

Republic of Indonesia  
Ministry of Agrarian Affairs  
and Spatial Planning (ATR/BPN)

**PROJECT FOR CAPACITY  
DEVELOPMENT FOR LAND  
ACQUISITION SYSTEM IMPROVEMENT  
IN REPUBLIC OF INDONESIA**

**Final Report**

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**Japan International Cooperation Agency (JICA)**

**PASCO Corporation**

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## Foreword

This report is a record of the technical cooperation project for “Capacity Development for Land Acquisition System Improvement”. The project was conducted in a collaboration between ATR/BPN counterparts and JICA project team. The project started in March 2018 and completed in October 2022.

The report consists of the main text and attachments. There are also reference documents which were made during the project.





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## List of Abbreviations

APBD	:	Regional Budget
APBN	:	State Budget
ATR/BPN	:	Agrarian Affair and Spatial Planning/National Land Agency (Agraria dan Tata Ruang/Badan Pertanahan Nasional)
BPHTB	:	Land and Building Right Acquisition Fee
DG	:	Directorate General
DGLALD	:	Directorate General of Land Acquisition and Land Development
DGLSSM	:	Directorate General of Land and Spatial Survey and Mapping
DLV	:	Directorate of Land Valuation and Land Economics
DPPT	:	Land Acquisition Document Planning (Dokumen Perencanaan Pengadaan Tanah)
FAQ	:	Frequently Asked Questions
FBC	:	Final Business Case
FGD	:	Focus Group Discussion
GCA/PJPK	:	Government Contracting Agency
GFA	:	Grant Floor Area
GWR	:	Geographically Weighted Regression
HGB	:	Right to Built
HGU	:	Cultivation Right
HM	:	Ownership right
HP	:	Right to Use
HPL	:	Right to Manage
IA	:	Implementing Agency
IRR	:	Internal Rate of Return
JCC	:	Joint Coordinating Committee
KDB	:	Building Base Coefficient
KKPR	:	Suitability of Space Utilization Activities
KLB	:	Floor Area Ratio
KMK	:	Decree of the Minister of Finance
KPK	:	Corruption Eradication Commission
KPPIP	:	Priority Infrastructure Delivery Acceleration Committee
LC	:	Land Consolidation
LC	:	Land Consolidation
LG	:	Local Government
MAPPI	:	Association of Indonesian Appraisers
MLIT	:	Ministry of Land, Infrastructure, Transport and Tourism of Japan
MRT	:	Mass rapid Transit
NBT	:	Parcel-based land value
Nexco-west	:	The West Nippon Expressway Company Limited
NIR	:	Average Index Value
NJOP	:	Tax Object Selling Value
Non-PSN	:	Non- National Strategic Project (Non-Proyek Strategis Nasional)
OBC	:	Outline Business Case
OJT	:	On the Job Training
PAP	:	Project Affected Person

PBB	:	Land and Building Taxes
PDF	:	Project Development Facility
PDM	:	Project Design Matrix
Penlok	:	Location Determination (Penentuan Lokasi)
PentaBit	:	Parcel-based Mass Land Valuation Application
Peta NBT	:	Parcel-based Land Value Map
Peta ZNT	:	Zone-based Land Value Map
PMK	:	Regulation of the Minister of Finance
PNBP	:	Non-Tax State Revenue
PNBP	:	Non-Tax State Revenue
PO	:	Plan Operation
PPh	:	income tax
PPP	:	Public Private Partnership
PSN	:	National Strategic Project (Proyek Strategis Nasional)
PU/PUPR	:	Ministry of Public Works and Housing
PUSDATIN	:	Data Center (Pusat Data dan Informasi Pertanahan, LP2B Kementerian Agraria dan Tata Ruang/Badan Pertanahan Nasional Republik Indonesia)
QGO	:	Quasi-Governmental Organization
RDB	:	space below the ground surface
Renstra	:	Strategic Plan
SIPP	:	Planning and Preparation Information System (Sistem Informasi Perencanaan dan Persiapan)
SIPT	:	Land Acquisition Information System (Sistem Informasi Pengadaan Tanah)
SPI	:	Indonesian Appraisal Standards
TOT	:	Training on Trainers
UUPA	:	Agrarian Basic Law
VLC	:	Vertical Land Consolidation
ZNT	:	Zone-based land value

## Chapter I. Basic Information

### I.1 Project Outline

#### I.1.1 Background

##### I.1.1.1 Status and issues of the sector at the time

The procedure for acquiring land for public works projects in Indonesia had been carried out based on several relevant regulations that went back to Basic Agrarian Law (UU) 5/1960. However, those regulations did not stipulate the details of land acquisition procedures nor mentioned any compulsory land acquisition for public interests except Law (UU) 20/1961 on “Revocation of land right and/or object over land”, and Presidential Regulation (Perpres) 36/2005 on “Land acquisition for development implementation of public interests” and its amendment, Presidential Regulation (Perpres) 65/2006, all of which had not been fully executed. Together with no effective regulatory framework, there were also reasons of delayed land acquisition such as lack of implementation capacity on the government side and disagreement in land provision on the land owner side due to price dissatisfaction, difficulties in identifying right holders etc. Land acquisition has continued to be a major factor of hindering infrastructure development in Indonesia.

In response to these situations, Land Acquisition Law (UU) 2/2012 was enacted followed by Presidential Regulation (Perpres) 71/2012 and National Land Agency (BPN) Regulation (Permen) No. 5/2012 as well as Ministry of Home Affairs Regulation (Permen) 72/2012 and Ministry of Finance Regulation (Permen) 13/2013. Since then, BPN (note: in 2014 with the inauguration of the new government, BPN was reorganized by merging spatial planning function from the then Ministry of Public Works into Ministry of Agrarian Affairs and Spatial Planning /BPN (ATR/BPN)) has been held responsible for maintaining legal system and realizing smooth implementation of land acquisition for public interests.

The above law and regulations stipulate a series of procedures related to land acquisition for expropriation, responsible agencies for those procedures, and processing period for each procedure. More specifically, four phases are defined as the procedure of acquiring land for public works projects: (1) planning, (2) preparation, (3) implementation, and (4) handover. If calculated in line with the law and regulations, land acquisition for public interests can be completed in 289 days at the shortest and 532 days at the longest. Phase (3) and (4) become mainly ATR/BPN’s responsibility while phase (1) is conducted by implementing agencies and phase (2) by local governments. The issue in this separation of roles and responsibilities is that: 1) ATR/BPN then did not have sufficient know-how, human resources, organizational structure, equipment, etc. necessary for implementation of land acquisition; 2) ATR/BPN did not actively engage in phase (1) and (2); 3) collaboration and information sharing of land acquisition projects among implementing agencies, local governments and ATR/BPN did not well organized.

In order to realize reliable and prompt land acquisition for public works projects, it was recognized that the provision of legal framework alone was not sufficient, and ATR/BPN’s capacity enhancement was urgently required. Under such circumstances, the Government of Japan was requested to provide

technical cooperation for the purpose of strengthening the capacity of ATR/BPN, who is to be responsible for the implementation of land acquisition under the law and regulations.

#### I.1.1.2 Development policy of the sector and positioning of the project

The administration of President Joko Widodo, which was launched in November 2014, set up a basic policy called Nawa Cita. Under this policy, development of urban and regional infrastructure was emphasized to strengthen national productivity and international competitiveness. The administration was strongly recognizing that smooth and planned implementation of land acquisition is necessary for infrastructure development, and giving a high priority to securing land for public works projects. Priority Infrastructure Development Promotion Committee (KPPIP), which was established in 2014 having related ministers as a member was held responsible for accelerating development of National Strategic Projects (PSN) in response to the intention of the administration. KPPIP also aimed to facilitate land acquisition for PSN by establishing a working team of land acquisition which has never been realized. This project, which aimed to strengthen the implementation system and capacity of land acquisition according to the law and regulations, was in line with the development policy priorities of the government of Indonesia.

#### I.1.1.3 JICA's assistance policies to the sector of Indonesia

The country-specific assistance policy for Indonesia cited at the time "support for further economic growth" as a priority area, and stipulated support for infrastructure development centered on the Jakarta metropolitan area. In addition, the Japan-Indonesia Joint Statement in March 2015 agreed to launch the Japan-Indonesia Investment and Export Promotion Initiative (PROMOSI), and it was confirmed that Japan was continuing supports in developing high-quality infrastructure to improve the business and investment environment. This project would provide technical cooperation for the smooth implementation of land acquisition, which is indispensable for infrastructure development, and contributes to solving delays in infrastructure development projects due to land acquisition problems. Hence the project was also in line with the assistance policies of Japan and JICA.

### I.1.2 Project Design Matrix (PDM)

#### I.1.2.1 PDM ver.0 and ver.1

The Record of Discussions on Project for Capacity Development for Land Acquisition System Improvement in Indonesia (RD) was signed on May 24, 2017, with Project Design Matrix (PDM) and Project Operation (PO) attached as reference. The attached PDM, PDM ver.0, stipulated the narrative summary as follows:

##### (1). Overall Goal

Land acquisition in implementation and delivery phase are implemented smoothly in accordance with the new legal framework.

##### (2). Project Purpose

Capacity of ATR/BPN for land acquisition is strengthened.

##### (3). Outputs

- (a) Systems and technologies for smooth land acquisition are strengthened

- (b) Implementing skills/ knowledge of land acquisition staff are enhanced
- (c) ATR/BPN's function to coordinate relevant organizations of land acquisition is strengthened

With Activities, Inputs and Project period as well as Indicators and Assumptions included, PDM ver.0 was approved by the 1st Joint Coordinating Committee (JCC) meeting held on March 19, 2018, becoming PDM ver.1.

#### I.1.2.2 PDM ver.2 and ver.3

RD has been amended twice. The first amendment of RD was signed on September 17, 2019. Since the JICA's financial problem were occurring when the project started, the inputs of Japan side had been delayed around a year later than planned in PO. Due to the delay, activities of the output 2 and 3 were rescheduled and countermeasures against the delay have been conducted. For example, during the 1st Technical Meeting on May 9, 2018 both sides agreed on the revised schedule of activities as in PO ver.1 as well as modification of activities as in PDM ver.1 based on importance and priority of ATR/BPN since some circumstances had been changed from the time of RD signing in 2017. More specifically, regarding rescheduling, OJT and the pilot projects were rescheduled to start in 2019. With regard to modification of activities, OJT and trainings were more intensely to be conducted instead of a classroom training with Education and Training Center (DIKLAT). These changes were jointly monitored at the 4th Technical Meeting on January 11, 2019. They were also reported to the 2nd JCC meeting on April 5, 2019 as draft PDM ver.2 and draft PO ver.2 which were officially approved by the first amendment of RD.

The second amendment of RD was signed on January 27, 2021 in accordance with the results of the 3rd JCC meeting held on October 24, 2020. The second amendments of RD were: 1) extension of the project period until October 31, 2022 from previously until March 14, 2021; 2) additional activities to Activity 1-6 such as land bank, land economics, land management in accordance with the 5-year Strategic Plan (Renstra 2020-2024); 3) adding 3D Measurement System development to Activity 2-1; 4) relating equipment input of Structure from Motion(SfM) system; and 5) rescheduling or increasing activities of existing activities during the extended project period. In line with the amendments, PDM and PO were amended into their version 3 and version 5 respectively.

For the document of RD and its amendments, PDM and amendments, and PO can be seen in the reference part of this report.

### I.1.3 Activities and Achievements

#### I.1.3.1 Activities

The activities have been amended twice as mentioned above. Their first amendment in PDM ver.2 were caused by unexpected changes of the assumption including: 1) no realization of Land Acquisition Working Team under KPPIP which re-directed the project to take more care of cross-institutional aspects; and 2) cancelation of the training with DIKLAT because of similar training having been conducted before the project started. Their second amendment in PDM ver.3 were reflected by the circumstances at the time of land administration and changes of the government organization as well as

land policy and strategy in line with Renstra 2020-2024. These amendments are summarized in the Table I.1.

#### I.1.3.2 Achievements

The achievements are summarized in the table I.2 The table shows each activity by deliverables wise. Since the year of 2020, there has been issued new laws, government regulations and presidential/ministerial regulations as well as new 5-year strategic plan, that affect ATR/BPN land administration. Due to the changes in policy and regulatory framework, the project needed to review and amend some deliverables which had already been developed. The project was also required to develop deliverables as computer systems instead of documentation products to cope with e-government policy. The indicators for each output evaluated the deliverables and proved the achievement to be appropriate.

Table I.1 Activities and their amendments

note: boldface for change

No	As in PDM Ver. 0 and PDM Ver.1	As in PDM Ver. 2	As in PDM Ver. 3
1.1	To review legal framework of land acquisition with viewpoints of effective procedure and fair compensation	No change	No change
1.2	To review organizational arrangement in land acquisition of ATR/BPN's HQs and Regional/ Land offices	No change	No change
1.3	To develop SOP for land acquisition in collaboration with LAWT of KPPIP including monitoring and evaluation system	<b>To develop integrated implementation documents (Ex. DPPT, SOP) and to examine roles and responsibilities related to land acquisition from Planning, Preparation, Implementation to Transfer</b>	No change
1.4	To prepare supportive documents such as practical manuals/ guidelines for survey, measurement, mapping, verification of compensation and registration	No change	No change
1.5	To manage information sharing data base for PAPs and their assets through Planning, Preparation and Implementation stages by Computer-based Land Acquisition Application	<b>To Provide support on IT system improvement to expand interface and coverage of land Acquisition Information System (SIPT) under KKP.</b>	No change

1.6	To support relevant works such as non-registered land registration, Land Value Zone Map through KKP, area/space development and Land Consolidation/Land Rights	No change	To support relevant works such as non-registered land registration, <b>Parcel-based Land Valuation</b> , Land Value Zone Map through KKP, area/space development and Land Consolidation/Land Rights, <b>as well as Land reserve, Land economics, management and development in accordance with Renstra 2020-2024</b>
2.1	To develop training materials for land acquisition implementation from the SOP and manuals/guidelines	No change	To develop training materials for land acquisition implementation from the SOP and manuals/guidelines <b>including Mobile System and 3D Measurement System</b>
2.2	To conduct trainings for land acquisition O&M with DIKLAT and in Japan	<b>To provide training courses and study tours in Japan</b>	No change
2.3	To conduct OJT in pilot project(s) regarding to survey, mapping and confirming appraisal for inventory and identification of PAPs and their assets	<b>To upgrade ATR/BPN's capacity through trainings and support in implementation by OJT at land offices</b>	No change



2.4	To monitor and evaluate post-training at selected office(s)	No change	No change
3.1	To develop checklist of Land acquisition Planning Document and Standard Level Agreement between each stage	To develop checklist of Land acquisition Planning Document and Standard Level Agreement between each stage, <b>to review Technical Guideline of Land Consolidation</b>	No change
3.2	To make collaboration plan and establish a system to facilitate coordination for Pilot Project(s) among IA, local government and ATR/BPN	No change	No change
3.3	To practice model documentation of inventory, negotiation and agreement history of PAPs and their assets	To practice model documentation of inventory, negotiation and agreement history of PAPs and their assets <b>as well as a trial operation of expanded SIPT</b>	To practice model documentation of inventory, negotiation and agreement history of PAPs and their assets as well as a trial operation of expanded SIPT <b>with risk mitigation included</b>
3.4	To apply the SOP and to identify necessary adjustment to be made to the SOP through Pilot Project(s)	To apply the SOP and to identify necessary adjustment to be made to the SOP through Pilot Project(s) <b>for Land Acquisition, and the guideline for Land Consolidation</b>	No change

3.5	To summarize lessons learned on problem solving and to establish a system of making a proposal to LAWТ if the problem is on an interdepartmental policy issue	To summarize lessons learned on problem solving and <b>to itemize necessary subjects to be the background of forming new regulations to cover interdepartmental policy issues</b>	No change
3.6	To disseminate Project deliverables through WS	No change	To disseminate Project deliverables through WS <b>and in visual materials by creating videos</b>

Table I.2 Achievements evaluated with Deliverables by Indicators

Note: PDM's indicators in blue

<b>1. Deliverables for Output 1: Institutional and System Improvement</b>			
	<b>Activities</b>	<b>Achievements</b>	<b>Indicators for Output 1</b>
1.1	<p>DPPT Manual and Integrated SOP for Four Phases of Land Acquisition</p> <ul style="list-style-type: none"> <li>- Reviewing in line with new regulations</li> <li>- Feedback and adjustment through pilot project</li> </ul>	<ul style="list-style-type: none"> <li>- Final draft completed and disseminated in 2018</li> <li>- Final draft reflected to 1st SIPP in 2019 and new regulations in 2020</li> </ul>	<p>(1) SOP is developed and authorized in ATR/BPN.</p> <p>DPPT Manual and Integrated SOP was drafted and land acquisition SOP has been enacted by Permen 19/2021.</p>
1.2	<p>Expansion of SIPT</p> <ul style="list-style-type: none"> <li>- System development of 1st SIPP</li> <li>- 2nd SIPP development in line with new regulations</li> <li>- Adjustment through pilot project</li> </ul>	<ul style="list-style-type: none"> <li>- 1st SIPP developed in 2019</li> <li>- 2nd SIPP developed inline with new regulations in 2021</li> <li>- Adjustment through pilot project conducted in 2022</li> </ul>	<p>(2) Information sharing data base is used and kept updated.</p> <p>SIPP has been developed with an interface to data base/collection system, and interrelated with SIPT.</p>
1.3	<p>System development for OJT</p> <ul style="list-style-type: none"> <li>- Photo-captured system for UAV-GIS system utilization</li> <li>- Mobile system</li> <li>- 3D Measurement System</li> </ul>	<ul style="list-style-type: none"> <li>- Advance UAV utilization of spatial data collection introduce in 2019 - 2022</li> <li>- 1st Mobile system in 2019 and 2nd in 2021</li> <li>- 3D Measurement system developed in 2021</li> </ul>	<p>(3) Practical manuals/guidelines are prepared and authorized in ATR/BPN.</p> <p>Supporting system for land acquisition works such as advance UAV utilization, Mobile system and 3D measurement system was developed and used at OJT</p>

1.4	<p>PENTABIT</p> <ul style="list-style-type: none"> <li>- System improvement from PB1.0 to PB3.0 (2018-2020)</li> <li>- Development of PB4.0 (March 2022)</li> </ul>	<ul style="list-style-type: none"> <li>- PB1.0 to PB3.0 developed in 2018-2020</li> <li>- PB4.0 developed in March 2022</li> </ul>	<p>(3) Practical manuals/guidelines are prepared and authorized in ATR/BPN.</p> <ul style="list-style-type: none"> <li>- PentaBit was developed and operated in Sipenta of ATR/BPN</li> <li>- Technical Guideline and VLC potential and feasibility quick check have been developed</li> <li>- Land Bank Agency was established at end of 2021 and relevant supporting studies were conducted.</li> <li>- Study results were discussed among stakeholders at FGDs .</li> </ul>
1.5	<p>Technical Guideline for Vertical Land Consolidation</p> <ul style="list-style-type: none"> <li>- Technical guideline</li> <li>- System development</li> <li>- Promotion video</li> </ul>	<ul style="list-style-type: none"> <li>- Final draft completed in 2021 and finalization is underway</li> <li>- VLC Software development for potential and feasibility quick check analysis completed in March 2022</li> <li>- Creation of VLC promotion video is underway</li> </ul>	
1.6	<p>Technical inputs for Land Rights above and below Ground and Land Bank</p>	<ul style="list-style-type: none"> <li>- FGDs in 2021 and 2022</li> <li>- Conducted are Development of Business plan, Development of Highest and best use of Land Bank Lands and Business models of land development</li> </ul>	
1.7	<p>Government land use and TOD</p> <ul style="list-style-type: none"> <li>- Study on IKN development by TOD of government assets under PPP scheme</li> <li>- Study on Land Development for economic benefit, ex. TOD and Land Value Capture</li> </ul>	<ul style="list-style-type: none"> <li>- Study result and FGD in 2019</li> <li>- Proposal of new JICA Technical Cooperation submitted to Bappenas in August 2022</li> <li>- Preliminary study on Land Development is underway</li> </ul>	

<b>2. Deliverables for Output 2: Enhancement of Skills/Knowledge by Training</b>			
	<b>Activities</b>	<b>Achievements</b>	<b>Indicators for Output 2</b>
2.1	Study Tour to Japan	Conducted in 2018 (9 participants), 2019 (10) and 2022 (11)	<p>(1) Training materials and programs for land acquisition are prepared.</p> <p>Syllabus of OJT and training materials of Mobile System, Advance UAV Utilization, and 3D Measurement system developed</p> <p>(2) Training courses are conducted by 9 times and more than 450 trainees are trained.</p> <p>9 times of OJT and 459 trainees in total</p> <p>(3) Staff feel more confident and determined about their duties and assignments.</p> <p>Positive answer to questionnaire of each training course</p>
2.2	OJT at Land offices	OJT at 9 locations conducted in 2019 and 2022, each had a Regional office and its Land offices. Substitute on-line training for 3 locations conducted in 2021	
2.3	3D Measurement System	System development completed in 2022	
<b>3. Deliverables for Output 3: Coordination with Relevant Organizations through Pilot Project</b>			

	Activities	Achievements	Indicators for Output 3
3.1	Pilot Project - Land Acquisition	<ul style="list-style-type: none"> <li>- Test operation of 2nd SIPP conducted in February 2022</li> <li>- SIPP is operated in pilot project</li> </ul>	<p>(1) Bottlenecking of land acquisition process are identified.</p> <p>SIPP has been developed with close collaboration with land acquisition practitioners to solve identified bottlenecks</p> <p>(2) Checklist(s) for the items to be covered in land acquisition plan, which is prepared by implementing agencies at planning phase, are prepared.</p> <p>SIPP has been installed with a checking function and function to enter the data, and functioned at the test operation.</p>
	- Vertical Land Consolidation	- VLC Feasibility Software and VLC Promotion Video developed in March and September 2022 respectively.	VLC Feasibility Software has been developed to enhance C/P's capability for project identification and VLC planning and inspection.

#### I.1.4 Achievement of the project objectives

The objectives of this project were achieved as follows.

Table I.3 Status of achievement of project objectives

Objective	Achievement Status
Review laws that serve as the base for land acquisition, existing standard operating procedures, existing systems, surveying methods, etc.	In the activities of the long-term expert in FY2018, the legal system and organizational structure were reviewed, and issues and activities in this project were proposed. In addition, in FY2019 activities, by reviewing the work contents of ATR/BPN regional offices, JICA project team confirmed the existing standard operating procedures, systems, and survey methods, then extracted points for improvement, and reflected them in the OJT plan.
Conduct technology transfer through pilot projects and optimize work processes and methods	Through technology transfer by OJT conducted at 9 locations, the digitization of land acquisition work performed by ATR/BPN staff has improved efficiency and accuracy. JICA project team also conducted training for the introduction of new technologies (UAV, mobile system, 3D measurement). As a result, work processes and methods were optimized properly.
To strengthen the capacity of ATR/BPN to implement land acquisition	In light of the above, the ATR/BPN's capacity to implement land acquisition was strengthened, and the objectives of the project were achieved.

#### I.1.5 Effects expected from the project outputs (contribution to the overall goal)

The following effects are expected for the smooth process of the implementation and the rights transfer phases of land acquisition in line with the new legal framework.

- (1) By systematizing the entire process of land acquisition, including not only the implementation and the rights transfer phases, but also the planning and preparation phases which is the upstream processes of land acquisition, land acquisition information can be handed over to the implementation phase more accurately and quickly.
- (2) A system and mechanism for inter-organizational collaboration was established through the system of AI in charge of the planning phase, local governments in charge of the preparation phase, and ATR/BPN in charge of the implementation and rights transfer phases. This will enable smooth information sharing between phases of land acquisition.

#### I.1.6 Recommendations for sustainability of the project effects after the project completion

##### Recommendation 1. Further strengthening of coordination between central and local organizations in ATR/BPN

Improvement of the land acquisition process, system development, introduction of new technology, etc. are considered at the ATR/BPN headquarters, transferred and propagated to each local land office via the state land office. Currently, local offices are passive in response to the

implementation of new initiatives at the headquarters, and there are cases where issues on the local offices do not reach the headquarters. In addition, due to differences in the situation of each local office and regional characteristics, there are cases where land acquisition is forced to be implemented using a process different from the implementation process considered by the headquarters. In order to resolve these issues and improve the process of land acquisition across ATR/BPN, ATR/BPN regularly holds technical exchange meetings. However, not all land offices in 34 provinces and more than 450 regencies and cities are in two-way talks with the headquarters in Jakarta. Since COVID-19, the number of discussions using web conferences has increased, however it is desirable to strengthen cooperation by further increasing the number of opportunities for discussions and technical exchanges between the headquarters and local offices.

#### Recommendation 2. System maintenance and regular improvement update

For each system developed in this project, ATR/BPN must not only use it for actual land acquisition work, but also extract correction points and improvement points while using it in the works, develop regularly system improvements, and manage data and users. In order to do so, it is necessary to secure personnel in charge of these tasks, secure the budget, and build a system of collaboration between the officers that use the system and the system administrator. It is also important to systematically secure the system and budget for large-scale renovations or system replacement every few years. For this reason, even during the period of this project, JICA project team developed the systems jointly with ATR/BPN. In addition, the local consultant that supported the development work was selected in the condition with a track record of system maintenance work at the ATR/BPN data centre.

#### Recommendation 3. Continue voluntary training by ATR/BPN using manuals and guidelines

In this project, OJT was conducted at 9 locations, and more than 450 ATR/BPN officers participated in the training, including online training. However, there are still many offices that have not implemented OJT, and there are staff changes due to job transfers, etc. Therefore, it is desirable that all land offices conduct continuous training regardless of whether OJT has been implemented or not. As an activity of this project, manuals and guidelines for training were developed and handed over, but regular reviews and updates are required for these as well. The 9 locations where OJT was conducted were selected by the ATR/BPN headquarters as important districts. During or after OJT, JICA project team explained the purpose, content, and importance of OJT to senior staff in each district. In the future, the achievements of this project can be expected to be sustained through systematic and continuous updating of documents and conducting the training by ATR/BPN.

#### I.1.7 Issues to be addressed in the future

Appropriate conducting of land acquisition will lead to good infrastructure development in the future, which in turn will contribute to the development of the economy and society. Land acquisition is a part of land administration, and when looking at land administration in general from this perspective, for example, not only land acquisition, but also land consolidation and urban re-development might be methods to secure necessary land and improve the living environment of local residents while



developing infrastructure and land. In addition, the land bank for developing underutilized land and unused land will also lead to social environment improvement such as fair land distribution, revitalization of the land trading market and economic development. In the future, by introducing these modern land management systems, it will be necessary to consider efforts from a broader perspective, such as raising the overall level of land administration, with the keyword "From land expropriation to Land development."

## I.1.8 Counterparts and Joint Coordinating Committee (JCC)

### I.1.8.1 Implementation structure of the project

ATR/BPN has provided Project Director and Project Manager as well as assigned their officials engaged in each activity. The project director was occupied by the then Director General of Land Acquisition and the project manager was by the then Director of Government Land Acquisition and Determination Development, both positions having been succeeded by the corresponding Director General and Director after the organization restructuring. The Figure I.1 shows the project implementation structure including counterpart organizations

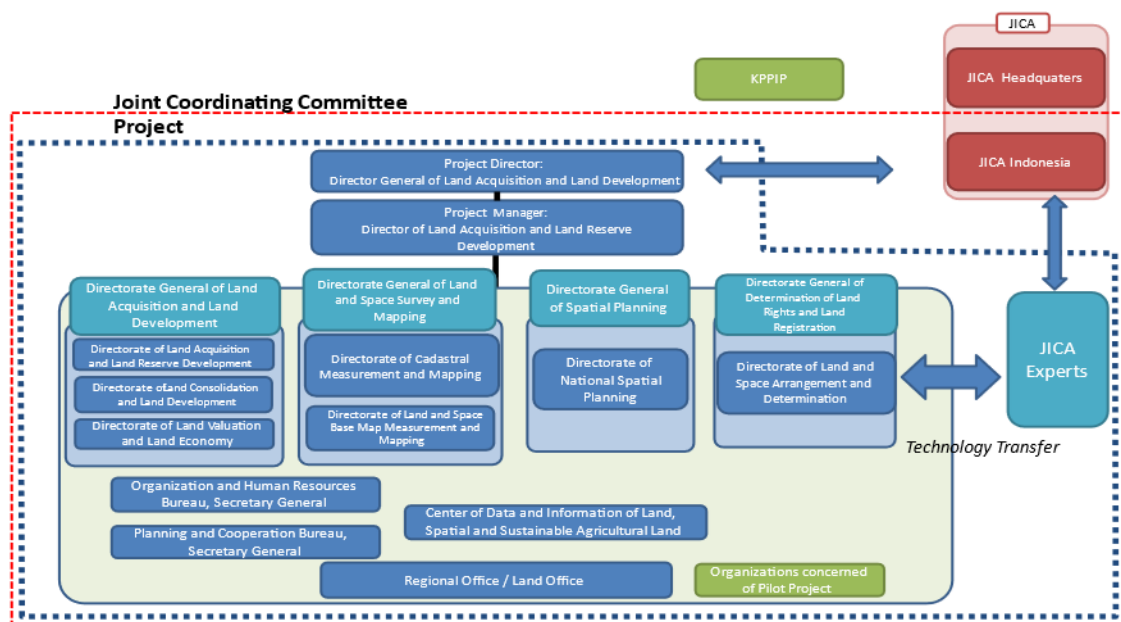


Figure I.1 Implementation structure of the project (after 2020)

During the project period, JCC was conducted four times chaired by the project director:

- (1). 1st JCC meeting on March 19, 2018 to confirm project components, to discuss updated land issues of ATR/BPN's concerns and importance and to approve the project implementation plan for project kick off;
- (2). 2nd JCC meeting on April 5, 2019 to report achievements of 2018 on DPPT manual and PentaBit as well as the study tour in Japan, and to approve activities of 2019 on system development and OJT of land acquisition, etc.

- (3). 3rd JCC meeting on October 24, 2020 by online due to COBIT-19 to agree extension of the project period for one and half years, and to expand project aspects in accordance with ATR/BPN Renstra 2020-2024; and
- (4). 4th JCC meeting on December 7, 2021 to confirm project activities and achievements so far and to approve activities until end of the project.

In addition to JCC, the Technical Meeting which was not officially stipulated in RD was conducted especially in the early time of the project to help with a smooth commencement of each activity:

- (1). 1st Technical Meeting on May 9, 2018 to confirmed action plan for 2018 and project operation for the 3 years.
- (2). 2nd Technical Meeting on June 22, 2018 to confirm demarcation on DPPT guideline with ADB and manual/SOP development for practical use.
- (3). 3rd Technical Meeting on August 14, 2018 to discuss issues on Land rights above/ below ground and land consolidation, and to share cases of Japan and outline of draft Permen for land rights above/below and Vertical Land Consolidation; and
- (4). 4th Technical Meeting on January 11, 2019 to discuss the progress of 2018 activities and the plan of 2019 activities.

The 4th Technical Meeting also proposed a working team for each activity which was later approved at the 2nd JCC. Since then, the working team for each activity as shown in the table I.4 has been held responsible for the implementation.

Table I.4 Activity and Working Team

Activity	Person in Charge	
1-1 DPPT Manual and Integrated SOP for Four Phases of Land Acquisition	<ul style="list-style-type: none"> <li>- Dit. Bina Pengadaan dan Pencadangan Tanah</li> <li>- Sekretariat Direktorat Jenderal Pengadaan Tanah dan Pengembangan Pertanahan</li> </ul>	Nobuyuki Tsuneoka Pasco
1-2 Expansion of SIPT	<ul style="list-style-type: none"> <li>- Dit. Bina Pengadaan dan Pencadangan Tanah</li> <li>- Dit. Penilaian Tanah dan Ekonomi Pertanahan</li> <li>- Pusdatin</li> </ul>	Nobuyuki Tsuneoka Pasco
1-3 PENTABIT	<ul style="list-style-type: none"> <li>- Dit Penilaian Tanah dan Ekonomi Pertanahan</li> </ul>	Nobuyuki Tsuneoka
1-4 Technical Guideline for Vertical Land Consolidation	<ul style="list-style-type: none"> <li>- Dit. Konsolidasi Tanah dan Pengembangan Pertanahan</li> </ul>	Ryuji Yamasaki Tamano

Activity	Person in Charge	
1-5 Technical inputs for Land Rights above and below Ground and Land Bank	<ul style="list-style-type: none"> <li>- Ditjen Penetapan Hak dan Pendaftaran Tanah</li> <li>- Dit Penilaian Tanah dan Ekonomi Pertanahan</li> </ul>	Nobuyuki Tsuneoka Tamano
1-6 Government land use and TOD  Study on Land Development for economic benefit, ex. TOD and Land Value Capture	<ul style="list-style-type: none"> <li>- Former Dit. Pemanfaatan Tanah Pemerintah</li> </ul>	Nobuyuki Tsuneoka Tamano
2-1 Training Course  <ul style="list-style-type: none"> <li>- Land Consolidation (1)</li> <li>- Public Participation (1)</li> <li>- Urban Planning (1)</li> <li>- Agriculture land title (1)</li> </ul>		Nobuyuki Tsuneoka
2-1 Study Tour (10 persons)		Nobuyuki Tsuneoka Pasco
2-2 OJT at Land offices	<ul style="list-style-type: none"> <li>- Dit. Bina Pengadaan dan Pencadangan Tanah</li> <li>- Ditjen Survey dan Pemetaan Pertanahan dan Ruang</li> <li>- Kantah/Kanwil</li> </ul>	Nobuyuki Tsuneoka Pasco
2-3 3D Measurement System	<ul style="list-style-type: none"> <li>- Ditjen Survey dan Pemetaan Pertanahan dan Ruang</li> <li>- Kantah/Kanwil</li> </ul>	Nobuyuki Tsuneoka Pasco
3-1 Pilot Project  <ul style="list-style-type: none"> <li>- Land Acquisition</li> <li>- Vertical Land Consolidation (or TOD)</li> </ul>	<ul style="list-style-type: none"> <li>- Dit. Bina Pengadaan dan Pencadangan Tanah</li> <li>- Kantah/Kanwil</li> </ul>	Nobuyuki Tsuneoka Pasco
	<ul style="list-style-type: none"> <li>- Dit. Konsolidasi Tanah dan Pengembangan Pertanahan</li> <li>- Kantah/Kanwil</li> </ul>	Nobuyuki Tsuneoka Ryuji Yamasaki

Activity	Person in Charge
	Tamano Pasco

### I.1.8.2 Organization and structure of ATR/BPN

ATR/BPN was established in 2015 with one Secretariat General and seven Directorates General shown in the Figure I.2.

