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The Role of Land Management Paradigm Towards Certainty and Justice

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ABSTRACT

To achieve land order, Indonesia implements the Sustainable Agrarian Regulation System (SPAB). The crucial issue, however, is whether the management of activities at this point has been conducted sustainably in order to establish justice and legal certainty in the community. The purpose of this study is to examine a variety of issues concerning the Role of Land Management Paradigm Towards Certainty and Justice. This research is empirical with a qualitative approach. The results indicate that as the Dynamics of Population Growth and Rapid Progress was being constructed, soil quality began to deteriorate. For the exploitation and utilization of soil, therefore, effective, efficient, and sustainable land management is necessary. It is widely acknowledged that sustainable land management is essential for halting land degradation, preventing desertification, and regenerating degraded areas. Given the complex options available to communities and landowners, Japan's policy is shifting its emphasis to policies pertaining to sustainable land use management by means of consensus building.

1. Introduction

The soil is a source of fixed human existence that continues, despite its nature being in opposition to growing human requirements. The interactions between edaphic characteristics, soil biota, and biotic processes such extracellular enzyme synthesis result in the complex systems known as soil nutrient cycles.[1] Nutrients in the soil can vary in quality as the population grows. This can be seen in while the Dynamics of Population Growth and Rapid Progress (DPGRP) were being built, the quality of the soil began to decrease. As a result, effective, efficient, and sustainable land management are required for the exploitation and utilization of soil. The Indonesian constitution contains precise rules regarding land management. It is commonly acknowledged that sustainable land management (SLM) is essential for reducing rates of land degradation and halting desertification. Worldwide,

[1]Jacob R. Hopkins, Tatiana A. Semenova-Nelsen, and Benjamin A. Sikes, 'Land Management Drives Dynamic Changes to Microbial Function through Edaphic Factors and Soil Biota', *Pedobiologia*, 96 (2023), 150859 https://doi.org/10.1016/j.pedobi.2022.150859

many initiatives have been made to adopt and/or develop different SLM methods by a variety of stakeholders. Academics, scientists, decision-makers, and other influential professionals who approach policies and practices from a Western, scientific perspective are generally responsible for designing and implementing land management.[2] Risk assessment, sustainability evaluation, and risk management techniques are all part of the contaminated land management process.[3]

Globally, several nations employ land use planning as a tool for spatial organization and to maximize the use of land for all people.[4] Given the complicated options available to communities and landowners, policy in Japan is shifting its focus to policies relating to sustainable land use management through consensus building. Preliminary findings, conclusions, and perspectives from ongoing initiatives were also addressed and presented, which sparked a discussion of potential future directions for sustainable land use management in Japan. For instance, the transformation of agricultural land into renewable energy sites, which is an example of "conversion of land use for newly discovered purposes", is moving forward quickly, and laws are implemented to "manage agricultural land in a minimal way (low labor demand)". There are currently governmental and scientific initiatives to reconcile environmental preservation with agricultural and forestry producing operations based on science and data. By reporting and debating current project development, policy can be pursued to affirm what has been shifted from the planning to implementation phase of the suggested consensus-building approach. There are three themes that are timely explored inside this planning framework. Information that planners are accustomed to nowadays cities around the world include "smart cities," "land adjustment mechanisms and value retrieval," and development focused on transportation. The reconstruction of cities is one of the most effective initiatives. Japanese consultants had promoted the Postwar Japan land adjustment scheme in several Asian cities.

Yet, there is a dearth of a thorough analysis of the spatial distribution, future possibilities, and difficulties of SLM activities and research. In order to fill this vacuum, we gathered data from two academic research bibliographic databases as well as a global SLM database supplied by the World Overview of Conservation Approaches and Technology (WOCAT).[5] We draw the conclusion that soil erosion is expected to increase globally under climate change based on a comprehensive evaluation of 224 studies from around the world. The single model global projection is similar to the weighted median rise of 10%. It is widely acknowledged that sustainable land management (SLM) is essential for halting the rate of land deterioration, preventing desertification, and regenerating damaged areas.[6] Working on issues related to land degradation and various SLM techniques for decades are researchers, land users, and other stakeholders. According to the definition adopted by the World Overview of Conservation Approaches and Technologies (WOCAT), SLM practice

[2]Heather Sauyaq Jean Gordon (Iñupiaq) and others, 'Integrating Indigenous Traditional Ecological Knowledge of Land into Land Management through Indigenous-Academic Partnerships', *Land Use Policy*, 125 (2023), 106469 https://doi.org/10.1016/j.landusepol.2022.106469

[3]Kabari Sam, 'Uncertainty in Policy Transfer across Contaminated Land Management Regimes: Examining the Nigerian Experience', *Land Use Policy*, 129 (2023), 106645 https://doi.org/10.1016/j.landusepol.2023.106645

[4]David Asante Edwin, Evam Kofi Glover, and Edinam K. Glover, 'When Tradition Meets Modernity in Land Registration: Evidence from Dagbon, Ghana', *Land*, 9.11 (2020), 416 https://doi.org/10.3390/land9110416

[5]Nigussie Haregeweyn and others, 'Progress and Challenges in Sustainable Land Management Initiatives: A Global Review', *Science of The Total Environment*, 858 (2023), 160027 https://doi.org/10.1016/j.scitotenv.2022.160027

[6]Joris P.C. Eekhout and Joris de Vente, 'Global Impact of Climate Change on Soil Erosion and Potential for Adaptation through Soil Conservation', *Earth-Science Reviews*, 226 (2022), 103921 https://doi.org/10.1016/j.earscirev.2022.103921

refers to both technologies and approaches in this context. The type of initiating stakeholder appears to have a significant impact on the dissemination of SLM practices: 47% of the initiation occurs through external (domestic or foreign) projects, 21% through land users' creativity, 16% through researchers, and 15% through traditional traditions.[7] However, there has been little systematic documentation of the successes or the associated challenges. In particular, monitoring and assessment have received relatively little attention.

