The Acceleration of Agrarian Reform through the Provision of Lands Redistribution Object from the Released Forest Area Using Land and Spatial Thematic Map

Dony Erwan BRILLIANTO, Hendro PRASTOWO, Vito Haga MURSA, Valentina INGRADIARINI, Rendra Ady WIJAYA, Indonesia

Key words: Spatial Planning, Agrarian Reform, Thematic Maps, Spatial Data, Land Redistribution

SUMMARY

This study reviewed the use of thematic land and spatial map for accelerating agrarian reform through the provision of Lands for Agrarian Reform (LAR) from the State Forest Area release in Indonesia. It focused on five regencies in four provinces. The making of land and spatial thematic map began by conducting a field survey to collect data on land tenure, ownership, use, and utilization (P4T) and other supporting data. Data were analyzed in terms of the structure of the land tenure, ownership, use, and utilization (P4T), land potential, and land program. The analysis result could be used as valuable input to the utilization program and plan proposal, which is one of the requirements for applying non-productive convertible production forest release proposals to the Ministry of Environment and Forestry.

RINGKASAN

Penelitian ini mengkaji penggunaan peta tematik pertanahan dan ruang dalam rangka percepatan reforma agraria melalui penyediaan TORA dari pelepasan kawasan hutan di Indonesia. Penelitian ini mengambil lokus pada 5 kabupaten di 4 provinsi yang menjadi lokasi pilot project percepatan redistribusi tanah dari pelepasan kawasan hutan. Pembuatan peta tematik pertanahan dan ruang diawali dengan kegiatan survei lapangan dalam rangka pengumpulan data P4T dan data pendukung lainnya. Selanjutnya data P4T dan data pendukung lainnya dianalisa dengan analisa yang terkait dengan reforma agraria yaitu analisa struktur P4T, analisa potensi TORA, dan analisa program pertanahan. Analisa reforma agraria yang dihasilkan menjadi masukan dalam proposal rencana dan program pemanfaatan yang menjadi salah satu syarat dalam usulan pelepasan HPK tidak produktif kepada Kementerian Lingkungan Hidup dan Kehutanan.

The Acceleration of Agrarian Reform Through the Provision of Lands Redistribution Object from the Released Forest Area Using Land and Spatial Thematic Map (12014)
Dony Erwan Brilianto, Hendro Prastowo, Vito Haga Mursa, Valentina Ingradiarini and Rendra Ady Wijaya (Indonesia)

FIG Working Week 2023
Protecting Our World, Conquering New Frontiers
Orlando, Florida, USA, 28 May–1 June 2023

The Acceleration of Agrarian Reform through the Provision of Lands Redistribution Object from the Released Forest Area Using Land and Spatial Thematic Map

Dony Erwan BRILLIANTO, Hendro PRASTOWO, Vito Haga MURSA, Valentina INGRADIARINI, Rendra Ady WIJAYA, Indonesia

1. INTRODUCTION

Poverty is a global problem faced mostly by underdeveloped and developing countries, making poverty alleviation one of the Sustainable Development Goals. Poor and vulnerable households refer to those with no rights to economic resources, including land. As an economic resource, land serves as an important object in which humans carry out their activities. Population growth has caused an increased need for space and land. Consequently, some people fail to obtain their rights to own land. Land and agrarian issues are among the issues that require special attention as they directly link to deal with public needs. In rural areas, a properly managed land-community relationship may eventually lead to decreased poverty (Balisacan, 2007). In order to solve land issues and increase the people's welfare, the Indonesian government implements various sustainable development programs, including land provision, to ensure sustainable agriculture.

In this regard, The Ministry of Agrarian Affairs and Spatial Planning/ National Land Agency (MoASP/NLA) organizes the Agrarian Reform (Reforma Agraria) program as one of the efforts to overcome land issues. This program restructures fairer land tenure, ownership, use, and utilization through asset management for the Indonesian people's welfare (2018). It supports Sustainable Development Goals by improving the people's economic welfare, maintaining people's social life, and preserving the environment's quality in a sustainable manner. These method is believed to be able to combat hereditary unfairness while supporting economic structural transformation and displaying the ideal model of an agrarian country