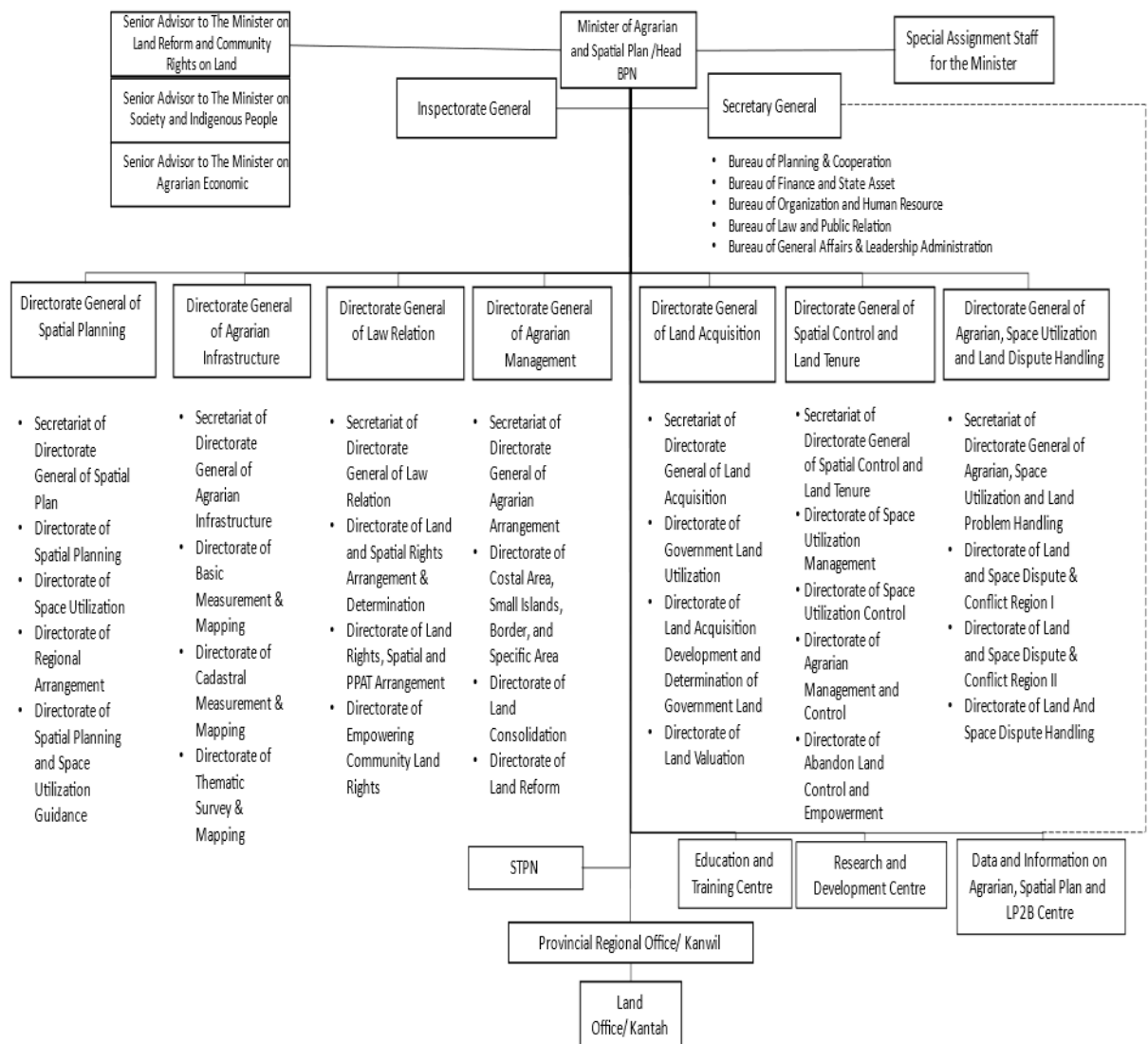


Figure I.2 Organization of ATR/BPN when the Project Started

In 2020 ATR/BPN restructured their organization as shown in the Figure I.3. One of the strategic restructurings related to the project was for strengthening a role and function of the land development. Renstra 2020-2024 also stipulates its policy direction and strategy for Land Development and regulatory framework for Land Bank establishment as shown in the Figure I.4.

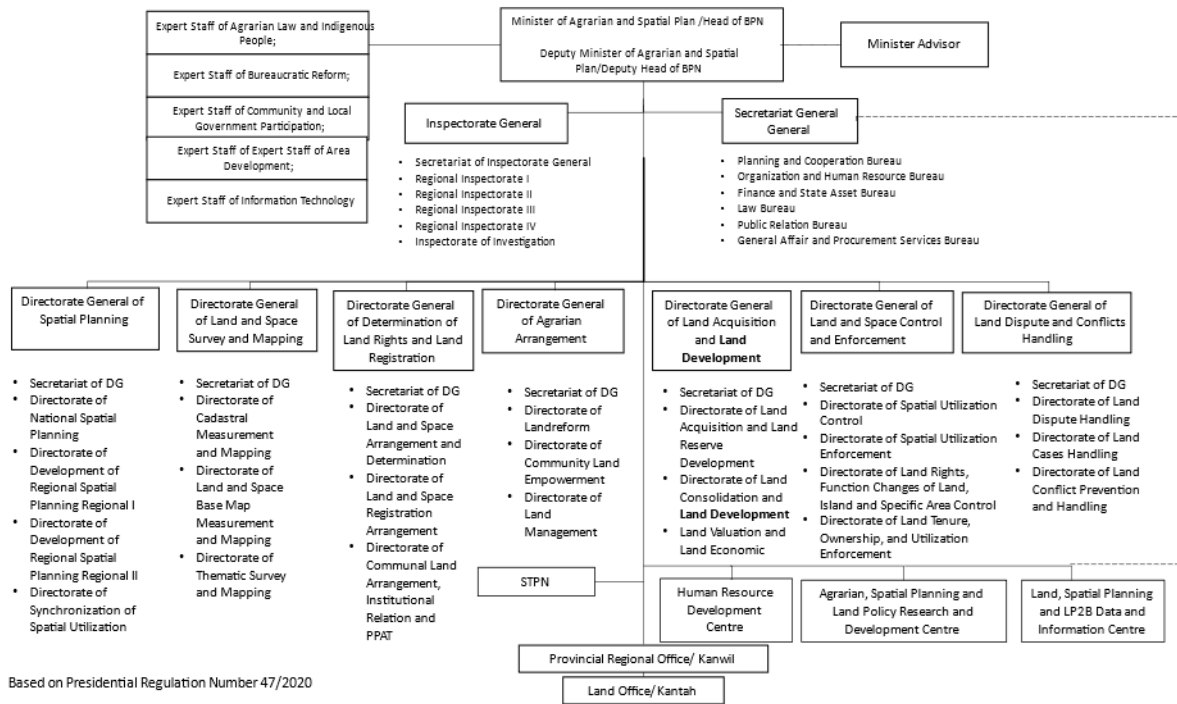


Figure I.3 Organization of ATR/BPN after restructuring

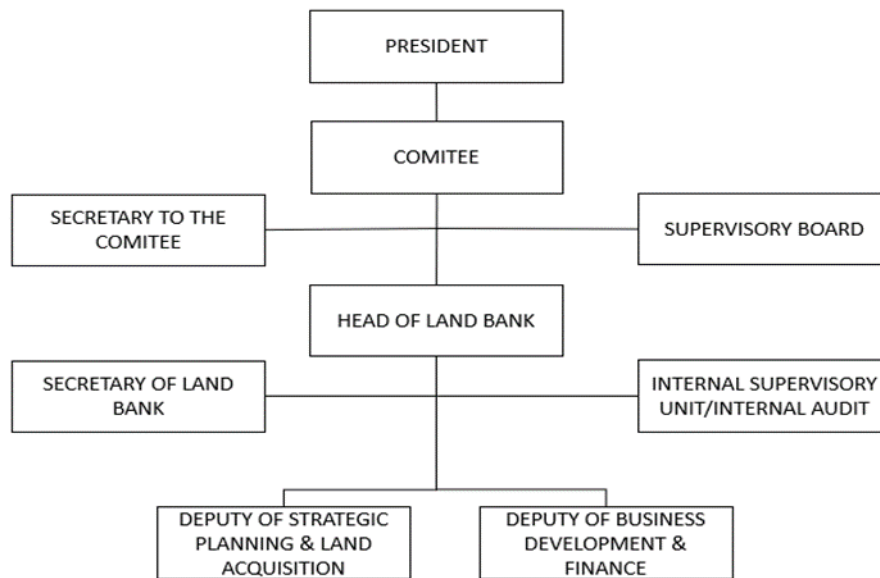


Figure I.4 Organizational of Land Bank at establishment

### I.1.9 Counterpart training in Japan

The counterpart training in Japan was conducted three times, in 2018, 2019 and 2022. All three were programed as a study tour for high-level ATR/BPN officials, consisting of policy dialog with government officials of Japan and related site inspection. Topics encompassed: 1) 3-dimension land right, Sectional Superficies; 2) compulsory land acquisition, expropriation system; 3) land valuation,

Standard land price publication system; 4) urban redevelopment, TOD, vertical or rolling land consolidation system; 5) land banking, accumulation of agriculture land; and 6) land registration.

In addition, two study tours to Japan for middle-level ATR/BPN officials financed by the counterpart were conducted. One is on land and space rights and use with 16 participants in August 2019, and another on land rights, land surveying and registration with 13 participants in December 2019.

For more details related to the participants, can be seen in Attachment I.1 Counterpart Training Participant List 2018 with itinerary, Attachment I.2 Counterpart Training Participant List 2019 with itinerary, and Attachment I.3 Counterpart Training Participant List 2022 with itinerary

### I.1.10 Equipment

As in the table I.4, the equipment by the input of Japan side was planned in RD of May 24, 2017. However, Indonesia side had got such equipment for OJT and the pilot projects. It had been discussed by both sides and decided to replace GNSS receiver (Rover) and Total Station with Drone system and GIS soft and server as in PDM ver. 2.

As mentioned in the section 1.2.2, Structure from Motion (SfM) system was added in order for 3D Measurement System development as in PDM ver.3.

Table I.5 Input from Japan side

Note: boldface for change

No	As in PDM Ver.0 and Ver.1	As in PDM Ver.2	As in PDM Ver.3
1	Experts (1) Institutional framework/ Land acquisition planning (2) Land valuation/ Land title/ Land development (3) Land survey/ Measurement (4) GIS mapping/ System development (5) Coordination/ Land registration/ Training Preparation (6) Local consultant(s)	No change	No change
2.	Equipment (1) GNSS receiver (Rover) (2) Total Station	Equipment (1) <b>Drone system</b> (2) <b>GIS soft and server</b> (3) Working Station	Equipment (1) Drone system (2) GIS soft and server

No	As in PDM Ver.0 and Ver.1	As in PDM Ver.2	As in PDM Ver.3
	(3) Working Station		(3) Working Station (4) <b>Structure from Motion(SfM) system</b>
3.	Workshop	No Change	To add ones during extended period
4.	Training in Japan	No Change	To add programs in FY2021

### I.1.11 Workshop

Several workshops or seminars of ATR/BPN's general or specific events have been held by their own expenses, providing the project with opportunities to disseminate project achievements such as:

- (1). WS on land valuation for PentaBit (Parcel-based Land Value Application) introduction in November 2018;
- (2). Rakernis (general meeting of land acquisition function) for a draft DPPT manual and integrated SOP in March 2019;
- (3). FGD for government land use and TOD by PPP scheme in October 2019;
- (4). Raker (coordinating meeting of land development function) for JICA technical cooperation March 2020;
- (5). Bimtek (Technical Assistance of LC Implementation) for a draft technical guideline of VLC and for VLC planning software in March 2022; and
- (6). FGDs for Land Bank study in June 2021, November, 2021 and March 2022

## I.2 Principle of Land Law in General

### I.2.1 Agrarian Basic Law

Before UUPA (agrarian basic law), land law in Indonesia is dualism, there is customary law which religious-communalistic and unwritten law, and the other hand there is law land regulated in KUH Perdata (code of civil law) that individualistic liberal and a written law. Regulation on the code of civil law is imposed to Dutch people and foreign eastern groups (Chinese, Arabian). Meanwhile, customary law is for the Indonesian people. This law dualism is caused by the colonial law politics (Dutch) to take their law to the colonized country for their people and let the colonized society by their law.<sup>1</sup>

As the effect of law dualism, there are 2 kinds of land such as land with the west land right like *eigendom*, *erpacht*, *postal*, etc, and Indonesian land, which is customary land. Another effect occurred

<sup>1</sup> Boedi Harsono, Hukum Agraria Indonesia, 12<sup>th</sup> edition (Jakarta: Trisakti University publisher), page 68

that west land right is already implementing a land registration and mapping in the Cadastre office. But meanwhile, the customary land is not registered, so there is no legal certainty.

Because of that reason, UUPA was enacted on September 24<sup>th</sup>, 1960. UUPA is a national land law. Therefore, the law shall be suitable to the Indonesian personality. The descriptions of that national land law are:

- (1). Customary law shall be the basis;
- (2). Need a simple law, by eliminating legal dualism, it will provide legal simplicity;
- (3). Give a legal certainty;
- (4). Must contain elements of religion. Land law must not ignore elements that rely on religious law, which is in accordance with Pancasila, especially the first principle.
- (5). Shall according to the public interest;
- (6). Shall fulfil the demands of time.<sup>2</sup>

As explained above, customary law should be a basis of land law in Indonesia. The concept of religious-communalistic in land law consist of:

- (1). individual
- (2). Joint land

Joint land has a public element and contain an obligation to control, mastery land, maintenance, design and utilize. This obligation is carried out by the customary head.

This religious communalistic was adopted by agrarian basic law, so the land belongs to the nation. But to function control cannot be done by the nation and authorized to the highest citizen organization namely the state. This stated in article 3 paragraph 3 the 1945 institution:

*“The earth, water and natural resources contained therein are controlled by the State and used for the greatest prosperity of the people”*

Hak Menguasai Negara (The right to control by the state) as the same as ulayat land (customary land) doesn't mean “owned the land” but give the authority to the state to:

- (1). arranges and carried out the designation, used, supply and maintenance
- (2). determines and regulate rights that can be owned by (part of) the earth, water and space;
- (3). determines and regulate legal relations between people and legal actions concerning the earth, water and space

This hak menguasai negara is limited to the land that already has a land title, but for the land that has not a land title, the state has a fully power.

Based on hak menguasai negara tersebut, Agrarian basic law organizes the land right in Indonesia. Article 16 paragraph 1 Law (UU) 5 1960 on Agrarian Basic Law, land right In Indonesia consist of:

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<sup>2</sup> Ibid, page 163



- (1). Hak Milik (ownership right);  
 is the hereditary, the strongest and the most complete right that a person can have. This right can be transferred to other party (article 20).
- (2). Hak Guna Usaha (cultivation right);  
 is the right to cultivate the land that directly controlled by the state for agricultural, fishery or farming within a period time (article 28). This right can be transferred to other party. The subject who can be given HGU:  
 (a) Indonesian citizen;  
 (b) Indonesian legal entity.
- The period of HGU is 25 years and can be 35 for legal entity that need a longer period. This period can be extended for 25 years.
- (3). Hak Guna Bangunan (Right to build);  
 is the right to construct and own a building on the land which is not his own for some period of time (article 35). This right can be transferred to other party. The subject who can be given HGU:  
 (a) Indonesian citizen;  
 (b) Indonesian legal entity
- Period of HGB is 30 years and can be extended for 20 years.
- (4). Hak Pakai/HP (Right to use)  
 Is the right to use the land and/or collect proceeds from land that is directly controlled by the State or land owned by another person, who gives authority and obligations specified in the decree by an official authorized or in an agreement with the land owner, which is not a lease agreement (article 41). This right divided into 2:  
 (a) Hak Pakai without period (as long as used)  
 (b) Hak Pakai with period
- The subject who can owned HGB:  
 (a) Indonesian citizen;  
 (b) Foreigner;  
 (c) Indonesian legal entity;  
 (d) Foreign legal entity.
- (5). Hak sewa (Right to lease)  
 the right to use land owned by another person by paying the owner some money as rent (article 44).
- (6). Hak membuka tanah dan Hak Memungut Hasil Hutan (Right to Open the Land and Right to Collect Forest Product)  
 These two kinds of right only can have by Indonesian citizen. This right it's not land ownership rights. To open the land and collect the forest product, the person/legal entity should have a permission from the state.
- (7). Other rights not included in the rights mentioned above which will be determined by law and temporary rights as mentioned in article 53.  
 Temporary right in article 53:

- (a) Hak Gadai (fiduciary right);
- (b) Hak Usaha bagi hasil (business sharing right);
- (c) Hak Menumpang (right to stay)
- (d) Hak sewa tanah pertanian (agricultural land lease rights).

Those right are temporary because not suitable with national land law principles.

Table I.6 The summary of right period time based on Agrarian Basic Law

Title	Period	Extension	Renewal
Hak Milik	-	-	-
HGU	25/35 years	25 years	Can be renewal
HGB	30 years	20 years	Can be renewal
Hak Pakai:			
a. As long as used	No period	-	-
b. With period of time	25 years (PP 40/1996)	20 years	Can be renewal

In practical there is another land right namely *Hak Pengelolaan* /HPL (right to manage). HPL is not regulated in agrarian basic law. The HPL term used in Law (UU) 16 /1985 on flats, but there wasn't a clear definition on it. Government Regulation (PP) 40/1996 on HGU, HGB and HP give a short definition of HPL such as is the right to control from the state whose implementation authority is delegated to the holder. This delegated authority is explained by Law (UU) 20/2000 on the amendment of Law (UU) 21/1997 on Land and Building Rights Acquisition Fee (BPHTB) such as:

- (1). land utilization planning;
- (2). Use the land for their duties;
- (3). Give the parts of the land to the third parties and/or cooperate with third parties.

There is no specific regulation on HPL, several regulations that mention HPL are:

- (1). Law (UU) 16/1985 on flats;
- (2). Law (UU) 2 /2000 on the amendment of Law (UU) 21/1997 on Land and Building Rights Acquisition Fee (BPHTB);
- (3). Government Regulation (PP) 40/1996 on HGU, HGB and HP;
- (4). Ministerial Regulation (Permen) 9/1999 on the procedure of granting and revocation land rights and HPL.

## I.2.2 Omnibus Law and Following Government Regulations

The enactment of omnibus law, Law (UU) 11/2020 on November 2<sup>nd</sup> 2020 give an impact to many sectors including land law. There are several amendments to the agrarian basic law and their implementation regulations. The article concerning land right on omnibus law is regulated on article 136-142. The implementation regulation from the chapter on omnibus law is regulated on Government Regulation (PP) 18/2021 on HPL, land rights, flats and land registration. And also, on Ministerial Regulation (Permen) 18/2021 on the determination procedure of HPL and land rights. Several important

things that mentioned on Government Regulation (PP) 18/2021 and Ministerial Regulation (Permen) 18/2021 on the land rights:

(1). HGU:

- (a) The land can be given by HGU:
  - i. State land; and
  - ii. HPL land (*previously HGU only given on state land*)
- (b) Period: 35 years, can be extend for 25 years and renewal for 35 years.
- (c) The HGU extension can be proposed after the age of the plant or other business are effective or no latter before the HGU period expires.
- (d) The HGU holders which is a limited liability company have an important obligation called “plasma obligation”. This obligation is requiring the HGB holders to facilitate the development of the community plantations in the vicinity of at least 20% from the land area given HGU.

(2). HGB

- (a) Land can be given by HGB:
  - (i) State land;
  - (ii) HPL land;
  - (iii) Hak Milik land.
- (b) HGB period on the state land and HPL land: 30 years, can be extend for 20 years and can be renewal for 30 years. Meanwhile HGB period on Hak Milik can be given for 30 years and can be renewal (*previously there is no division of time periods for different land rights given by HGB and the time period for HGB is 30 years, can be extend for 20 years and can be renewal in the same land*)
- (c) The extension can be proposed after the land use as the designation or no later before the HGB period expires. And the renewal can be proposed maximum 2 years after the HGB period expires.

(3). Hak Pakai (HP)

- (a) Devided into:
  - (i) HP with period for:
    - 1) Indonesian citizen;
    - 2) Legal entities established by Indonesian law and domiciled in Indonesia;
    - 3) Foreign legal entities that have a representative in Indonesia;
    - 4) Religious and social organizations; (*previously the religious and social organization is included to HP as long as used*)
    - 5) Foreigner
  - (ii) HP as long as used; that will be given for:
    - 1) central government institutions;
    - 2) local government;
    - 3) village government;
    - 4) foreign country representative and international agency representative
- (b) Time period:
  - (i) on the state land or HPL: 30 years, extend for 20 years and renewal for 30 years (*previously 25 years, extend for 20 years and can be renewal*).

- (ii) on Hak Milik: 30 years and can be renew (previously 25 years and can be renewal)
  - (iii) for HP as long as used there is no time period, as long the land is utilized.
  - (c) The extension proposal on the state land and HPL can be submitted after the land use as its designation or at least before the HP period expires. The renewal proposal can be submitted maximum 2 years after the HP periods expires. In the previous regulation the extension and renewal can be proposed no later than 2 years before the expires of HP or HP extension periods.
- (4). Hak Pengelolaan (HPL)

Previously there is no specific regulation on HPL. By the enacted of Omnibus law (UUCK), the HPL regulated more detailed in PP 18/2021 and Permen 18/2021. Several important point that mentioned:

- (a) HPL can be given from the state land and Ulayat land. But HPL originated from ulayat land especially for customary law community. Meanwhile the HPL originated from state land is given to:
  - (i) central government institutions;
  - (ii) local government;
  - (iii) SOE/Local SOE (BUMN/BUMD) including their subsidiary;
  - (iv) state owned legal entity/local government owned legal entity;
  - (v) land bank agency;
  - (vi) legal entity appointed by central government.
- (b) The HPL holders have an authority to:
  - (i) prepare the land designation and utilization planning following the spatial planning;
  - (ii) utilize all or part of HPL to use on his own or cooperate with other parties;
  - (iii) determine the tariff and/or annual compulsory fee according agreement.
- (c) Above HPL can be given:
  - (i) HGU;
  - (ii) HGB;
  - (iii) HP
- (d) The extension and renewal of HGB on HPL can be given after the land used according to the objective of land right granting (article 138 paragraph 3 UUCK).
- (e) HPL can't be used as collateral by mortgage
- (f) HPL can't be transferred to another party.

Table I.7 Summary period of land right based on Government Regulation (PP 18) /2021

No	Land Right	Time Period	Extension	Renewal
1	HGU	35 years	25 years	35 years
2	HGB (on state land &HPL)	30 years	20 years	30 years
	HGB (on Hak Milik)	30 years	-	30 years
3	Hak Pakai (on state land &HPL)	30 years	20 years	30 years
	Hak Pakai (on Hak Milik)	30 years	-	30 years
	Hak Pakai as long as used		No period of time	
4	HPL (on state land)		As long as used	

## I.2.3 Legal framework of Land Acquisition

### I.2.3.1 Land Acquisition Law and following regulations

Initially, land acquisition policies in Indonesia were not specifically regulated in a separate regulation. The chronology of the arrangements the legal framework for land acquisition in Indonesia can be seen in Figure I.5. below:

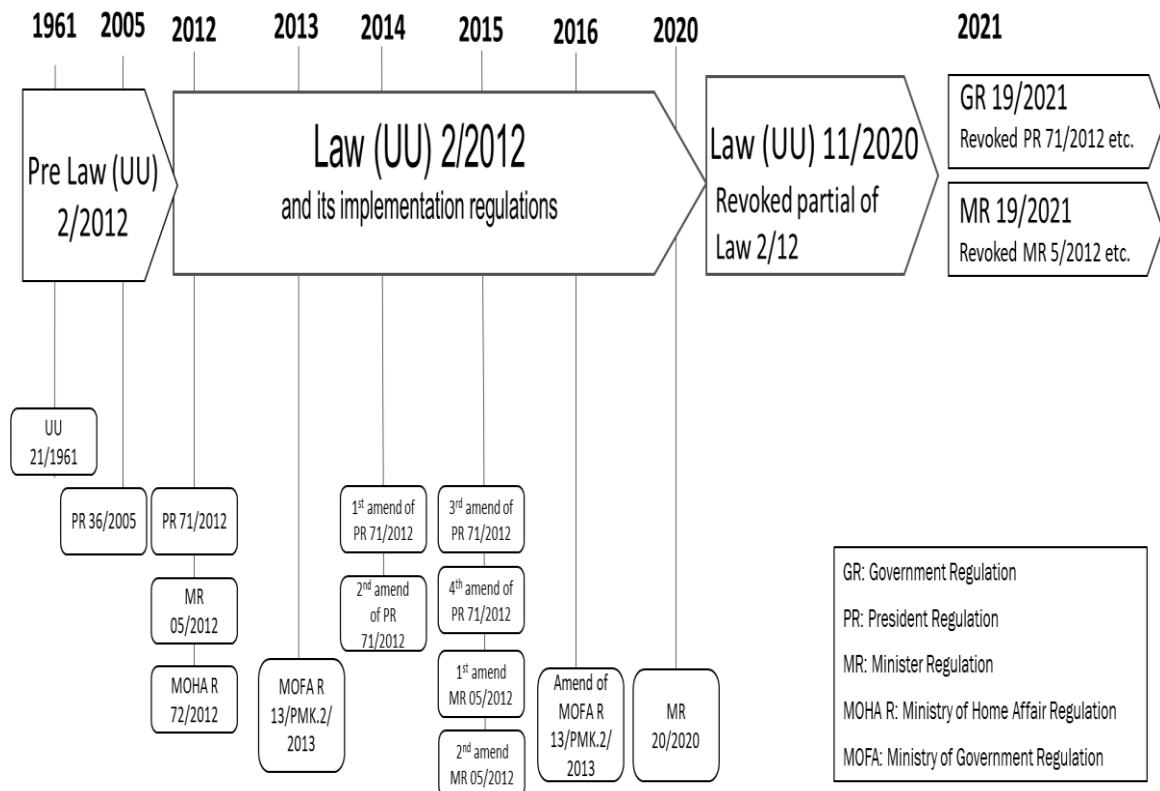


Figure I.5 Timeline of Land Acquisition Regulations in Indonesia

### I.2.3.2 Law Number 2 of 2012 on Land Acquisition for Public Interest

Before the enactment of Law (UU) 2/2012, the Government of Republic of Indonesia until 2012 to provide the guidelines in land acquisition sector by stipulated several regulations as follows:

- (1). Law (UU) 21 of 1961 on the Revocation of Rights to Land and Objects on the Land;
- (2). Presidential Regulation (Perpres) 36/2005 as amended by Presidential Regulation (Perpres) 65/2006 on the implementation of Land Acquisition for Public Interest;

however, based on the academic paper of the Draft Law on Land Acquisition for Development, these regulations, especially Law (UU) 21/1961, are considered inefficient to be implemented because both politically and sociologically unpopular.<sup>3</sup>

In the same document, it is stated that it is necessary to regulate land acquisition at the level of the Law which can accommodate several principles as follows: (1) land for development must be available land, (2) people are guaranteed control or ownership of their land, (3) land speculation is minimized,

<sup>3</sup> Academic Paper Document of the Draft on Land Acquisition for Public Interest Development, Secretariat and BK DPR RI Archive and Documents, Jakarta, 2010, page. 5

(4) pay attention to land acquisition practices in other countries, and (5) base on national land history, politics, and law.<sup>4</sup>

Based on this background, on January 14, 2012, the Indonesian government stipulated and promulgated Law (UU) 2/2012 on Land Acquisition for Public Interest.

Article 3 of Law (UU) 2/2012 states that Land Acquisition for the Public Interest aims to provide land for the implementation of development in order to improve the welfare and prosperity of the nation, state, and society while guaranteeing the legal interests of the Entitled Parties. Meanwhile, in the Elucidation, under the General section, it is stated that the principles of land acquisition regulated in Law (UU) 2/12 are as follows: a. The Government and Local Governments guarantee the availability of land for the Public Interest and its funding; b. Land Acquisition for the Public Interest is organized in accordance with; regional spatial plan, national/Regional Development Plan, strategic plan, and work plan of each Agency/Institution that Requires the land (IA); c. Land Acquisition is organized through planning by involving all stakeholders; d. The implementation of Land Acquisition pays attention to the balance between development interests and community interests; e. Land Acquisition for the Public Interest is carried out with the provision of proper and fair Compensation.

Based on the objectives and also the principles of land acquisition mentioned above, Law (UU) 2/2012 broadly consists of elements that when described will be seen in Picture I.6, with the following details:

(1). Object

In Law 2/2012 in Article 1 number 4, it is stated that the objects of Land Acquisition activities are land, underground and underground spaces, buildings, plants, objects related to land, or others that can be assessed. Then in Article 10, it is stated that the object is limited to only be used for the construction of 18 (eighteen) public interests such as: National defense security, public roads, reservoirs, etc.

(2). Phases and Involved Parties

In Article 13 of Law 2/2012, it is stated that Land Acquisition for the Public Interest is carried out through the following phases:

- (a) Planning will be done by IA, to provide accurate DPPT;
- (b) Preparation, after IA submit the DPPT to LG, the authorized body in this phase until the issuance of Penlok, in this phase also involved IA, and entitled parties. If there is any Penlok lawsuit, it may also involve administration court
- (c) Implementation, after the issuance of Penlok, IA submit the application of the implementation of Land Acquisition to the authorized body for this phase, Ministry of ATR/BPN, in this phase also involved IA, appraiser, entitled parties, and court if there is any objection and/or deposit of compensation money
- (d) Handover of the land acquisition result by ATR/BPN to the IA

The detail of each phase shown at Figure I.7.

(3). Funding

In Article 52 of Law (UU) 2/2012, it is stated that Land Acquisition Funding is sourced from the State Budget (APBN) and/or the Regional Revenue and Expenditure Budget (APBD).

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<sup>4</sup> Ibid page. 6

If the agency that requires land is a State-Owned Legal Entity/State-owned Enterprise that gets a special assignment, funding comes from the company's internal or other sources in accordance with the provisions of the laws and regulations.