Changes in land use can have an impact on local climate that is akin to that of LCC.[8] Changes in intense precipitation under climate change have the biggest direct impact on soil erosion. A warmer atmosphere's increased ability to hold moisture is expected to lead to an increase in extreme precipitation, which will result in a more active hydrological cycle. Natural disasters have always been seen as a force major, which is out-control by human, therefore to minimize the occurrence of victims due to disasters, awareness and readiness of the community in dealing with disasters is needed. Whether it occurs at the local, regional, or national level, this declaration is often a necessary first step for response and recovery processes. Awareness and readiness for this disaster should ideally be owned by the community through the local wisdom of the local area, because considering that the territory of Indonesia is an area that has a risk of disaster.

Inadequate management of land resources has made industrialisation and urbanization more obvious.[9] With the anticipated rise in intense precipitation and the potential negative effects of land use change, soil erosion is predicted to worsen over the next few decades. The few worldwide modeling studies that are now available predict an increase in soil erosion of between 9 and 56%, but they have several conceptual flaws.[10] Land ownership (customary and state), urbanization and the rise in land value, urban planning and development control, and the mindset of the head and planning authority are the four main categories that can be used to understand the reasons of land use change.[11] Referring to the theory of legal certainty based on Utrecht, there are two definitions: first, that there are general laws that specify what actions are allowed and prohibited, and second, that legal equality for individuals, including legal equality for natural people with misappropriation, can be imposed or applied by the state against individuals. Therefore, the State needs a base on which to govern land rights.[12] Community justice, on the other hand, is social justice; that is, fairness that is already systemic and does not depend on an individual's good intentions or on small but fair acts of kindness. Means The development of just social structures has been crucial to the implementation of social justice. Urban planning, also known as town planning, city planning, regional planning, or rural planning, is a political

[7]Eekhout and de Vente.
[8]Temesgen Abera and others, 'Impacts of Land Cover and Management Change on Top-of-Canopy and below-Canopy Temperatures in Southeastern Kenya', *Science of The Total Environment*, 874 (2023), 162560 https://doi.org/10.1016/j.scitotenv.2023.162560
[9]Shimeng Ma and others, 'Intensive Land Management through Policy Intervention and Spatiotemporal Optimization Can Achieve Carbon Neutrality in Advance', *Journal of Cleaner Production*, 385 (2023), 135635 https://doi.org/10.1016/j.jclepro.2022.135635
[10] Pasquale Borrelli and others, 'Land Use and Climate Change Impacts on Global Soil Erosion by Water (2015-2070)', *Proceedings of the National Academy of Sciences*, 117.36 (2020), 21994–1 https://doi.org/10.1073/pnas.2001403117
[11]Bernard Adjei-Poku and others, 'Customary Land Ownership and Land Use Change in Kumasi: An Issue of Chieftaincy Sustenance?', *Land Use Policy*, 125 (2023), 106483 https://doi.org/10.1016/j.landusepol.2022.106483
[12]Nur Nafa Maulida Atlanta, Bayu Dwi Anggono, and Fendi Setyawan, 'Pengelolaan Ruang Bawah Tanah Dalam Reformasi Hukum Pertanahan Di Indonesia', *Syntax Idea*, 4.12 (2022) https://doi.org/https://jurnal.syntax-idea.co.id/index.php/syntax-idea/article/view/1227

and technical field that deals with organizing, governing, and managing the implications of specified spatial boundaries for the economy, society, and the environment.[13]

Land registration is essential to ensure that there won't be any disputes like overlapping in the future because it is crucial to the efficient management of the land sector. This is evident from the government's ongoing efforts to carry out land registration activities. This ongoing and regular activity involves a number of procedures, including the gathering, processing, bookkeeping, presentation, and maintenance of data, such as physical data and juridical data, regarding land parcels and apartment units, in the form of register maps, as well as the provision of proof of rights to various plots of land that already have rights and property rights. The number of unregistered lands due to this natural disaster, there are several circumstances that can cause problems for the land.

Geologically, liquefaction is an event where the soil loses shear strength due to increased pore water stress as a result of very fast and instantaneous cyclic loads (earthquake loads). According to Seed *et al*, liquefaction is a process of changing the condition of sandy soil with water saturate into liquid due to the increase in pore water pressure whose value becomes equal to the total pressure due to dynamic loads, so that the effective stress of the soil becomes zero. Liquefaction is also a phenomenon of the loss of strength of the soil layer due to vibration.[14] This disaster caused complications in terms of reorganizing and rediscovering the identity of the right to own land, due to the destruction of land boundaries, and the loss of evidence of land ownership due to the earthquake. The ownership documents owned by the community were also lost because they were also submerged in the ground at the time of the disaster. Those who survived did not necessarily have a certificate of ownership of the land. This condition requires serious handling from the government as well as legal arrangements in the form of rearranging the legal status of land ownership affected by the disaster in order to provide legal certainty on the status of the land, whether it is destroyed, in the sense that it cannot be reclaimed as property rights or not. Policymakers stress the importance of adopting an evidence-based strategy. This modeling project is part of a larger program of work to inform national policy makers that is coordinated by the United Nations.