This program is one of the Indonesian government's national strategic projects since 2015 with the targets of 9 million hectares of land. The program target is divided into two schemes: 4.5 million hectares of asset legalization and 4.5 million hectares of land redistribution (2015). The 4.5 million hectares of land redistribution was further divided into two categories based on the object: redistribution of 0.4 million hectares of state lands with un-extended Rights of Exploitation (Hak Guna Usaha/HGU), abandoned lands, and other types of state lands; and 4.1 million hectares lands from relinquishment of state forest areas. Of this target, 348,185 hectares

The Acceleration of Agrarian Reform Through the Provision of Lands Redistribution Object from the Released Forest Area Using Land and Spatial Thematic Map (12014)
Dony Erwan Brilianto, Hendro Prastowo, Vito Haga Mursa, Valentina Ingradiarini and Rendra Ady Wijaya (Indonesia)

FIG Working Week 2023
Protecting Our World, Conquering New Frontiers
Orlando, Florida, USA, 28 May–1 June 2023

of land (0.85%) from the State Forest release have been distributed (Annual Report of Achievement of Land Redistribution by Agrarian Arrangement Division, 2022), implying the need for accelerating the target realization. In Indonesia, lands are managed by the Ministry of Agrarian Affairs and Spatial Planning/ National Land Agency (MoASP/NLA) and the Ministry of Environment and Forestry (MoEF). The Ministry of Agrarian affairs and spatial planning/ National Land Agency (MoASP/NLA) manages non-forest lands, while the Ministry of Environment and Forestry (MoEF) manages forest land.

In order to accelerate the provision of Lands for Agrarian Reform (LAR) from relinquishment of state forest areas (2020), the Ministry of Agrarian Affairs and Spatial Planning/ National Land Agency (MoASP/NLA) initiated a pilot project. The concept of the project is to discover a novel method expected to be capable and accurate of accelerating the provision of land from forest areas. Considering the provision of land from forest areas, MoASP/NLA initiated the project involving methods regarding conserving ecological and environmental functions. Potential lands from forest areas that are going to be a candidate of the pilot project are classified into non-productive convertible production forest (CPF). The statue of non-productive convertible production forest (CPF) itself are still "reserved" to be released. Based on the regulatory by MoEF number 7/2021, the procedure in order to release these areas from forest areas, shall be applying the proposal concerning land utilization concept approach to preserve the land's ecological and environmental functions. Application of nonproductive CPF release is made using a zone approach instead of a per-land parcel approach and is supported by the planning and utilization program proposal for the applied nonproductive CPF. The pilot project would generate the number of land parcels and areas from nonproductive CPF release, which could be followed up by the land redistribution.

It was conducted in five regencies in four provinces, covering a total area of 53.959.96 hectares. This pilot project was done in several stages: preparation, data collection, review and analysis, and finally, the release stage. Data collection serves as one of the most crucial stages that require thorough examination. It was done by conducting thematic land and spatial mapping, in addition to collecting other supporting data. The thematic land and spatial mapping, including collecting field data on tenure, ownership, use, and utilization of lands and other supporting data, was done using a cellular application called **SiPetik.**

This activity would generate data on land tenure, ownership, use, and utilization, and other supporting data, including land ability, demographic data, and socioeconomic data. The result of the mapping process was analyzed based on the land potential and the land program analysis. The thematic land and spatial map would be valuable input for the land utilization plan proposal

The Acceleration of Agrarian Reform Through the Provision of Lands Redistribution Object from the Released Forest Area Using Land and Spatial Thematic Map (12014)
Dony Erwan Brilianto, Hendro Prastowo, Vito Haga Mursa, Valentina Ingradiarini and Rendra Ady Wijaya (Indonesia)

FIG Working Week 2023
Protecting Our World, Conquering New Frontiers
Orlando, Florida, USA, 28 May–1 June 2023

applied to the Ministry of Environment and Forestry as a requirement of the forest area release program.

2. RESEARCH METHOD

This qualitative study examined sociocultural and natural conditions through observation and interviews. The data on land tenure and ownership (legal data) and data on land use and utilization (physical data) were collected in order to provide an in-depth scrutiny of the land tenure, ownership, use, and utilization in the research site. Interviews with the local community were conducted to obtain historical data on the land acquisition, which would provide a depiction of land tenure and ownership. Meanwhile, data on land use and utilization was collected by observing the existing situation and condition of the land.