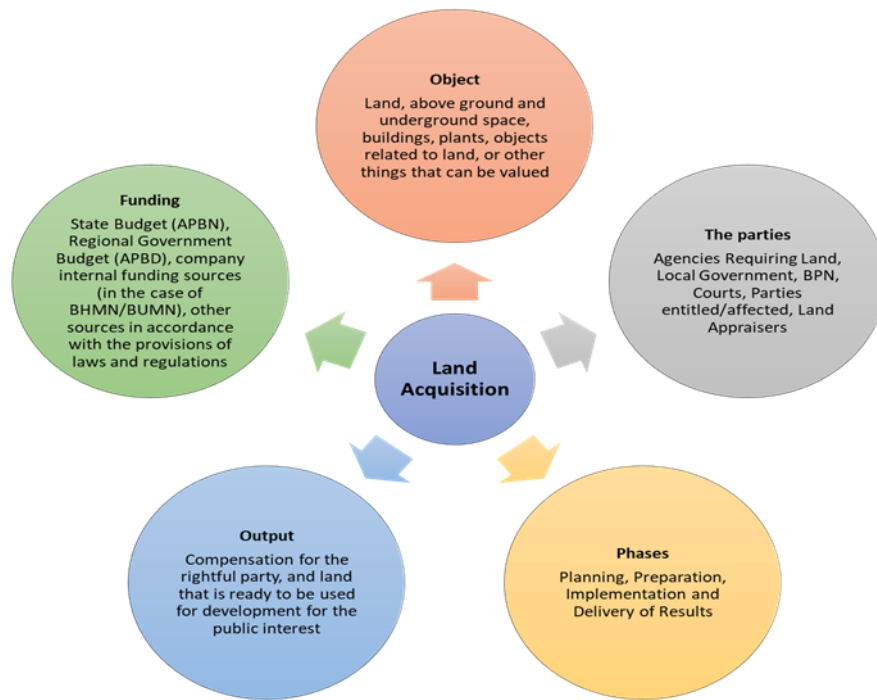


Figure I.6 Summary of Land Acquisition Process Under Law (UU) 2/2012

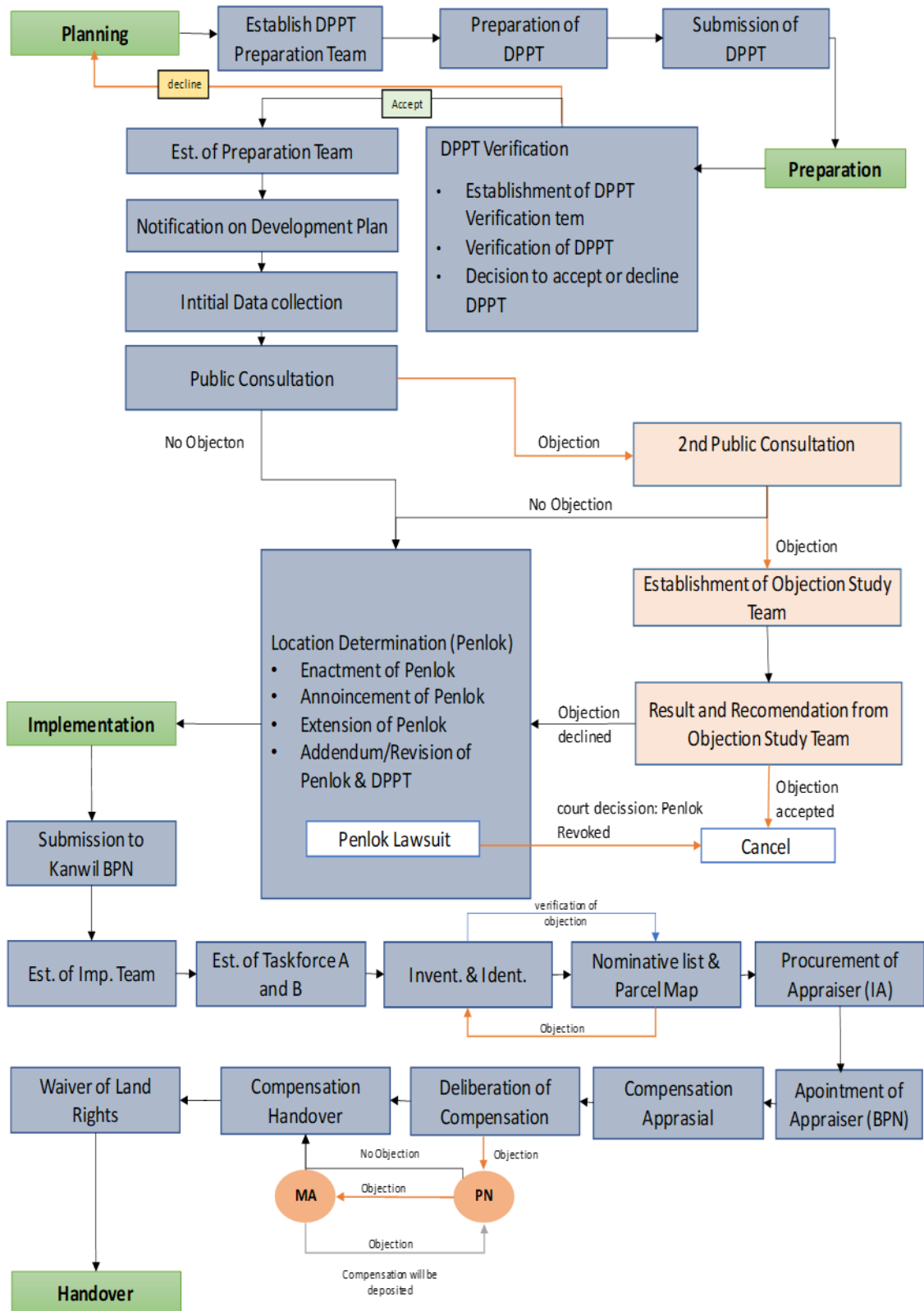


Figure I.7 Land Acquisition Flowchart



As for the numbers of days for each phase is summarized in the Figure I.8. as follow:

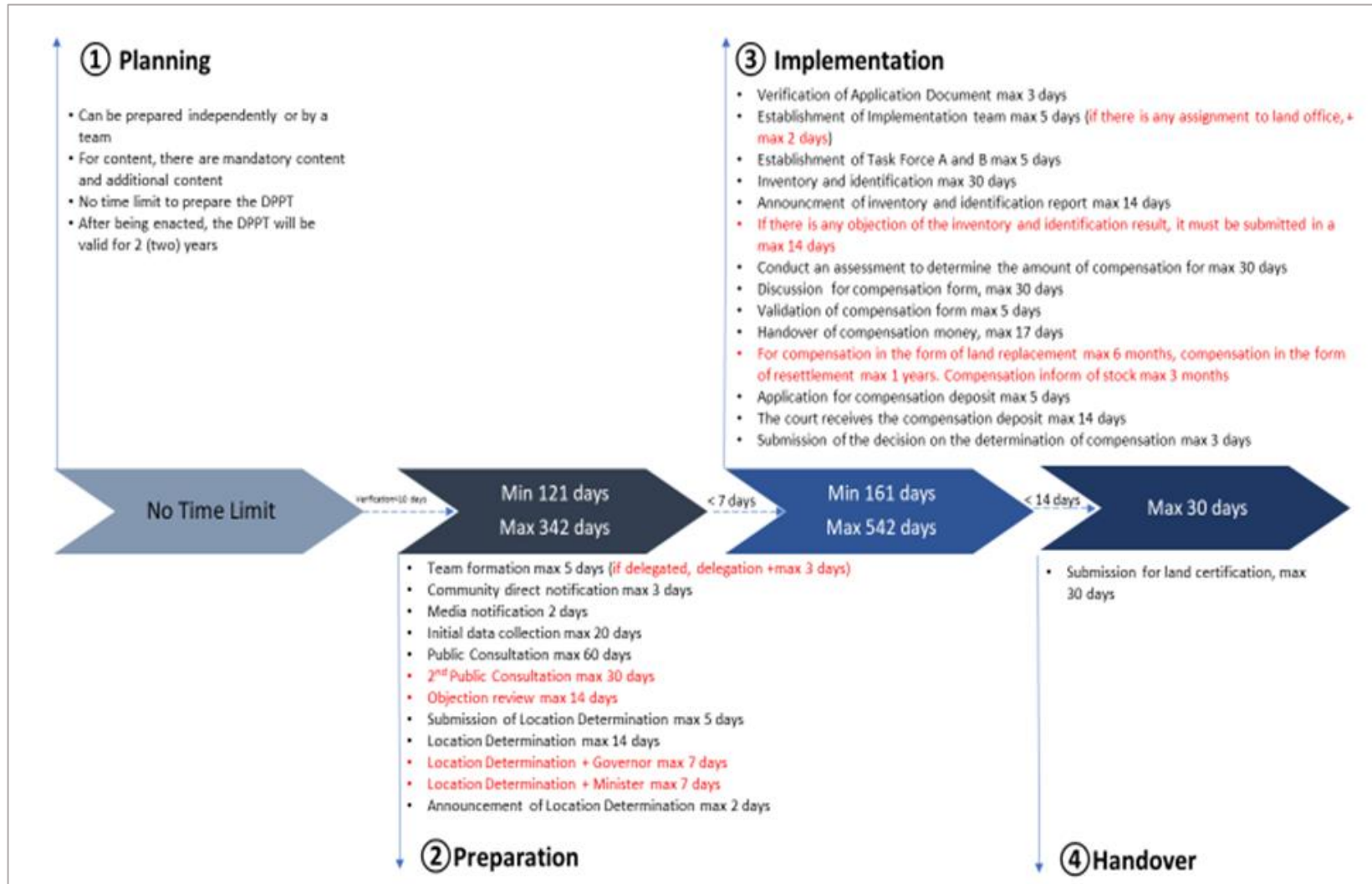


Figure I.8 Land Acquisition Timeframe

### I.2.3.3 Implementation regulations of Law (UU) 2/2012

Law (UU) 2/2012 mentioned that for more detail and further provision on the land acquisition implementation will be delegated to be regulated by Presidential Regulation (and further technical guideline by Ministerial Regulation). These are following implementation regulations under Law (UU) 2/2012:

(1). Presidential Regulation (Perpres) 71/2012 on the Implementation of Land Acquisition for the Public Interest

The regulations elaborate the implementation of Law (UU) 2/2012 with detailed process and procedures to implementing the land acquisition, i.e., Presidential Regulation (Perpres) 71/2012 provides the detailed provision on the Notification on Development in the preparation phase, which include what should be notified, and how the notification should be made, Etc.

For the implementation phase, this regulation delegates further provision to be regulates under the Ministerial Regulation.

This Presidential Regulation has been amended four times, by the following presidential regulations which summarized in table I.8:

Table I.8 Summary of The Amendment of Presidential Regulation (Perpres) 71/2012

1 <sup>st</sup> Amendment	2nd Amendment	3rd Amendment	4th Amendment
Presidential Regulation (Perpres) 40/2014	Presidential Regulation (Perpres) 99/2014	Presidential Regulation (Perpres) 30/2015	Presidential Regulation (Perpres) 148/2015
<ul style="list-style-type: none"> <li>• specify funding sources for the operational and supporting cost for SOE.</li> <li>• upstream oil and gas public infrastructure, the size of small-scale land acquisition &lt;5 Ha.</li> </ul>	<ul style="list-style-type: none"> <li>• more detail on the determination of compensation</li> <li>• the procedures to acquire the appraisal services</li> <li>• expanding the time frame of compensation to 14 days</li> </ul>	<ul style="list-style-type: none"> <li>• business entities who is authorized can provide infrastructure of the public interests, and provide the pre-finance land acquisition, which will be reimbursed.</li> <li>• more detail process and requirements for the location determination for the incomplete land acquisition.</li> </ul>	<ul style="list-style-type: none"> <li>• stipulates new definition of IA.</li> <li>• new time period of the preparation and implementation for land acquisition, submission of the results of land acquisition is shorten.</li> <li>• small-scale land acquisition up to 5 Ha no need Penlok.</li> </ul>

(2). Regulation of the Head of the National Land Agency (Permen ATR/BPN) No. 5/2012 on the Technical Guidelines for Land Acquisition Implementation

This regulation specifies in detail of the implementation phase that includes: inventory and identification of the affected land, determination of appraisal services and task of appraisers, discussions/negotiations on the forms and compensation values, compensation payment or the provision of compensation other than cash compensation, the process and

procedures in providing compensation in special circumstances, custody of compensation/consignment, and etc. This regulation is also providing a set of various formats as annexes so the user of this regulation can grasp on what should they do in the implementation phase.

This regulation has been twice amended by these following regulations as summarized in Table I.9:

Table I.9 Summary of The Amendment of Presidential Regulation (Perpres) 71/2012

1 <sup>st</sup> Amendment	2 <sup>nd</sup> Amendment
<p style="text-align: center;">Regulation of the Agrarian Affair and Spatial Planning/National Land Agency (Permen ATR/BPN) 6/2015</p>	<p style="text-align: center;">Regulation of the Minister of Agrarian Affair and Spatial Planning/National Land Agency (Permen ATR/BPN) 22/2015</p>
<ul style="list-style-type: none"> <li>• land management rights could be given to the national institutions, ministries, non-ministerial institutions, provincial, district or city, and authorized SOEs.</li> <li>• Authorized business entities could be given building rights or utilization rights.</li> <li>• Land acquisition funds is included in the budget document (DIPA) of the government institutions or budget of the SOEs.</li> <li>• processes and procedures for an area up to 5 Ha and land acquisition for infrastructure that are not for public interests.</li> <li>• process, procedures, and requirements on the incomplete land acquisition but has obtained the Location Determination.</li> </ul>	<ul style="list-style-type: none"> <li>• business entities that have been assigned by the Government to acquire land, can pre-finance land acquisition, which will be reimbursed by the concerned agencies/ministries/ and local governments through APBN/APBD. The funds can be obtained through a special account mechanism.</li> </ul>

(3). Minister of Agrarian Affairs and Spatial Planning/National Land Agency (Permen ATR/BPN) 20/2020 on the Procedure on Preparation of Land Acquisition Planning Document

Before this ministerial regulation, in preparing Land Acquisition Planning Document, the institution that require the land has no national level guideline on how to prepare it. Some of the institution makes their own guideline, and this guideline may differ from one institution to the other.

Ministry of Agrarian Affair and Spatial Planning/National Agency as the institution that has the authority to organized government affairs in the agrarian/land and spatial planning sector, tries to unify the guideline, so that all the institution that need the land can have the same standard on how to prepare the Land Acquisition Planning Document.

This ministerial regulation also mentioned about the necessary of the planning system information.

(4). Regulations on Operational and Supporting Cost of the Land Acquisition Implementation

Beside the regulation which already mentioned in point (1), (2), and (3), which most of them are issued by the Ministry of Agrarian and Spatial Plan Affairs/National Land Agency, there are also other regulations which stipulated by Ministry of Finance Affairs,

and Ministry of Home Affairs, since its substantial is under the authority of those two ministries, but still closely related to the land acquisition implementation:

- (a) Minister of Finance Regulation Number 13/PMK.02/2013 that has been amended by Minister of Finance Regulation Number 10/PMK.02/2016 on Operational and Supporting Cost for the Implementation of Land Acquisition for Public Interest funded by State Budget, as mentioned by the title, this regulation is provide detailed provision on how the implementing agency manage to use the state budget in order to provide the operational and supporting cost that will be used in the implementation phase.
- (b) Minister of Home Affairs Regulation Number 72/2012 on Operational and Supporting Cost of Land Acquisition for Public Interest Funded by the Local Government Budget this regulation is provide detail provision on how the implementing agency manage to use the state budget to provide the operational and supporting cost that will be used in the implementation phase.

#### I.2.3.4 Amendments by Omnibus Law and following regulations

Under Chapter VIII the Law (UU) 11/2020 changed 10 Articles, 1 elucidation, and added 3 new Articles of Law (UU) 2/2012. The key changes under the Law (UU) 11/2020 are as follows:

- (1). Provision for the affected land issues, it is regulated that when the land object is in a forest area, village treasury land, waqf land, ulayat/customary land, and/or land assets of the central government, regional government, BUMN/D, the settlement of the status must be completed until the issuance of the Location Determination.
- (2). The public interest scope is become wider, with 6 additional scopes, namely: upstream and downstream oil and gas industrial areas, special economic zones, industrial areas, tourism areas, food security areas, and technology development areas, all of which are initiated and/or controlled by the central government, regional, or BUMN/D.
- (3). In the context of efficiency and effectiveness, land acquisition with an area less than 5 hectares can be carried out directly by the agency that requires the land with the entitled person (the owner or someone that control of the land). This provision is not a completely new provision because it was previously regulated in the implementing regulations. Similar with the previous provision under the implementation of regulation of Law (UU) 2/2012 the Business-to-Business mechanism (B-to-B) for small-scale land acquisition is optional. If the agency that require the land can make prediction if the B-to-B will not effective nor efficient, then the agency can do the 4-phase land acquisition process.
- (4). After the issuance of Location Determination, there are five requirements that are no longer needed, namely the suitability of spatial use activities, technical considerations, analysis of environmental impacts, outside forest areas and mining areas, outside peat areas/coastal borders. The location determination is considered to have covered the 5 requirements so that there is no longer any need for separate fulfillment of the conditions other than the issuance of the Location Determination.
- (5). The land acquisition period is changed to 3 years and can be extended for 1 year. Previously the permitted period was 2 years and could be extended for 1 year. The application for the extension of the location determination is submitted at least 6 months before the expire date.

- (6). Data collection on the entitled parties can also be carried out by licensed surveyors/appraiser.
- (7). The compensation value which assessed by the appraiser is final and binding. This provision is firm in nature so that the land acquisition process can continue to be carried out without negotiation or objection to the stipulated value, without negating the rights of the party entitled to file legal remedies against the determined compensation value through the general court.
- (8). Changes to the elucidation of who can be called the 'entitled party', namely 'the party who controls state land in good faith'. A party is said to be in control of state land in good faith if (i) the control of the land is recognized by laws and regulations (ii) there are no objections from the customary law community, kelurahan/village or what is called by another name, or other parties over the land tenure either prior to as well as during the announcement, and (iii) control is proven by the testimony of 2 reliable witnesses.
- (9). New maximum limit for compensation deposit (consignment) by the district court, which is 14 days after being submitted if the party entitled to refuse the form and/or amount of compensation. This provision provides clarity on the timing of when the relinquishment of land rights is deemed to have occurred and the return of the status of the freed land to land that is directly controlled by the state.

Further and more detailed provision delegated to be regulated under Government Regulation and Ministerial Regulation, which then enacted about 1 year after Law (UU) 11/2020 as Government Regulation (PP) 19/2021 and Minister of ATR/BPN Regulation (Permen ATR/BPN) 19/2021.

Government Regulation (PP) 19/2021 is revoking Presidential Regulation (Perpres) 71/2012 and all its amendments, while Minister of ATR/BPN Regulation (Permen ATR/BPN) 19/2021 revoking Minister of ATR/BPN Regulation (Permen ATR/BPN) and all its amendments.

The stipulation of the Law (UU) 11/2020 also gives an impact to other related regulations to the land acquisition process, i.e., for spatial planning sector, Law (UU) 11/2020 is amended the Law (UU) 26/2007, and its implementation regulations. The most significant impact for spatial planning issue in land acquisition process after Law 11/2020 is related to the conformation of spatial planning. Under the new spatial planning regulation, its clearly mentioned that for the national strategic policy, the spatial utilization must get Suitability of Space Utilization Activities (*Kesesuaian Kegiatan Pemanfaatan Ruang*/KKPR), the resume of the KKPR explanation are as in this following figure:

# Kesesuaian Kegiatan Pemanfaatan Ruang (KKPR)

Suitability of Space Utilization Activities

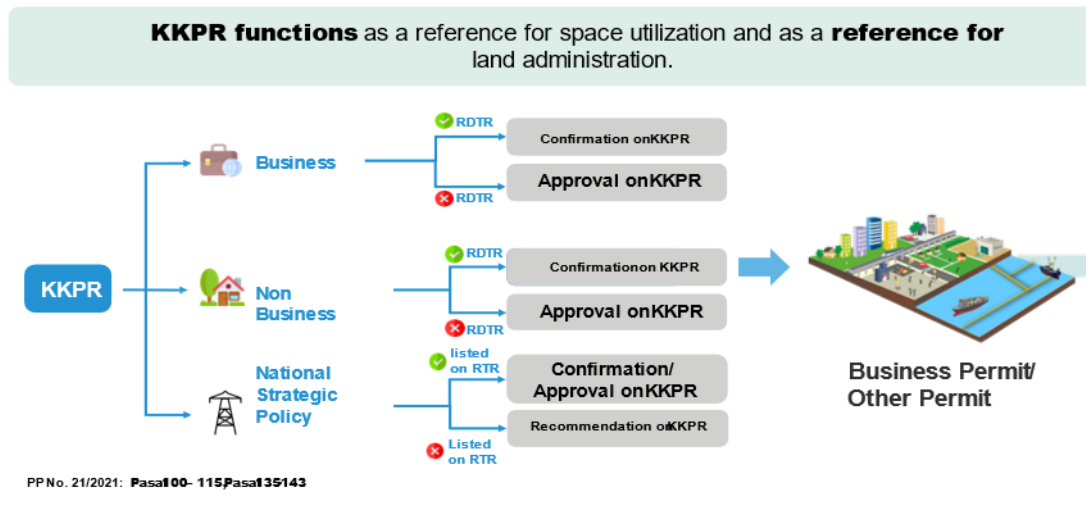


Figure I.9 Suitability of Space Utilization Activities<sup>5</sup>

Overall, we can see Indonesia's legal framework for land acquisition after the enactment of Law (UU) 11/2020 in this following figure:

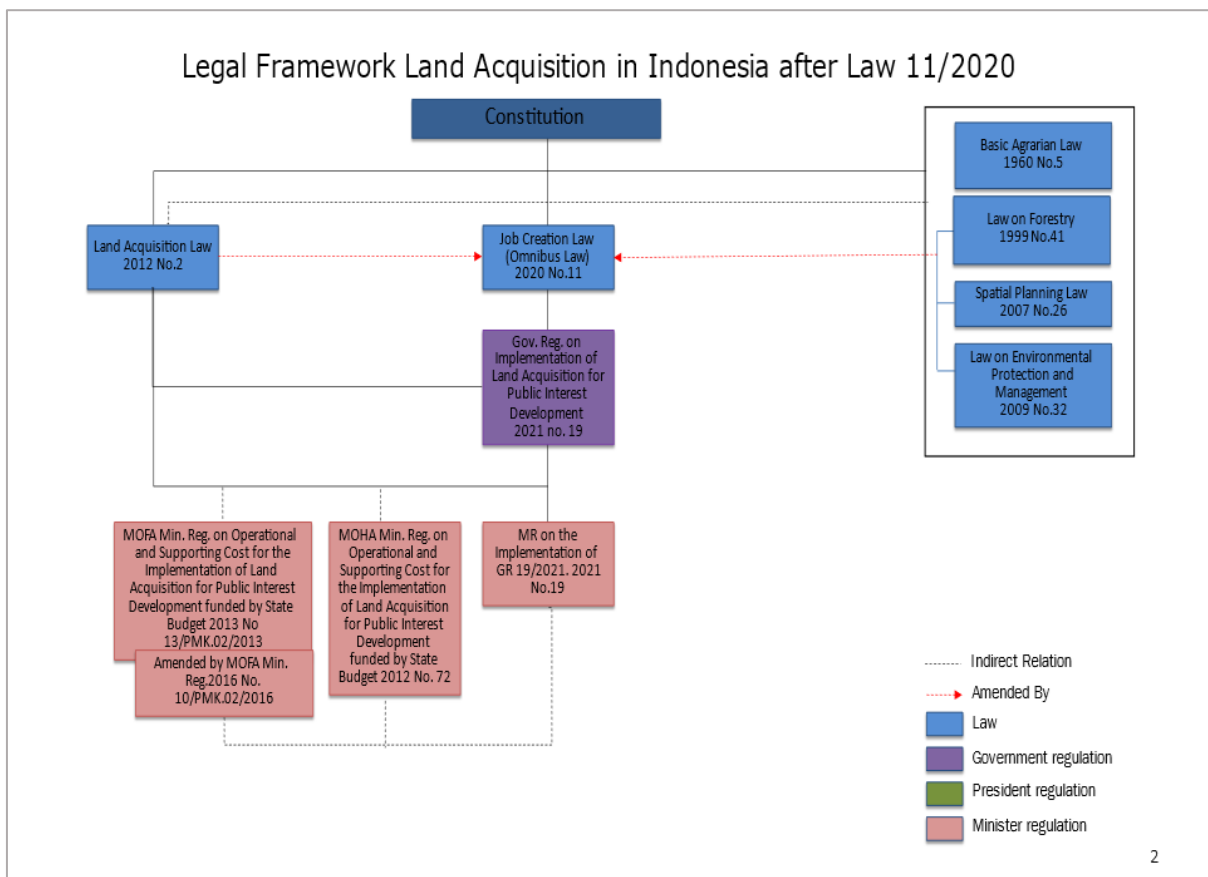


Figure I.10 Indonesia Legal Framework for Land Acquisition Process After Omnibus Law

<sup>5</sup> Socialization Material of the Spatial Planning Policy Under GR 21/2021, downloaded from <https://tataruang.atrbpn.go.id/Images/Uploads/New/Dokumen/2021/Maret/Pengumuman/Bahan%20Paparan%20Pak%20Dirjen%20Tata%20Ruang%20Sosialisasi%20PP%2021%202021.pdf>

### I.2.3.5 Relevant Regulations for the Land Acquisition Procedure

Land Acquisition also related to some technical issue, such as spatial planning, environmental, etc. Following are the relevant sectoral regulations for the land acquisition procedure in Indonesia, with the detail of the relation between each sector as in Figure I.11.

- (1). Spatial Planning Regulations;
- (2). Forest Area Regulation, IPPKH for borrow to use, PPTKH for change of status;
- (3). Environment; and
- (4). Agriculture, LP2B for sustainable agriculture land.

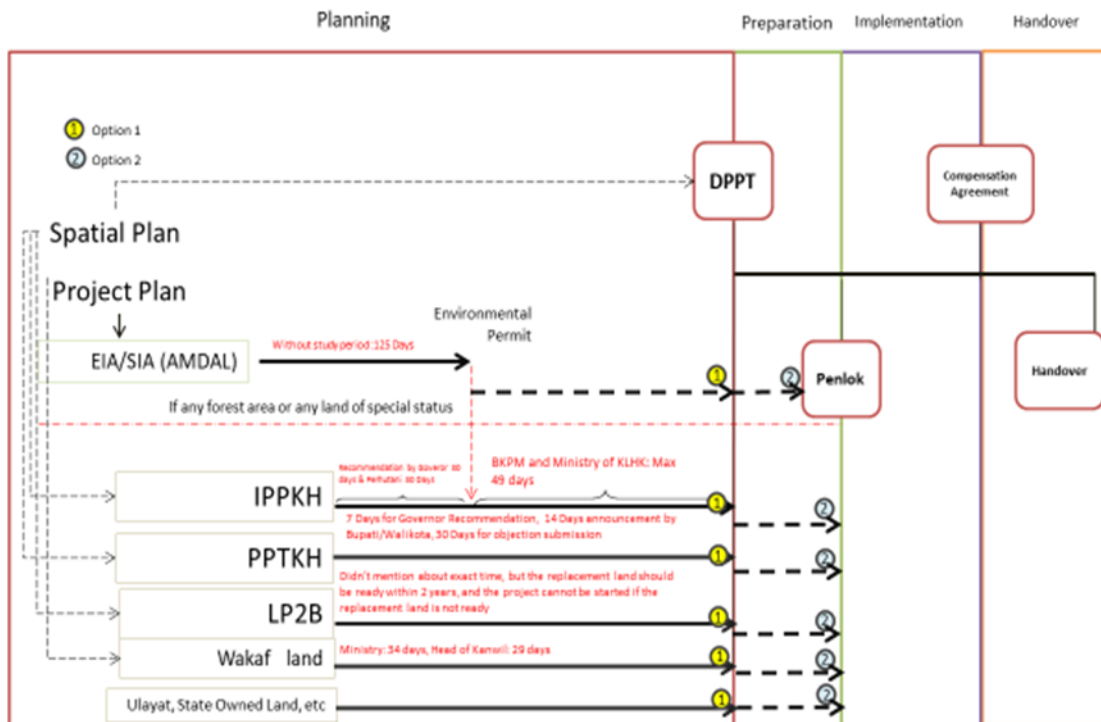


Figure I.11 Land Acquisition Relation with others sectoral Regulations

## I.2.4 Legal Framework of Land Consolidation

### I.2.4.1 Land Consolidation Regulation

The need for land is a basic need for every human being and will always increase every year in line with population growth. However, the availability of land is increasingly limited and not in line with the increasing population and development.

As a result of the incompatibility of land availability and population growth:

- (1). The land and space utilization are not well maintained and not effective;
- (2). Land prices are getting higher, and residential prices are high when compared to people's income levels;
- (3). The emergence of slum dwellings, especially in urban areas.

Due that situation, it is necessary to arrange land use to improve the quality of life and community welfare. One of the instruments for land arrangement is land consolidation. The legal basis of land

consolidation is Ministerial Regulation (Permen) 4/1991 on Land Consolidation as revoked by Ministerial Regulation (Permen) **12/2019 on Land Consolidation**.

Ministerial Regulation (Permen) 4/1991 was enacted on December 7th, 1991. Therefore, we can say that Ministerial Regulation (Permen) 4/1991 is the basis of land consolidation regulation because previously, there was no specific regulation on land consolidation.

Ministerial Regulation (Permen) 12/2019 is the improvement of Ministerial Regulation (Permen) 4/1991 and it was promulgated on May 27<sup>th</sup>, 2019. Article 1 paragraph 1 of Ministerial Regulation (Permen) 12/2019 mentioned that land consolidation is a policy for restructuring mastery, ownership, and utilization of land according to the spatial planning and the effort of providing land for public interest to increase the environment quality and maintenance of natural resource by involving active participants of community. The benefit of land consolidation:

- (1). Create a good living environment according to the spatial plan; and
- (2). availability of land for public interest by involving the active participation of the community.

The basic differences between Ministerial Regulation (Permen) 4/1991 and Ministerial Regulation (Permen) 12/2019:

- (1). Basically, the land consolidation in Ministerial Regulation (Permen) 4/1991 is for agriculture land consolidation in rural area. The vertical land consolidation (VLC) has not been regulated clearly and detailed. Meanwhile Ministerial Regulation (Permen) 12/2019 strictly divided the provision for horizontal land consolidation and vertical land consolidation.
- (2). The implementer in Ministerial Regulation (Permen) 4/1991 is functionally by ATR/BPN, not regulated swadaya land consolidation (initiator by other stakeholders). Meanwhile Ministerial Regulation (Permen) 12/2019 mentioned that the initiator can be from:
  - (a) Ministry of ATR/BPN;
  - (b) Other stakeholders, such as:
    - (i) Other ministry/institution
    - (ii) Local government
    - (iii) Cooperation, SOE, local SOE, village SOE and/or
    - (iv) Academic/practitioner; and/or Community
- (3). The minimum percentage of approval to implement land consolidation in Ministerial Regulation (Permen) 4/1991 is 85% from landowners. This percentage is too high that it is difficult to implement land consolidation. Ministerial Regulation (Permen) 12/2019 determined lower percentage than Ministerial Regulation (Permen) 4/1991, it is **60 % (sixty percent)** of land consolidation participants.
- (4). Ministerial Regulation (Permen) 4/1991 not mentioned in detailed the stages to implement land consolidation. It is different to the Ministerial Regulation (Permen) 12/2019 which mentioned the detailed stages such as:
  - (a) Planning stages, consist of the activities of:
    - (i) Establishment of coordination team and planning/implementation team.
    - (ii) Study of spatial planning and sector policy;  
The result of this study will be used to determine the land consolidation (LC) location from the chosen location.



- (iii) Social mapping and area potential analysis;
  - Social mapping carried out to capture the aspirations of the community at the land consolidation location, meanwhile the area potential analysis is to find out the potential, shortcomings, opportunities, and threats at the land consolidation location.
- (iv) Initial design sketch making (visioning) and LC consensus;
  - Visioning will be used as the basis to generate an agreement between right holders and/or land cultivators on the Land Consolidation plan.
- (v) LC location determination.
- (b) Implementation stage, consist of activity of:
  - (i) Physical and juridical data collection and LC object valuation;
  - (ii) Design preparation and LC action plan;
  - (iii) Land right releasement and land affirmation of LC object;
    - The land right releasement carried out by giving the certificate of ownership by the participants. Then in the land affirmation decree shall be stated that the released land will be given back to the participant according to the LC design with a land right.
  - (iv) LC design application (staking out);
  - (v) The issuance of land right certificate and deliverable the joint land certificate.
- (c) Construction stage, consist of activity of:
  - (i) Construction preparation;
  - (ii) The construction of infrastructure, facility and utility;
  - (iii) The issuance of land certificate and asset handover for VLC;
  - (iv) Establishment of owner and occupant association and the community empowerment;
    - The establishment of owner and occupant is to ensure the right to manage the VLC result.
  - (v) Asset management of LC result.
    - This activity is to ensure the maintenance of building function, infrastructure, facility, and utility for the sustainability of environmental quality.
- (d) LC supervision consists of activities of:
  - (i) Monitoring the suitability of stages and LC documents;
  - (ii) Monitoring the progress and LC design implementation;
  - (iii) Monitoring and evaluation social, economic and environmental impact;
  - (iv) Area performance evaluation and periodic development every 5 years;
  - (v) Planning and redevelopment of the area (long term).
- (5). Ministerial Regulation (Permen) 4/1991 not regulated the land acquisition mechanism for public interest in the case the participant candidate refuses to be the land consolidation participant and refused to transfer their right to other parties, meanwhile article 10 paragraph 4 and 5 of Ministerial Regulation (Permen) 12/2019 mentioned about this.

#### I.2.4.2 Relevant Regulations

The laws that relevant to vertical land consolidation:

- (1). Law (UU) 5 /1960 on Agrarian Basic Law.  
The land right mechanism in land consolidation should be according to the land right that apply in Indonesia, including several amendments on the implementation regulation (PP 18/2021).
- (2). Law (UU) 25/2004 on National Development Planning System.  
The national planning system is a development planning procedure that produces long, medium- and short-term development plans. So that all development planning should refer to this national planning system. Land consolidation that can be included in the development plan should refer to the national planning system.
- (3). Law (UU) 38/2004 on Road.  
The road is one of the infrastructures resulting from land consolidation. The road construction also increases the value of the results of land consolidation. Therefore, the construction of roads should comply with the provisions of the law on roads.
- (4). Law (UU) 17/ 2007 on Long-Term National Development Program.  
Land consolidation to be carried out should be in accordance with the long-term National development program
- (5). Law (UU) 26/2007 on Spatial Planning.  
Land consolidation programs, whether initiated by the government or other stakeholders, must be in accordance with the spatial plan.
- (6). Law (UU) 29/2009 on the Amendment of Law (UU) 15/1997 on Transmigration.  
Transmigration is the voluntary migration to improve welfare and settle in transmigration areas organized by the government (Article 1 paragraph 2 of Law (UU) 29/2009). The population arrangement shall be customized to utilize the potential of natural resources and their carrying capacity so that development can be carried out sustainably. Land consolidation can be used as a tool to rearrange the transmigration area.
- (7). Law (UU) 41/ 2009 on Protection of Sustainable Agriculture.  
One of the agrarian reform activities is the rearrangement of mastery, ownership, use, and utilization of land. The arrangement should be carried out without disturbing or eliminating the function of the land designated for sustainable agricultural land.
- (8). Law (UU) 1/2011 on Housing and Residential Area.  
Article 106 of Law (UU) 1/2011 states that the provision of land for the construction of housing and residential areas can be carried out through land consolidation. Thus, this law becomes one of the basics in providing houses and residential areas through Land consolidation.
- (9). Law (UU) 20/2011 on Condominium.  
Article 22 paragraph 1 letter b of Law (UU) 20/2011 states that the provision of land for the construction of flats can be carried out through land consolidation by the landowner. This is the basis that by swadaya land consolidation, the construction of flats can be carried out.
- (10). Law (UU) 2/2012 on Land Acquisition.  
The land acquisition law is related to land consolidation because if the land rights holders and land cultivators are not willing to become land consolidation participants and not willing to release them to other parties, the next step used is to use the land acquisition. mechanism that refers to Law 2/2012.
- (11). Law (UU) 19/2013 on Protection and Empowerment of Farmer.  
This Law (UU) is related to Law (UU) 41/2009, where development and rearrangement should not disturb agricultural land and farmers.

(12). Law (UU) 9/2015 on the second amendment of Law (UU) 23/2014 on local government.

In rearrangement through land consolidation, it should be in accordance with the program planned by the local government

(13). Law (UU) 2/2017 on construction service.

The arrangement of the area through land consolidation by constructing flats should follow the provisions of UU No. 2/2017 and its implementing regulations.

(14). Law (UU) 11/2011 on Omnibus Law (UU Cipta Kerja).

As explained in the previous sub-chapter, the omnibus law revises or revokes several regulations. In addition, several laws related to land consolidation have been revised through the omnibus law, as described in the chart below.

The implementing regulations of the law related to land consolidation are as follows:

(1). Government Regulation (PP):

- (a) Government Regulation (PP) 224/1961 on Land Distribution and Compensation;
- (b) Government Regulation (PP) 24 /1997 on Land Registration;
- (c) Government Regulation (PP) 16/2004 on Land Utilization;
- (d) Government Regulation (PP) 34/2006 on Road;
- (e) Government Regulation (PP) 3/2014 on the Implementation of Law (UU) 15/1997 as amended by Law (UU) 29/2009.
- (f) Government Regulation (PP) 12/2021 on the amendment of Government Regulation (PP)14/2016 on management of housing and residential area;
- (g) Government Regulation (PP) 18/2021 on HPL, land rights and registration;
- (h) Government Regulation (PP) 21/2021 on spatial plan management;
- (i) Government Regulation (PP) 128/2015 on Non-tax state revenue on ATR/BPN.

(2). Presidential Regulation (Perpres):

- (a) Presidential Regulation (Perpres) 88 /2017 on Control of Settlement in Forest Area;
- (b) Presidential Regulation (Perpres) 86/ 2018 on Agrarian reform;
- (c) Presidential Regulation (Perpres) 47/2020 on Ministry of ATR/BPN.

(3). Ministerial Regulation (Permen):

- (a) Ministerial Regulation (Permen) 3/1997 on the Implementation of Land Registration;
- (b) Ministerial Regulation (Permen) 16/2017 on the Development Guideline on TOD;
- (c) Ministerial Regulation (Permen) 16/2020 on Organization of ATR
- (d) Ministerial Regulation (Permen) 17/2020 on Organization of Regional/Land Office.