The settlement of ownership rights to land can actually be completed, among others, by guaranteeing certainty and effective legal protection by the government and related institutions on land ownership rights. State power over land that is not owned with any rights by someone or another party is wider and fuller. The right of control of the State is used for the greatest prosperity of the people, in the sense of happiness, prosperity, and independence, in an independent, sovereign, just and prosperous society and state of law.[15] Its implementation can be authorized to autonomous regions and customary law communities as necessary and not contrary to the national interests. The existence of land and rights attached to land in Indonesia is regulated in the Basic Agrarian Law which regulates the definition of land, which can be concluded as the surface of the earth which in its use includes part of the earth's body beneath it and part of the space above it with restrictions that are only necessary for interests that are directly related to the use of the land. According to Article 87 Paragraph 1 of PP No. 18 of 2021, it is required that Land Parcel Owners systematically follow the implementation of Land Registration in order to

[13]Milad Haghani and others, 'The Landscape and Evolution of Urban Planning Science', *Cities*, 136 (2023), 104261 https://doi.org/10.1016/j.cities.2023.104261
[14]Anita Amirsardari and others, 'Impact of Earthquakes on the Transportation Infrastructure of Indonesia: A Preliminary Study', *Civil Engineering Dimension*, 21.1 (2019), 19–28 https://doi.org/10.9744/ced.21.1.19-28
[15]Meiske Meiske, Marwati Riza, and Susyanti Nur, 'Status Hukum Hak Milik Atas Tanah Yang Ditetapkan Sebagai Zona Merah: Studi Kasus Kota Palu', *Amanna Gappa*, 29.1 (2021), 26–35 https://doi.org/https://doi.org/10.20956/ag.v29i1.14399

expedite Land Registration. Then, according to Article 97 of PP No. 18 of 2021, land certificates, compensation certificates, village certificates, and other documents of a like nature issued by the village head, lurah, or sub-district and intended to provide information on land tenure and ownership may only be used as guidelines in the context of land registration.

If the right and usage involve using land on land, using land bodies, or using concrete land, then that is what is meant by the term "land." In addition to being a legal phrase, land rights are also a legal idea with a legal declaration. Administrative, civil, and agrarian laws are three legal perspectives through which to understand the concept of land rights.[16] The responsibilities and authorities of local governments play a role in the disaster management system. Both aspects of funding, where local governments must allocate budget for disaster management in the form of routine and operational funds as well as aspects of capacity development including infrastructure development in the form of information and communication equipment. The role of the local government is known to be very important and its existence is absolutely necessary in the implementation of disaster management. In other words, weaknesses regarding these aspects will interfere or hinder the optimization of disaster management.

In both rural and urban settings, neglecting land is not only a foolish, unfair, and unfair activity, but it also violates the rights of the legitimate owner or the person that has acquired the basis of the land rights. It also makes it more difficult to meet the goals of various development programs, weakens national economic stability and food security, restricts socioeconomic access to land for local groups, particularly farmers, and ruins social cohesion and a feeling of justice. This necessitates a deeper comprehension of the significance of managing land according to the principles of optimal land use, balancing various needs, and sustainability. Recognize that if we use land in an orderly manner and maximize commercial outcomes, the wellbeing of the people will be attained. In general, policy rules will result from government actions based on discretion or Ermessen that are documented in writing. It is stated generally since not all government discretionary decisions result in policy regulations. Government decisions that are made at its discretion may go against rules and laws.[17]

Discretion in particular regarding the actions of the regional head towards disaster management in the region is something that cannot be avoided. The discretion of administrative officials has the power to act in dealing with urgent problems because the rules do not yet exist, the regulations are unclear or provide choices, and a situation that results in stagnant conditions, including when faced with disaster conditions. As it turns out into practice, in this situation, the administrative officer determines “what is the law” for the problem and relates to the responsibility for solving the problem. So that discretion is the answer to the weakness of written law. However, if a government administration official must use discretion in making a government administrative decision, especially the actions of the regional head towards disaster management in areas that are not regulated in laws and regulations, he must pay attention to the purpose of granting discretion, the scope of discretion, discretionary requirements, boundaries applicable law and public interest.

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[16]Gunanegara Gunanegara, ‘Kebijakan Negara Pada Pengaturan Hak Atas Tanah Pasca Undang-Undang Cipta Kerja’, *Refleksi Hukum: Jurnal Ilmu Hukum*, 6.2 (2022), 161–84 https://doi.org/10.24246/jrh.2022.v6.i2.p161-184

[17]Vera Siti Parihah, ‘Penyelesaian Sengketa Tanah Dengan Hak Guna Usaha Dalam Penertiban Tanah Terlantar’, *Administrative Law and Governance Journal*, 5.3 (2022) https://doi.org/https://doi.org/10.14710/alj.v5i3.205%20-%20215

Bernard's earlier research cited a number of causes for the observed change in land usage. It was discovered that certain traditional authorities forcedly encroached on educational land to effect change as a result of inadequate government management of state-acquired land, including over-acquisition and noncompensation. It was discovered that additional factors played a role in the observed changes in land usage. They include rising land values, urbanization, the unfavorable attitudes of local authorities, ownership conflicts, and the improper treatment of land by governments that have been obtained through well-known domains that contribute to changing land use.[18] Evaluation of land use conflicts serves as a foundation for the coordination of various land use types.[19] Later, in research conducted by Chen Yang stated that Due to China's dual land ownership structure, distinct land markets exist in rural and urban areas, and the problem of confusing property rights regimes is considered to be a rural issue in theory. The government has recently turned rural-to-urban relocation into a powerful weapon for encouraging urbanization and tackling the ambiguity problem. Yet, resettlement initiatives may stray from the assumed ideal course of achieving equal property rights through reorganizations of property rights.[20]

Globally, several nations employ land use planning as a tool for spatial organization and to best utilize land for all people. Land use planning systems have been developed in many nations in tandem with national government systems. Four broad categories can be used to understand the aforementioned reasons of land use change: Land Tenure (Customary and State), Land Value Growth due to Urbanization, Land Planning and Development Control, and Head and Planning Authority Attitude.

2. Research Method

This research is empirical with a qualitative approach. It was conducted in 4 (four) regencies that were hit by the earthquake, Palu city, Donggala, Sigi, and Parigi Moutong regencies, Central Sulawesi. The population were public officials, government agencies and non-ministerial. Data were analyzed with descriptive qualitative analysis with content analysis. This paper provides information on the latest trend in research.