2.1. Location

In this study, the mapping for LAR from non-productive CPF release was done in five regencies in four provinces, covering a total of 53,959.96 hectares. The detail of each location is presented as follows:

- Banyuasin Regency, South Sumatera Province (6,895.92 hectares)
- Musi Banyuasin Regency, South Sumatera Province (23,410.37 hectares)
- Sintang Regency, West Kalimantan Province (14,310.42 hectares)
- Pulang Pisau Regency, Central Kalimantan Province (5,500.94 hectares)
- Kutai Kartanegara Regency, East Kalimantan Province (3,842.31 hectare)

2.2 Primary and Secondary Data Collection

Primary data were collected through field surveys by 40 surveyors in the five regencies previously mentioned. The survey was done using the SiPetik application to collect data on land tenure, ownership, use, and utilization from field survey and deliver the data into thematic geoportal. This android-based mobile application was developed specifically to map and survey land parcels. It allows users to plot the land parcel and input information on land tenure, ownership, use, and utilization in a real-time manner. Meanwhile, secondary data were collected to support the analysis, including demographic data, socioeconomic data, cultivated land area, and spatial planning data.

2.3. Analysis of Lands for Agrarian Reform (LAR) Potentials

The potential analysis was made to identify the land's eligibility, which was categorized into three eligibility criteria: priority-1 (eligible), priority-2 (eligible-confirmation required), and

The Acceleration of Agrarian Reform Through the Provision of Lands Redistribution Object from the Released Forest Area Using Land and Spatial Thematic Map (12014)
Dony Erwan Brilianto, Hendro Prastowo, Vito Haga Mursa, Valentina Ingradiarini and Rendra Ady Wijaya (Indonesia)

FIG Working Week 2023
Protecting Our World, Conquering New Frontiers
Orlando, Florida, USA, 28 May–1 June 2023

priority-3 (conservation), as presented in Table 1. The analysis was made using data on spatial planning, cultivation land area, and land tenure, ownership, use, and utilization, as the input.

Table 1 LAR potentials classification

Variable	Priority 1	Priority 2	Priority 3
Cultivation Land Area (Wilayah Tanah Usaha/WTU)	Cultivation Land Area level 1 (WTU 1)	Cultivation Land Area level 2 (WTU 2)	Limited cultivation area
Land Use	The land has been used for residential, agricultural (field, plantation), and fish-farming purposes. Some land was also found to be vacant.	Land use exists/ does not exist	Land use exists/ does not exist
Spatial Planning	Spatial planning for agricultural and non-agricultural purposes.	Spatial planning for cultivation area	Spatial planning for Forest Area/ Protection Area/ Disaster-prone area

2.4 Land Program Analysis

This analysis was made to find out a suitable land program to follow up on eligible Lands for Agrarian Reform (priorities 1 & 2). The analysis result presents **recommendations regarding land redistribution and asset legalization**, as presented in Table 2. The analysis also used data on spatial planning, cultivation land area, and data on land tenure, ownership, use, and utilization as the input.

Table 2 Land program Classification

Variable	Land Redistribution	Asset Legalization	Non-land related program
Land ownership	Unregistered	Unregistered	Registered

The Acceleration of Agrarian Reform Through the Provision of Lands Redistribution Object from the Released Forest Area Using Land and Spatial Thematic Map (12014)
Dony Erwan Brilianto, Hendro Prastowo, Vito Haga Mursa, Valentina Ingradiarini and Rendra Ady Wijaya (Indonesia)

FIG Working Week 2023
Protecting Our World, Conquering New Frontiers
Orlando, Florida, USA, 28 May–1 June 2023

Land Use	Land use for agriculture (rice fields, plantations), fish farms, vacant land, bushlands	Land Use involving social/public facilities, government's buildings or legal entity's buildings.	All Land Uses
Spatial Planning	Spatial planning for agricultural purposes	Spatial planning for non-agricultural purposes	General Spatial Planning
Cultivation Land Area (Wilayah Tanah Usaha/WTU)	Cultivation Land Area level 1 (WTU 1) or Cultivation Land Area level 2 (WTU 2)	Cultivation Land Area level 2 (WTU 2)	All Cultivation Land Area level
Land Subject/Tenure	Individuals, group, or legal entity considered eligible to be the subject of land redistribution.	Subject(s) are ineligible for land redistribution program	All Subjects