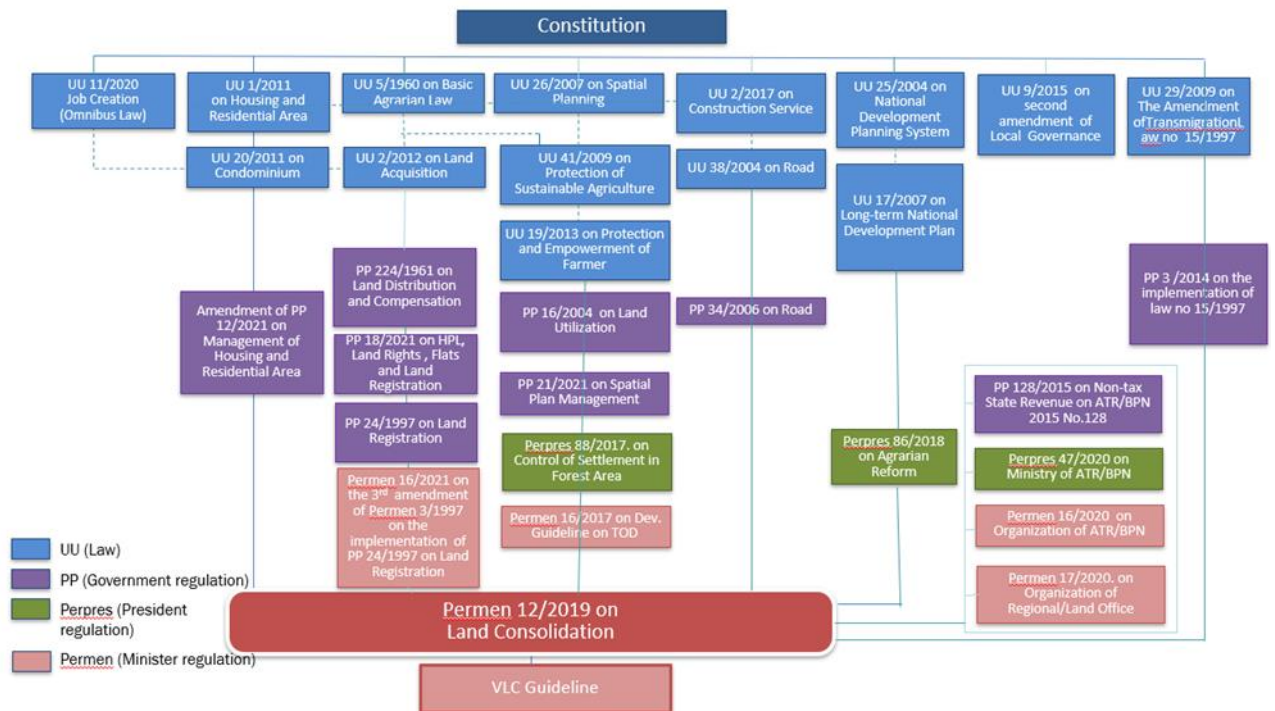


Figure I.12 Legal Framework of Land Consolidation

## I.2.5 Legal Framework of Land Valuation

### I.2.5.1 General

Currently, there is no law or regulation that specifically regulates land valuation; only several regulations stand in effect that are related to land valuation affairs. Directorate of Land Valuation and Land Economics (DLV) is in the process of drafting the Minister of ATR/BPN regulation (Permen) on land valuation.

### I.2.5.2 Land Value Appraiser

There are two kinds of land appraiser as stated in Minister of ATR/BPN regulation (Permen) 4/ 2020 on Land Appraiser as follow:

- (1). Public Appraiser is an individual who conducts an independent and professional assessment who has obtained an appraisal practice permit from the Minister of Finance.
- (2). Land Appraiser is a Public Appraiser who has obtained a license from the Minister of ATR/BPN to calculate the value of the object of land acquisition activities for development for the public interest, or other land and spatial planning activities.

The same Permen also stated that appraisal is a work process to provide a written opinion on the economic value of an object of assessment under Indonesian Appraisal Standards or SPI. This SPI is made by an Association of Indonesian Appraisers named MAPPI which the Government has recognized based on the Decree of the Minister of Finance (KMK) 406/KMK.01/2014 on the determination of MAPPI as the Association of Appraisal Profession. MAPPI carries out its profession as the Public Appraiser guided by the Regulation of the Minister of Finance (PMK) 101/PMK.01/2014 on Public

Appraisers. As for the Land Appraiser, the guidance is the Minister of ATR/BPN regulation 4/2020, which is currently being revised by DLV.

### I.2.5.3 Zone-based Land Value (ZNT)

The main principle of looking for similar land for market comparison data is comparable and similar or "apple to apple". Nevertheless, although some comparative data have been obtained, these prices often have pretty high price differences. For this reason, the appraiser needs a reference in selecting the comparison data. One of the references currently available is the land value listed in the Zone-based land value (ZNT) issued by the Ministry of ATR BPN.

The determination of the Zone-based Land Value Map (Peta ZNT) exists in Government Regulation (PP) 128/2015 regarding the Type and Tariff of Non-Tax State Revenue (PNBP) applied in Ministry of ATR/BPN. The elucidation of article 16 of this regulation stated that the land price, which becomes the basis for the tariff of land registration service, shall refer to Peta ZNT legalized by the Head of Land Office. And if the Peta ZNT is not yet available, the Tax Object Selling Value (NJOP) can be used.

Based on Article 1 paragraph 16 of Regulation of the Minister of Finance (PMK) 208/2018 on Guidelines for the Assessment of Rural and Urban Land and Building Taxes, ZNT is a geographical zone consisting of one or more tax objects that have the same Average Index Value (NIR), and is limited by the limit of control/ownership of tax objects within the administrative area of the village/sub-district without being bound by block boundaries.

In general, ZNT data issued by the Ministry of ATR/BPN is a polygon that describes the value of land, which is relatively the same as a set of land parcels in it. Information displayed in ZNT is mostly the value of land in an "empty" state, excluding the value of objects attached to it.

ZNT can be used for determining tariffs in land services such as land and building rights acquisition fees (BPHTB), as community references in knowing the market value of land in land transactions, for inventorying the value of public assets and community assets, as reference for determining the NJOP for Land and Building Taxes (PBB), and also for determining compensations in land acquisition activities.

Table I.10 List of regulation related with Land Valuation Affairs

No	Regulation	Regarding/On	Main Points	Remarks
1	Minister of ATR/BPN regulation (Permen) 4/2020	Land Appraiser	Regulates land appraisers	Currently in the process of revising by DLV
2	Regulation of the Minister of Finance (PMK) 101/PMK.01/2014	Public Appraisers	Regulates public appraisers	
3	PMK 56/PMK.01/2017	Amendment to PMK		

No	Regulation	Regarding/On	Main Points	Remarks
		101/PMK.01/2014 on Public Appraisers		
4	PMK 228/PMK.01/2019	Second Amendment to PMK 101/PMK.01/2014 on Public Appraisers		
5	Decree of the Minister of Finance (KMK) 406/KMK.01/2014	the determination of MAPPI as the Association of Appraisal Profession	Recognition of MAPPI by the Government	
6	Government Regulation (PP) 128/2015	the Type and Tariff of Non-Tax State Revenue (PNBP) applied in Ministry of ATR/BPN	The land price which become the basis for the tariff of land registration services shall refer to Zone-based Land Value Map (ZNT Map) legalized by the Head of Land Office. And if the ZNT Map is not yet available, the Tax Object Selling Value (NJOP) can be used (Elucidation of Article 16).	
7	PMK 208/PMK.07/2018	Guidelines for the Assessment of Rural and Urban Land and Building Taxes	Definition of ZNT (Article 1 Paragraph 16)	

### I.2.6 Legal Framework of Land Bank

In essence, the umbrella regulation for Land Bank is the Law (UU) 11/2020 on Job Creation specifically in articles 125 to 135. In article 125 it is stated that Land Bank has a task of managing lands that includes planning, gaining, acquiring, managing, utilizing, and distributing lands. Explained in article 126, Land Bank should ensure the provision of lands in various interests which are Social Interests, National Development Interests, Economic Equitable Interests, Land Consolidation Interests and Agrarian Reform Interests. Specifically for agrarian reform interest, Land Bank should possess 30% of state lands. Further explanations are detailed in the Government Regulation (PP) 64/2021 on Land Bank that regulates the basic activities of land bank. These 2 regulations are the main regulatory basis

for Land Bank establishment. Other regulations can be linked to support the operations of Land Bank as described above based on the activities in relation to Land Bank’s mandate.

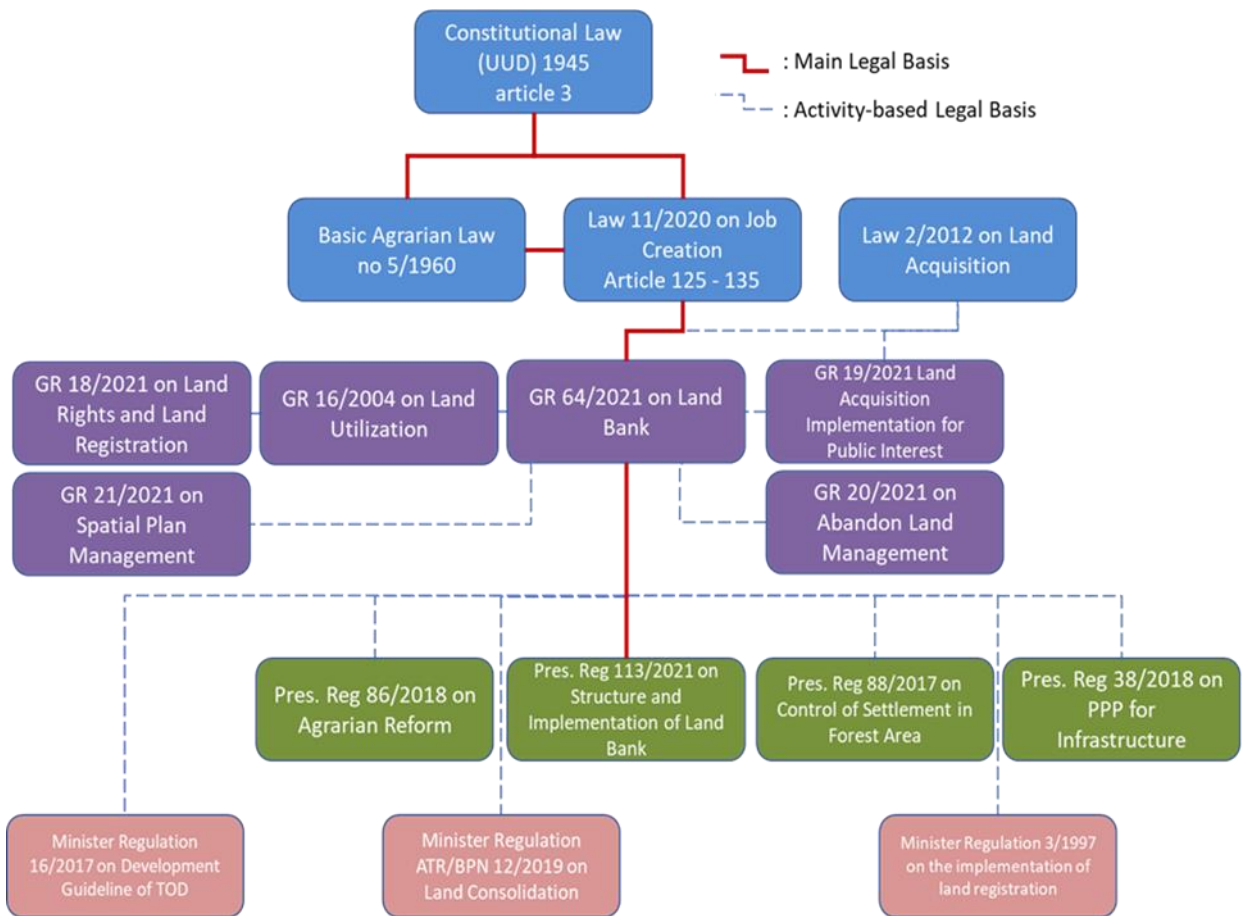


Figure I.13 Legal Framework of Land Bank

### I.2.7 Legal Framework of Land Rights Above and Below Ground

The increasing population and community economic activities, especially in urban areas, are not proportional to the availability of land. This has resulted in various problems, such as rising land prices so people cannot afford to buy affordable houses and also causes high traffic jams.

To overcome the limitations of the land and improve the quality of space and environmental sustainability, it is necessary to optimize the use of space both above and under the ground. And for that, there is a need for technical and land law regulation on space above and under the ground.

Prior to the enactment of the omnibus law (UUCK), the space utilization was regulated in the Regulation of the Minister of Public Works (Permen PU) Number 02/PRT/M/2014 on the guidelines for the use of space. However, this regulation only regulates the use of space below the ground surface /Ruang Dalam Bumi (RDB) and aims to:

- (1). overcome the limitations of land on the land's surface;
- (2). realizing harmony between activities; and
- (3). maintain and improve the quality of space and environmental sustainability (article 5).

According to Article 11, the types of activities and their locations are determined based on the level of depth, which is divided into two types:

- (1). Shallow RDB, located at a depth of 0-30 meters below the land surface; whereas
- (2). Depth RDB, located at a depth of more than 30 meters below the land surface.

The utilization of shallow RDB:

- (1). activities whose existence or location is close to or not far from or integrated with space or activities on the surface;
- (2). activities that require access to and from shallow RDB;
- (3). activities whose resources are located in shallow RDB; and;
- (4). activities based on study results and/or certain reasons can or should be placed in shallow RDB and/or cannot be placed in deep RDB

Meanwhile, the utilization of depth RDB is a priority to:

- (1). activities that connect between activity canter, between regions, and/or main networks;
- (2). activities or goods that require a high level of security or are dangerous;
- (3). activities whose resources are in the depth RDB; and
- (4). activities based on study results and/or certain reasons can or should be placed in deep RDB and/or cannot be placed in shallow RDB.

There had been also an attempt to develop a regulation for land rights above and below ground at ATR/BPN before issuing the omnibus law. The regulation was drafted but not promulgated. However, the contents discussed during the attempt have been realized in the omnibus law and the following government regulation.

With the enactment of the omnibus law, the regulation on space utilization has been expanded, not only below ground but also above the ground. The strengthening of this arrangement is regulated in the Omnibus Law articles 146 and 147. The omnibus law mandates granting rights to the space above and below the ground. The rights that can be granted are Hak Guna Bangunan (HGB), Hak Pakai (HP) and Hak Pengelolaan (HPL). The Omnibus law also states that the limit of land ownership in the basement shall be based on the boundary of the depth of use.

As the implementing regulation of the omnibus law on above and below ground space, it is regulated in articles 74 to 83 of PP 18/2021 on Hak Pengelolaan, land rights, Flats, and Land Registration. Article 74 explains that the space structurally and/or functionally separate from the land right holder is the space that is directly controlled by the state. The use and utilization of land rights holders are limited by:

- (1). height limit according to the koefisien dasar bangunan/ KDB (building base coefficient) and Koefisien lantai bangunan/KLB (Floor area ratio /FAR) as stipulated in the spatial plan;
- (2). the depth limit regulated in the spatial plan or up to 30 meters from the land surface if it has not been regulated in the spatial plan

The division of the space below the ground is the same as Ministerial Regulation (Permen) PU 02/PRT/M/2014, which consists of:



- (1). shallow space below the ground, owned by the right holder for the limit as described above
- (2). Depth space below the ground, which are structurally and/or functionally separate from the land rights holder.

Before the utilization of the space above and below the ground, it is necessary to obtain the suitability of the use of space. In granting the space above and below ground right, it must not interfere with:

- (1). Interests of land rights holders (in shallow space below the ground). If it causes disturbance to the land rights holders, compensation should be given, the calculation of which is carried out by the land appraiser.
- (2). Public interest. If it is considered that it will cause disturbance to the public interest, it must obtain the central government's approval.

As explained in the omnibus law, Government Regulation (PP) 18/2021 also explains that the space above and below-ground can be granted HPL, HGB, dan HP. The provisions regarding the subject who can obtain these rights, the period, mortgages, transfers, and cancellations are the same as those described in sub-chapter I.2.2. Each granting rights of the space above and under the ground will be given a certificate and must be registered at the land office.

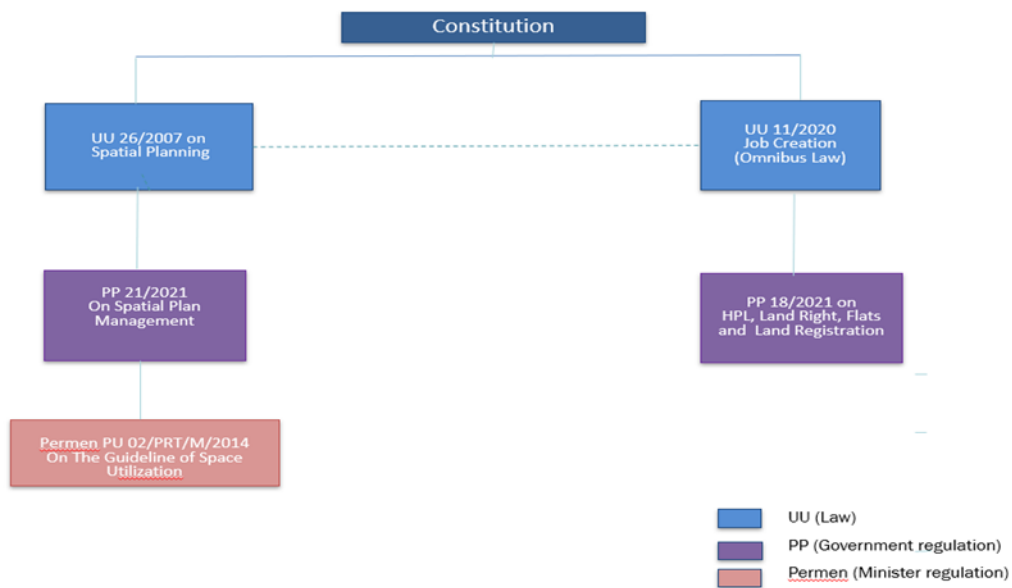


Figure I.14 Legal Framework of Land Rights Above and Below Ground

### I.2.8 Legal Framework of Land Development

Ministerial Regulation (Permen) ATR/BPN 27/2020 on Ministry of ATR/BPN Strategic Plan of 2020-2024 (RENSTRA, 5 years strategic plan of ATR/BPN) stipulates as policy direction and strategy that land development shall be prepared to increase the economic benefits through the proper land utilization and contribute both community lands and state asset lands for the community's welfare and state revenue increasing. It also mentions as the regulatory framework that land development is accommodated by establishing the Land Bank Agency who is responsible for managing the land inventory.

In addition, Presidential regulation No.47/2020 has been promulgated which restructured the then Director General of Land Acquisition into Director General of Land Acquisition and Land Development to achieve the above policy, and ATR/BPN Minister's regulation No.16/2020 intends to strengthen and clarify the need and function of land development.

## I.2.9 List of Law and Regulations

Table I.11 List of Law and Regulation that Related to the Project

Law (UU)	Government Regulation (PP)	Presidential Regulation (Perpres)	Ministerial Regulation (Permen)	Referred by
Law (UU) 5/1960 on Agrarian Basic Law	Government Regulation 24/1997 on Land Registration		Minister of ATR/BPN Regulation 18/2021 on Procedure of Determining Management Right and Land Right	Land Acquisition, Land Consolidation, Land Bank, Land Development
	Government Regulation 18/2021 on Management Right, Land Right, Apartment Unit and Land Registration			
Law (UU) 41/1999 on Forestry	Government Regulation 23/2021 Forestry Management		Minister of F&E Regulation 4/2021 on List of Businesses and/or Activities Required to Have an Environmental Impact Analysis	Land Acquisition, Land Consolidation
Law (UU) 2/2000 on the Amendment of Law (UU) 21/1997 on Land and Building Rights Acquisition Fee (BPHTB)				Land Consolidation, Land Acquisition
Law (UU) 38/2004 on Road				Land Consolidation
Law (UU) 17/2000 on Long-Term National Development Program				Land Acquisition, Land Consolidation
Law (UU) 26/2007 on Spatial Planning	Government Regulation 21/2021 Spatial Planning Management		Minister of ATR/BPN Regulation 10/2021 on Guidelines for the Preparation, Review, and Revision of Island/Archipelago Spatial Plans,	Land Acquisition, Land Consolidation

Law (UU)	Government Regulation (PP)	Presidential Regulation (Perpres)	Ministerial Regulation (Permen)	Referred by
			<p>National Strategic Areas Spatial Plan, and Detailed Spatial Plans for State Border Areas</p> <hr/> <p>Minister of ATR/BPN Regulation 11/2021 on Procedures for Preparation, Reviewing, Revisioning, and Issuing Substance Approval of Spatial Planning for Provinces, Regencies, Cities, and Detailed Spatial Plans</p> <hr/> <p>Minister of ATR/BPN Regulation 13/2021 on Implementation of the Spatial Utilization Activities Conformity and Synchronization of Spatial Utilization Program</p> <hr/> <p>Minister of ATR/BPN Regulation 21/2021 on Implementation of Spatial Utilization Control and Spatial Planning Supervision</p> <hr/> <p>Minister of ATR/BPN Regulation 25/2021 on Coordination of Spatial Planning Implementation as amended through Minister of ATR/BPN Regulation Number 9/2022</p>	
Law (UU) 29/2009 on the Amendment of Law (UU) 15/1997 on Transmigration.				Land Consolidation

Law (UU)	Government Regulation (PP)	Presidential Regulation (Perpres)	Ministerial Regulation (Permen)	Referred by
Law (UU) 32/2009 on Environment Protection and Management	Government Regulation 22/2021 Implementation and Management of the Environment		Minister of F&E Regulation 7/2021 on Forestry Planning, Change of Forest Area Designation and Change of Forest Area Function, and Use of Forest Area	Land Consolidation, Land Acquisition
Law (UU) 41/ 2009 on Protection of Sustainable Agriculture				Land Consolidation, Land Acquisition
Law (UU) 1/2011 on Housing and Residential Area				Land Consolidation
Law (UU) 20/2011 on Condominium				Land Consolidation
Law (UU) 2/2012 on Land Acquisition for Public Interest	Government Regulation 19/2021 on Implementation of Land Acquisition for Public Interest		Minister of ATR/BPN Regulation 19/2021 on Implementation of Government Regulation 19/2021 on Implementation of Land Acquisition for Public Interest	Land Acquisition, Land Consolidation
Law (UU) 19/2013 on Protection and Empowerment of Farmer				Land Consolidation
Law (UU) 11/2020 on Job Creation (Omnibus Law)	Government Regulation 64/2021 on Land Bank	Presidential Regulation 113/2021 on Structure and Implementation of Land Bank		Land Acquisition, Land Consolidation, Land Bank, Land Development
	Government Regulation 20/2021 on Abandon Land Management			Land Bank

Law (UU)	Government Regulation (PP)	Presidential Regulation (Perpres)	Ministerial Regulation (Permen)	Referred by
	Government Regulation (PP) 16/2004 on Land Utilization			Land Consolidation, Land Bank, Land Development
	Government Regulation (PP) 128/2015 on the Type and Tariff of Non-Tax State Revenue (PNBP) applied in Ministry of ATR/BPN			Land Valuation
		Presidential Regulation 86/2018 on Agrarian Reform		Land Consolidation
		Presidential Regulation 88/2017 on Control of Settlement in Forest Area		Land Acquisition, Land Consolidation, Land Bank
		Presidential Regulation 38/2018 on PPP for Infrastructure		Land Bank
		Presidential Regulation 47/2020 on Ministry of Agrarian Affairs and Spatial Planning/National Land Agency		Land Acquisition, Land Consolidation, Land Valuation, Land Development
			Ministerial Regulation 16/2017 on the Development Guideline on TOD	Land Consolidation

Law (UU)	Government Regulation (PP)	Presidential Regulation (Perpres)	Ministerial Regulation (Permen)	Referred by
			Decree of the Minister of Finance (KMK) 406/KMK.01/2014 on the determination of MAPPI as the Association of Appraisal Profession	Land Valuation
			Regulation of the Minister of Finance (PMK) 101/PMK.01/2014 on Public Appraisers	Land Valuation
			PMK 56/PMK.01/2017 on Amendment to PMK 101/PMK.01/2014 on Public Appraisers	Land Valuation
			PMK 208/PMK.07/2018 on Guidelines for the Assessment of Rural and Urban Land and Building Taxes	Land Valuation
			PMK 228/PMK.01/2019 on 101/PMK.01/2014 on Public Appraisers	Land Valuation
			Minister of ATR/BPN 12/2019 on Land Consolidation	Land Consolidation
			Minister of ATR/BPN regulation 4/2020 on Land Appraiser	Land Valuation
			Minister of ATR/BPN 16/2020 on Organization of ATR	Land Acquisition, Land Consolidation, Land Valuation, Land Development

Law (UU)	Government Regulation (PP)	Presidential Regulation (Perpres)	Ministerial Regulation (Permen)	Referred by
			Minister of ATR/BPN 17/2020 on Organization of Regional/Land Office	Land Acquisition, Land Consolidation, Land Valuation, Land Development
			Ministerial Regulation 27/2020 on Ministry of ATR/BPN Strategic Plan of 2020-2024	Land Acquisition, Land Consolidation, Land Valuation, Land Development

The full body text of each regulation can be seen in the Reference part of this report.



### I.3 Structure of the report

The report consists of seven chapters including Basic Information of Chapter I. The following chapters are dedicated to each activity: Chapter II Land Acquisition; III Land Consolidation; IV Land Valuation; V Land Banking; VI Land Rights Above and Below Ground; and VII Land Development. The activities in PDM were categorized into two, Land Acquisition activity and relevant activities. When the project started, a strong request came from ATR/BPN to take care of not only land acquisition but also relevant works to land acquisition. The project has responded the request by mobilizing the resources as much as possible including local consultants. All activities have been conducted as combined shown in the Figure I.15. The land development was a newly introduced concept in Renstra 2020-2024 to actively manage efficient land use for economic and social benefits. It is suggested as the way forward to continue a technical cooperation on land development in the future.

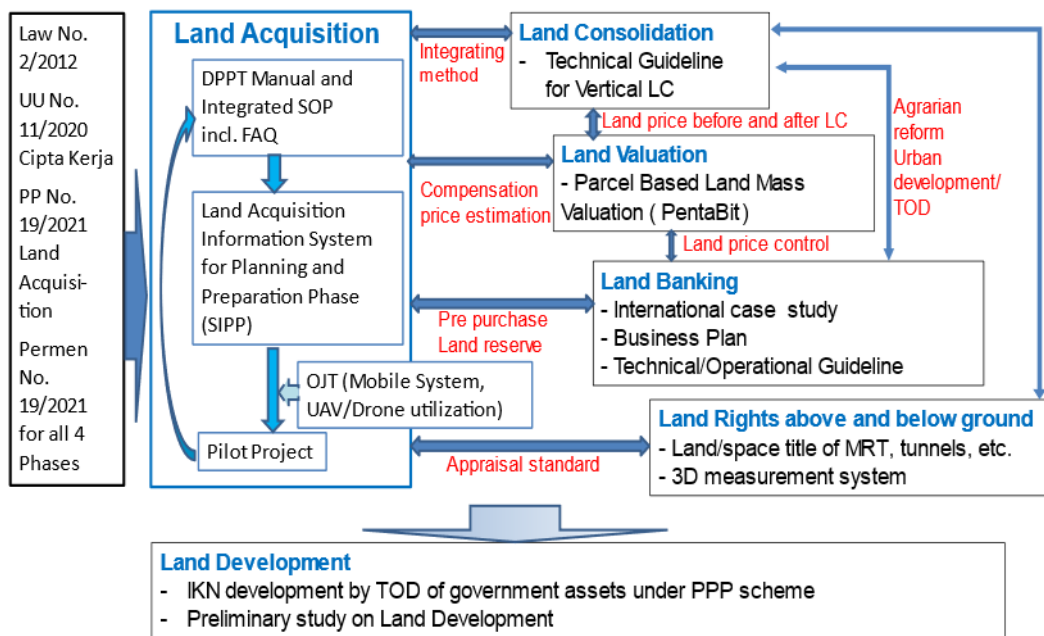


Figure I.15 Combination of Land Acquisition Activity and Relevant Activities

## Chapter II. Land Acquisition

### II.1 General

The Government of Republic Indonesia, through the Law (UU) 2/2012 and its implementing regulations amended by the Law (UU) 11/2021, has stipulated a series of land acquisition procedures, which under regulations already include responsible agencies for each phase and working days for each step. Referring to Article 13, Law (UU) 2/2012, four phases are defined as the procedure of acquiring land for public works projects: (1) Planning, (2) Preparation, (3) Implementation, and (4) Handover. In the implementation of the four phases, several issues caused the delay, among others:

- (1). ATR/BPN did not actively engage in phases (1) and (2);
- (2). collaboration and information sharing of land acquisition projects among Implementing Agencies (hereinafter referred to as IA), Local Governments (hereinafter referred to as LG), and ATR/BPN did not well organized; and
- (3). some internal issues in the ATR/BPN (ATR/BPN human resources skills need to be enhanced, equipment that can support land acquisition implementation needs to be upgraded).

Based on the problem identification, JICA Project team started to review the legal framework of land acquisition with viewpoints of effective procedure and fair compensation, as well as reviewing organizational arrangement in land acquisition of ATR/BPN's HQ and ATR/BPN Regional/Land offices. Through the legal framework and the organizational arrangement and problems identifications, JICA Project team proposed several supports to ATR/BPN that became the outputs of the project, namely:

- (1). developing DPPT Manual and Integrated SOP, including FAQ to cope with the issue of shortage of ATR/BPN involvement in phases (1) and (2) since there were legal voids in the regulations that applied at that time, which the IA and LG make their own guideline to carry on phase (1) and (2). Besides, to cope with that issue, the DPPT Manual and Integrated SOP, including FAQ, were made to help understand the regulations and to avoid different interpretations. The DPPT Manual and Integrated SOP strongly recommended ATR/BPN's contribution to earlier phases to realize a smooth implementation of land acquisition;
- (2). to organize the collaboration and information sharing of land acquisition among IA, LG, and ATR/BPN, developing a system based on the DPPT Manual and Integrated SOP was proposed. The system is to extend the recent Land Acquisition Information System in ATR/BPN called SIPT (Land Acquisition Information System/Sistem Informasi Pengadaan Tanah). SIPT accommodates data information only for phases (3) and (4); thus, the project proposed to develop a system extension to cover data information for phases (1) and (2), and the system called SIPP (Planning and Preparation Information System/Sistem Informasi Perencanaan dan Persiapan). SIPP development was expected to be connected with SIPT to provide the easiness of information sharing from phase (1) up to phase (4);
- (3). to enhance ATR/BPN's human resources skills and upgrade ATR/BPN equipment to support land acquisition, JICA Project team proposed to conduct on-the-job training (OJT). Besides conducting training, JICA Project team also would support the OJT's activity with system development and equipment provision. The system includes the development of Mobile System, the creation of 3D Viewer System, and Advanced UAV Utilization. While

the equipment provided is mobile tablets, PCs and software to process data for 3D and UAV data utilization, and a fixed-wing type of UAV/Drone. OJT was proposed to increase the capability of ATR/BPN's human resources, specifically for Taskforce A and B, who assigned the identification and inventory process in the land acquisition phase (3). The OJT training materials was included the system and equipment that developed and provided, and field practices that have a similar situation to the Task Force's work;

- (4). to apply and elaborate the above outputs, JICA Project team proposed to conduct a Pilot Project which also intended to improve collaboration and information sharing among stakeholders of all four phases.

## II.1.1 Timeline Land Acquisition Activities in The Project

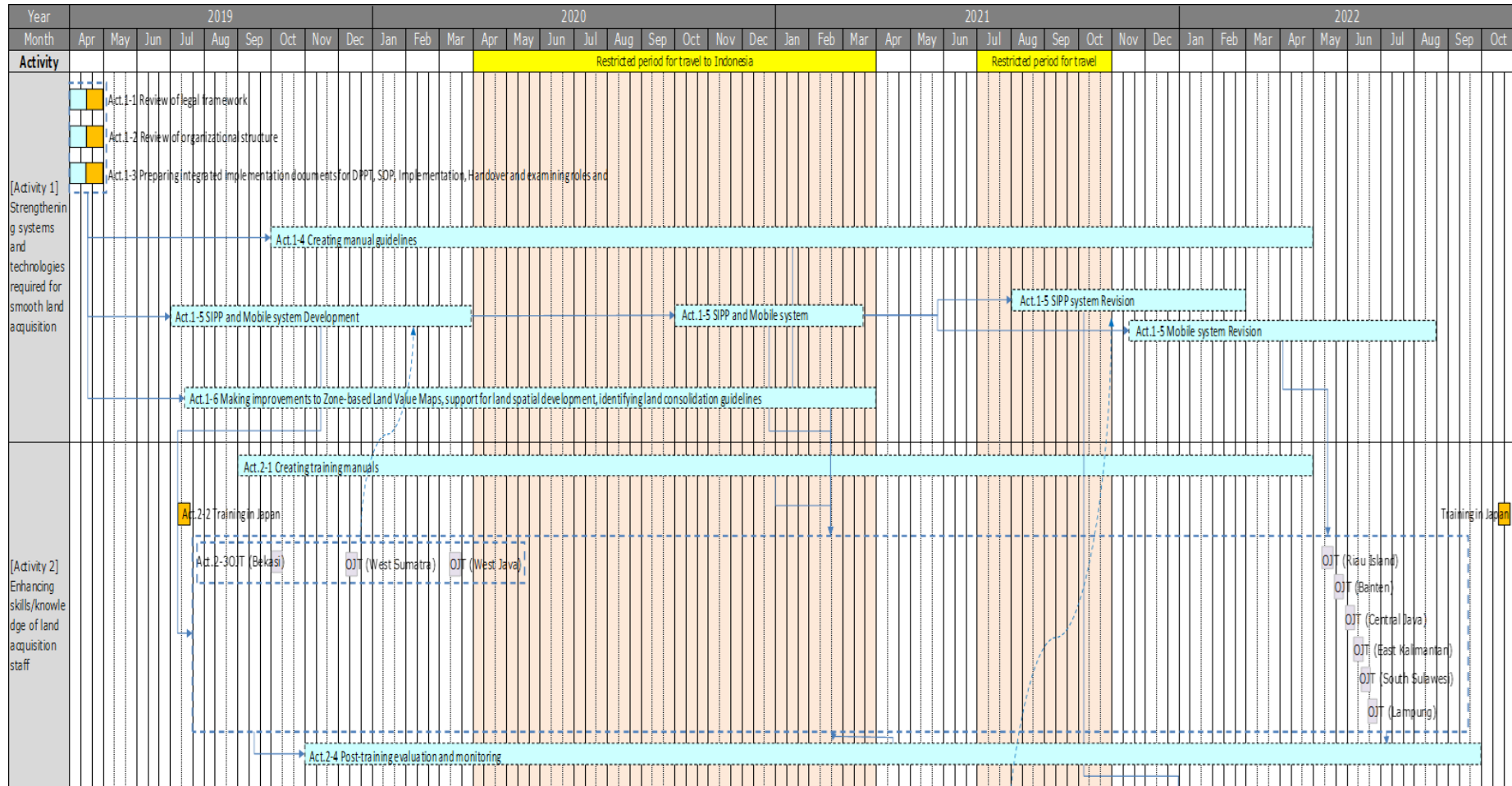


Figure II.1 Timeline Land Acquisition Activities in The Project (1)

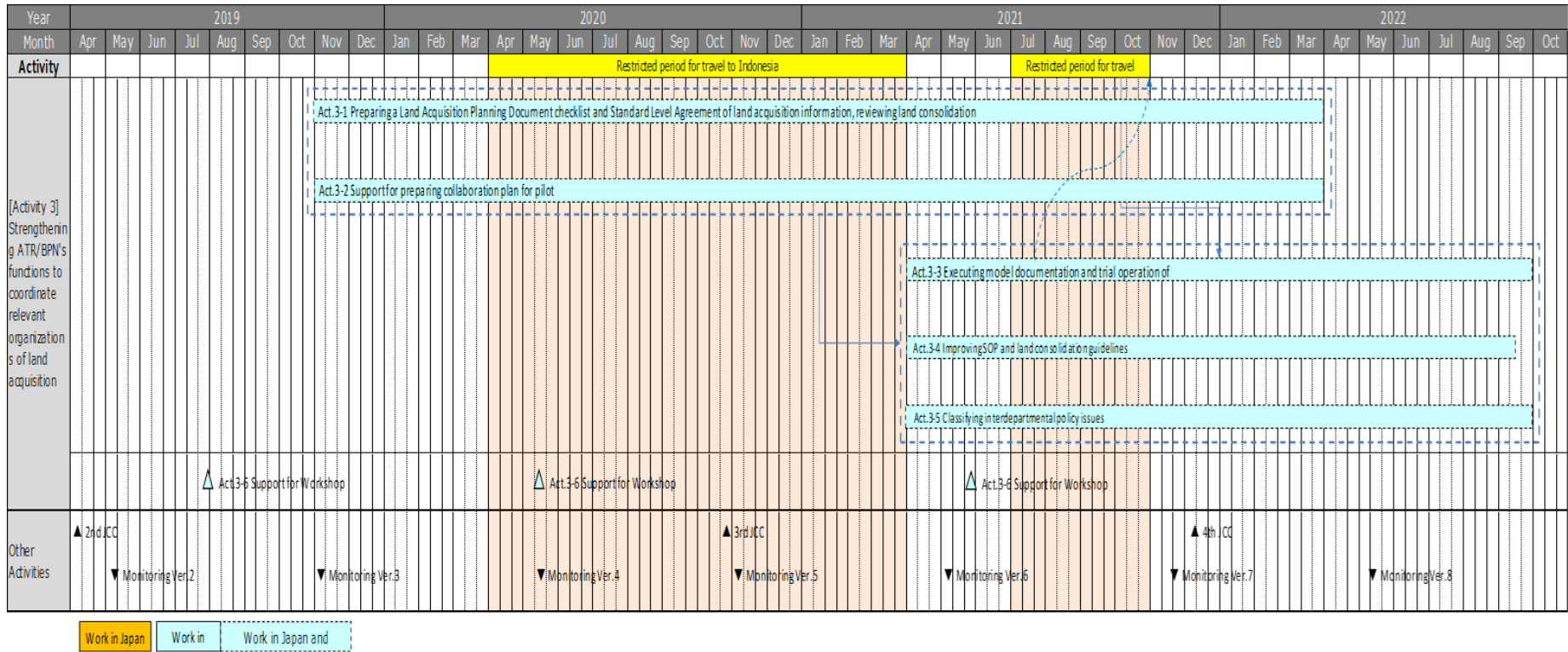


Figure II.2 Timeline Land Acquisition Activities in The Project (2)

## II.2 DPPT Manual and Integrated SOP

### II.2.1 DPPT Manual

#### II.2.1.1 Objective

Preparing DPPT is the first step of land acquisition and most stakeholders understand that the precise land information in DPPT leads to smooth implementation in the following phases. Therefore, preparing a good DPPT needs practical guidance, and the project proposed to make a Manual and SOP that is aimed at the use by practitioners as guidance. Hence, it is called DPPT Manual and Integrated Land Acquisition SOP. The main objective of the DPPT Manual and Integrated Land Acquisition SOP is to:

- (1). increase the accuracy/validity of data on the DPPT;
- (2). equating perceptions about DPPT;
- (3). standardize DPPT; and
- (4). facilitate the compilation of DPPT.