3. Results and Discussion

3.1 Land Management Paradigm Towards Certainty and Justice in Japan

Owner-unknown land issues have grown significantly in importance in Japan in recent years. The Japanese registry does not always reflect the true owner, primarily because registration is expensive and time-consuming and is only required for perfection under civil law. For instance, it is very difficult to identify the true owner (inheritor) of a large portion of land because it is registered to owners from nearly 100 years ago and has changed hands numerous times through inheritance. As a result, it is very time- and money-consuming to do so today. But if the land's potential earnings do not outweigh these costs, it remains undeveloped as "owner-unknown land." Even if the land has high returns, it cannot be used effectively if it is "owner-unknown land" because under Japanese civil law, purchasing and selling land requires consent from all landowners, even in the case of shared ownerships. In this section, focus on unclaimed land and offer a variety of viewpoints on its causes, flaws in the current system, and potential remedies. Furthermore, when liens are put on properties

[18]Adjei-Poku and others.
[19]Hebin Niu and others, 'Identification and Management of Land Use Conflicts in Mining Cities: A Case Study of Shuozhou in China', *Resources Policy*, 81 (2023), 103301 https://doi.org/10.1016/j.resourpol.2023.103301
[20]Chen Yang and Zhu Qian, 'The Complexity of Property Rights Embedded in the Rural-to-Urban Resettlement of China: A Case of Hangzhou', *Land Use Policy*, 122 (2022), 106394 https://doi.org/10.1016/j.landusepol.2022.106394

for unpaid mortgages, real estate auctions are frequently held. The short-term lease protection system/former Civil Code Article 395 of the Japanese civil auction system, which was institutionalized at the end of the nineteenth century, states that a tenant who is in arrears on a mortgage may resist a purchase unconditionally as long as the mortgage default period is within 3 years. This system was created to prevent mortgaged properties from being used in an unstable manner and to encourage the effective use of real estate; however, because the vast majority of its users and beneficiaries were in fact anti-social groups, it was used to unfairly demand money from debtors and buyers, preventing the mortgaged properties from being used effectively.[21] Thus, it is advised that immediate action be taken to encourage prompt inheritance registration, the creation of "containers" for land without a plan of use, and the development of a land information infrastructure.

Public rules and regulations pertaining to urban planning and development, the environment, and taxation have a significant impact on the use and value of real estate, such as land and buildings. A crucial area of study for land use planning is sustainable land use. Nevertheless, local policymakers frequently lack access to the potential theoretical effects of initiatives. Moreover, the dissemination of knowledge has significance, particularly in the context of globalization.[22] More land might have been converted into housing lots, leading to more urbanization, had the Japanese government not amended the PGL Law at that time. On the one hand, if adequate green area can be preserved for agricultural use, the modified PGL Law may have a positive aspect. Yet, it has also contributed to a housing shortage in urban areas, which is related to the fact that many landowners in the designated cities did not convert their land into housing lots at the time of the reform in the early 1990s. As such, the government should not have fixed the PGL Legislation.[23] Land uses can only be regulated through urban planning, which is the only acceptable method.[24]

As changes at the national level can have an impact on decisions made at the local level, the review described here is undertaken on both a national and local project site level (with possible feedback mechanisms). The scientific communities are responding by designing science-based tools, attuned to local policy settings and processes, that support the decisions of the community. Additionally, increased policy attention is given to the consensus of the community at national levels, particularly for agricultural lands (i.e., the Hito Nouchi Plan or the Agricultural Land Management Plan).

Many urban master plans (MPs) in Japan, where an aged society is developing as a result of depopulation and a high risk of natural disasters like earthquakes and floods, fail to take into account the connection between future depopulation mitigation and disaster mitigation. In order to promote fair land use by merging urban land use into low-risk zones, local governments do not view long-term depopulation as an opportunity. Secure evacuation facilities with more floor level for short-term catastrophe management, such as flooding. It's vital to consider the flood inundation height. Land use regulations that promote migration

[21]Hideo Fukui, 'Real Estate and the Legal System of Japan', in *New Frontiers in Regional Science: Asian Perspectives*, 2021, XXIX, 3–7 https://doi.org/10.1007/978-981-15-8848-8_1
[22]Zhichao Xue and others, 'Impact Assessment of Land Use Functions on the Sustainable Regional Development of Representative Asian Countries – A Comparative Study in Bangladesh, China and Japan', *Science of The Total Environment*, 694 (2019), 133689 https://doi.org/10.1016/j.scitotenv.2019.133689
[23]Tomomi Miyazaki and Motohiro Sato, 'Property Tax and Farmland Use in Urban Areas: Evidence from the Reform in the Early 1990s in Japan', *Journal of the Japanese and International Economies*, 63 (2022), 101185 https://doi.org/10.1016/j.jjie.2021.101185
[24]H.S. Geyer, 'Conflicts and Synergies between Customary Land Use Management and Urban Planning in Informal Settlements', *Land Use Policy*, 125 (2023), 106459 https://doi.org/10.1016/j.landusepol.2022.106459

from places with major depopulation and aging trends to disaster-prone areas are needed as long-term responses. Proposed low character and land use as an agricultural area after emigration. Making appropriate management decisions, such as when creating a strategic catchment flood management plan or scheduling yearly crops and farm nutrient regimes, requires a fundamental understanding of the soil.[25]

The primary method of managing land today is agriculture.[26] With the help of five strategies, including increasing productivity at the farm level or in plantations, restoring degraded land, enabling resilient landscape management, enhancing and diversifying downstream activities, and developing a new value proposition, biotechnology will play a significant role in altering current land use systems. Currently, one of the key elements is the change of the land use system. People and the environment have suffered as a result of the recent quick and extensive exploitation of land for economic development, particularly in the tropics.[27] Agroecological resilience, or the ability of the land use system to endure and adapt to change, should be increased. In the face of climate change, the environment is the primary focus for sustainable development.