3. RESULT AND DISCUSSION

The survey using SiPetik was conducted in five regencies from 29 May to 26 June 2021 and obtained information related to land tenure, ownership, use, and utilization. The map was made using a scale of 1:5000. In addition to primary data, secondary data were also collected, including data on Cultivation Land Area and spatial planning in the pilot project location. Especially,

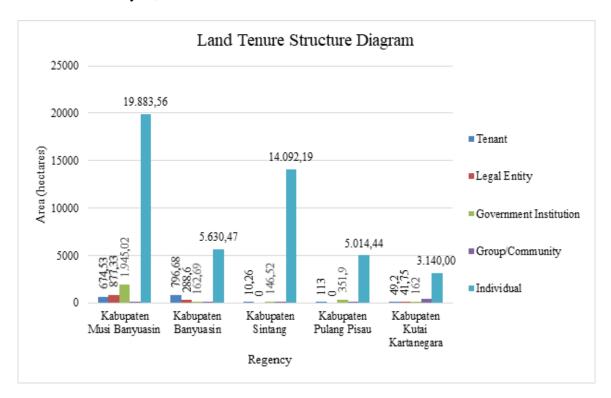### 3.1 The Structure of Land Tenure, Ownership, Use, and Utilization

The structure of land tenure, ownership, use, and utilization was analyzed to find out its composition. Land tenure refers to a legal relationship between individuals, groups, or legal entities and a land parcel. Information on land parcels in each regency is presented in Table 1. The analysis result showed that most lands in this study were held by individuals, indicating the presence of a legal relationship between an individual and the land. In other words, they directly hold the land individually.

The Acceleration of Agrarian Reform Through the Provision of Lands Redistribution Object from the Released Forest Area Using Land and Spatial Thematic Map (12014)
Dony Erwan Brilianto, Hendro Prastowo, Vito Haga Mursa, Valentina Ingradiarini and Rendra Ady Wijaya (Indonesia)

FIG Working Week 2023
Protecting Our World, Conquering New Frontiers
Orlando, Florida, USA, 28 May–1 June 2023

Table 1 Land Tenure Structure

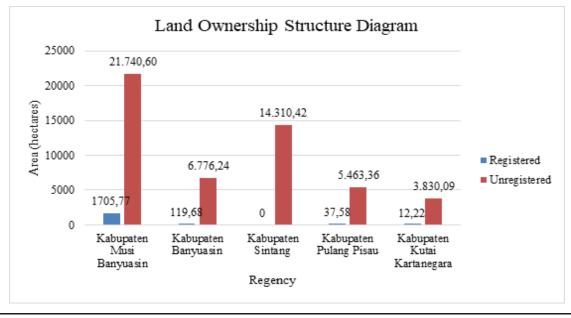| No.	Land Tenure (in hectare)	Musi Banyuasin	Banyuasin	Sintang	Pulang Pisau	Kutai Kartanegara
1	Tenant	674.53	796.68	10.26	113.00	49.20
2	Legal entity	877.33	288.60	0	0	41.75
3	Government Institution	1,945.02	162.69	146.52	351.90	162.00
4	Group	29.92	17.48	61.46	21.60	449.36
5	Individual	19,883.56	5,630.47	14,092.19	5,014.44	3,140.00
	Total	**23,410.37**	**6,895.92**	**14,310.42**	**5,500.94**	**3,842.31**

Source: Studio analysis, 2021

The Acceleration of Agrarian Reform Through the Provision of Lands Redistribution Object from the Released Forest Area Using Land and Spatial Thematic Map (12014)
Dony Erwan Brilianto, Hendro Prastowo, Vito Haga Mursa, Valentina Ingradiarini and Rendra Ady Wijaya (Indonesia)

FIG Working Week 2023
Protecting Our World, Conquering New Frontiers
Orlando, Florida, USA, 28 May–1 June 2023

Land ownership refers to the legal relationship between individuals, groups, or legal entities and a land, which is supported by proof of ownership in the form of a land certificate. Information on land ownership in each regency is presented in Table 2. As displayed in table 2, most land ownerships in the five regencies were unregistered. In other words, the majority of the landowners have not possessed a land certificate. This condition is probably accounted for by the fact that the locations' statues are still 'forest areas' and hence under the authority of the MoEF. Meanwhile, The Ministry of Agrarian Affairs and Spatial Planning only has the authority to issue a land certificate for the non-forest area. However, the field survey also revealed that some land certificates have appeared at some lands, which were probably issued before the land was legally classified as the forest area.