Beside to strengthen Ministry of ATR/BPN's function in the early phase of land acquisition process, the Manual and SOP are expected to provide linkage and methodology how to expand for Planning and Preparation phases and how to broaden access to IA and LG users.

#### II.2.1.2 Scope of work

The initial plan to make the DPPT Manual and SOP are to be a series of SOPs together with SOP for Implementation and Handover phases, which are then be regulated by the Head of BPN Regulation (Permen) 5/2012. At first, JICA Project team conducting the following scope of work:

- (1). to review relevant legal and regulatory documents to organize the framework of the Manual and Integrated SOP;
- (2). to review several available relevant documents, such as the ADB Report, which contains comprehensive information on land acquisition, safeguard issues, forest area issues, etc., and is expected for professional use;
- (3). to outline the Manual and Integrated SOP;
- (4). to conduct data/information collection from Kanwil/Kantah, IA, LG, and consultants that have experience in preparing DPPT;
- (5). to list and analyze problems and solutions; and
- (6). to draft DPPT Manual and Integrated SOP.

The first draft of the DPPT Manual and Integrated SOP was used as the basic guideline in the other outputs of the project, which is the development of the expansion of the Land Acquisition Information System (expanded SIPT), then to be named Planning and Preparation Information System (SIPP). In the process of developing the SIPP, the project received feedback to update the substance of the manual and SOP. Therefore, the project conducted DPPT Manual and Integrated SOP reviews in order to provide a more updated and comprehensive manual and SOP to be used as the reference in developing the SIPP. In addition, the first draft of the Manual and Integrated SOP elaborates on the Land Acquisition's FAQ, which is also one of the project's outputs.

DPPT Manual, Integrated SOP, and FAQ were planned to be implemented in the Pilot Project. At that time, the project agreed to do the Pilot Project in Padang–Pekanbaru Toll Road Project in West Sumatra Province. But with the unfortunate pandemic of COVID-19 situation, the Pilot Project has to be postponed. With the dynamic of the land acquisition policy, ATR/BPN decided to make the DPPT Manual has a more robust legal basis by adopting the DPPT Manual into the Ministerial Regulation (Permen) 20/2020 on Guideline on Preparation of DPPT; the DPPT Manual became one of the primary references in preparing the substance of the regulation.

### II.2.1.3 Deliverables

There are 3 (three) outputs from the preparation of the DPPT Manual and Integrated SOP, with the following details:

- (1). The first draft of the DPPT Manual and Integrated SOP was finalized in February 2019. In the first draft, JICA Project team identifies that to provide detailed DPPT, the minimum items in DPPT mentioned in the Presidential Regulation (Perpres) 71/2012 need to be added. The additional substance in DPPT Manual is shown in Figure II.3.

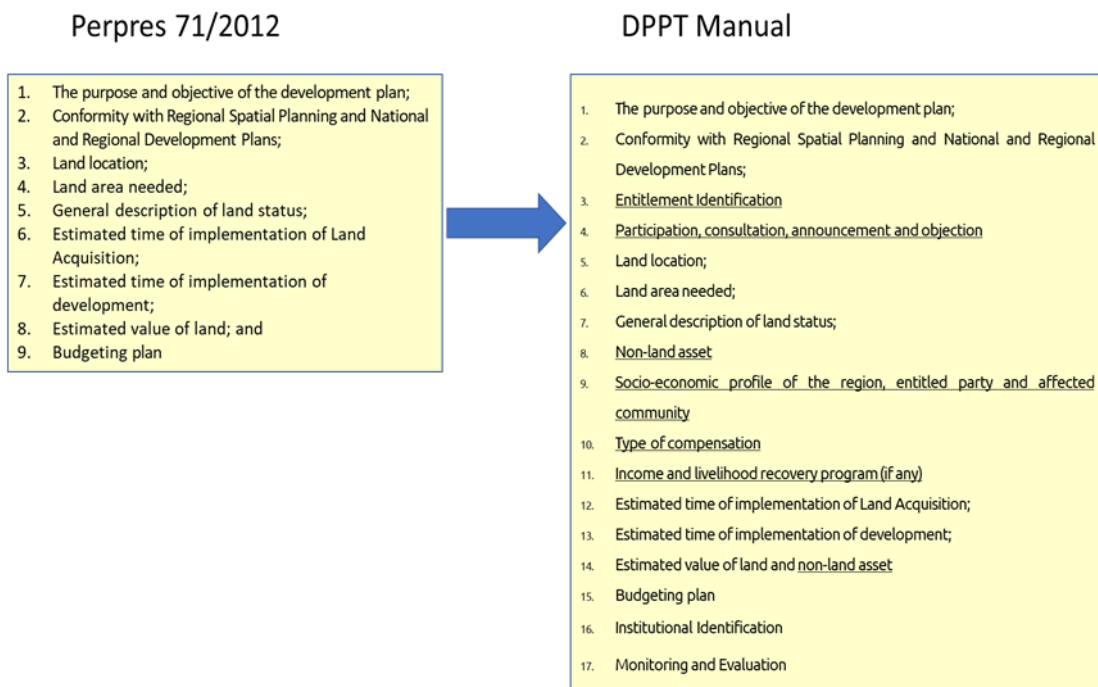


Figure II.3 Additional Substance of DPPT

In this draft, JICA Project team tried to make a detailed yet compact with necessary information on how to prepare each chapter in DPPT. Also, include the related regulations to be referred to, the most common problem that might arise while preparing the data for each chapter, and information on related activities that the IA should conduct. The visualization of the first draft shown in the エラー! 参照元が見つかりません. as follow:



ISI DOKUMEN PERENCANAAN PENGADAAN TANAH	
<p><b>PERATURAN TERKAIT - 1</b></p> <p>Peraturan terkait Maksud dan Tujuan: UU No. 2/2012 dan Peraturan Presiden No. 12/2012 Pasal 4 ayat 1 dan 2.</p> <p>Maksud dan tujuan rencana pembangunan sebagaimana dimaksud pada ayat (2) huruf (a), merupakan maksud dan tujuan pembangunan yang dilaksanakan dan manfaat pembangunan untuk kepentingan umum.</p> <p>Untuk menghindari atau meminimalkan pengadaan tanah dan pemukiman kembali, dapat dilakukan melalui:</p> <ul style="list-style-type: none"> <li>Memodifikasi desain teknik proyek;</li> <li>Menghindari sensasional sumber atau mengorganisir bila diperlukan, jika proyek yang melibatkan pemukiman penduduk, seperti budaya, tempat yang dibenarkan, tempat ibadah dan lain-lain (seperti proyek jalan, terminal, bandara, dll);</li> <li>Mengajukan atau rencana konsultasi dibarengi dengan peninjauan pengadaan tanah dipertimbangan untuk proyek yang bersifat lintas sektor (jika terencana, jalan tol, jalan raya, rehabilitasi sungai);</li> <li>Mengajar pejabat konsultasi untuk mempromosikan dampak lingkungan dan muatan dari rencana proyek. <p><b>PERATURAN TERKAIT - 2</b></p> <p>UU No. 2/2012 dan Peraturan Presiden No. 12/2012 Pasal 4 ayat 1 dan 2.</p> <p>Rencana Tata Ruang Wilayah sebagaimana dimaksud dalam Pasal 3 ayat (2) huruf a, dibedakan atas (a) Rencana Tata Ruang Wilayah Nasional; (b) Rencana Tata Ruang Wilayah Provinsi; dan (c) Rencana Tata Ruang Wilayah Kabupaten/Kota.</p> </li></ul>	<p><b>1. Maksud dan Tujuan Pembangunan</b></p> <p><b>Penulisan pada DPPT.</b></p> <p>(1) Menguraikan maksud dan tujuan pembangunan yang direncanakan dan manfaat pembangunan untuk kepentingan umum.</p> <p>(2) Menguraikan komponen pembebasan lahan dan pemukiman kembali yang ditimbulkan dari rencana pembangunan.</p> <p><b>Kegiatan (termasuk metodenya) yang perlu dilakukan</b></p> <p>(1) Melakukan kurjungan lapangan dan koordinasi dengan instansi terkait di sekitar lokasi untuk mendapatkan informasi kondor dampak.</p> <p>(2) Mendiskusikan dengan tim teknis rencana pembangunan mengenai alternatif untuk menghindari atau meminimalkan pengadaan tanah dan pemukiman kembali.</p> <p><b>2. Kesesuaian dengan Rencana Tata Ruang Wilayah dan Rencana Pembangunan Nasional dan Daerah;</b></p> <p><b>Penulisan pada DPPT.</b></p> <p>(1) Menjelaskan kesesuaian dan prioritas pembangunan dalam Rencana Pembangunan Jangka Menengah dan Rencana Strategis.</p> <p>(2) Menginformasikan perencanaan pengadaan tanah sesuai dengan rencana kerja instansi terkait, diantaranya Dinas tata ruang Provinsi/Kabupaten Kota, instansi terkait.</p> <p>(3) Pengadaan tanah bagi pembangunan untuk kepentingan umum, dikelompokkan menjadi dua kategori yaitu (a) Proyek Strategis Nasional (PSN) dan (b) Proyek Infrastruktur (Non PSN).</p> <p><b>Kegiatan (termasuk metodenya) yang perlu dilakukan</b></p> <p>(1) Berkonsultasi/konfirmasi kepada instansi di bawah pemerintah daerah yang menangani penataan ruang.</p> <p>(2) Jika pembangunan tidak sesuai dengan RTRW, maka berkoordinasi dengan instansi di bawah pemerintah daerah yang menangani penataan ruang untuk melakukan penyesuaian RTRW.</p>
<p><b>PERATURAN TERKAIT - 3</b></p> <p>UU No. 2/2012 dan Peraturan Presiden No. 12/2012 Pasal 27</p> <p>Berikut:</p> <p>(1) Pihak yang Berhak berupa pemrosesan, badan hukum, badan sosial, badan keagamaan, atau instansi pemerintah yang memiliki atau menguasai objek pengadaan tanah sesuai dengan ketentuan peraturan perundang-undangan.</p> <p>(2) Pihak yang Berhak sebagaimana dimaksud pada ayat (1) meliputi:</p> <ol style="list-style-type: none"> <li>penanggungjawab atas tanah;</li> <li>pemegang pengelolaan;</li> <li>nadzir untuk tanah wakaf;</li> <li>pemilik tanah bekas milik adat;</li> <li>mayarakat hukum adat;</li> <li>pihak yang menguasai tanah negara dengan tidak baik;</li> <li>pemegang dasar pengusahaan atas tanah; dan/atau</li> <li>Pemilik bangunan, tanaman, atau benda lain yang berkaitan dengan tanah.</li> </ol>	<p><b>3. Pengaturan Keberhasilan</b></p> <p><b>Permasalahan yang sering dihadapi.</b></p> <p>(1) Terdapat pihak-pihak memanfaatkan/menggarap lahan milik pihak lain (contoh penggarapan di kawasan hutan).</p> <p>(2) Adanya pemukiman, fasilitas umum, makam dan aset lain yang memerlukan relokasi.</p> <p>(3) Perubahan pada kawat reman.</p> <p><b>Penulisan pada DPPT.</b></p> <p>(1) Menyebut peraturan dasar legal yang terkait dengan keberhasilan serta jenis kompensasi yang dapat diberikan.</p> <p>(2) Menyebut beberapa kebijakan untuk merumuskan matriks keberhasilan.</p> <p>(3) Menyebut Matriks Keberhasilan yang berisi informasi jenis aset yang terkena dampak (kehilangan fisik dan non fisik) yang layak (eligible) dikompensasi, atau kebijakan lainnya (jika tidak bisa diberikan kompensasi).</p> <p>(4) Apabila ada interpretasi dari ayat (2) huruf a-h yang tidak jelas, dibuat jelas, atau apabila ada pihak lain yang dapat diidentifikasi sebagai pihak yang berhak untuk mendapatkan kompensasi selain huruf (a) sampai (h).</p> <p><b>Kegiatan (termasuk metodenya) yang perlu dilakukan</b></p> <p>(1) Membuat matriks keberhasilan (format pada Lampiran xxx)</p> <p><b>Pertanyaan yang sering ditanyakan:</b></p> <p>(1) Apakah sudah merumuskan kebijakan proyek pihak yang berhak yang mendapatkan kompensasi?</p> <p>(2) Apakah kebijakan proyek sudah merumuskan kebijakan untuk subjek dan objek yang akan diberi kompensasi?</p>

Figure II.4 First Draft of DPPT Manual and Integrated SOP

(2). the second draft of the DPPT Manual and Integrated SOP, which includes the FAQ's elaboration, was finalized in November 2020. In the second draft, besides some updates around the flowchart and the layout to make it easier to read, the DPPT Manual and Integrated SOP also elaborate on the frequently asked question (FAQ) about the land acquisition process.

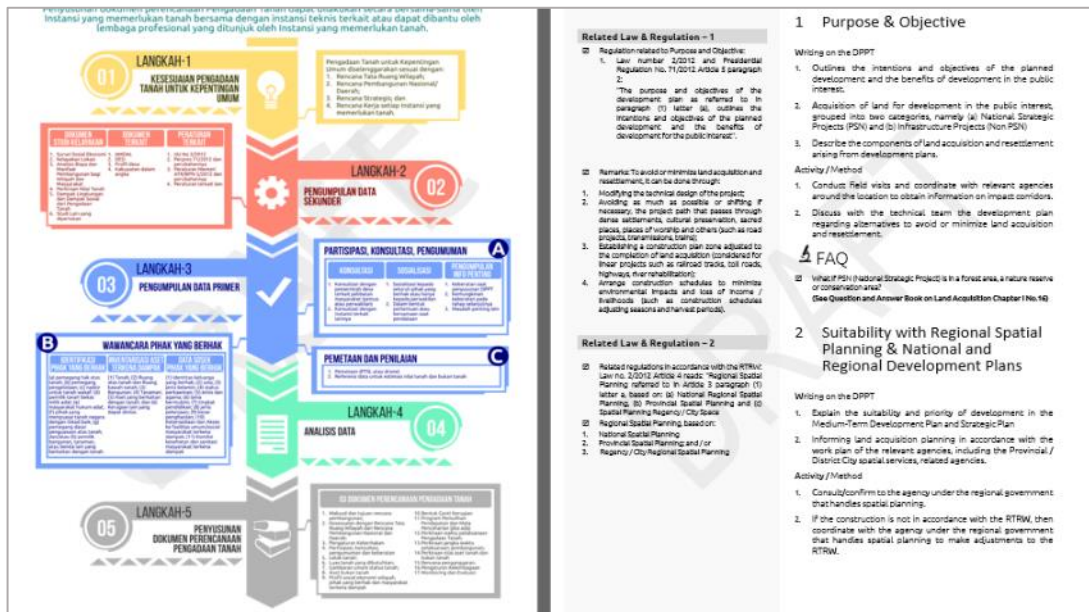


Figure II.5 Second Draft of DPPT Manual and Integrated SOP

(3). The comparison before and after the Ministerial Regulation (Permen) 20/2020 was finalized in March 2021. After the stipulation of Ministerial Regulation (Permen) 20/2020, then the stipulation of Law (UU) 11/2020, the DPPT Manual and Integrated SOP are being reviewed. Some results are shown as the comparison of before and after Ministerial Regulation (Permen) 20/2020, as shown in Table II.1.



Table II.1 Comparison Before and After Ministerial Regulation (Permen) 20/2020

NO	Topic	New Permen		Perpres 71 and its amendment		Draft DPPT Manual JICA
		Article	Content	Article/Paragraph	Content	
1	DPPT Content (Mandatory)	Part Two: Mandatory Content Article 6 Article 7	Article 6, 7, and 18 in the New Permen explains about <b>Mandatory &amp; Additional content in DPPT</b> .  Article 6 The content of DPPT includes: (a) mandatory content; (b) additional content.  Article 7 The mandatory content of DPPT, as referred to in Article 6 point a consists of: (a) the objective and purpose of the development plan; (b) conformity with RTRW and National/Regional Development Priorities; (c) the location of the land; (d) the total area of the required land; (e) the general description of land status; (f) estimated period of Land Acquisition implementation of; (g) estimated period of implementation of development; (h) estimated land value; and (i) budgeting plan.	Part Two: Land Acquisition Planning Document  Article 5 paragraph (1):	Land Acquisition Planning Document at least consist:  a. the objective and purpose of the development plan; b. conformity with RTRW and National/Regional Development Priorities; c. the location of the land; d. the total area of the required land; e. the general description of land status; f. estimated period of Land Acquisition implementation of; g. estimated period of implementation of development; h. estimated land value; and i. budgeting plan.	There is no statement about Mandatory and Additional content for DPPT items in DPPT Manual. It is assumed that all DPPT items are Mandatory.
2.	DPPT Content (Additional)	Article 18	Article 18 (1) Additional content, as referred to in Article 6 point b, is carried out in the Agency that requires the land to consider the need to add the DPPT content other than those specified in Article 7 to Article 17. (Artiden 7 - 17 explains about the item of DPPT) (2) Agencies that require the land formulate and decide on additional DPPT content as referred to in paragraph (1) with the DPPT Preparation Team.	Did not mention additional content		

#### II.2.1.4 Review Work After Omnibus Law

After the stipulation of Ministerial Regulation (Permen) 20/2020 on Guideline on Preparation of DPPT, the only remaining land acquisition phase still has no national-level guideline is the Preparation phase. Therefore, the Directorate General of Land Acquisition and Land Development (hereinafter referred to DGLALD) asked JICA Project team to contribute to the preparation of Ministerial Regulation for the guideline of the Preparation phase by using the Integrated SOP as the base. But then, the Government of the Republic of Indonesia stipulated Law (UU) 11/2020 on Job Creation Law (Omnibus Law). The law delegates all of the detailed provisions regarding the implementation of land acquisition for public interest development will be regulated by Government Regulation.

However, after the discussion between DGLALD and JICA Project team, it was decided to change the focus from the initial request to prepare the Ministerial Regulation for the guideline of the Preparation phase into assisting in reviewing the old vs. new regulation and providing some suggestions regarding the necessary provision that need to be regulated in the Government Regulation and Ministerial Regulation.

#### II.2.2 FAQ on Land Acquisition SOP

##### II.2.2.1 Objective

In implementing the land acquisition process, the Ministry of ATR/BPN, as the government institution which has the authority in the sector of land, has received many repetitive questions regarding know-how and solution for several similar problems that may occur. By the time when the project was finishing the first draft of the DPPT Manual and Integrated SOP, the Director General of Land Acquisition asked the project to assist the Director General's office in preparing the FAQ Book. At that time, they already had the draft with the list of typical questions and answers that IA, LG, Kantah/Kanwil, and entitled parties might ask regarding a particular subject in the land acquisition process. The FAQ book was intended to help any institution/parties involved in the land acquisition process get a proper answer for their question related to land acquisition just by reading the book.

##### II.2.2.2 Scope of Work

JICA Project team prepared the FAQ book within this following scope:

- (1). reviewing the available draft of FAQ book by considering relevant legal and regulatory frame work;
- (2). to add necessary questions and answers; and
- (3). to improves FAQ with appropriate legal interpretation and proper regulatory basis.

##### II.2.2.3 Deliverable

- (1). Draft of Buku Pintar Pengadaan Tanah (Land Acquisition FAQ Book) may be seen in the reference part of this report.
- (2). Linked relevant question to the appropriate chapter in DPPT Manual and Integrated SOP.

## II.3 System Development

### II.3.1 Land Acquisition Information System (SIPT and SIPP)

#### II.3.1.1 Objective

Referring to sub-chapter II.1, the issue of an unorganized collaboration and information sharing of land acquisition projects among IA, LG, and ATR/BPN affects land acquisition delay. One of the factors that caused the delay is incomplete information and inaccurate data since the early phases of land acquisition, which is the Planning and Preparation phase, although SIPT had been developed for the Implementation and Handover phases before. Therefore, a system to cover Planning and Preparation phase is needed to overcome the delay issue. The necessity of the system is also related to article 132 in Government Regulation (PP) 19/2020 and article 80 in Ministerial Regulation (Permen) 19/2021, which stated that the data and documentation of land acquisition shall be made and saved in electronic data. The project then proposed to develop a system called SIPP (Planning and Preparation Information System/*Sistem Informasi Perencanaan dan Persiapan*).

SIPP is an extended concept of the SIPT (Land Acquisition Information System/*Sistem Informasi Perencanaan Pengadaan Tanah*) to cover the Planning and Preparation phases that developed with the aim to prepare the land acquisition process with more accurate and well-monitored data. As a result, SIPP will be able to accommodate electronic Land Acquisition Planning Document (DPPT) submission in the Planning phase and the electronic data process in the Preparation phase before entering the Implementation and Handover phases of land acquisition.

#### II.3.1.2 Scope of Work

- (1). The SIPP scope of work as mentioned in Attachment II.1 SIPP System Flow Chart is described in the following:
- (2). Pre-Planning of land acquisition that consists of Land Acquisition Project Registration and Project Inventory dan Identification;
- (3). Account registration for user in Planning phase; user in Preparation Phase; and user in ATR/BPN account;
- (4). Planning phase that consists of Feasibility Study and DPPT submission;
- (5). Preparation Phase that consists of DPPT Verification, Preparation Team Formation, Announcement of the Development, Initial Data Collection, Public Consultation, Objection Study, and Land Determination;
- (6). Revision and/or update of DPPT and Land Determination;
- (7). Small-scale Land Acquisition that consists of small-scale of land acquisition with direct buying and with land acquisition phases.

#### II.3.1.3 Deliverable

- (1). SIPP first development was carried out in 2019 by referring the regulations that applied in 2019, namely Law (UU) 2/2012, Presidential Regulation (Perpres) 71/2012, and the Draft DPPT Manual and Integrated SOP developed by JICA Project team.
- (2). The second development started in August 2021 and refers to the updated regulations, which are Government Regulation (PP) 19/2021 and Ministerial Regulation (Permen) 19/2021.

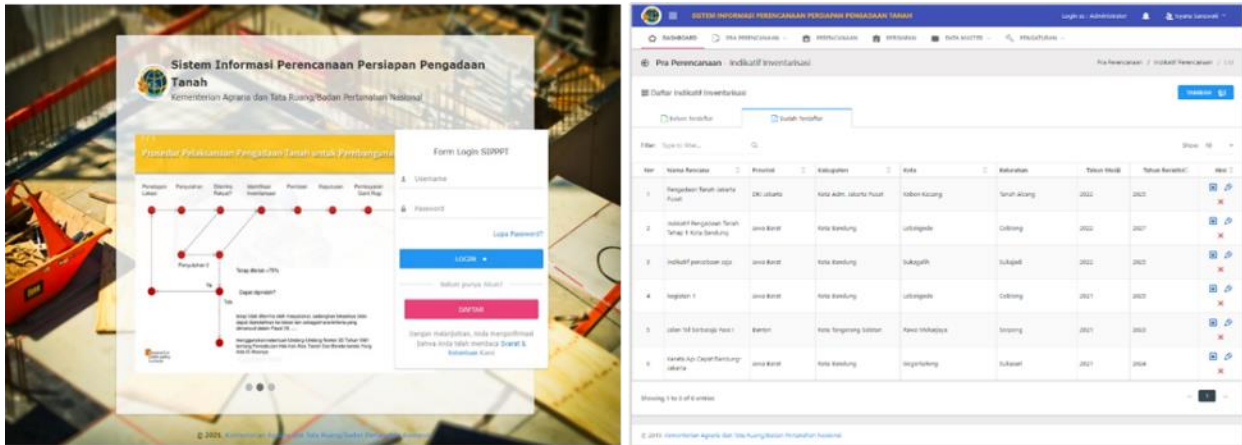


Figure II.6 SIPP System

- (3). SIPP is tested on the Pilot Project in 2022. The system test is in conjunction with the SIPT trial that developed in the same year as the SIPP development.
- (4). Both SIPP developments (SIPP first and second development) involve collaboration between the JICA Project team, ATR/BPN (DGLALD), as well as with PUSDATIN of the Ministry of ATR/BPN.
- (5). SIPP Data Structure, System Components, and Server Configuration can be seen in Attachment II.2 SIPP Structure, Components, Configuration.
- (6). Overall architecture.

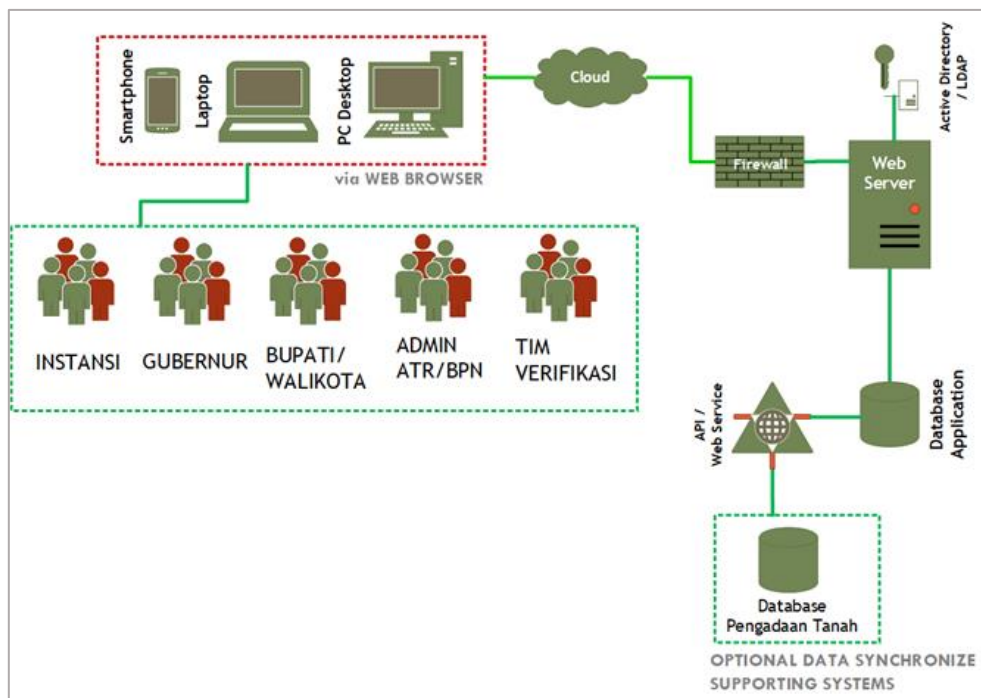


Figure II.7 SIPP System Architecture

With the following explanation:

- (a) The basic platform for the application to be built is web-based.
- (b) The application is built with modular technology, where each user will be assigned to have authority in each module.

- (c) The system architecture can depend on the readiness of the server infrastructure, can be split on several servers can also be unified in one server, at least two servers for application servers and database servers.
- (d) Database related to content from other applications or systems will be used by API/Web Service to retrieve data, which is then integrated with the system or application being developed.
- (e) The application uses a three-tier technology application model.

This means that there are 3 (three) tier models related to the application, namely client, application and data tier, the schema of this model is illustrated in the figure below:

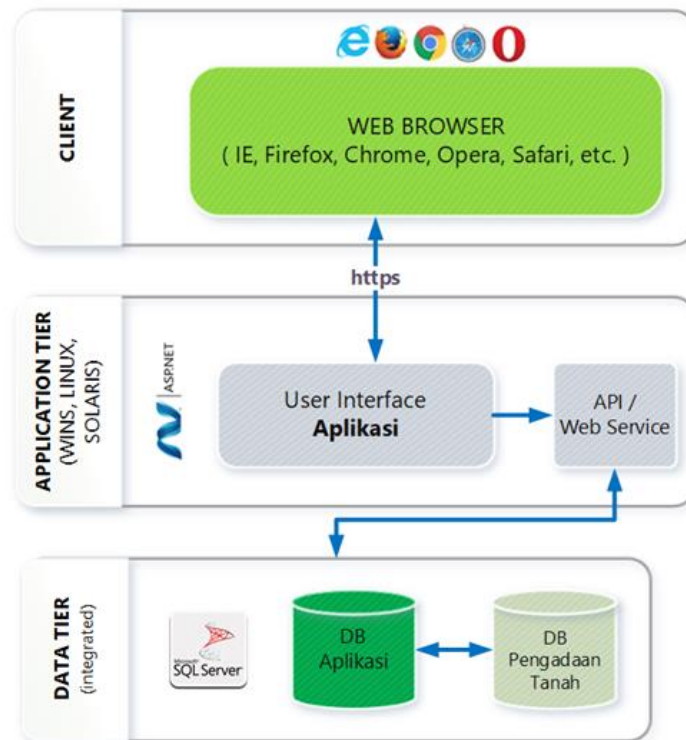


Figure II.8 3 (three) Tier Models SIPP

#### II.3.1.4 Review work after Omnibus Law

In November 2020, Law 11/2020 concerning Job Creation (Undang Undang Cipta Kerja/Omnibus Law) was enacted. The Law, which also regulates land acquisition, generates derivative regulations such as Government Regulation (PP) 19/2021 and Ministerial Regulation (Permen) 19/2021 that affects several changes in the land acquisition process. The changes in the land acquisition process, especially in the Planning and Preparation phase that affect the SIPP development process. The changes or additional terms in for Planning and Preparation phase are the following:

- (1). Planning phase
  - (a) Reinforce regulations related to Land Acquisition Planning Document (DPPT), among others, by regulating the policies related to mandatory and additional content of DPPT;
  - (b) the policy of the validity period of the DPPT and policy related to amendments to the DPPT.
- (2). Preparation phase

- (a) Verification stage for DPPT before the LG starts the Preparation phase;
- (b) reinforce the authority, duties, and functions of the LG in the Preparation phase;
- (c) expanding the scope of entitled parties, proof of ownership/control over land, etc.;
- (d) reinforce regulations related to the issuance of location determination, validity period, renewal process, etc.;
- (e) in certain situations, the Minister is given the authority to issue the Location Determination.

In August 2021, the second development of SIPP was conducted by adjusting the new laws and regulations by providing several changes and additional items mentioned above in the form of system features. The adjustment also involved a discussion among the project (including JICA Project team and DGLALD) and PUSDATIN of the Ministry of ATR/BPN. The SIPP second development version was tested during the pilot project that involved collaboration among IA, LG, and ATR/BPN.



Figure II.9 Documentation: Meeting for SIPP and Mobile System Development in PUSDATIN Office (1)

## II.3.2 Mobile System for Identification and Inventory and Initial Data Collection Activity

### II.3.2.1 Objective

From 2019 until 2022, On the Job Training (OJT), which is one of the project activities, was conducted to strengthen the capacity of Task Force A and B in the ATR/BPN Regional Office/Land Office. Before the OJT activity was conducted, JICA Project team cooperated and had discussions with High Officials and Task Force A and B at the ATR/BPN Land Office Bekasi Regency, which was the first location of OJT, in 2019. Based on the discussion, one of the main issues in collecting field data is that Task Force B is still using the manual data collection method. The manual data collection using manual writing on paper carries a high risk of data loss, and if the data is lost, Task Force B must retrieve the data in a short time. Also, during the discussion, the Head of ATR/BPN Land Office Bekasi Regency mentioned that if the manual method were changed to a digital form using a data collection system, then Task Force B would work more efficiently and overcome the risk of data loss. Due to the ATR/BPN Land Office Bekasi Regency's issue and concerns, JICA Project team discussed it with

DGLA decided to develop a support system to help Task Force B work and to prevent data loss, and the system is called a Mobile System for identification and inventory.

