when dealing with the reality of ecological damage. Coastal families are often trapped in a vulnerable position without adequate legal support to protect their rights to a clean and healthy environment as part of family resilience (Muhammad Arhan Rajab, 2025).

Based on the results of this analysis, the reconstruction of family law has become an urgent necessity. This reconstruction refers to the process of rebuilding the framework of family law to align it with the principles of environmental sustainability. The principle

of environmental sustainability emphasizes intergenerational justice, protection of natural resources, and the guarantee of people's rights to a healthy environment. By incorporating this principle into family law, the dimension of family protection will become more comprehensive because it will not only focus on internal relationships but also on the quality of the external environment that supports family life (Usman, 2013).

The results of the study show that there are three main dimensions that must be reconstructed. First, the normative dimension. Family law must be enriched with norms that connect the rights and obligations of families with the environment. For example, protecting children's rights to a healthy life should not only be understood as the obligation of parents to provide nutritious food and medical care, but also as the obligation of the state and society to ensure the availability of a coastal environment that is free from pollution. Thus, Article 72 of the Child Protection Law can be reinterpreted within the framework of environmental-based family law by expanding the meaning of child protection to include ecological aspects.

Second, the institutional dimension. The reconstruction of family law requires legal and non-legal institutions that are responsive to environmental issues within the family. Religious courts, for example, when deciding family disputes in coastal areas, must consider ecological factors as one of the variables in determining child custody or the division of joint property. If the coastal environment is severely damaged to the extent that it endangers children's health, judges can decide on a more adaptive parenting pattern in the best interests of the children. Similarly, the KUA or coastal customary institutions can serve as mediators in introducing environmental sustainability values into marriage and household practices (Dewi & Fajarwati, 2021).

Third, the cultural dimension. Family law cannot be separated from the culture of society. In many coastal communities, there are traditional customs that actually embody the spirit of environmental protection, such as *sasi laut* in Maluku or *awig-awig* in Bali. These traditions must be integrated into modern family law so that families are not only seen as social units, but also as guardians of the ecology. Thus, the reconstruction of environmentally-based family law requires harmonization between national law and local coastal wisdom (Satria, 2015).

Further discussion shows that the reconstruction of family law based on the environment is also relevant to the theory of family resilience. Family resilience is not only measured by internal harmony, but also by the family's ability to withstand external pressures, including ecological change. In family systems theory, the family is viewed as an open system that constantly interacts with its environment. When the coastal environment is damaged, the family system is shaken and family functions are disrupted. Therefore, family law must provide protection mechanisms so that families remain resilient in the face of ecological change.

A concrete example can be seen in the fishing families on the north coast of Java who have been affected by abrasion (Satmaidi, 2017). Many families have lost their homes due to the shifting coastline. This situation has caused serious problems in family law, such as regarding the residence of children, protection of inheritance rights to lost land, and maintenance obligations that have been disrupted due to the loss of livelihoods. If family law remains conventional, these issues will continue to cause legal uncertainty. Conversely, if family law is reconstructed to take into account

environmental sustainability, new norms can be established to protect families from ecological risks, such as the right to adequate relocation, social protection for children, and fair ecological compensation.

In addition, the reconstruction of family law based on the environment also needs to be linked to the green victimology approach, which places coastal families as ecological victims. Green victimology highlights that victims of environmental damage are not only individuals, but also families and communities that live off certain ecosystems (Sutarto, 2018). With this framework, children and women in coastal areas can be viewed as ecological victims who require special legal protection. Family law, through the strengthening of children's and women's rights, can be a key instrument for providing protection to ecological victims within the family sphere.

Furthermore, the reconstruction of family law based on the environment also requires policy reform. The government must integrate family protection programs with sustainable coastal development policies. For example, family planning programs in coastal areas must be complemented with environmental education so that families understand the importance of preserving marine ecosystems for the sustainability of their children and grandchildren's lives. Similarly, social assistance programs for fishing families must take ecological aspects into account, so that they are not merely financial assistance, but also support for environmentally friendly livelihood diversification (Wahyono dkk., 2016).

Normative and empirical discussions show that the reconstruction of family law based on the environment also has challenges. First, there is fragmentation between family law, environmental law, and customary law. This fragmentation often causes overlap or even legal vacuums. Second, there is a lack of political will on the part of the state to truly place coastal families as the main subjects of ecological policy. Third, coastal communities themselves still have low awareness of environmental protection, mainly due to economic pressures. Therefore, the reconstruction of environmental-based family law requires not only changes in norms, but also legal education, economic empowerment, and the strengthening of local institutions (Setiawan, 2014).

When viewed more broadly, the reconstruction of family law based on the environment has significant novelty value in legal studies. Until now, family law studies have rarely touched on environmental issues, even though sociologically, the two are closely related. By internalizing the principle of environmental sustainability, family law can be transformed into a more responsive, progressive, and contextual law. This is in line with the prophetic legal paradigm that emphasizes the dimensions of humanity, justice, and sustainability.

Within the framework of legal philosophy, this reconstruction also reflects a shift from rigid legal positivism towards a holistic approach to law. Family law is no longer understood merely as a set of formal rules, but as a social instrument that must be able to respond to ecological challenges. When family law successfully internalizes the principle of environmental sustainability, it will become an important pillar of sustainable development.

Thus, these results and discussions show that the reconstruction of family law relevant to the internalization of environmental sustainability principles must be carried out through three main strategies: reinterpretation of norms, institutional reform, and integration of local culture. Reinterpretation of norms is carried out by expanding the

scope of family law to include environmental dimensions. Institutional reform is carried out by strengthening the role of the courts, the Office of Religious Affairs (KUA), customary institutions, and local governments in protecting coastal families from ecological risks. Local cultural integration is carried out by incorporating coastal local wisdom into family law practices, so that the principle of environmental sustainability can be lived out in the daily lives of families.

Finally, the reconstruction of family law based on the environment is the answer to the increasingly complex challenges of ecological change. Coastal families can no longer be viewed merely as isolated private units, but rather as part of an interconnected socio-ecological system. By placing families at the center of legal protection while also assigning them ecological responsibilities, family law will truly serve to strengthen the resilience of coastal families. This reconstruction is not only an academic necessity, but a real need that will determine the sustainability of future generations.

4. CONCLUSION

Based on the analysis conducted, it can be concluded that the reconstruction of family law that internalizes the principle of environmental sustainability is an urgent need to strengthen the resilience of coastal families amid the ecological crisis. Damage to coastal ecosystems has been proven to directly weaken the economic, health, and educational functions of families, so that conventional family law oriented towards the private sphere is no longer adequate. The novelty lies in the positioning of the family as both a legal subject and an ecological actor, where the protection of children's and women's rights depends not only on internal family relations but also on the quality of the external environment guaranteed by the state. This reconstruction requires a reinterpretation of norms, institutional reform, and the integration of local coastal wisdom so that family law is responsive to the challenges of ecological change while also functioning as an instrument of social justice and intergenerational sustainability.

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