Table 2 Land Ownership Structure

No.	Land ownership (In hectare)	Musi Banyuasin	Banyuasin	Sintang	Pulang Pisau	Kutai Kartanegara
1	Registered	1705.77	119.68	0	37.58	12.22
2	Unregistered	21,740.60	6,776.24	14,310.42	5,463.36	3,830.09
	Total	**23,410.37**	**6,895.92**	**14,310.42**	**5,500.94**	**3,842.31**

Source: Studio analysis, 2021

The Acceleration of Agrarian Reform Through the Provision of Lands Redistribution Object from the Released Forest Area Using Land and Spatial Thematic Map (12014)
Dony Erwan Brilianto, Hendro Prastowo, Vito Haga Mursa, Valentina Ingradiarini and Rendra Ady Wijaya (Indonesia)
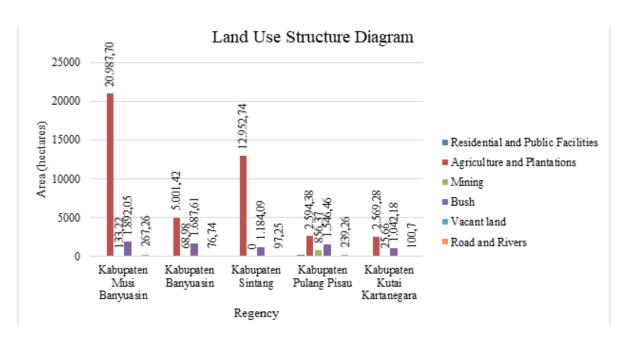
Land use refers to the earth's surface coverings that are naturally formed or artificially made by humans. Information on land use in each regency is presented in Table 3. As shown in the table, the majority of lands surveyed in the five regencies were used for agricultural and plantation purposes, followed by lands in the form of bushes. This condition matches the forest area status itself, namely nonproductive convertible production forest (CPF). Nonproductive CPF refers to a forest area that is dominantly covered by low vegetation such as bushes. Some areas in this pilot project location were also used for residential areas and public facilities and infrastructures.

Table 3 Land Use Structure

No.	Land Use (in hectare)	Musi Banyuasin	Banyuasin	Sintang	Pulang Pisau	Kutai Kartanegara
1	Residential and Public Facilities	61.71	45.39	59.34	241.58	104.49
2	Agriculture and Plantations	20,987.70	5,001.42	12,952.74	2,594.38	2,569.28
3	Mining	133.22	68.98	0	856.37	25.66
4	Bush	1,892.05	1,687.61	1,184.09	1,546.46	1,042.18
5	Vacant Land	68.44	15.78	17.00	22.91	0
6	Road and Rivers	267.26	76.74	97.25	239.26	100.70
	Total	**23,410.37**	**6,895.92**	**14,310.42**	**5,500.94**	**3,842.31**

Source: Studio analysis, 2021

The Acceleration of Agrarian Reform Through the Provision of Lands Redistribution Object from the Released Forest Area Using Land and Spatial Thematic Map (12014)
Dony Erwan Brilianto, Hendro Prastowo, Vito Haga Mursa, Valentina Ingradiarini and Rendra Ady Wijaya (Indonesia)

FIG Working Week 2023
Protecting Our World, Conquering New Frontiers
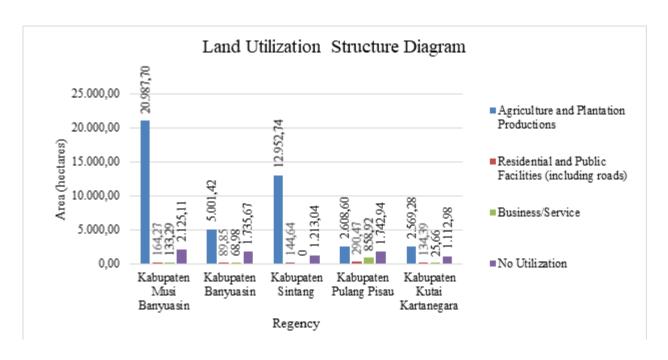Orlando, Florida, USA, 28 May–1 June 2023

Land utilization refers to an activity to yield value-added from the land without physically changing its use. Information on land utilization in each regency is presented in Table 4. As shown in Table 4, most of the land utilization in this study was in the form of agricultural and plantation production.