Mobile System is an application to collect juridical data for identification and inventory activity of Task Force B and generate it into digital format. The Mobile System contains the features developed based on Ministerial Regulation (Permen) 19/2021 to record Subject data (owners of land, building, plant) and Object data (Land, Building, Plant) of land acquisition. In addition, Mobile System also has feature to export those data into a Nominative List (DANOM). Mobile System is also planned to be integrated with SIPT, the ATR/BPN's existing land acquisition system that is also used for identification and inventory data storage and data process.

During the development and finalization of the Mobile System for identification and inventory, there was a suggestion raised from the project to utilize the Mobile System format as an application for initial data collection activity in the Preparation phase of land acquisition. The utilization was suggested due to the function's similarity, which is to collect data on subjects and objects affected by land acquisition. Nonetheless, the data purpose is different. The subject and object data in the initial data collection is temporary data that will be used for public consultation in the Preparation phase. Meanwhile, the subject and object data in identification and inventory will be used for compensation calculation in the Implementation phase. Another difference is that the user in initial data collection is from the LG, and inventory and identification activity is from ATR/BPN. Based on the suggestion mentioned above, the project developed an application that called as Mobile System for initial data collection.

The Mobile System for initial data collection's content was following the Ministerial Regulation (Permen) 19/2021, Article 45 and Article 56 that accommodates initial data collection of Entitled Parties data and Land Acquisition Objects data. The system's output is a temporary list of Entitled Parties and Land Acquisition Objects, which will be used as estimation data for Public Consultation activity in the Preparation phase. Due to the contents' similarity, the development of the Mobile system for initial data collection adapts the contents from the Mobile system for inventory and identification. However, it adjusts it to the needs of the Mobile system for initial data collection. Mobile System for initial data collection is integrated with SIPP to synchronize needed data from SIPP and to export the output to SIPP to be used in Public Consultation in Preparation phase.

#### II.3.2.2 Scope of Work

The Mobile System for Identification and Inventory and Mobile System for Initial Data Collection scope of work, as mentioned in Attachment II.1 Mobile System Identification Inventory System Flow Chart and Attachment II.2 Mobile System Initial Data Collection System Flow Chart are described in the following:

- (1). Mobile System for Identification and Inventory of Task Force B.
  - (a) Inventory and Identification activity of Task Force B.
  - (b) Data Collection for Subject Data (Land/Building/Plant owner Data) and Object Data (Land/Building/Plant Data).
  - (c) Nominative List Data (DANOM) is the output.
  - (d) Data synchronization (parcel map data) from SIPT to Mobile System.







(f) Overall Architecture

<b>Client Tier</b>	Android
<b>Application Tier</b>	
Programming Language & Tools:	<ul style="list-style-type: none"><li>- Kotlin and Java</li><li>- IDE (Integrated Development Environment): Android Studio Chipmunk  2021.2.1</li></ul>
Library	<ul style="list-style-type: none"><li>- Networking, to connection between android and API</li><li>- Maps, to display map data on android</li><li>- Database Local, to save data entered from android or taken from a server and stored on a smartphone device</li></ul>
Web Service	<ul style="list-style-type: none"><li>- Programming Language: PHP 5.x</li><li>- Framework: Codeigniter</li><li>- ORM: Native Framework ORM Codeigniter</li></ul>
Map Layer	Open Street Map
<b>Data Tier</b>	SQL Lite
<b>Operating System</b>	Apps run on minimal Android 4.4 (API level 19) or higher
<b>Permissions</b>	
Photos/Media/Files	Read the contents of your USB storage Modify or delete the contents of your USB storage
Storage	Read the contents of your USB storage Modify or delete the contents of your USB storage
Wi-Fi Connection Information	View Wi-Fi connections (not mandatory, application can run in offline mode)
Location	Precise location (GPS and network-based) Approximate location (network-based)

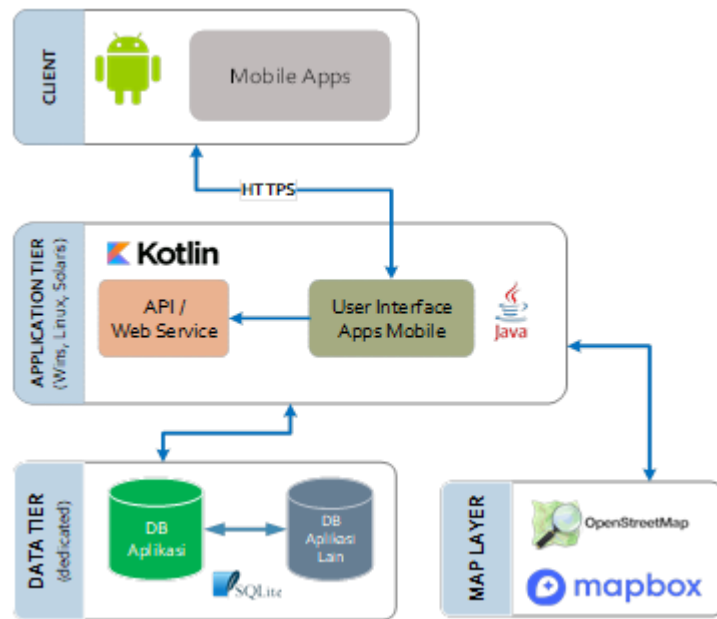


Figure II.11 Mobile System Inventory and Identification System Architecture

(2). Mobile System for Initial Data Collection

- (a) In 2022, the system developed based on Ministerial Regulation (Permen) 19/2021, Article 45 and 56, and using Attachment XVI from the regulation as the system's output format. The development was initiated by the project.

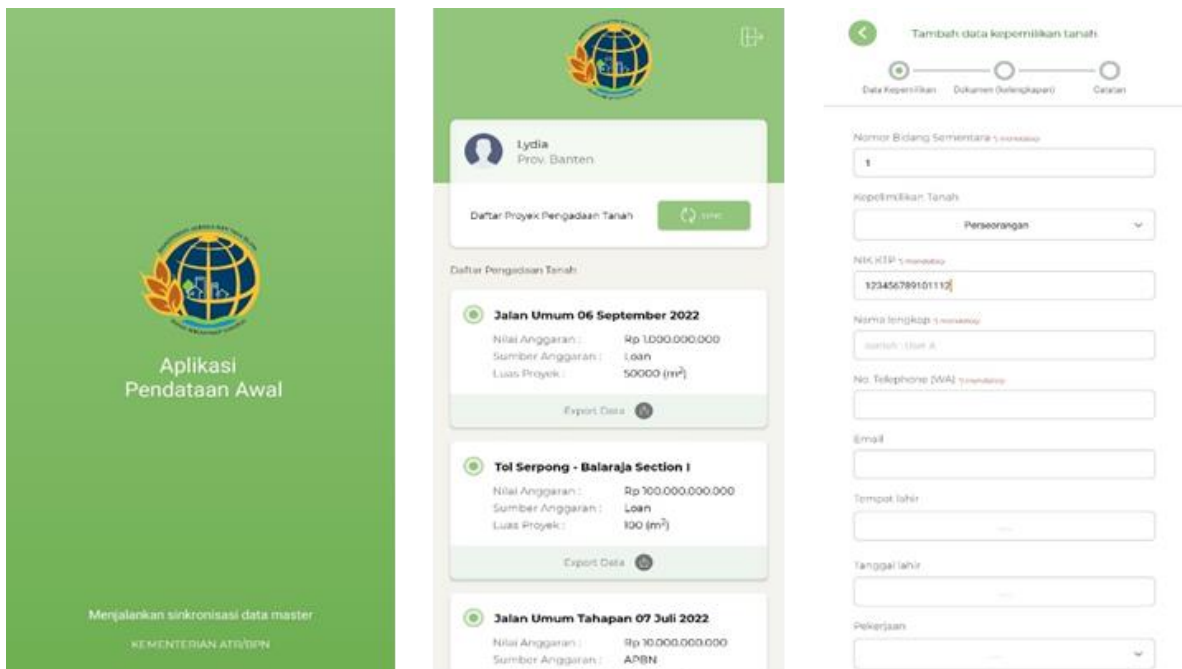


Figure II.12 Mobile System for Initial Data Collection

- (b) Data Structure, System Components, and Server Configuration can be seen in Attachment II.5 Mobile System Structure, Components, Configuration.
- (c) Overall architecture:

<b>Client Tier</b>	Android
<b>Application Tier</b>	
Programming Language & Tools:	<ul style="list-style-type: none"> <li>- Kotlin and Java</li> <li>- IDE (Integrated Development Environment): Android Studio Chipmunk  2021.2.1</li> </ul>
Library	<ul style="list-style-type: none"> <li>- Networking, to connection between android and API</li> <li>- Maps, to display map data on android</li> <li>- Database Local, to save data entered from android or taken from a server and stored on a smartphone device</li> </ul>
Web Service	<ul style="list-style-type: none"> <li>- Programming Language: PHP 5.x</li> <li>- Framework: Codeigniter</li> <li>- ORM: Native Framework ORM Codeigniter</li> </ul>
Map Layer	Open Street Map
<b>Data Tier</b>	SQL Lite
<b>Operating System</b>	Apps run on minimal Android 4.4 (API level 19) or higher
<b>Permissions</b>	
Photos/Media/Files	<p>Read the contents of your USB storage</p> <p>Modify or delete the contents of your USB storage</p>
Storage	<p>Read the contents of your USB storage</p> <p>Modify or delete the contents of your USB storage</p>
Wi-Fi Connection Information	View Wi-Fi connections (not mandatory, application can run in offline mode)
Location	<p>Precise location (GPS and network-based)</p> <p>Approximate location (network-based)</p>

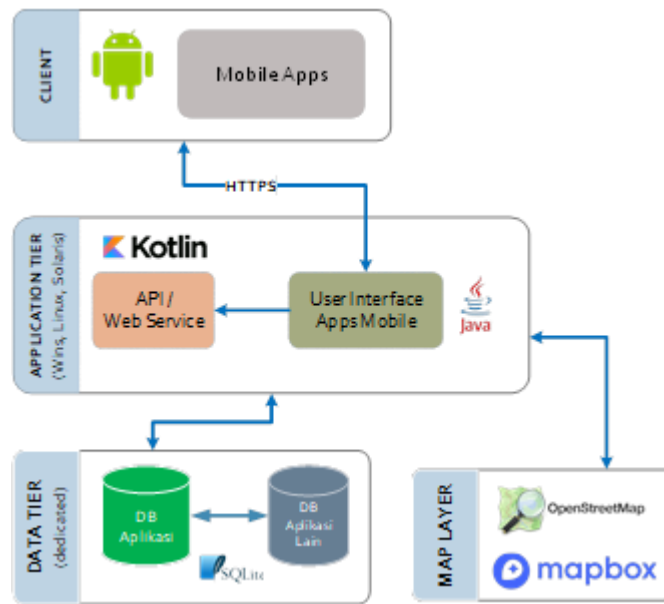


Figure II.13 Architecture Mobile System Initial Data Collection

#### II.3.2.4 Review work after Omnibus Law

The Law Number 11 of 2020 concerning Job Creation (Undang Undang Cipta Kerja/Omnibus Law) and its derivative regulations related to land acquisition such as Government Regulation (PP) 19/2021 and Ministerial Regulation (Permen) 19/2021 become the legal basis for the development of Mobile System for inventory and identification activity and Mobile System for initial data collection. By following the latest regulations, the data that needs to be taken by each user is more precise and detailed, and the system adjusts the content with more rigid data as mentioned in the regulation.



Figure II.14 Documentation Meeting for SIPP and Mobile System Development in PUSDATIN Office (2)

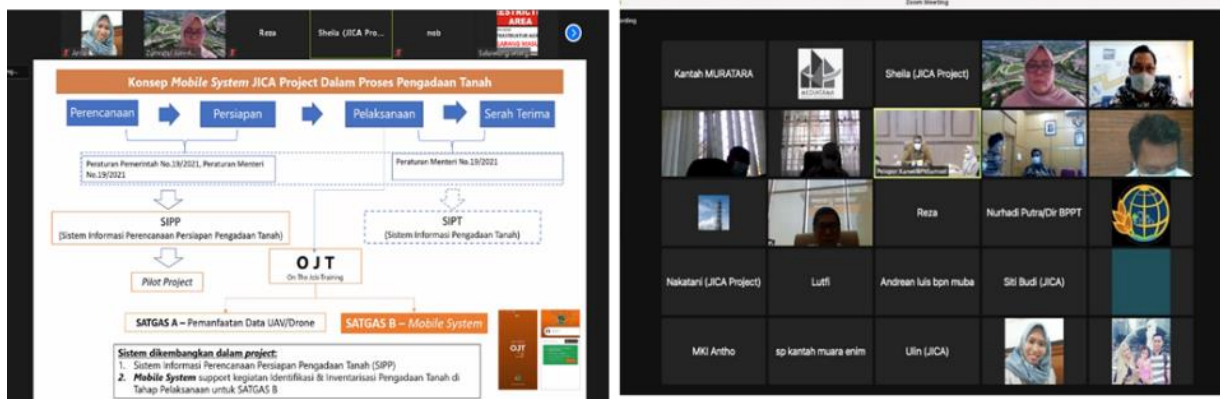


Figure II.15 Mobile System Discussion with DGLALD and Pusdatin through Online Meeting

### II.3.3 3D Measurement System

#### II.3.3.1 Objective

In Indonesia, surveying, registration, and creation of rights in 3D space (above and below the land) are urgent issues for land administration. All conventional work and information of land administration have been managed in two dimensions. Recently, however, the lands, structures, and rights of subjects have diversified, and it has become necessary to manage things in three-dimensional space. Along with this, the current measurement and recording methods have to be improved to new methods. To solve those issues, JICA Project Team developed a 3D measurement system to carry out measurements, verification, and detailed survey works using a 3D point cloud by SfM (Structure from Motion) technology. Using the technology, the position and shape of the underground/indoor structure to be measured can be easily visualized and detailed which leads to efficiency and speeds up measurement work. By using this low-cost method, JICA Project Team aims to support the problem-solving of the above issues and achieve sustainable efficiency of land management administration of ATR/BPN.

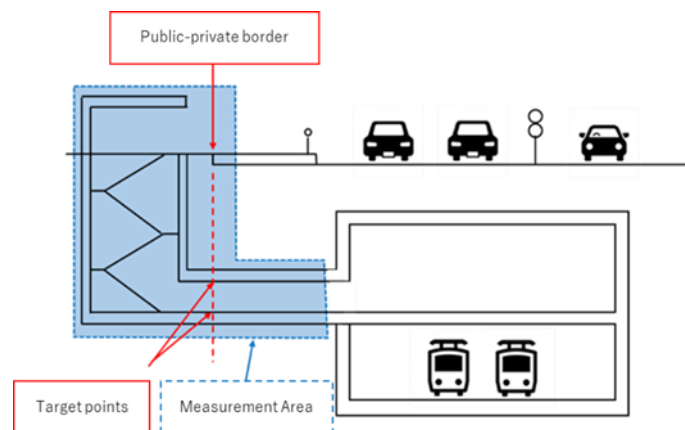


Figure II.16 Conceptual diagram of the measurement of MRT entrance (by JICA Project Team)

In a field survey for the compensation of land and buildings by Task Force B in the implementation phase of land acquisition, necessary information is collected visual and by hearing. Also, in order to acquire the data inside the building, it is necessary to obtain permission from the residents of the building. If there are cases where human errors such as typographical errors and omissions in the survey results occur, and repeating a field survey is necessary to confirm and correct the mistakes. This

repeated survey is a significant cause of delay in Taskforce-B work of ATR/BPN. In order to solve this problem, proposed aerial photographs using UAV and combined with 3D Measurement System. The aerial photographs by UAV will become the records of the land, buildings, etc. at the time of the survey that taken from the sky, and meanwhile the 3D Measurement System is to acquire information that covers the walls of the building and inside the building. Those informations will be used to correct any omissions or mistakes in the field survey.



Figure II.17 Left: Ortho-photo (from Google), Right: 3D data

The process of the 3D measurement system is around the building, and the inside of the building is captured with a 360 degrees camera during the field survey. The camera position and direction information are recorded simultaneously by a sensor such as GNSS that is built into the camera. By processing those image data, the ortho-photo image created from the aerial photograph and the above-ground/underground or indoor image are overlaid with GIS, which establishes a three-dimensional image.

### II.3.3.2 Equipment

Table II.2 Equipment for 3D Measurement System

(a) 360 Degrees Camera	<ul style="list-style-type: none"> <li>- 360 degrees camera</li> <li>- Requires GNSS sensor</li> </ul>
(b) SfM Software	<ul style="list-style-type: none"> <li>- Any type of photo format captured by various types of cameras</li> <li>- Optimize camera exterior orientation parameters from GPS and IMU input parameters</li> <li>- Ground control point</li> <li>- DSM/DTM, Ortho photo, Mosaic image creation</li> <li>- 2D/3D, Image/Vector data output</li> </ul>
(c) Workstation	<ul style="list-style-type: none"> <li>- 3D data processing</li> <li>- 3D data visualization</li> <li>- Large storage capacity</li> </ul>

### II.3.3.3 Accuracy Verification

After creating 3D model data based on the data acquired, the position of the model is oriented using the ground control points. By using that 3D model data, the position coordinates of any point in the model and the length between features points are able to be measured. And by comparing with the values measured in the field in advance, and the absolute position accuracy and relative position accuracy of the created 3D model is presumed. By this process, for example, the accuracy of the positional relationship between the boundary on the ground and the control boundary inside the

underground passage is verified. To the point cloud data acquired for the building, the accuracy of the relative position is verified by measuring the length between feature points such as walls and windows. Furthermore, by reading the materials of the wall, floor, and ceiling from the acquired images, the accuracy improvement of the field work for property compensation is verified. The result of the accuracy verification has been summarized in a document as attached in Attachment II.6 3D System Simulation Summary.

#### II.3.3.4 Detailed Work Process

The result of the following image acquisition and data processing work were summarized, and system practical manuals was created that summarizes the procedures for performing work efficiently and with stable accuracy and points to be noted.

##### (1) Data Acquisition

The first step of 3D Measurement is data acquisition with 360 degrees camera shooting in the indoor space and to create a 3D point cloud. The data acquisition method (shooting interval, distance to the object, angle, brightness at the time of shooting, etc.) with the digital camera influent the visual quality and position accuracy of the created data. In particular, the accuracy of the point cloud data to be created differ depending on the quality of images, the degree of overlapping of images, the shooting angle, and the number of images.

##### (2) Data Processing

After acquiring the 360 degrees image in the field, the captured image is loaded into the software and data processing is performed in the following steps.

Table II.3 Contents of the Data Processing

Step 1 [Initial processing]	Common feature points are detected from the overlapping image files to create joint points called ‘tie points’. After that, the image photographing position is restored by the result of the self-calibration based on the lens distortion of the image, the focal length, etc., and the adjustment calculation of the photographing principal point and the inclination of the image. At the same time, the error between the control point and the verification point is calculated to verify the calculation process.
Step 2 [Creation of 3D point cloud data]	The 3D point cloud (point cloud) data is created by 3D position of all feature points in the image is calculated from the positional relationship between each image based on the photographed position restored in step 1.
Step 3 [3D model creation]	By integrating the 3D point cloud data created in step 2 and the colour information of the images, 3D model data with the position, shape and colour information of the photographed feature is created.



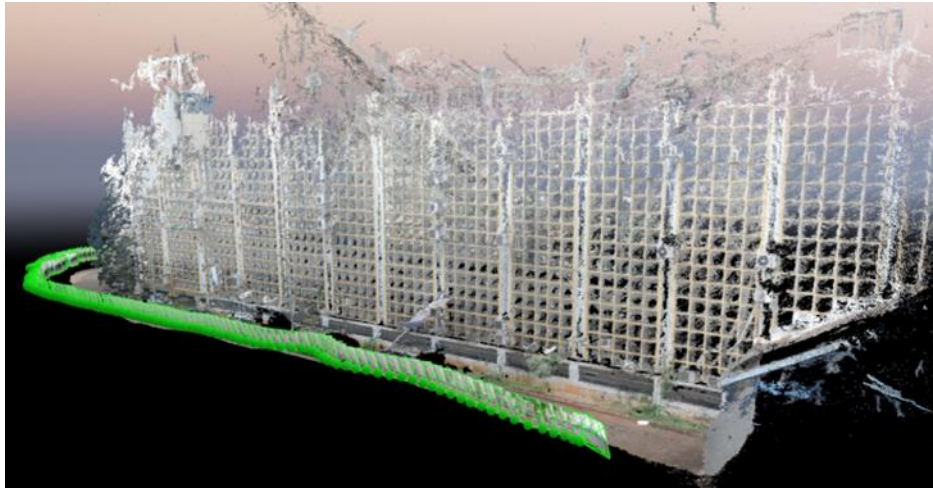


Figure II.18 Example of 3D model data created by SfM from images

### II.3.3.5 Utilization in OJT (On the Job Training)

In the OJT targeting the land offices of ATR/BPN implemented in the project, the 3D measurement system was introduced in cooperation with the mobile system for taskforce-B property compensation, and Ortho image created by UAV for taskforce-A.

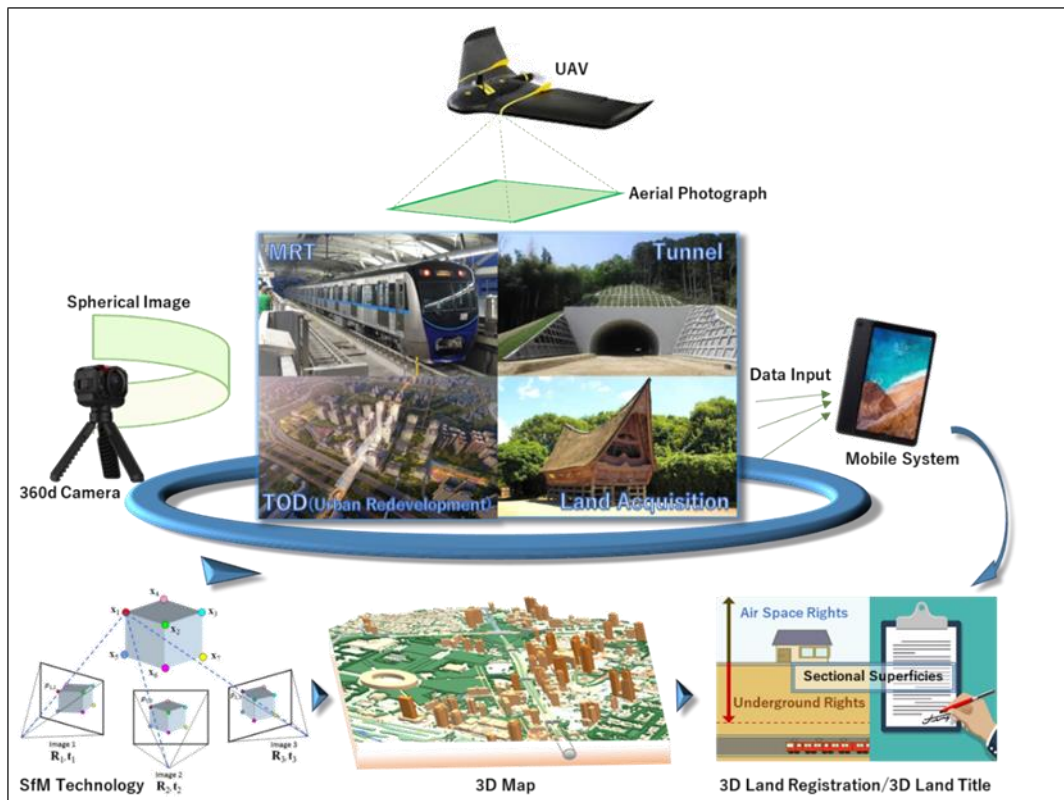


Figure II.19 Image of 3D map using UAV, 360 degrees camera and mobile system (by JICA Project Team)



## II.3.4 3D Viewer System

### II.3.4.1 Objective

A 3D Viewer System was built so that the result of the 3D measurement system could be used more extensively in the land and space management administration of ATR/BPN. This system was also an activity to support "systematization of land and space management", which is one of the goals of ATR/BPN's new strategic five-year plan (RENSTRA2020-2024).

The 3D data with image created by the 3D measurement system and existing drawing data such as CAD and GIS owned by ATR/BPN, can be overlaid and displayed in the 3D Viewer System. It allows to construct 3D land/spatial model data that faithfully reproduces the real world.

By realistically visualizing and utilizing conventional 2D maps and drawings as more realistic 3D land and space models, it facilitates decision-making and consensus building among stakeholders in many situations such as not only in land acquisition and registration, but also in urban development projects such as three-dimensional land readjustment projects, urban infrastructure maintenance, and disaster management. As a result, the overall work will be more efficient and faster, which will be very useful for the future of ATR/BPN.

It is also important that 3D land/spatial model data be widely used within ATR/BPN. Currently, there is a minimum of software for 3D data creation, but at least the introduction of viewing software (viewer) is necessary for many staff to use it. As for 3D data viewers, there is a lot of commercially available software and there is no standard, and a large amount of cost is incurred to introduce it to all staffs in ATR/BPN. Therefore, considering compatibility with existing ATR/BPN systems in addition to economic efficiency, the project developed the 3D viewer system as ATR/BPN's original software.

### II.3.4.2 3D Viewer System Development

The 3D viewer system was developed based on the design document that is complied with the IT facilities of ATR/BPN and following system policy or requirements.

Table II.4 Policy and requirements of the 3D viewer system

System Policy	<ul style="list-style-type: none"> <li>- Simple and user friendly</li> <li>- Editable for future upgrade (source code and copyright to be provided to ATR/BPN)</li> <li>- Affordability and sustainability (Cost and technology perspective)</li> <li>- Browser-based operation</li> <li>- Internet (web) security</li> </ul>	
Design Platform	<ul style="list-style-type: none"> <li>- Operating System: Linux</li> <li>- Open-source Database System: PostgreSQL</li> <li>- Programming Language: Javascript and Python</li> <li>- Method of Operation: Online for background map / Offline for user's data</li> <li>- Language of Interface: Bilingual (English / Bahasa)</li> <li>- Base Map: BIG Map/ Open Street Map</li> </ul>	
Function	Dimensional space	Three (3D)

Overlay multiple format layer	Format: ifc, dxf/dwg, shp, 3tiles, las, dgn, gml(citygml), fbx, obj, 3ds, tif(dsm/dem/orthoimage), CIM, LandXML, gbXML, kmz/kml
Coordinate system	Both Defined and Undefined spatial data are available
Measurement tool	2D+3D Length, 2D+3D Area, 3D Volume
Print out	Yes
Show Texture image of feature	Yes
Export	Format: jpg, pdf, dxf, dwg, shp, fbx, obj, 3ds, IFC
View operation	Zoom-in, Zoom-out, 3d-Rotation, Move
Show attribute information	Yes
Background base map	BIG Map/Open Street Map
Data Edit	Not Available



Figure II.20 Display of 3D Viewer System (By JICA Project Team)

## II.4 On-the-Job Training (OJT)

### II.4.1 Background

As mandated by Article 58 of Government Regulation (PP) 19/2021 concerning Implementation of Land Acquisition for Development for Public Interest, the Task Force that is in charge of land acquisition's inventory and identification activity are divided into two, Task Force A and Task Force B. Task Force A is assigned to collect physical data on Land Acquisition Objects, while Task Force B is in charge of collecting juridical data on Land Acquisition Objects. The duties and responsibilities of the two task forces are substantial and have an essential role in the overall land acquisition process; therefore, the human resource for the Task Force with reliable competence and capacity are needed. Thus, to enhance ATR/BPN's human resources skills in carrying out the land acquisition process, the project conducted On the Job Training (OJT) for Task Force A and Task Force B that were assigned in the Regional Office/Land Office environment.

### II.4.2 Purpose and Objective

OJT activity aims to increase the capacity and knowledge of Task Force personnel at the land acquisition and support land acquisition activities during the Implementation phase, specifically in inventory and identification activity. The OJT activity is supported by system technology and training with simulations with a situation or condition similar to the Task Force's work.

### II.4.3 Target Group

- (1) Task Force A and Task Force B in the identification and inventory process at the land acquisition Implementation phase.
- (2) Other personnel (outside the Task Force) who are within the Land Office or Regional Office designated as OJT locations who are interested in OJT technology and content.
- (3) Task Force from outside of ATR/BPN (Building Department from Ministry PUPR, Agricultural Department from LG, or other related parties) who assigned in the inventory and identification process at the land acquisition Implementation phase.

### II.4.4 Summary of OJT Activity

OJT activities were conducted from 2019 to 2022 with nine times on-site OJT and three times online OJT in 9 (nine) locations that consists of 8 (eight) ATR/BPN Regional Offices and 1 (one) ATR/BPN Land Office. The OJT locations are based on the result of the JCC (Joint Coordination Committee) meeting between the DGLALD and the JICA project team in 2019, 2020, and 2021. Initially, OJT intended to support certain ATR/BPN Land Offices in solving issues using technical support. However, due to the needs and interests in the selected OJT locations, OJT activities were expanded to be within the scope of ATR/BPN Regional Offices. As a result, the total number of OJT participants was 459, consisting of Task Force A and Task Force B from ATR/BPN Land Office that appointed by each Regional Office where the OJT activity is located; the officers within the ATR/BPN Regional Office; and the Task Force from outside the ATR/BPN (Building Department from Ministry of PUPR, Agriculture Agency, etc.). The OJT locations and participants' total number shows in Table II.5 OJT Locations.

Table II.5 OJT Locations

No	OJT Locations	Date of Activity	Participants
<b>On-site OJT</b>			
1	ATR/BPN Bekasi Regency Land Office	02 – 10 October 2019	13
2	ATR/BPN Regional Office West Sumatra Province	09-13 December 2019	41
3	ATR/BPN Regional Office West Java Province	16 – 18 March 2020	33
4	ATR/BPN Regional Office Riau Island Province	17 – 20 May 2022	33
5	ATR/BPN Regional Office Banten Province	23 – 25 May 2022	30
6	ATR/BPN Regional Office Central Java Province	07 – 09 June 2022	60
7	ATR/BPN Regional Office East Kalimantan Province	14 – 17 June 2022	42
8	ATR/BPN Regional Office South Sulawesi Province	21 – 24 June 2022	36
9	ATR/BPN Regional Office Lampung Province	27 – 29 June 2022	42
<b>Online OJT</b>			
1	ATR/BPN Regional Office Riau Island Province	15 – 18 March 2021	16
2	ATR/BPN Regional Office Banten Province	29 March – 01 April 2021	35
3	ATR/BPN Regional Office Central Java Province	12 – 15 April 2021	78

The length of time to conduct OJT depends on the location's situation and needs, but in general, OJT takes three to four days of training. The material presented in OJT was organized to be implemented in the classroom for two or three days and one day for practice in the field that simulated the actual situation when participants worked in the field. The practice location also used the actual land acquisition project location or the location similar to the project location. The detail of material in OJT is described in the OJT Material Syllabus Table II.6 OJT Material Syllabus.

Table II.6 OJT Material Syllabus

Day	Topics/Material	Participant
<b>4 Days OJT Syllabus</b>		
<b>Day 1</b>	<b>Project Introduction</b> Brief explanation of the Technical Cooperation Project of the Ministry of ATR/BPN with JICA Project and explanation of OJT.	Task Force A Task Force B
	<b>3D Measurement System</b> Sharing knowledge of 3D measurement system for land acquisition application.	Task Force A Task Force B
	<b>Advance UAV/Drone System Utilization</b> UAV/Drone fixed-wing mapping theory and data utilization for Task	Task Force A

Day	Topics/Material	Participant
	Force A to support identification and inventory activity.	
	<b>Mobile System</b> Introduction of the Mobile System application for Task Force B as supporting tool for identification and inventory activity.	Task Force B
<b>Day 2</b>	<b>GIS</b> - Introduction to the basics of GIS, QGIS, and QFELD - Training of utilization of GIS, QGIS, and QFIELD for land acquisition.	Task Force A
	<b>Advance UAV/Drone System Utilization</b> UAV/Drone fixed-wing flight safety guide to prepare the field practice	Task Force A
	<b>Mobile System</b> Mobile System demonstration and simulation to prepare the field practice	Task Force B
	<b>3D Measurement System</b> - Theory and conceptual of 3D measurement system. - Introduction of 3D viewer system. - Preparation for 3D model data collection for field practice.	Task Force A Task Force B
<b>Day 3</b>	<b>Field Practice</b> - Data collection for field area using fixed-wing UAV/Drone - Data collection using Mobile System in the people's properties (land, building, plant) - Data collection for 3D model and measurement in the people's properties (land, building, plant) - Survey and data collection by utilizing QField	Task Force A Task Force B
<b>Day 4</b>	<b>Advance UAV/Drone System Utilization</b> Processing data result from data collection for field area using fixed-wing UAV/Drone	Task Force A
	<b>Mobile System</b> Processing the data and show the result from data collection using Mobile System in the people's properties	Task Force B
	<b>3D Measurement System</b> Processing data result from data collection for 3D model	Task Force A Task Force B
	<b>Additional Material</b> Sharing knowledge of calculation of compensation based on SPI 204 of MAPPI (Masyarakat Profesi Penilai Indonesia/ Indonesian Society of Appraisers)	Task Force B
<b>3 Days OJT Syllabus</b>		
<b>Day 1</b>	<b>Project Introduction</b> Brief explanation of the Technical Cooperation Project of the Ministry of ATR/BPN with JICA Project and explanation of OJT.	Task Force A Task Force B
	<b>Advance UAV/Drone System Utilization</b> - UAV/Drone fixed-wing mapping theory and data utilization for Task Force A to support identification and inventory activity. - UAV/Drone fixed-wing flight safety guide to prepare the field practice	Task Force A
	<b>GIS</b> - Introduction to the basics of GIS, QGIS, and QFELD - Training of utilization of GIS, QGIS, and QFIELD for land acquisition.	Task Force A
	<b>Mobile System</b> - Introduction of the Mobile System application for Task Force B as supporting tool for identification and inventory activity. - Mobile System demonstration and simulation to prepare the field practice	Task Force B
	<b>3D Measurement System</b> - Sharing knowledge of 3D measurement system for land acquisition	Task Force A Task Force B

Day	Topics/Material	Participant
	application. - Theory and conceptual of 3D measurement system. - Introduction of 3D viewer system - Preparation for 3D model data collection for field practice.	
<b>Day 2</b>	<b>Field Practice</b> - Data collection for field area using fixed-wing UAV/Drone - Data collection using Mobile System in the people's properties (land, building, plant) - Data collection for 3D model and measurement in the people's properties (land, building, plant) - Survey and data collection by utilizing QField	Task Force A Task Force B
<b>Day 3</b>	<b>Advance UAV/Drone System Utilization</b> Processing data result from data collection for field area using fixed-wing UAV/Drone	Task Force A
	<b>Mobile System</b> Processing the data and show the result from data collection using Mobile System in the people's properties	Task Force B
	<b>3D Measurement System</b> Processing data result from data collection for 3D model	Task Force A Task Force B
	<b>Additional Material</b> Sharing knowledge of calculation of compensation based on SPI 204 of MAPPI (Masyarakat Profesi Penilai Indonesia/ Indonesian Society of Appraisers)	Task Force B

As seen in the Table II.6, for OJT activity, the project not only provided training but also developed systems to support land acquisition activity in general and supports OJT activity in particular. The systems included Mobile System for Identification and Inventory land acquisition activity for Task Force B and 3D Viewer System to support 3D measurement training materials. The summary of OJT material could be seen in the Attachment II.7 OJT Summary Material. The implementation of OJT material to support land acquisition activity is in Figure II.21 and as for the documentation in OJT activity, it is shown in Figure II.22.