Given the complexity of communities and landowners, policies at the national level are now still evolving, with a progressive trend toward policies connected to sustainable land-use management through consensus building. Landowners have a variety of options to choose from when managing their properties sustainably. The typical method of repurposing abandoned lands, for instance, is "the conversion of agricultural and forest lands to renewable energy sites". Moreover, policies are including management practices like "conversion of croplands to grasslands," which require less upkeep and cheaper labor.[28]

The "Rural Renewable Energy Act (Act No. 81 of 2013)" or the "Act promoting the sound development of agriculture, forestry, and fisheries and power generation of renewable energy" promotes the idea of taking agricultural power generation (solar sharing) into consideration. In order to bring renewable energy to rural areas and boost regional income through renewable energy regeneration, the law went into effect in 2014. The law's enforcement pushed local governments to create a framework that prepares and approves a plan for a renewable facility generation without obstructing food production or national land preservation. In order to continue farming activities effectively with solar panels and prevent using the farmland only as a location for power generation, the solar sharing system in Japan is strictly regulated and mandates that the average production volume of the farm should not decrease by more than 20% (at least maintaining 80% of the production level before the introduction of the solar system).

Transformed from forest land Japanese farmland loses a substantial amount of carbon when it becomes arable. Despite multiple studies, the majority of the land in Japan is being converted from forest to grasslands, which is causing soil carbon reserves to decrease. Before, it was reported that soil carbon reserves had barely altered or grown. These findings

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[25]Samantha Broadmeadow and others, 'Incorporating Technical and Farmer Knowledge to Improve Land Use and Management for Natural Flood Management in Lowland Catchments', *Land Use Policy*, 128.February 2022 (2023), 106596 https://doi.org/10.1016/j.landusepol.2023.106596

[26]Francesca Della Rocca and Pietro Milanesi, 'The New Dominator of the World: Modeling the Global Distribution of the Japanese Beetle under Land Use and Climate Change Scenarios', *Land*, 11.4 (2022) https://doi.org/10.3390/land11040567

[27]Chun Sheng Goh, Amanda Ahl, and Wing Thye Woo, 'Sustainable Transformation of Land-Based Economic Development in the Era of Digital Revolution', *Trends in Biotechnology*, 39.1 (2021), 1–4 https://doi.org/10.1016/j.tibtech.2020.05.010

[28]Ryo Kohsaka and Satomi Kohyama, 'State of the Art Review on Land-Use Policy: Changes in Forests, Agricultural Lands and Renewable Energy of Japan', *Land*, 11.5 (2022) https://doi.org/10.3390/land11050624

are anticipated to raise Japan's national land use conversion sector's greenhouse gas inventory.[29] In recent decades, research on topics including the connections between urban form and carbon emissions and the effects of land-use management on carbon emissions in urban areas has been conducted.[30]

Policies addressing the usage of various green spaces, like parks, Agricultural land, and gardens, need to be considered alongside general policies that enable visits to green area. The findings indicate that urban residents are the primary users of the park, whereas rural residents are the primary users of farmland and gardens. If a policy request is made to make it easier to use specific green spaces, like agricultural land, it must be prepared with enough vegetation and possibilities to be used.[31]

In addition, understanding the process of urban development in Japan's main cities requires an understanding of land readjustment. It is worthwhile to describe its institutional setup. The "Correct conversion" approach is used to implement Development Projects Urban Return Category 1. Prior to the implementation of a project, rights (original property), such as ownership, rental rights, and rental house rights over land and buildings, and land rights and buildings following the project's implementation, can be converted in an equal manner (proceeds). = "entitled" floor). The floor that exceeds the "entitled" floor is referred to as the floor reserves sold to raise money to pay for project launch costs among the floors of buildings constructed by the project (including a piece of land that corresponds to the floor). Individuals in impacted areas who are not obtaining a "rights conversion" might ask the project executor for compensation so they can relocate.

Regarding the readiness to use agricultural land, one of the policy initiatives began in fiscal year 2021. A variety of parties, including the Agriculture Commission, regional agricultural cooperatives, Agricultural Land Intermediate Management Organizations (Agricultural banks), land improvement district offices, municipalities, farmers, and locals, collaborate to plan the use of agricultural land. By the end of the fiscal year 2026, MAFF hopes to have maintained and strengthened communities in 100 national territories. During the planning process, agricultural districts might categorize agricultural land into "farmer-centered crop land" and "degraded crop land that is difficult to maintain or cultivate" in order to give its residents a sense of fairness and legal certainty. Also, there will be financial assistance and infrastructural upgrades including land leveling and the construction of appropriate electric fences.[32]

3.2 Land Management Paradigm Towards Certainty and Justice in Indonesia

The connections between better land tenure security, human well-being, and environmental results.[33] The notion of which is based on the distribution of benefits should

[29]Nobuhisa Koga and others, 'Assessing Changes in Soil Carbon Stocks after Land Use Conversion from Forest Land to Agricultural Land in Japan', *Geoderma*, 377 (2020), 114487 https://doi.org/10.1016/j.geoderma.2020.114487

[30]Chuyu Xia and others, 'Exploring Potential of Urban Land-Use Management on Carbon Emissions—— A Case of Hangzhou, China', *Ecological Indicators*, 146 (2023), 109902 https://doi.org/10.1016/j.ecolind.2023.109902

[31]Yuta Uchiyama and Ryo Kohsaka, 'Access and Use of Green Areas during the Covid-19 Pandemic: Green Infrastructure Management in the "New Normal"', *Sustainability (Switzerland)*, 12.23 (2020), 1–9 https://doi.org/10.3390/su12239842

[32]Kohsaka and Kohyama.

[33]Tzu-Wei Joy Tseng and others, 'Influence of Land Tenure Interventions on Human Well-Being and Environmental Outcomes', *Nature Sustainability*, 4.3 (2020), 242–51 https://doi.org/10.1038/s41893-020-00648-5

be the foundation of agrarian reform intended to bring about the maximum prosperity for the Indonesian people. By collaboration in the usage and utilization of soil, settings for the reuse and utilization of land owned by a person or legal body. Landowners, the federal government and/or its regions, businesses, organizations with legal status, social, religious, and civil society groups were among the Parties that participated in the partnership. The outcome of the cooperative usage of this land is distributed fairly to all pertinent parties. The benefit of improving use and land utilization to produce use and ideal soil utilization is one of distribution aims. Land use and utilization results are fairly distributed to all parties involved.