Table 4 Land Utilization Structure

No.	Land Utilization	Musi Banyuasin	Banyuasin	Sintang	Pulang Pisau	Kutai Kartanegara
1	Agricultural and Plantation Productions	20,987.70	5,001.42	12,952.74	2,608.60	2,569.28
2	Residential and Public Facilities (including road)	164.27	89.85	144.64	290.47	134.39
3	Business/Service	133.29	68.98	0	858.92	25.66
4	No Utilization	2,125.11	1,735.67	1,213.04	1,742.94	1,112.98
	Total	**23,410.37**	**6,895.92**	**14,310.42**	**5,500.94**	**3,842.31**

Source: Studio analysis, 2021

The Acceleration of Agrarian Reform Through the Provision of Lands Redistribution Object from the Released Forest Area Using Land and Spatial Thematic Map (12014)
Dony Erwan Brilianto, Hendro Prastowo, Vito Haga Mursa, Valentina Ingradiarini and Rendra Ady Wijaya (Indonesia)

FIG Working Week 2023
Protecting Our World, Conquering New Frontiers
Orlando, Florida, USA, 28 May–1 June 2023

Land Utilization Structure Diagram

3.2. Lands for Agrarian Reform (LAR) Potentials and the Land Program

This study involved two analyses: an analysis of the Land for Agrarian Reform potentials and an analysis of the land program. Both analyses are interrelated and were done sequentially. Analysis of Lands for Agrarian Reform potentials were made to identify the eligibility priority of the Lands for Agrarian Reform. This analysis involved several variables, including cultivation land area, land use, and spatial planning. After analyzing the land potentials, the next step was performing the land program analysis. The land program analysis was made to determine the suitable program for the location. In this regard, two land programs are related to land rights issuance: land redistribution and asset legalization.

Table 5 Land Potentials and the Land Program

No.	Land Potentials and the Land Program	Musi Banyuasin	Banyuasin	Sintang	Pulang Pisau	Kutai Kartanegara
1	Land Redistribution-Priority 1	1,957.74	1,635.36	1,201.09	1,564.76	1,042.18
2	Land Redistribution-Priority 2	18,689.95	4,729.95	12,832.29	3,479.34	2,549.58

3	Land Redistribution- Priority 3	24.74	68.02	0	0	0
	Total land redistribution	**20,672.44**	**6,433.33**	**14,033.38**	**5,044.10**	**3,591,76**
4	Asset legalization- priority 1	2,320.07	332.09	0	37.58	53.98
5	Asset legalization- priority 2	10.51	6.39	19.56	22.22	0.18
6	Asset legalization- priority 3	135.31	47.55	160.23	157.78	95.69
	Total asset legalization	**2,465.89**	**386.03**	**179.79**	**217.58**	**149.85**
7	Non land program	272.05	76.56	97.25	239.26	100.70
	Total non land program	**272.05**	**76.56**	**97.25**	**239.26**	**100.70**
	Total Area	**23,410.37**	**6,895.92**	**14,310.42**	**5,500.94**	**3,842.31**

Source: Studio analysis, 2021

The land potential and land program analysis results are presented in Table 5. The analysis results show that most lands in the pilot project locations were categorized as **land redistribution-priority 2** (Musi Banyuasin Regency, 18,689.95 hectares; Banyuasin Regency, 4,729.95 hectares; Sintang Regency, 12,832.29 hectares; Pulang Pisau Regency, 3,479.34 hectares; Kutai Kartanegara, 2,549.58 hectares). Land redistribution-priority 2 means that the location requires further confirmation and review based on land tenure/subjects (Regulatory of President Decree of Indonesia Republic number 86/2018 → Agrarian Reform) before being followed up by the land redistribution program.

The analysis results also show locations categorized as **land redistribution priority 1 and asset legalization priority 1.** Locations categorized as priority 1 for land redistribution and asset legalization are those considered ready and eligible to be followed up by the land redistribution and asset legalization programs. The readiness and eligibility of the locations are determined by land tenure, ownership, use, and utilization aspects.