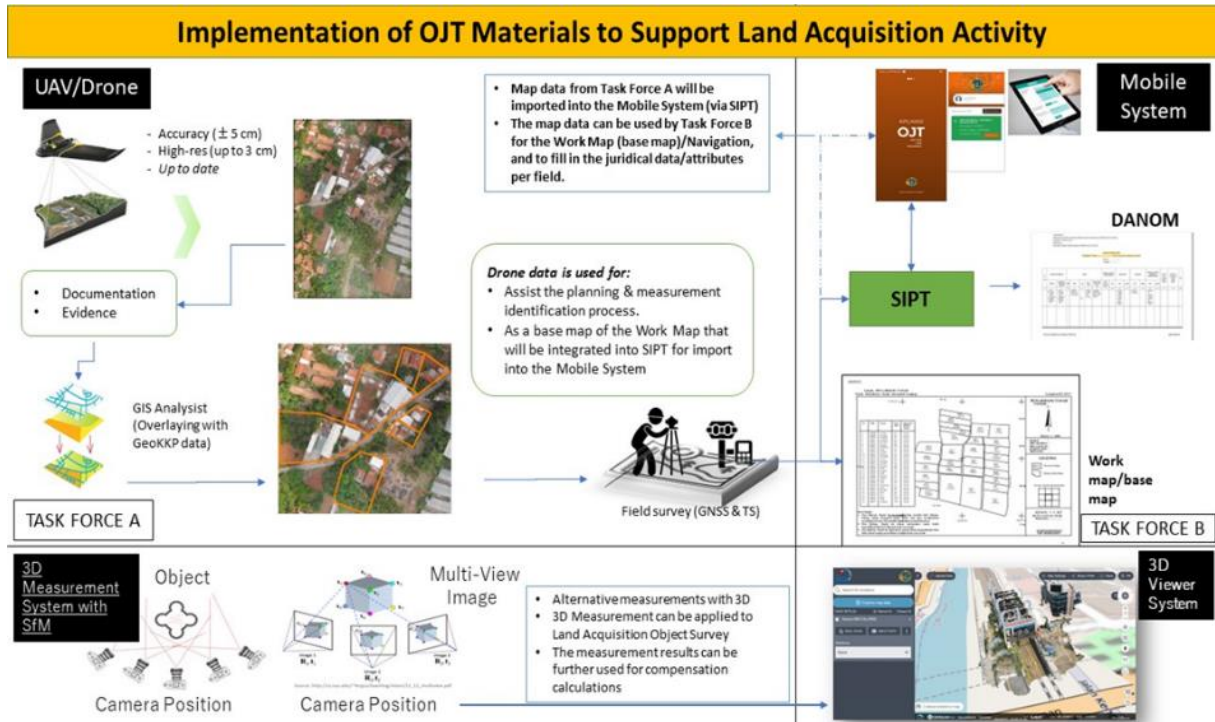


Figure II.21 OJT material implementation to support Land Acquisition activity





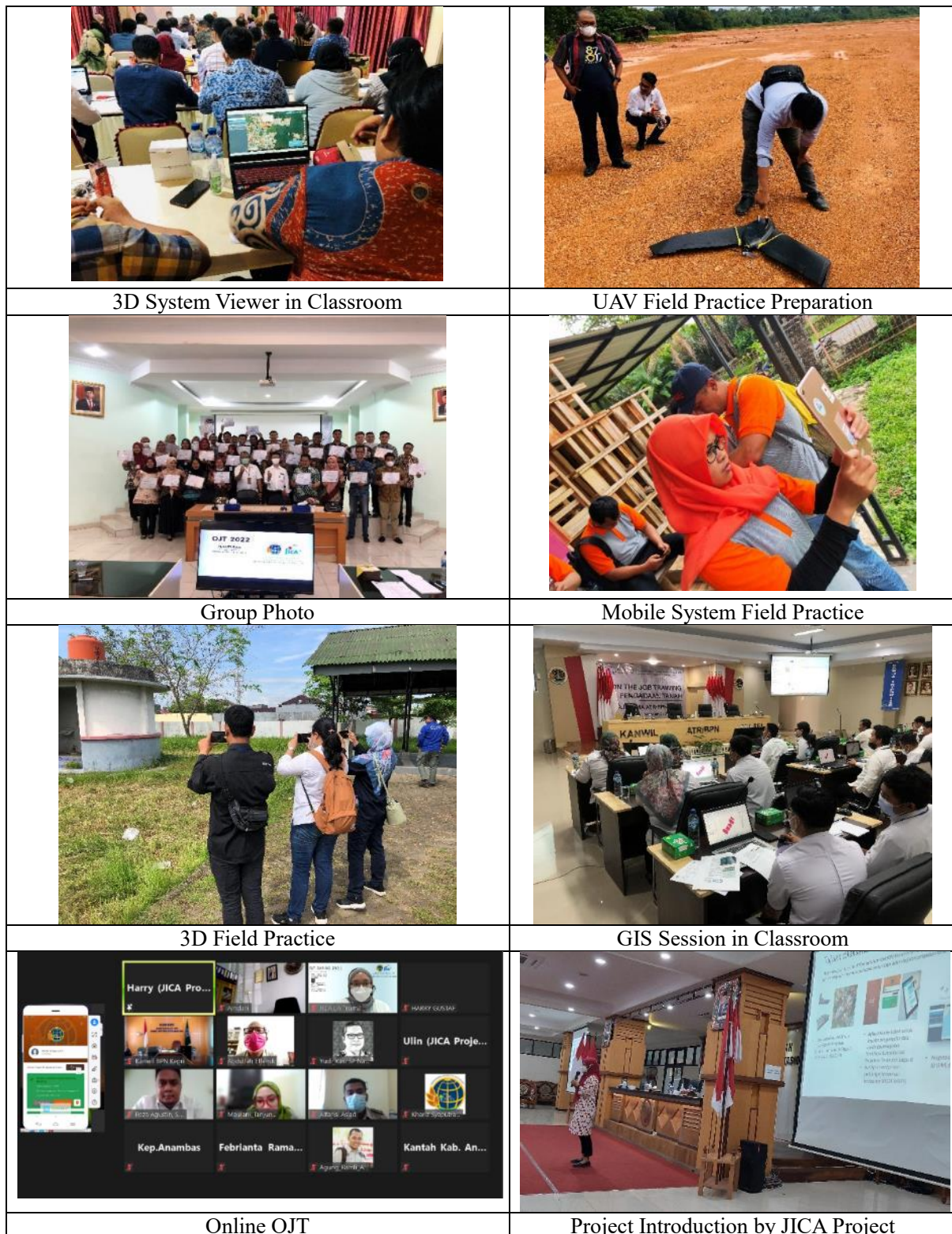


Figure II.22 OJT Documentation

For an evaluation of the OJT activity implementation, the project provided questionnaires to participants that the detail can be seen in the Attachment II.8 OJT report. The summary of the questionnaire result is as follows:

- (1) Most of the participants thought that in general, OJT activity is in accordance with the needs of participants in carrying out their daily duties in the land acquisition process, as well as in



accordance with the conditions in the field. OJT activity also provides new knowledge and alternative method that participants can use to support their work;

- (2) Participants also thought that the technology presented in OJT (UAV/Drone, Mobile System, and 3D) is expected to continue to develop and can be used in the identification and inventory activity of land acquisition in the future;
- (3) There were several inputs obtained from participants regarding the technology presented in the OJT (UAV/Drone, Mobile System, 3D), including:
  - (i) Utilization of mapping with UAV/Drone is required in the fieldwork process for the land acquisition process to facilitate field data collection;
  - (ii) UAV/Drone can facilitate the creation of base map data and activity planning;
  - (iii) With the Mobile System, fieldwork can be more effective and efficient;
  - (iv) The combination of UAV/Drone and 3D can facilitate measurement and mapping activities at ATR/BPN;
  - (v) Advance OJT is required, especially for UAV/Drone data processing and apply the technology with case studies in the field.

The conclusion of the OJT activity is, from the whole series of OJTs and based on the responses from the participants, OJT is in accordance with the needs of the participants in carrying out their duties in the land acquisition process. Participants also responded that OJT activities provided new knowledge and alternative method to support participants' work. Participants expect additional OJT activity for further data processing and apply the technology presented in OJT with case studies in the field. Some of the technologies introduced by the JICA project team in OJT 2022 may not be implemented immediately, but hopefully in the future, and along with the development of technology, the introduced technology can be utilized for the land acquisition process.

#### II.4.5 OJT Recommendations

After conducting the whole series of OJT, JICA Project Team gave recommendation as follows:

##### **(1) Systems Related Recommendation**

##### **(a) Continuous monitoring, maintenance and update of systems**

The systems introduced during OJT shall be maintained and updated to avoid becoming obsolete with the change of the times. Furthermore, by seeing the dynamic changes of regulations in the Ministry of ATR/BPN, the regulations, procedures, and requirements may change in the future. Thus, the systems must be revised and adjusted to each situation. A technology review is also recommended to evaluate how effectively the systems are used in the daily practices of regional offices.

##### **(b) Create an environment to involve users in each district**

The systems will be used throughout regional offices of ATR/BPN, and all staff involved should be respected and allowed to contribute to the further development of the systems.

##### **(c) Create a help desk to support regional offices and incorporate their voice**

Good support for Task Force is essential. Even more, when it comes to using the system that Task Force has to use, such as SIPT and in the future SIPP and Mobile System. Task Force shall be able to access a support desk when they encounter problems using systems during field survey. Using a help desk is expected to prevent Task Force from stopping using systems because they cannot get support when they have difficulties understanding. The support from the Help Desk

can be given by email, phone, short message (e.g., WhatsApp), Q&A, or any other formats that ease the Task Force to reach the support.

**(d) TOT and Self-training (Continue OJT by ATR/BPN staff)**

Although the daily support from the Help Desk could be helpful, but it is more efficient to increase the number of skilled users who can teach to other staff. Therefore, ATR/BPN staff TOT and self-training would be more effective. In addition, manuals and materials should be provided from the viewpoint of ATR/BPN staff who are conducting land acquisition works rather than external consultants.

**(2) Other Recommendations**

**Creating Technical Guideline for Task Force related to the new regulations in Ministry of ATR/BPN**

During the OJT, there were frequent questions from participants related to the new regulation: Ministerial Regulation (Permen) 19/2021, about how to adjust the new regulation to the Task Force's work in the Implementation phase and Handover phase. Also, questions about handling the case/issue that the Task Force should encounter in the field using the new regulation. Therefore, it is recommended for ATR/BPN (DGLALD) to create a Technical Guideline for the Task Force that represents the process of Land Acquisition as stated in the new regulation. Providing Technical Guideline will ease the Task Force's officers to understand the regulation and how to practice it in the field.

## II.5 Pilot Project

### II.5.1 Background

In order to generate a collaboration plan and to implement a system to facilitate coordination among IA, LG, and ATR/BPN, the project conducted a Pilot Project. The initial plan for Pilot Project was to implement the DPPT Manual and Integrated SOP through the SIPP system developed based on the DPPT Manual. In early 2020, the project agreed to do the pilot project in Padang–Pekanbaru Toll Road Project in West Sumatra Province, where JICA loan project on “Development of New Tunnels Alignment in Payakumbuh – Pangkalan Toll Road” was planned. The status of the Padang–Pekanbaru Toll Road Project at that time is shown in Figure II.23.

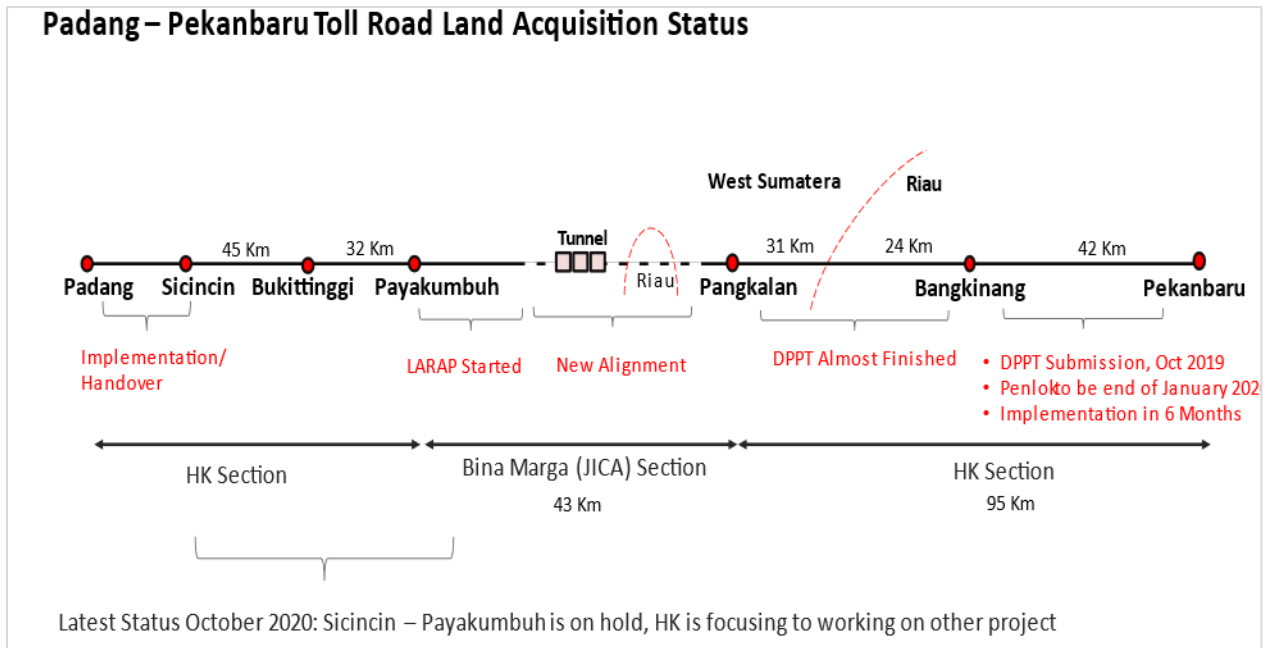


Figure II.23 Padang - Pekanbaru Toll Road Land Acquisition Status (October 2020)

Since the tunnel project has a portal, PUPR needs a new land tenure system for securing land around a portal instead of land acquisition such as by Sectional Superficies. The Pilot Project might have had multiple purposes, including the land rights above and below ground, and was welcomed by stakeholders, including Bina Marga and Hutama Karya, the toll road operator. The project then prepared to conduct FGD and prepared to invite the related parties, namely Bina Marga from the IA side, West Sumatera Local Government from the LG side, and DGLALD from ATR/BPN side, to discuss the Action Plan that focuses on the development of DPPT, DPPT submission to LG, preparation phase process, and document input to SIPP. Unfortunately, the inopportune condition of the Covid-19 pandemic during the FGD preparation temporarily suspended the FGD and the Pilot Project.

During the temporary suspension of the project in 2020, the Law (UU) 11/2020 was enacted and continued with the issuance of Government Regulation (PP) 19/2021 and Ministerial Regulation (Permen) 19/2021 in 2021. The enactment of the new regulation made the DPPT Manual and Integrated SOP change its focus, and SIPP continued the second development using the applied regulations. Therefore, the project changed the pilot project's goal from implementing the DPPT Manual and Integrated SOP through the SIPP system to the SIPP system trial.

## II.5.2 Overview

In line with the second development of SIPP, the project restarted the Pilot Project in 2021 and reapproached Padang–Pekanbaru Toll Road Project team. However, based on the Toll Road Project team’s information, the Padang–Pekanbaru Toll Road Project was suspended until an uncertain time because of the Covid-19 uncertain situation. Therefore, the project agreed to find another location that has a similar condition to the previous project location and is suitable for the pilot project. The proper project location for the pilot project shall be a PSN project (preferable); the project location is in the planning phase or preparing to enter the planning phase or preparation phase. After searching for a potential location, the project decided to use one of the locations offered by DGLALD, which was the

Toll Road Development Ir. Wiyoto Wiyono, MSc Section HARBOUR ROAD II project in DKI Jakarta Province.



Figure II.24 Project Map from “SPECIAL ASSISTANCE FOR PROJECT IMPLEMENTATION FOR THE TANJUNG PRIOK ACCESS ROAD PROJECT IN THE REPUBLIC OF INDONESIA” Project Final Report

The project section was formerly a part of Tanjung Priok Access Road, which was financed by a JICA loan. However, the section was cancelled due to the cost overrun. Though the direct ramp was constructed as an alternative, the section has been left as a missing link. The completion of this section was expected to make the most use of the Tanjung Priok Access Road benefit.

The first meeting regarding Pilot Project was held in January 2022 with a meeting agenda to demonstrate the SIPP; discuss the improvement for SIPP Development; and inform the intention to use the Toll Road Development Ir. Wiyoto Wiyono, MSc Section HARBOUR ROAD II as the Pilot Project location. The related parties that were invited and attended the meeting are shown in Table II.7.

Table II.7 Pilot Project first Meeting Attendees

No	Attendees	Representative
1	Director of Land Acquisition and Land Reserves	The project (DGLALD side)
2	Head of the Sub-directorate of Land Acquisition and Land Reserves	The project (DGLALD side)
3	Regional Office ATR/BPN DKI Jakarta Province (Land Acquisition and Development department)	ATR/BPN side for Pilot Project
4	North Jakarta Land Office	ATR/BPN side for Pilot Project
5	Wiyoto Wiyono Toll Road PPK	IA side for Pilot Project
6	Preparation Team from the DKI Jakarta Provincial Government for Land Acquisition of Wiyoto Wiyono Toll Road	LG side for Pilot Project
7	System Developer team (MKI)	The project (JICA Project team)
8	JICA Project Team	The project (JICA Project team)

The meeting resulted in all parties agreeing to use the Toll Road Development Ir. Wiyoto Wiyono, MSc Section HARBOUR ROAD II as the Pilot Project location and to do a SIPP system trial as the form of the Pilot Project. During the meeting, the attendees also suggested several inputs to improve SIPP development.

After the first meeting, several meetings continued to conduct the system trial with the party from the IA side, LG side, ATR/BPN side, and the project side as seen in the Attachment II.9 SIPP System Trial Invitations. The IA and LG sides also independently did the system trial by submitting the prepared DPPT to SIPP and submitting the required documents for the Preparation Phase process to SIPP. The sequences of the meeting for the system trial are described in Table II.8 SIPP System Trial.

Table II.8 SIPP System Trial

No	Meeting/System Trial Agenda	Date	Parties	Activity and Result
1	SIPP demonstration	05 January 2022	IA, LG, ATR/BPN, the project	<ul style="list-style-type: none"> <li>a) Several revisions for the Planning and Preparation phase part. The detail of the revisions is shown in Attachment II.3 MOM SIPP Meeting with DKI Jakarta LG IA (050122);</li> <li>b) all parties were agreed to use the Toll Road Development Ir. Wiyoto Wiyono, MSc Section HARBOUR ROAD II as the Pilot Project location and to do SIPP system trial as the form of Pilot Project.</li> </ul>
2	SIPP System Trial for data submission using dummy data	16 February 2022	IA, LG, ATR/BPN, the project	Several revisions for the Planning and Preparation phase part. The detail of the revisions is shown in Attachment II.4 System revisions SIPP (160222)
3	Discussion for SIPP System Trial result on February 16, 2022	23 February 2022	The project	Review the result to determine the possibility of the system development and inlining the function in the system with Ministerial Regulation (Permen) 19/2021. The detail of the discussion result is shown in Attachment II.5 System revisions SIPP (230222 & 010322)
4	SIPP System Trial for data submission using real data; to check the improvement of SIPP from the previous inputs and results.	01 March 2022	IA, LG, ATR/BPN, the project	<ul style="list-style-type: none"> <li>a) The IA asked the project's support to submit the DPPT that already compiled in one PDF document to the system, since the current SIPP only provide DPPT submission with separate item not for one DPPT compilation. The system developer would support the submission and would provide function to upload the compiled DPPT in PDF format;</li> <li>b) The LG was still in the Initial Data Collection stage in the Preparation phase, which means to continue the remaining process of preparation phase couldn't use the real project data yet. Then all parties agreed to use dummy data to continue the remaining process to check the SIPP improvement and the system flow. The result is the data flow has no issue.</li> </ul>

				c) Several revisions from previous system trial still remains. There were also additional revisions for the Planning and Preparation phase part. The detail is shown in Attachment II.12 System revisions SIPP (230222 & 010322).
5	Discussion for SIPP System Trial result on March 01, 2022	09 March 2022	The project	Review the result to determine the possibility of the system development and inlining the function in the system with Ministerial Regulation (Permen) 19/2021. The detail of the discussion result is shown in Attachment II.6 System revisions SIPP discussion (090322)
6	SIPP System Test to check the improvement	17 – 28 March 2022	The project	a) Checking SIPP system improvement; b) Several revisions from previous system trial still remains. The detail is shown in Attachment II.7 System revisions SIPP (170322 to 290322).
7	SIPP System Test to check the improvement	07 July 2022	The project	a) Checking SIPP system improvement; b) Several revisions from previous system trial still remains. The detail is shown in Attachment II.8 SIPP SysTest ST-S-0005 (20220707).
8	SIPP Final System Test	28 September 2022	The project	a) Checking SIPP system improvement for final test; b) Several revisions from previous system trial still remains. The detail is shown in Attachment II.9 SIPP SysTest ST-S-0007 (20220928).

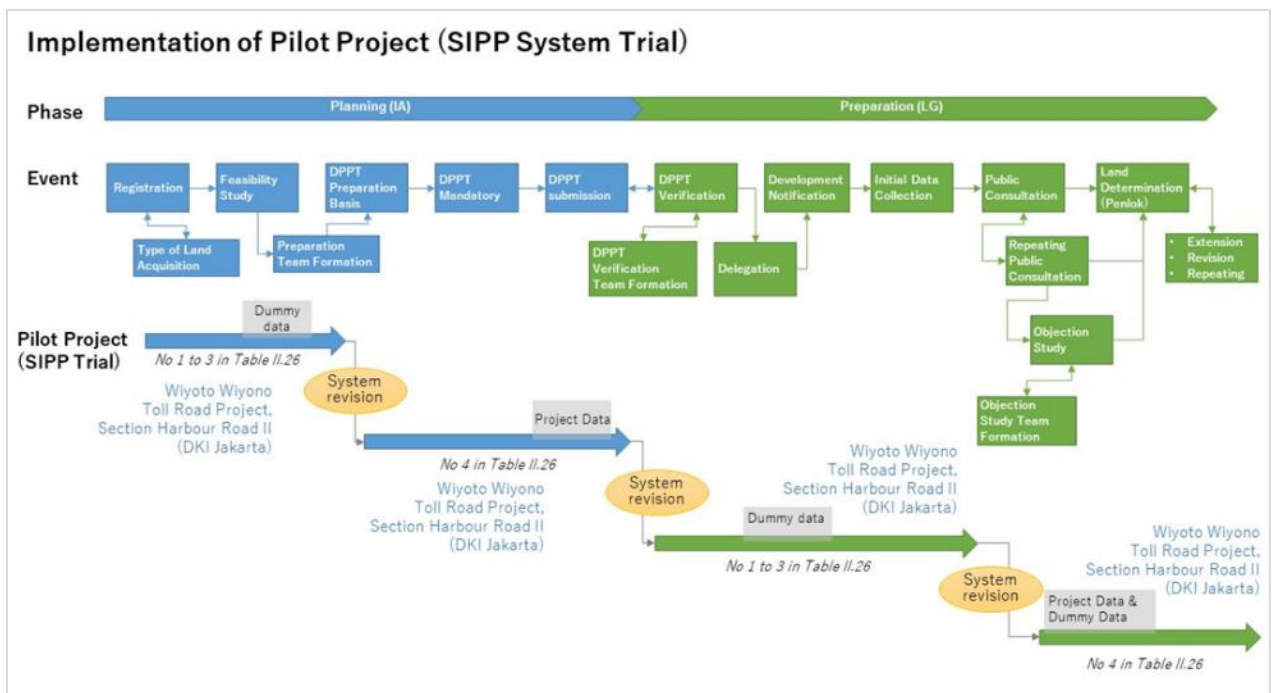


Figure II.25 SIPP Test Diagram



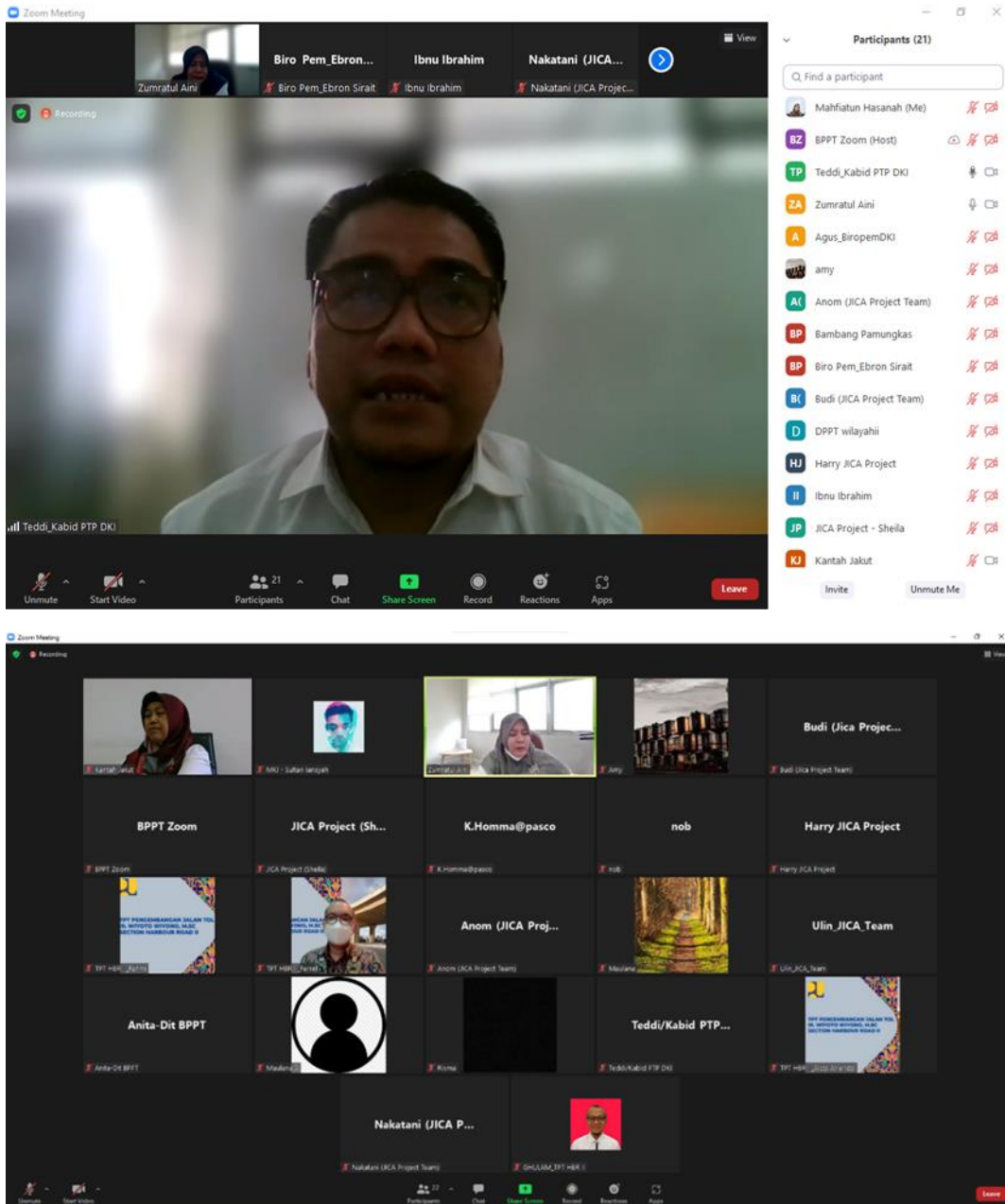


Figure II.26 Documentation SIPP System Trial

During the SIPP finalization, JICA Project Team (JICA Project Team and System Developer) was invited to DGLALD event, the coaching clinic for SIPT system. The event was attended by all Regional Office and Land Office under DGLALD. In the event, JICA Project was given opportunity to disseminate the overview of the systems that JICA Project Team had developed, including the SIPP.



Figure II.27 Systems Overview Dissemination

### II.5.3 Conclusion

As mentioned in sub-section II.5.2 and Table II.8, the Pilot Project was arranged and implemented by the ongoing project to test the SIPP. Ideally, the targeted project shall provide a complete document from Planning Phase to Preparation Phase to test SIPP. However, due to the schedule and conditions of the targeted project, the project was still in the Preparation Phase: Initial Data Collection stage and the targeted project was unable to provide the complete document from all stages in Preparation Phase. To obtain the complete data, the targeted project had to undergo several processes that took a long time period to reach the last stage of the Preparation Phase. In contrast, the Pilot Project had time limitations that did not suit the targeted project time condition. Therefore, by considering the time condition, the project, IA, and LG sides of this Pilot Project decided to continue the remaining process by using dummy data to submit to SIPP. This approach was slightly abnormal and challenging to cover whole things, nonetheless, the data flow of SIPP, which was the most important aspect of completing the Planning and Preparation phases of a project, was established through this trial by the effort of the project, IA side, and LG side of the Pilot Project.



During the Pilot Project, SIPP was improved by incorporating opinions from all parties in a stepwise fashion (PDCA cycle) in order to be operational after the system was released after the completion of the project. As a result of this improvement during the Pilot Project, the system became more operational enough to support works of the Planning and Preparation phases. However, we expect further updates and improvements should be continued both to deal with requests gathered during the Pilot Project and to cope with the changes in the situation, such as the amendment of regulations and/or procedures.

## II.6 Advance UAV Utilization

### II.6.1 Objective

The Article 97 of Ministerial Regulation (Permen) 19/2021 mentions that regarding the preparation of identification and inventory activity for the Implementation phase of land acquisition, Task Force A shall prepare equipment for measurement and mapping. The equipment is used for measuring and mapping the perimeter and land parcel of the land acquisition location as stated in the Location Determination (Hereinafter referred to as Penlok) data. However, implementing the usual equipment such as Total Station or GNSS receiver in ATR/BPN is unequal to the fieldwork condition and becomes an issue that delays the land acquisition process.

Several issues regarding equipment were found during the OJT preparation discussion between JICA Project Team and Regional/Land Office of ATR/BPN. Thus, JICA Project Team offered UAV provision to cope with the issues that also welcomed by DGLALD and Regional/Land Office of ATR/BPN. The issues found that form the basis of UAV provision are:

- (1) A need for the equipment that has the ability to measure location that has a long and wide area to speed the work of Task Force A;
- (2) unable to perform terrestrial survey due to the PAP's rejection;
- (3) the rare human resource that has knowledge of UAV and skill to operate UAV in ATR/BPN;
- (4) unawareness of Advance UAV Utilization;
- (5) the case of a suddenly built building after Penlok indicated the intention to increase the value of land/property after Penlok's release, which also violates the regulation.

Due to the issues mentioned above, JICA Project Team proposed to provide a fixed-wing UAV with considerations that follow the conditions in ATR/BPN, such as:

- (1). The fixed-wing UAV provided by the JICA Project Team featured the ability to collect high precision data in a long and wide location. This feature is expectedly able to speed the Task Force A measurement work. Also, using UAV to collect data from aerial view could capture data for an area that is unable to perform terrestrial survey;
- (2). the fixed-wing UAV provided by the JICA Project Team that has an auto-pilot feature makes the user not required to have a particular skill to operate the UAV. Thus, the feature could ease the user in operating the UAV and settle the issue of rare human resource that has the skill to operate UAV;
- (3). by providing Advance UAV Utilization material in OJT, the human resource in ATR/BPN would get the knowledge about UAV. The knowledge is not only how to operate the UAV but also how to utilize UAV data for land acquisition;

- (4). the Advance UAV Utilization material in OJT also shares the knowledge of using GIS (Geographic Information System) to analyze the data acquired by UAV and generates land parcel survey data with its attribute;
- (5). the UAV data utilization also would benefit ATR/BPN for the pre-survey method. The method will use UAV to capture data before identification and inventory activity and utilize it as evidence and documentation of the actual condition of land/property suited to Penlok data.



Figure II.28 Fixed-wing UAV Provided by JICA Project Team

## II.6.2 Scope of Work

- (1). Discussion of determining UAV specification with Directorate General of Land and Spatial Survey and Mapping (DGLSSM) and DGLALD;
- (2). Equipment purchase;
- (3). Transfer knowledge through Training on Trainers (TOT) and On the Job Training (OJT).

## II.6.3 Deliverable

The UAV provided by JICA Project was to support land acquisition activity in general and as supporting equipment for OJT in particular. The Advance UAV Utilization also became essential material provided in OJT. The participants in OJT were taught several Advance UAV Utilizations that could benefit their land acquisition work, namely:

- (1) UAV operation explanation and fixed-wing UAV operation in the field practice;
- (2) Knowledge and management methods for safety flight of UAV
- (3) Roles of georeferenced image data captured by UAV:
  - (a) Measure distance, area, and volume with precision and accuracy;
  - (b) Measure position, quantity and shape of plants and other compensation objects;
  - (c) helps Navigation, visualization (base map), 2D and 3D planning;
  - (d) Can be overlaid with other spatial data;
  - (e) Creating soil profiles/fields and calculating water flows;
  - (f) Monitor region changes (timelapse data).
- (4) The utilization of the data captured by UAV for land acquisition purposes:
  - (a) Updated documentation, evidence, and data;

- (b) UAV data is overlaid with ATR/BPN Geo-KKP data and analyzed with GIS software;
  - (c) UAV data can be used for searching and monitoring on screen;
  - (d) Used as Basemap and Navigation for direct Inventory and Identification purposes;
  - (e) UAV and ATR/BPN Geo-KKP data can be brought into the application so that in-field measurements are paperless/reduce paper, improve data accuracy and quality, and support digitalization movement in ATR/BPN.
- (5) GIS Material Provision in OJT to Support the Advance UAV Utilization:
- (a) GIS Basic knowledge: GIS terms, GIS type of data, GIS analyses;
  - (b) UAV data analyzed by using GIS to utilize the data for land acquisition survey;
  - (c) GIS operation training by using the open-source software 'QGIS'.