The importance of agricultural lands in supplying food for the planet's constantly expanding human population does not lessen despite the fact that they make up a sizable portion of its surface.[34] Human motivation and behavior with regard to land management are influenced by the land tenure regime, which is a system of statutory and informal norms controlling land access, use, ownership, and control in a society.[35] The development of agrarian management must take into account technical opportunities, as well as activities, policies, and approaches. More significantly, however, is the management of activities at this point, which is crucial for the sustainability of progress. Policy Land Policy Framework, Administration Land (land administration duties), and Land Information Infrastructure infrastructures are all part of the land management paradigm. This paradigm outlines a framework for making it easier to integrate new needs into a nation's existing systems. This framework, which is based on four primary purposes (core functions), namely land tenure, land valuation, land usage, and land development, is crucial for any nation when it comes to the regulation of administrative records relating to land.[36]

Policy reforms of public service encounters often seek to control, delegate, or eliminate discretion at the frontline. However, across cases the discretionary responses are indicative of the frontline practitioners' casuistic practices. Accordingly, securing the conditions for the exercise of discretion in frontline encounters is essential to the responsible provision of public services.[37] At the conceptual level, discretion is expected to be able to overcome concrete problems faced in the administration of government in terms of laws and regulations that provide options for not regulating, incomplete and/or government stagnation. Discretion includes not only written stipulations but also actions taken by Government Officials in terms of concrete problems faced in the administration of government in terms of laws and regulations that provide options for not regulating, incomplete, and/or government stagnation. Discretion (both in the form of decisions and actions) is also a form of State Administrative Decisions so that the settlement of cases regarding discretion is resolved through the State Administrative Court.

As for the form of discretion that can be stated in policy regulations if it is related to the real conditions that occur in Central Sulawesi. The author suggests that the government in managing impacts that occur due to natural disasters, can apply its free authority

[34]Jarosław Janus and Ela Ertunç, 'Impact of Land Consolidation on Agricultural Decarbonization: Estimation of Changes in Carbon Dioxide Emissions Due to Farm Transport', *Science of The Total Environment*, 873 (2023), 162391 https://doi.org/10.1016/j.scitotenv.2023.162391
[35]Emmanuel Timothy Malisa and Christopher Paul Mahonge, 'Implications of Institutional Interplay on Land Management: A Case of Traditional Land Tenure and Formal Laws in the Uluguru Mountains, Tanzania', *Land Use Policy*, 129 (2023), 106626 https://doi.org/10.1016/j.landusepol.2023.106626
[36]Andi Tenrisau, 'Landasan Pengelolaan Pertanahan Dalam Sistem Penataan Agraria Berkelanjutan', *Jurnal Pertanahan*, 11.2 (2021), 103–12 https://doi.org/10.53686/jp.v11i2.109
[37]Kirstine Zinck Pedersen and Anja Svejgaard Pors, 'Discretionary Responses in Frontline Encounters: Balancing Standardization with the Ethics of Office', *Journal of Public Administration Research and Theory*, 33.1 (2023), 80–93 https://doi.org/10.1093/jopart/muac012

(discretion) whether it is stated in written policy regulations or laws and regulations, which in this case further based on discretion, the government can issue funds allocated to meet the needs of victims of natural disasters. In fact, government officials do not need to worry about the authority to exercise discretion. Apart from being a principle in moving the course of government functions, discretion also has a strong juridical basis based on Act No. 30 of 2014 concerning Government Administration. It becomes a problem when discretion is abused (*discretional corruption*). The misuse occurs because of the wrong interpretation of discretion and/or the existence of malicious intent to obtain certain benefits by issuing discretion which leads to corruption. In fact, both policymakers and practitioners are asking serious concerns in response to these difficulties. Also, it is frequently more difficult to adjust and adapt to changing objectives and circumstances because of the legacy of an earlier policy or practice.[38]

Misuse of discretionary authority can result in unlawful acts (*onrechmatige daad*), or against the law (*wederrechteljik*) but does not mean that discretion is unlawful or against the law. Abuse of discretion means that the use of discretion has crossed the boundary of punishment, so it is no longer attached to discretion.[39] For example, a regional head who buys a helicopter to facilitate communication and transportation in his area is an act of discretion, but when the inflated price of the purchase of the aircraft is referred to by the seller, the unlawful act he has committed cannot be classified as a discretionary act.

Basically, discretion is very good to improve the quality of public services. So that discretion and public services cannot be separated from each other. However, this needs to be a concern for public service providers to pay attention to the rules so that they do not refer to the occurrence of maladministration. The maladministration that tends to be carried out by public service providers in the context of discretion is the abuse of authority. Abuse of authority is referring to ignoring the public interest or deviating from the public interest.

Functionally, the purpose of the discretionary action is in line with the legal function. This discretionary use parameter is more concrete as described in Chart 1. The first, regarding the choices given by the law, in this case an official is faced with two choices of action, from these alternatives the official is given the freedom to choose one so that choice is called discretion. The second, the regulations do not regulate are incomplete or unclear in the sense that a regulation related to the technical implementation of their duties does not yet exist, is not complete or has multiple interpretations so that an official must issue discretion so that there is no stagnation in the performance of duties. The third, there is stagnation of government can be interpreted as an emergency, urgency, and/or disaster. In the event of a situation of urgency, the official is legally given the freedom to take decisions or actions with the aim of responding to the situation in the public interest. This is explained in many laws and regulations, even a president can issue a presidential regulation in lieu of law in response to an urgent situation. Normatively, this discretion can be exercised by every official both at the central and regional levels, but discretion must be based on an