Furthermore, the analysis result also demonstrated locations categorized as **land redistribution- priority 3 and asset legalization- priority 3**. Locations grouped into these categories are deemed ineligible for the program and are the last options for land redistribution

The Acceleration of Agrarian Reform Through the Provision of Lands Redistribution Object from the Released Forest Area Using Land and Spatial Thematic Map (12014)
Dony Erwan Brilianto, Hendro Prastowo, Vito Haga Mursa, Valentina Ingradiarini and Rendra Ady Wijaya (Indonesia)

FIG Working Week 2023
Protecting Our World, Conquering New Frontiers
Orlando, Florida, USA, 28 May–1 June 2023

and asset legalization programs. Locations in these categories are considered to be better for conservation rather than agricultural or residential purposes but it needs more confirmation and other approaches considering there are subjects/people who live in these categorized areas. This study also analyzed non-land programs in the locations. Locations categorized as non-land programs were those with no possibility of being given a land certificate, for instance, water body.
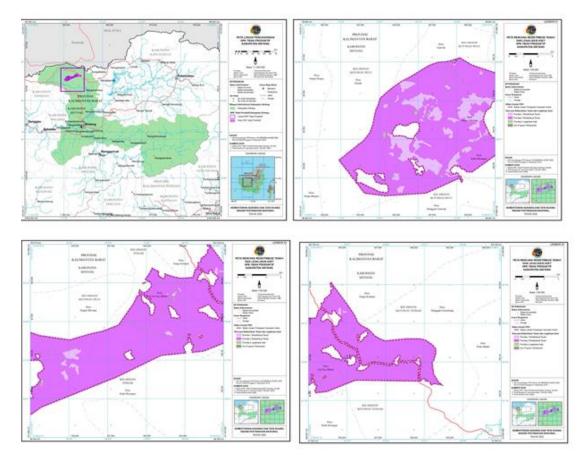

Figure 1. Orientation map of nonproductive CPF Release Proposal in Sintang Regency
Figure 2. Map of LAR potentials and Land Program (page 1).
Figure 3. Map of LAR potentials and Land Program (page 2).
Figure 4. Map of LAR potentials and Land Program (page 3).

3.3. Provision of Land for Agrarian Reform (LAR)

The analysis result serves as one of the inputs to the land use planning and program proposal. The land use planning and program proposal is one of the requirements for applying the release of nonproductive CPF to the MoEF. The MoASP/NLA has delivered the proposal of nonproductive CPF release plan and its utilization plan and program proposal to the MoEF. After a thorough review by the Ministry of Environment and Forestry, it may wholly or partially

The Acceleration of Agrarian Reform Through the Provision of Lands Redistribution Object from the Released Forest Area Using Land and Spatial Thematic Map (12014)
Dony Erwan Brilianto, Hendro Prastowo, Vito Haga Mursa, Valentina Ingradiarini and Rendra Ady Wijaya (Indonesia)

FIG Working Week 2023
Protecting Our World, Conquering New Frontiers
Orlando, Florida, USA, 28 May–1 June 2023

release the proposed locations to Land for Agrarian Reform (LAR). The LAR from the nonproductive CPF release are then followed up through land redistribution and asset legalization.

4. CONCLUSION AND RECOMMENDATION

Based on the result and discussion above, several conclusions were drawn:
- Analysis of land tenure, ownership, use, and utilization acts as the main analysis to develop a thematic land and spatial mapping and the land tenure, ownership, use, and utilization structure. The structure provides an overview of the land tenure, ownership, use, and utilization of a location.
- Majority of locations in the five regencies in this pilot project were categorized as land potentials-priority 2 and land redistribution-priority 2. This category indicates that the location needs further confirmation and review before being followed up by the land redistribution program.
- The thematic land and spatial map is one of the primary, crucial data for applying nonproductive CPF release proposals. This proposal is one of the alternatives for providing Land for Agrarian Reform (LAR) from Forest Area release in order to accelerate the Agrarian Reform program.

Following the result of the study, following recommendations are proposed:
- It is suggested to conduct similar thematic land and spatial mapping and Agrarian Reform study in other locations with nonproductive CPF. Performing such a study could help accelerate Agrarian Reform program, particularly by providing Land for Agrarian Reform (LAR) from Forest Area release. There are approximately 967,000 hectares of potential nonproductive CPF that could be followed up by nonproductive CPF release proposals.
- Future Agrarian Reform studies with LAR potentials and land programs are suggested to involve more complex and varied data and involve further analysis, for instance, community empowerment analysis.

The Acceleration of Agrarian Reform Through the Provision of Lands Redistribution Object from the Released Forest Area Using Land and Spatial Thematic Map (12014)
Dony Erwan Brilianto, Hendro Prastowo, Vito Haga Mursa, Valentina Ingradiarini and Rendra Ady Wijaya (Indonesia)

FIG Working Week 2023
Protecting Our World, Conquering New Frontiers
Orlando, Florida, USA, 28 May–1 June 2023

REFERENCES

McCharty, J.F., & Robinson, K. (2016). *Land, Economic Development, Social Justice and Envrronmental Management in Indonesia: The Search for The People's Sovereignity*. Singapore: ISEAS – Yusof Ishak Institute.

Balisacan, A.M. 2007). *Agrarian Reform and Poverty Reduction in the Philippines*. Manila: University of The Philippines Diliman and Southeast Asean Regional Center fot Graduate Study and Research in Agriculture.

Direktorat Jenderal Penataan Agraria. 2022). *Laporan Kegiatan Ditjen Penataan Agraria*

Republic of Indonesia. Regulation of the President on The *Medium-Term National Development Plan* (*RPJMN*) *2015–2019*, Pub. L. No. 2 (2015). Indonesia

Republic of Indonesia. Regulation of the President on The *Medium-Term National Development Plan* (*RPJMN*) *2020–2024* Pub. L. No. 18 (2020). Indonesia

Republic of Indonesia. Regulation of the President on Agrarian Reform, Pub. L. No. 86 (2018). Indonesia.

BIOGRAPHICAL NOTES

Dony Erwan Brilianto, is the Head of Planning and Cooperation Bureau at the Ministry of Agrarian Affairs and Spatial Planning. He has a bachelor degree in Geodetic Engineering from Bandung Institute of Technology, Indonesia and a master degree in Management from Parestya Mulya University.

Hendro Prastowo. is the Head of Cooperation Division at the Ministry of Agrarian Affairs and Spatial Planning. He has a bachelor degree in Geodetic Engineering from Gadjah Mada University, Indonesia and a master degree in Land Management from University of Twente.

Vito Haga Mursa. is the Head of Domestic Cooperation Sub-division at the Ministry of Agrarian Affairs and Spatial Planning. He has a bachelor degree in Geodetic Engineering from Gadjah Mada University, Indonesia and a master degree in Urban Planning and Environment from Royal Melbourne Institute of Technology.

Valentina Ingradiarini. is s Middle Land Administrator at the Ministry of Agrarian Affairs and Spatial Planning. She has a bachelor degree in Computer Science from Indonesia Computer

The Acceleration of Agrarian Reform Through the Provision of Lands Redistribution Object from the Released Forest Area Using Land and Spatial Thematic Map (12014)
Dony Erwan Brilianto, Hendro Prastowo, Vito Haga Mursa, Valentina Ingradiarini and Rendra Ady Wijaya (Indonesia)

FIG Working Week 2023
Protecting Our World, Conquering New Frontiers
Orlando, Florida, USA, 28 May–1 June 2023

University, Indonesia and a master degree in Land Management and Land Tenure from Technic University of Munich.

Rendra Ady Wijaya, is s Junior Land Administrator at the Ministry of Agrarian Affairs and Spatial Planning. He has a bachelor degree in Geographic from Gadjah Mada University, Indonesia and a master degree in Geographic from Gadjah Mada University

CONTACTS

Vito Haga Mursa
Ministry of Agrarian Affairs and Spatial Planning/National Land Agency Sisingamangaraja 2
South of Jakarta
INDONESIA
Tel. +62-812-2000-1147
Email: vitomursa@gmail.com
Web site: www.atrbpn.go.id

The Acceleration of Agrarian Reform Through the Provision of Lands Redistribution Object from the Released Forest Area Using Land and Spatial Thematic Map (12014)
Dony Erwan Brilianto, Hendro Prastowo, Vito Haga Mursa, Valentina Ingradiarini and Rendra Ady Wijaya (Indonesia)

FIG Working Week 2023
Protecting Our World, Conquering New Frontiers
Orlando, Florida, USA, 28 May–1 June 2023