[38]Alison Holt and Joe Morris, 'Will Environmental Land Management Fill the Income Gap on Upland-Hill Farms in England?', *Land Use Policy*, 122 (2022), 106339 https://doi.org/10.1016/j.landusepol.2022.106339
[39]Awad Ali Alanzi, 'Tendering in Assignment of the Administrative Contract: A Comparison of Egyptian Tender Law and Saudi Government Tenders and Procurement Law', *Hasanuddin Law Review*, 7.2 (2021), 105 https://doi.org/10.20956/halrev.v7i2.2977

authority that has limitations including time limits, territorial boundaries, and other powers granted by the provisions of laws and regulations.[40]

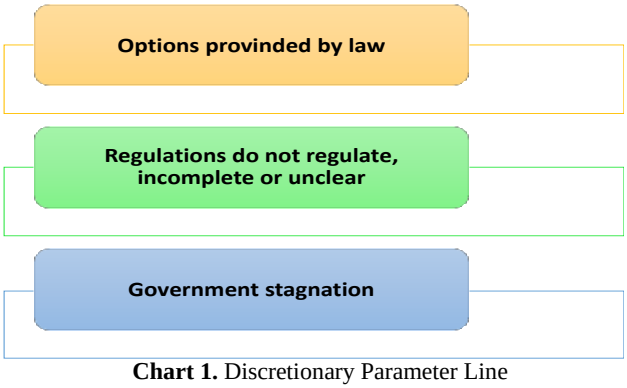


Chart 1. Discretionary Parameter Line

Policy regulations which are the principle of discretion are general regulations issued by government agencies regarding the implementation of government authority over citizens or against other government agencies and the making of these regulations does not have a firm basis in the Constitution and formal laws, either directly or indirectly. This regulation is not based on the authority to make laws, but is based on the government authority of a state administrative organ with regard to the implementation of its authority.[41] The principle of discretion departs from the government's obligations in the Welfare State, where the main task of the government is to provide public services or seek welfare for citizens, in addition to providing protection for citizens.

Land issues in the case of natural disasters such as earthquakes that cause landslides, tsunamis, liquefaction, and various other consequences have different characteristics from land that is destroyed but is not caused by natural disasters, but ordinary natural events.[42] One example is abrasion (continuous erosion by water) of the soil on the edge of a river or beach. Many cases of land owned or controlled and managed by someone become victims of abrasion. The abrasion, when not overcome by building embankments or water barriers, causes the soil to be eroded and carried away by the water flow slowly, until it is completely destroyed.

In the explanation from the Head of Bappeda of Central Sulawesi Province, it was stated that the earthquake that caused tsunami and liquefaction had caused damage and losses in various sectors such as housing, infrastructure, socio-cultural, economic, and cross-sector, with a total damage value of 6.78 trillion, and a loss of 1.52 trillion (Table 1).

Table 1. Damage and Loss Due to Earthquake and Tsunami and Liquefaction

Sector	Damage	Losses	Total
Housing	3,86 T	396,76 M	4,26 T
Infrastructure	498,10 M	16,69 M	514,79 M
Socio-culture	1,39 T	60,03 M	1,45 T

[40]Mohammed Noori Ali, Nurhafilah Musa, and Mohamad Rizal Bin Abd Rahman, 'Judicial Control over Administrative Discretion in Iraq', *Hasanuddin Law Review*, 8.3 (2022), 233–47 https://doi.org/10.20956/halrev.v8i3.3876

[41]Mas Pungky Hendra Wijaya and Mohammad Zulfikar Ali, 'Legislation Impediments in Reorganising Government Bodies in Indonesia', *BESTUUR*, 9.1 (2021), 1 https://doi.org/10.20961/bestuur.v9i1.51633

[42]Muhammad Basir-Cyio and others, 'The Impact of Liquefaction Disaster on Farming Systems at Agriculture Land Based on Technical and Psychosocial Perspectives', ed. by Simon Clegg, *PLOS ONE*, 16.1 (2021), e0245591 https://doi.org/10.1371/journal.pone.0245591

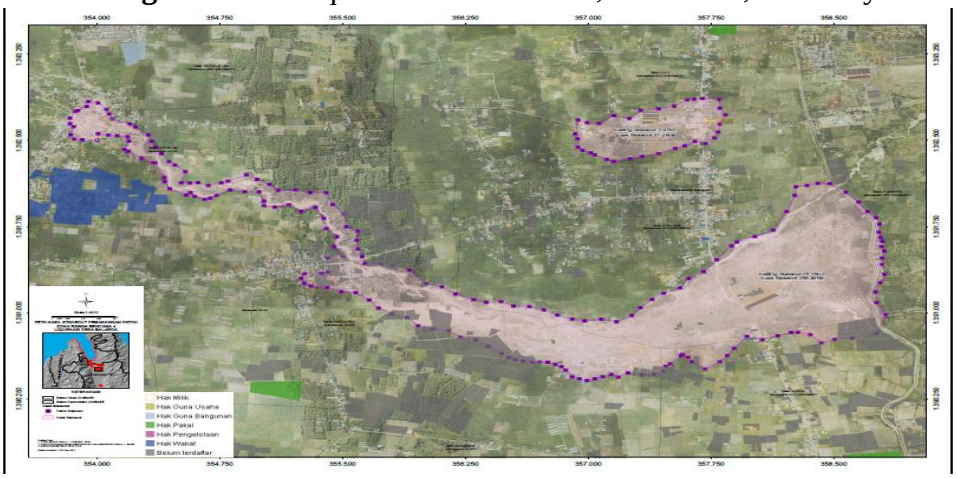
Economy	774,52 M	981,50 M	1,76 T
Cross-sector	260,31 M	43,78 M	304,09 M
Total	**6,78 T**	**1,52 T**	**8,30 T**

Source: *Bappeda*, Central Sulawesi, 2021 (Edited).

The case with liquefaction, which in this research only took research samples in Palu and Sigi regency - liquefaction or in English called "soil liquefaction" is a process that makes the soil lose its strength quickly due to vibrations caused by earthquakes. The earth is strong in fine-grained and water-saturated soil conditions, and there is a weak zone that causes it to surface. Manifestations on the surface are usually in the form of fine-grained sand silt coming out of soil cracks. Sometimes the water wells disappear and change to sand. Liquefaction is not caused by a tsunami, but an earthquake. While, tsunamis and liquefaction are caused by earthquakes, therefore earthquakes are trigger; tsunamis and liquefaction are effects.

In the Initial Landslide Investigation - Geotechnical Extreme Events Reconnaissance (GEER) liquefaction due to Palu earthquake on 28 September 2018 (Geotechnical Report on 2018 Palu-Donggala Earthquake), conducted by the Center for Research and Development of Housing and Settlements Research and Development Agency of the Ministry of Public Works and Public Housing (PUPR), it was found that the consequences of the most devastating geotechnical disaster that contributed almost 80 percent of the total fatalities were landslides and liquefaction that occurred in densely populated housing. This residential area is located in a part of the valley that was used as rice fields or was used for rice fields in the past. Liquefaction that occurred in Palu and Sigi regency can be identified in the following pattern, "*The top of the soil moves like a stream, then moves in another direction (hit or hit) another soil."* This research attaches an example of a liquefaction case that occurred in Balaroa village, West Palu subdistrict, Palu (Figure 1).

Figure 1. Soil liquefaction in Balaroa, West Palu, Palu City



Source: ATR/BPN and BNPB of Central Sulawesi, 2021.

The earthquake that caused liquefaction in Palu city and Sigi regency, complex problems in the land sector had arisen in the form of the first, there is a change or a shift in the plot of land from the beginning or its original place. The second, many certificates were damaged, torn, as a result of sweeping or the brunt of tsunami or liquefaction. The third, many certificates of land ownership are unknown or lost, so that it is very detrimental to the

owner of land rights.[43] The fourth, there are owners of property rights certificates who also become victims and die. The status of land affected by liquefaction and completely destroyed, when viewed from Government Regulation No. 24 of 1997 concerning Land Registration, the legal status is deleted because it is no longer in accordance with physical and juridical data as strong evidence. Therefore, the party who owns the land can no longer apply for land registration, because juridically, land registration according to the Government Regulation is only possible for land that physically exists, even though there are slight changes or damage, but can still be reclaimed as property rights.

Why is important, because when the State abolishes legal relations, the relationship between people and their land should be done properly through clear and firm legal protection institutions, so that the welfare and prosperity of the people that are aspired to become real. The post-amendment 1945 Constitution and Human Rights Act No. 39/1999 state that everyone has the right to receive guarantees, protection and fair legal treatment, receive equal treatment before the law and obtain legal certainty, including getting a guarantee of protection and legal certainty over his land affected by natural disasters.

In response to the above problems, legal protection for the owner or holder of property rights on land whose land is a victim of liquefaction disaster is absolutely necessary. Legal protection in the field of land ownership rights in practice is not only determined by the legal substance, but also determined by the apparatus and implementers as well as the legal awareness of the community.[44] Thus, the role of the State in fulfilling the land rights of victims of liquefaction is in accordance with the main responsibility of the State to fulfill, to respect, to protect, and to promote in the universal human rights doctrine. Holders of land rights have not lost their rights, and also the State has taken care of their survival and livelihood.

Development and effective government existence of an area of good agrarian management or excessive land administration might contribute to sustainability. The existence of and human resources (HR) in the system land bureaucracy are necessary to support function administration in the field of government land that is fair and legally certain. This means that peren them is not limited to managing administrative aspects and land management alone, as negative imagery that has formed "bureaucratic imaging" of the fishing apparatus bureaucracy of the National Land Agency in these recent decades. As stated in the preamble to tap MPR No. IX, the state's objectives to implement a good land administrative system are linked to the goal of agrarian reform for the purpose of establishing a just and prosperous society. As a gift from God Almighty to the Indonesian people, it was enacted in 2001 that natural resources and agricultural resources must be acknowledged as part of the nation's riches.

4. Conclusion

The soil is a source of fixed human existence that continues, despite its nature being in opposition to growing human requirements. In other words, while the Dynamics of Population Growth and Rapid Progress (DPGRP) were being built, the quality of the soil began to decrease. The Indonesian constitution contains precise rules regarding land management. It is commonly acknowledged that sustainable land management (SLM) is

[43]Ressi Dwiana, Ade Armando, and Mario Antonius Birowo, 'Emergency Broadcasting Radio in Indonesia: Comparative Studies in Lombok and Palu', *Journal of Disaste25r Research*, 15.5 (2020), 655–63 https://doi.org/10.20965/jdr.2020.p0655

[44]Ayu Erlinna, Djoko Santoso Abi Suroso, and Kim Dowon, 'Implementation of Build Back Better (BBB) Framework in Achieving Sustainable Development Goals', *The Journal of Indonesia Sustainable Development Planning*, 1.3 (2020), 267–80 https://doi.org/10.46456/jisdep.v1i3.76

essential for reducing rates of land degradation and halting desertification. It is widely acknowledged that sustainable land management (SLM) is essential for halting the rate of land deterioration, preventing desertification, and regenerating damaged areas. Given the complexity of communities and landowners, policies at the national level are now still evolving, with a progressive trend toward policies connected to sustainable land-use management through consensus building. Its implementation can be authorized to autonomous regions and customary law communities as necessary and not contrary to the 5national interests. The existence of land and rights attached to land in Indonesia is regulated in the Basic Agrarian Law which regulates the definition of land, which can be concluded as the surface of the earth which in its use includes part of the earth's body beneath it and part of the space above it with restrictions that are only necessary for interests that are directly related to the use of the land. The development of agrarian management should consider technical opportunities, as well as activities, policies, and approaches. However, what is more important is the management of activities at this point, which is crucial for the sustainability of progress in order to create justice and legal certainty for society.

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