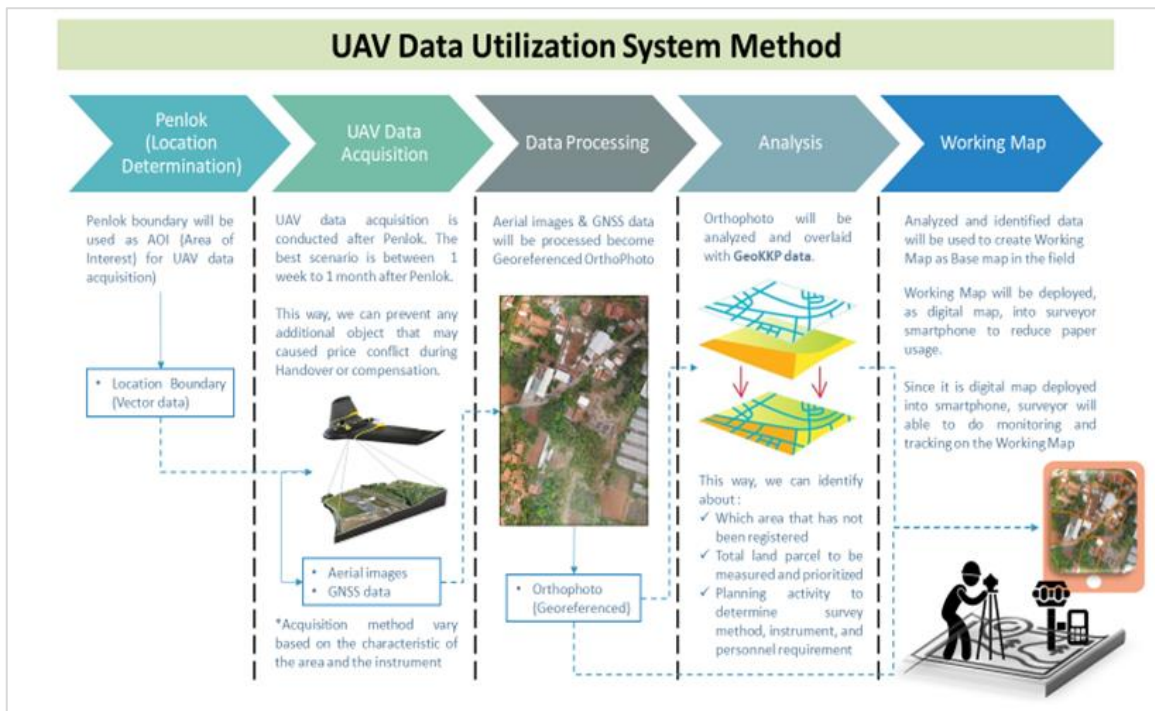


Figure II.29 UAV Data Utilization

The feedbacks from OJT participants regarding Advance UAV Utilization were positive and they requested for further specific training for UAV Utilization.

The UAV handed over to DGLALD in April 2022 and prior to the handover, JICA Project Team conducted Training on Trainers (TOT) to the licensed and unlicensed UAV pilots from ATR/BPN. The purpose was to prepare the human resource that mastering the operation of UAV that provided by JICA Project Team and expectedly would be able to transfer the knowledge to the other officers in ATR/BPN. JICA Project Team also equipped the UAV with 1 (one) year insurance to secure the use of UAV during OJT activity.



Training on Trainer in Classroom



Training on Trainer in the Field



Training on Trainer in the Field

Figure II.30 Training on Trainers UAV

## Chapter III. Vertical Land Consolidation

### III.1 General

Land Consolidation (LC) in Indonesia has been implemented since 1980's. It has been applied for land development and land rights formalization for urban land usage in agricultural area under Minister Regulation of Land Consolidation No.4/1991. LC projects have been implemented in 1,046 locations and developed approximately 252,000 land parcels in whole country.

However, as time goes by, population has been increasing and producing of land parcels is still stagnant in city canthers. The situation is causing urban issues such as urban area expansion, lack of infrastructure, traffic congestions, land value escalation and inhabitation in slum areas. The current LC system (herein after referred to as Horizontal Land Consolidation (HLC)) was no longer effective to solve these urban issues. For this, ATR/BPN introduced a concept of Vertical Land Consolidation (VLC) by using property right conversion from lands to building units to meet the spatial demand for living and economic activity in urbanized area.

ATR/BPN established the legal basis of VLC by revision of the Minister regulation (Minister Regulation of Land Consolidation No.12 2019) which was approved in the end of August 2019. The conceptual model of VLC is shown in Figure III.1.

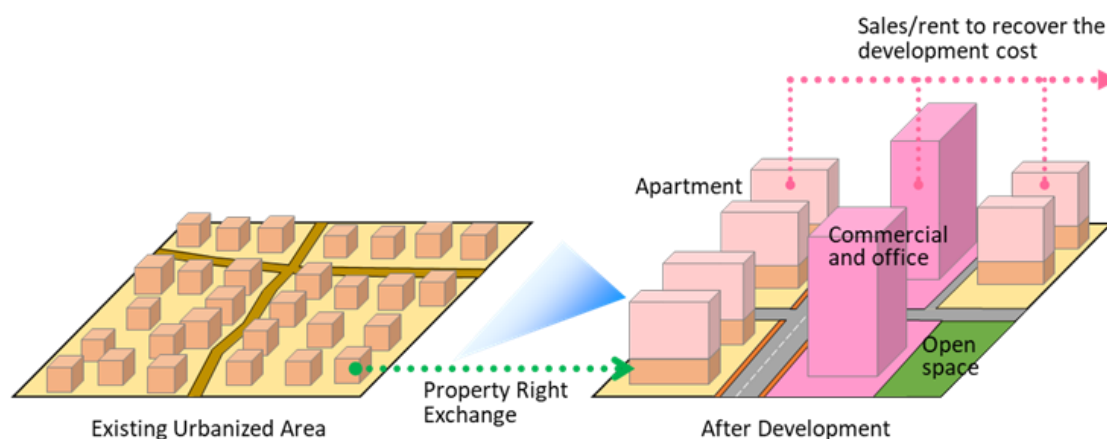


Figure III.1 Conceptual Model of VLC (JICA Project Team)

For the enhancement of ATR/BPN's capacity to implement the VLC project, this Project carried out the technical assistances for following activities.

- (a) Formulation of Technical Guideline for VLC
- (b) Technical Support for Planning and Implementation of VLC Pilot Project
- (c) Development of VLC Software
- (d) Development VLC Promotion Video

### III.2 Formulation of Technical Guideline for VLC

#### III.2.1 Objective

The guideline aims to disseminate the concept of VLC and the technical methodologies for the preparation, planning and implementation of VLC project. The target users and main objectives of the guideline are shown as follows:

**Target Users:**

- (a) Public sector: Officials of ATR/BPN, regional and land office and other relating agencies such as local government, relating ministry/institution (PU, etc.) and state own enterprise.
- (b) Private sector: Planner of design company, academic/practitioner, private developer, and land right holder/community/LC association.

**Main Objectives:**

- (a) To introduce background, concept, and basic mechanism of VLC;
- (b) To explain the implementation procedure and the stakeholder's responsibilities based on the regulation;
- (c) To explain the additional process, which is necessary, but missing in the regulation (e.g. site selection, selection of developer and association establishment);
- (d) To explain the technical approaches and methodologies (e.g. site selection, formulation of project implementation plan, property evaluation process of land right exchange).

### III.2.2 Scope of Work

Formulation of the guideline was conducted by the collaborative work with JICA Project Team and LC Team of ATR/BPN from a viewpoint of the capacity development. The guideline aims to disseminate the concept of VLC and the technical methodologies for the preparation, planning and implementation of VLC project. The target users and main objectives are shown as follows:

**JICA Project Team:**

- (a) Develop draft of the table of contents of the guideline;
- (b) Propose demarcation plan for the drafting;
- (c) Draft a part of the guideline based on the demarcation plan;
- (d) Technical advice for all parts of the draft of guideline.

**LC Team:**

- (a) Hold technical meetings on the guideline formulation;
- (b) Draft a part of the guideline based on the demarcation plan;
- (c) Incorporate a part of contents of current LC guideline and other relating regulation into the guideline;
- (d) Hold a technical seminar for the dissemination of guideline after the finalization.

### III.2.3 Deliverable

Draft of VLC guideline was finalized and was submitted to ATR/BPN in July 2021. The Focus Group Discussion (FGD) on the draft guideline was held on 28 October 2021 by ATR/BPN. Currently the draft guideline is being under process of the internal discussion in ATR/BPN for the finalization.

The table of contents of the draft guideline is shown in Table III.1 and Table III.2. The final version of draft of VLC guideline is attached as Reference.

Table III.1 Table of Contents of Draft VLC Guideline (JICA Project Team) (1/2)

CHAPTER	SECTION
I. General Provision	I.1 Rationale I.2 Objective of VLC I.3 Legal System of VLC I.4 Process and Scope of VLC Project
II. Organization for Implementation	II.1 Role of Project Implementer for VLC II.2 Organization Schemes for Project Implementation II.2.1 General II.2.2 ATR/BPN VLC II.2.3 SWADAYA VLC
III. Planning Stage	III.1 Key Viewpoints of VLC Planning III.2 Analysis of Potential Site of VLC III.2.1 Process of Quick Check for Project Site Selection III.2.2 Local Conditions and Needs III.2.3 Expected Implementer III.2.4 Feasibility III.3 Preparatory Survey and Analysis III.3.1 Study on Spatial Planning and Sector Policy III.3.2 Social Mapping Survey III.3.3 Area Potential Analysis III.3.4 Socialization of Land Right Holders III.3.5 Compile Study Results III.4 Initial Design Sketch (Visioning) III.4.1 Visioning (Macro Policy Concept) III.4.2 Develop Conceptual Plan (Development Theme and Direction) III.4.3 Development Strategy III.4.4 Sector Plan (Land Use, Building, Infrastructure and Landscape) III.4.5 Financial Plan III.4.6 Draft Property Rights Conversion Plan III.4.7 Implementation Schedule III.4.8 Documentation of Planning Results III.5 Clarification of Initial Plans III.6 Establishment of Association of VLC Participant III.6.1 Participant of VLC III.6.2 Association of VLC Participant III.6.3 Structure and Functions of Association of VLC Participant III.6.4 Contents of Article of Association (Anggaran Dasar) III.7 Preparation of Selection of Developer III.7.1 Objectives III.7.2 Process III.8 Location Determination III.8.1 Objectives III.8.2 Proposal of VLC Location III.8.3 Restriction of Land Right Transfer

Table III.2 Table of Contents of Draft VLC Guideline (JICA Project Team) (2/2)

CHAPTER	SECTION
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IV. Implementation Stage	IV.1 General Affairs IV.2 Data Collection IV.2.1 Objectives IV.2.2 Process of Collection of Physical and Juridical Data IV.3 VLC Object Valuation IV.3.1 Objectives IV.3.2 Process of VLC Object Valuation IV.4 VLC Design IV.4.1 Objectives IV.4.2 Methodology IV.4.2.1 Designing Land Use Plan and Building Plan IV.4.2.2 Cost Estimation IV.4.2.3 Valuation of Unit Value of VLC Building (Cost Allocation Approach)  IV.4.2.4 Coordination of Conversion Unit Based on Participants' Request IV.4.2.5 Formulation of Rights Conversion Plan IV.4.2.6 Estimation of Transferred Area to VLC Developer IV.4.3 Contents of VLC Design IV.4.4 Participants Agreement IV.5 VLC Action Plan IV.5.1 Objectives IV.5.2 Contents of Action Plan IV.5.3 Development Schedule IV.5.4 Financial Plan
V. Consensus Building	V.1 Importance of Consensus Building V.2 Principles of Consensus Building Activity V.3 Methodology for Consensus Building
VI. Property Right Registration	VI.1 General Process VI.2 Registration of Strata Title
VII. Monitoring and Land Dispute Resolution	VII.1 Monitoring Activity VII.1.1 Objectives VII.1.2 Person who Conducts Monitoring VII.1.3 Monitoring Viewpoint VII.2 Land Dispute Resolution
VIII. Asset Management	VIII.1 General Affairs VIII.2 Establishment of Owner's and Resident's Association

### III.3 Technical Support for VLC Pilot Project

#### III.3.1 Objective

The technical support for VLC pilot project aims to enhance C/P's capacity for the planning and implementation of the VLC project through the activities on the pilot project. In addition, it is also aimed that the outcomes and findings through the pilot activity will feedback for formulation of the VLC guideline.

#### III.3.2 Outline of VLC Pilot Project

ATR/BPN has been conducting the survey and discussion for establishment of VLC project in Pasar Manggis area since July 2018. LC Team of ATR/BPN selected the Pasar Manggis area as the VLC pilot project to be supported by JICA technical assistance in August 2019.

Pasar Manggis area is located at Central Jakarta and close to major urban centers in DKI Jakarta such as Dukuh Atas and Setiabudi. The area location has high development potential in terms of the



transportation connectivity and property market. The location of the Pasar Manggis is shown in Figure III.2.

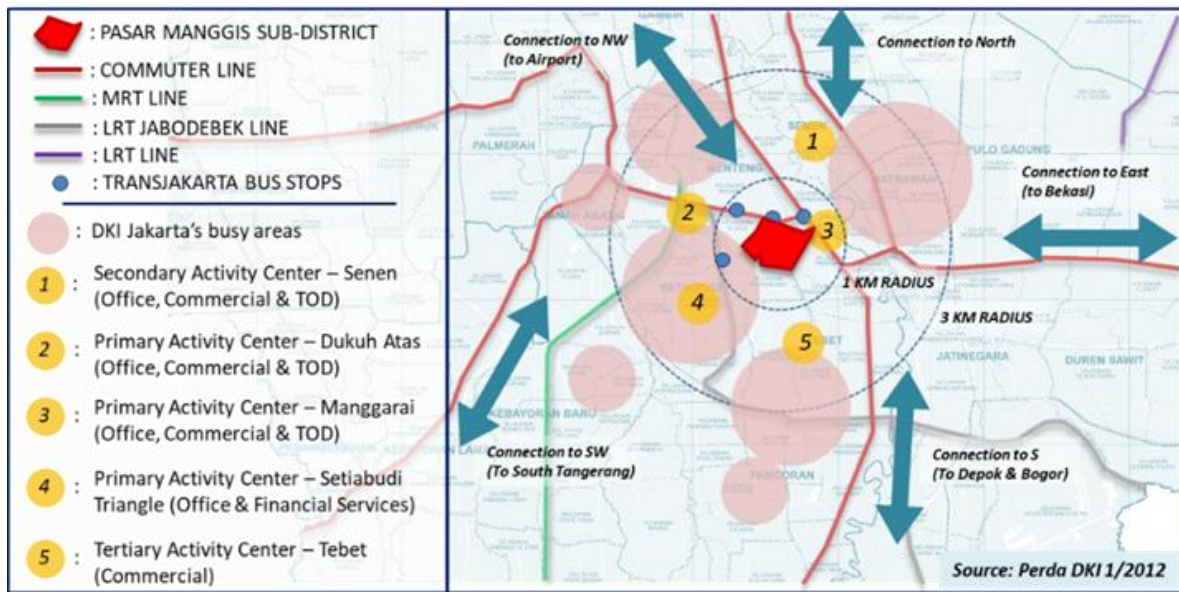


Figure III.2 Location of VLC Pilot Project (JICA Project Team) (Pasar Manggis Area)

Meanwhile, Pasar Manggis area is a typical low-rise and high-dense residential area without enough accessibility to infrastructure and public service. In addition, the lands are subdivided into small parcels and 75% of the lands are owned by individual, but 38% of the lands are unregistered. The summary of current condition of Pasar Manggis is shown in Figure III.3.

Since July 2018 to March 2019 before this JICA technical assistance, LC team has been conducting the data collection, field survey, coordination meeting with relating agencies and consultation meeting with the community as the preparation activity for the establishment of the VLC project. To continuously proceed the activity, LC team requested JICA Project Team to provide technical methodology for the planning and implementation for the as a pilot project.

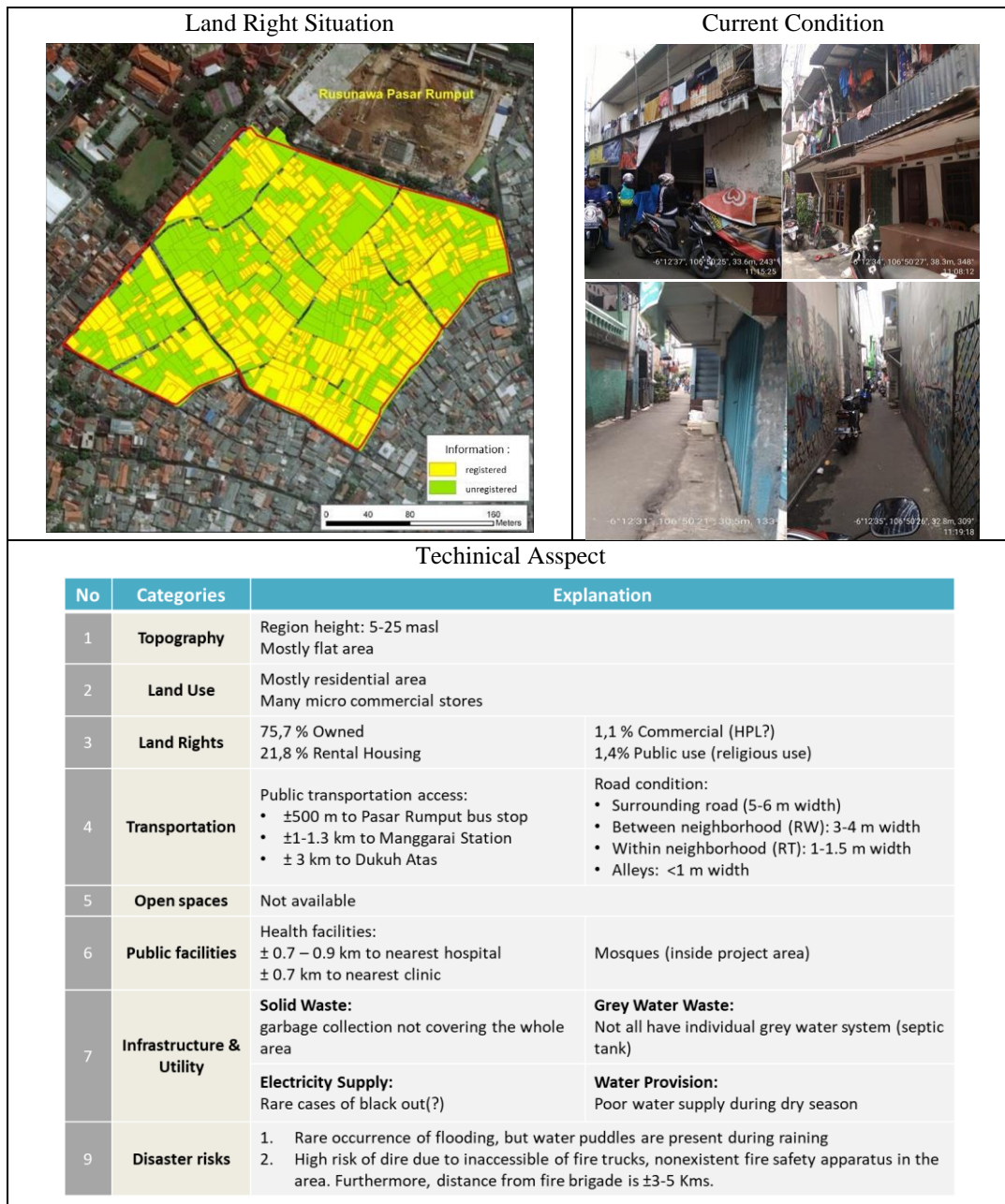


Figure III.3 Current Condition of VLC Pilot Project (Pasar Manggis Area) (LC Team and JICA Project Team)

### III.3.3 Activities for VLC Pilot Project

#### **Instruction for Initial Planning:**

JICA Project Team conducted technical meetings to instruct the formulation of Initial Planning which is stipulated as the Initial Design Sketch in the draft of regulation of land consolidation. Proposed structure and key viewpoints for Initial Planning are shown in Figure III.4. Based on the structure and viewpoints, JICA Project Team instructed the methodologies and expected outputs for each planning items in Initial Planning.

Overall Structure of Initial Planning	Key Viewpoints for Planning of VLC Project
---------------------------------------	--

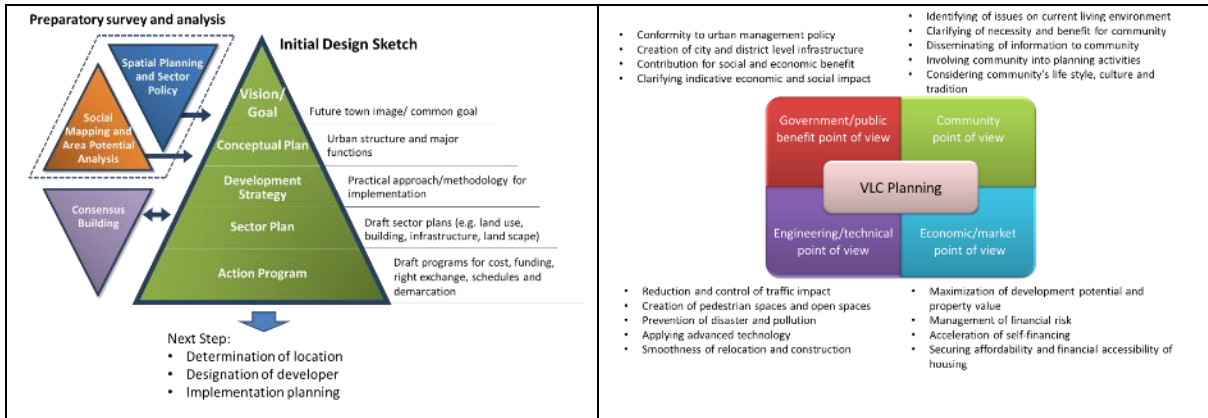


Figure III.4 Proposed Structure and Key Viewpoints for Initial Planning (JICA Project Team)

**Formulation of Initial Plan:**

LC Team conducted formulation of the Initial Plan of the VLC pilot area based on the JICA Project Team. For the activity, LC Team hired a local consultant for the designing of land use plan road plan and building plan. Major outputs of the initial planning are summarized in エラー! 参照元が見つかりません。 .

### Current Condition Analysis

RW	Area (Ha)	Total Building
003	2.512	316
004	1.851	201
005	2.415	212
011	0.543	67

Building use percentage :

- House Rental : 75,71%
- House : 21,81%
- Worship Place : 1,37%
- Store : 1,11%

**Total Building 796 unit**

### Area Potential Analysis

**Area Potency**

- Pasar Manggis village located in a strategic location as occupancy and business purpose
- almost most people still have a cooperation spirit

**Regional Problems**

- High population density and buildings so that it is prone to fire and the spread of disease.
- A shift in asset ownership.
- The extent of asset ownership is getting smaller.
- Social Problems (brawl and drug).
- Prone to flooding.

### Urban Block Plan

Legend: The number of visiting floor

- Yellow: Mutual field/multi purpose
- Orange: 5 story (Block T)
- Green: 5 Story (Block U)
- Pink: 10 story
- Blue: 15 story

Scenario 1

Block of RW 4 (RT 4, 6, 8, 7, 8, 9, 10)  
RW 5 (RT 1, 2, 3, 4, 5, 6, 7, 8)  
Total Site planning area = 45.000m<sup>2</sup>  
Floor planning area = 200.000m<sup>2</sup>

Scenario 2 (part of Block T, upper of Block U, Block V, 4 and 5)  
Block of RW 4 (RT 10) RW 5 (RT 1, 2)  
RT 1, RT 2  
Total Site planning area = 8.500m<sup>2</sup>  
Floor planning area = 15.000m<sup>2</sup>

Scenario 3 (part of Block U, Block V, 6, 7, 8)  
Block of RW 4 (RT 6, 7, 8)  
RT 6, RT 7  
Total Site planning area = 12.000m<sup>2</sup>  
Floor planning area = 25.000m<sup>2</sup>

### Road Network Plan

Ground floor as commercial space, under the floor and this road is a platform, the hollow as a space

### Right Conversion Plan

### Action Plan





- (b) ATR/BPN has been conducting survey and study for several candidate sites. However, their point of view for the site selection is only existing of poor living condition, and lack of real estate market and community’s willingness which will be critical factors for the successful implementation. For this, methodology of quick checking for site selection needs to be established.
- (c) Lack of financial point of view: LC Team of ATR/BPN still imagines that private developer bear all of the development cost including compensation because of limitation of budget of ATR/BPN. To accelerate private investment to VLC, government should provide financial incentives to reduce project risks on VLC project.

### III.4 Development of VLC Software

#### III.4.1 Objectives

Through the activities of VLC guideline formulation and supporting for VLC pilot project, it was identified that ATR/BPN’s capacity for the preparation and planning still needed to be improved in terms of following viewpoints:

- (a) Selection of proper candidate sites in consideration of the project feasibility;
- (b) Adjustment of land use control of spatial plan to secure feasibility of the project;
- (c) Inspection of project implementation plan which is proposed by the developer.

To improve above issues, JICA Project Team proposed to develop the VLC software as the supporting system for the ATR/BPN in the preparation and planning stages as well as dissemination of the technical methodologies of the regional land offices. Objectives of the VLC software are shown in Figure III.6.

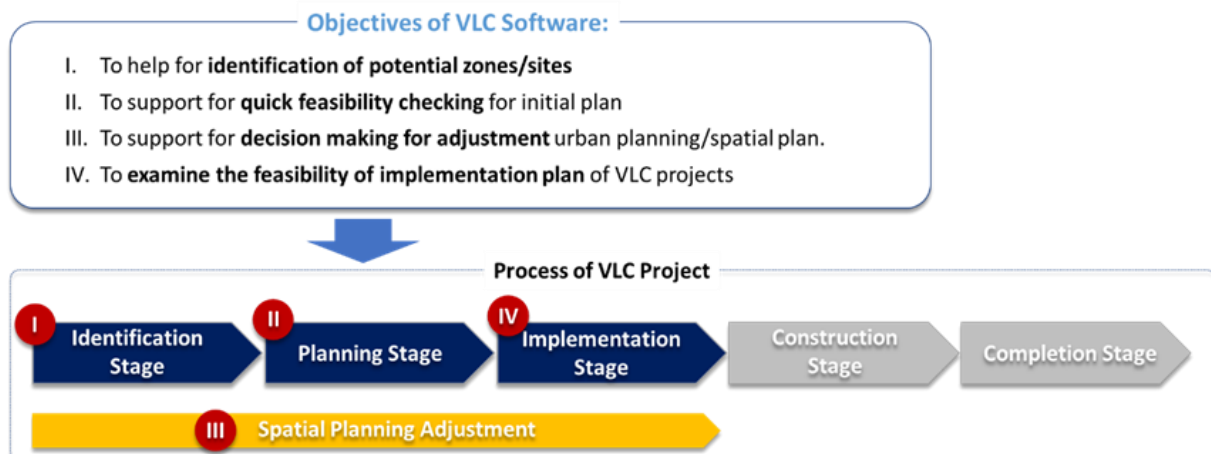


Figure III.6 Objectives of VLC Software (JICA Project Team)

#### III.4.2 Preparation of VLC Software Development

##### Structure of VLC Software:

JICA Project Team developed the structure and Excel calculation sheet which become the basis of the software before starting the procurement process to select the sub-contractor. The structure of VLC software is shown in Figure III.7. Excel calculation sheet is attached as Attachment III.1. VLC software

has two functions of feasibility analysis and potential analysis. Both analyses are carried out based on the user's data input of the necessary data which was identified in consideration of the data availability in each stage.

For identification stage, outputs of the analyses on the profitability, average unit size after VLC and potential score can be used for determination and/or comparison of VLC candidate site. In addition, the result can be used for modification of spatial plan.

For planning stage, the VLC planner can check the feasibility of the initial plan based on the outputs of the analyses on the profitability, average unit size after VLC and potential score, and feedback the result into revision of the plan and consideration of the countermeasures.

For implementation stage, LC implementation team under ATR/BPN and regional office can inspect the implementation plan which was proposed from the VLC developer by using outputs of the analyses in the profitability and unit size after VLC. In implementation stage, the potential analysis is excluded, because the site area is already fixed, and the spatial plan is also modified to enhance the potential of the site.

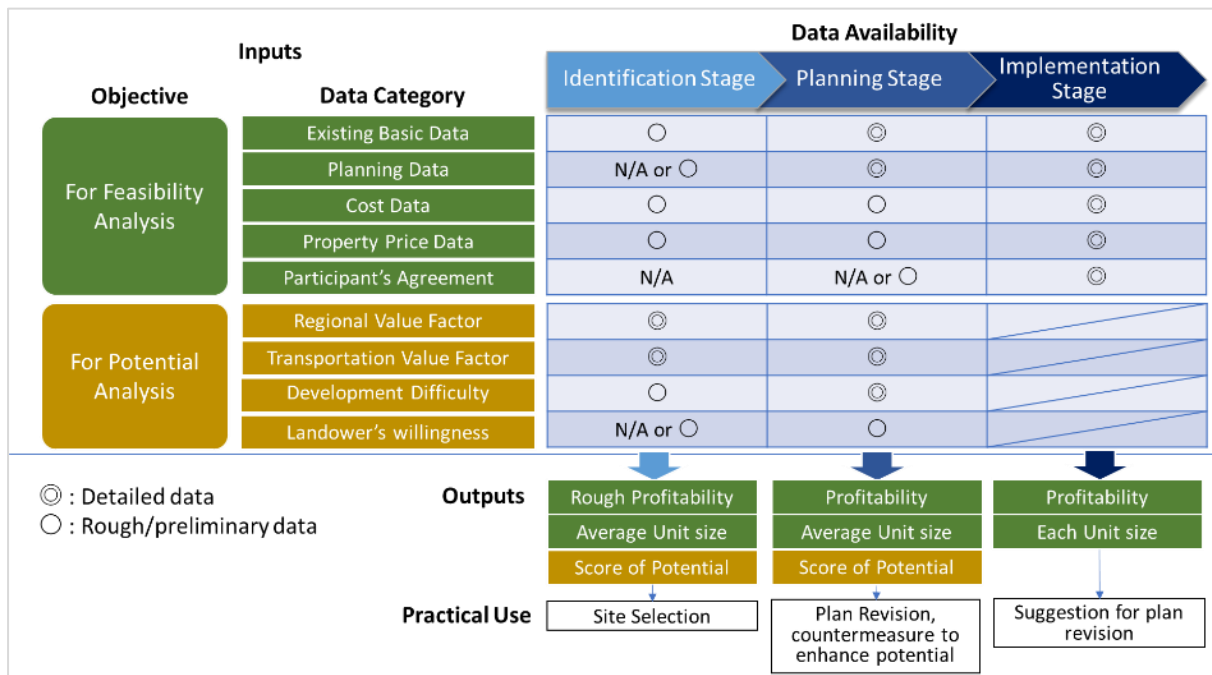


Figure III.7 Structure of VLC Software (JICA Project Team)

**Schedule of Software Development:**

Development of the VLC software was carried out by the outsourcing to the local consultant under the management of JICA Project Team and LC Team. The schedule of the development is shown in Figure III.5.

Through the tender process, PT Prismaatama Cipta Teknologi was selected as the local consultant. Outputs of the subcontract work consists of i) software development (web-based software), ii) manual formulation, iii) operation training for C/P staffs.

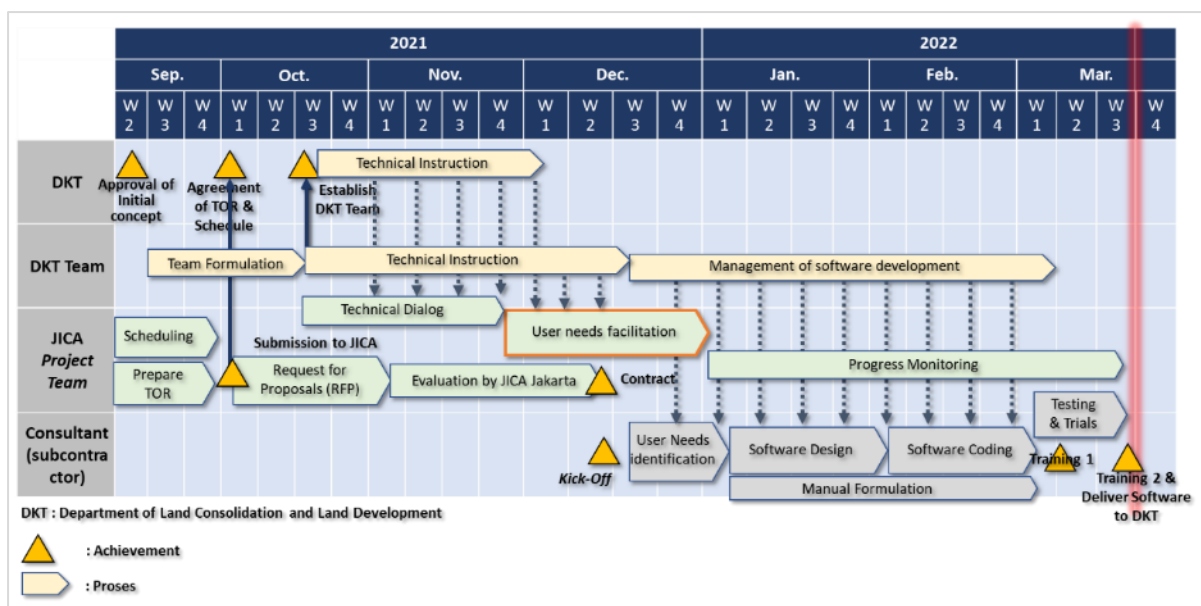


Figure III.8 Schedule of VLC Software Development (JICA Project Team)

### III.4.3 Outline of VLC Software

#### Users of VLC Software:

Users of this VLC software are basically officials of ATR/BPN and Regional/land offices. All users are required to be registered and the logging-in with the personal ID. The user category and the default role for the software are shown in Table III.3. The super administrator can modify the role of each user.

Table III.3 User Category and the Role in VLC Software (JICA Project Team)

User Category	Establish project	Data input/analysis/output	User registration	Modify template/formula	Modify role of user
Super administrator	○	○	○	○	○
Local administrator	○	○	○	-	-
Manager/Supervisor	○	○	-	-	-
Ordinary user	○	○	-	-	-

#### VLC Software System:

The VLC software is a stand-alone application for recording project data and calculating the feasibility and potential. The VLC application has a dependency on MySQL as a database to store all data that is used either as core data (master data) or data used for reporting.

Both the VLC software and the MySQL database will be in the same environment. The VLC software will use the Laravel framework by using a standard interface (PDO) to connect between the software and the database. VLC software was developed as the web-based application which could provide the same function and result for various user's devices such as PC, Laptop, Tablet and Smartphone (Android, IOS and the other operation system).

#### Interfaces and Contents of VLC Software:

Outline of interface and contents of main function of VLC software are shown as follows. Details of the interface and contents are described in the reference of Manual of VLC software.

a) User Registration

All users are required to be registered with the personal E-mail address, log-in password and the authorized role by the administrator. The authorized role can be modified by the administrator.

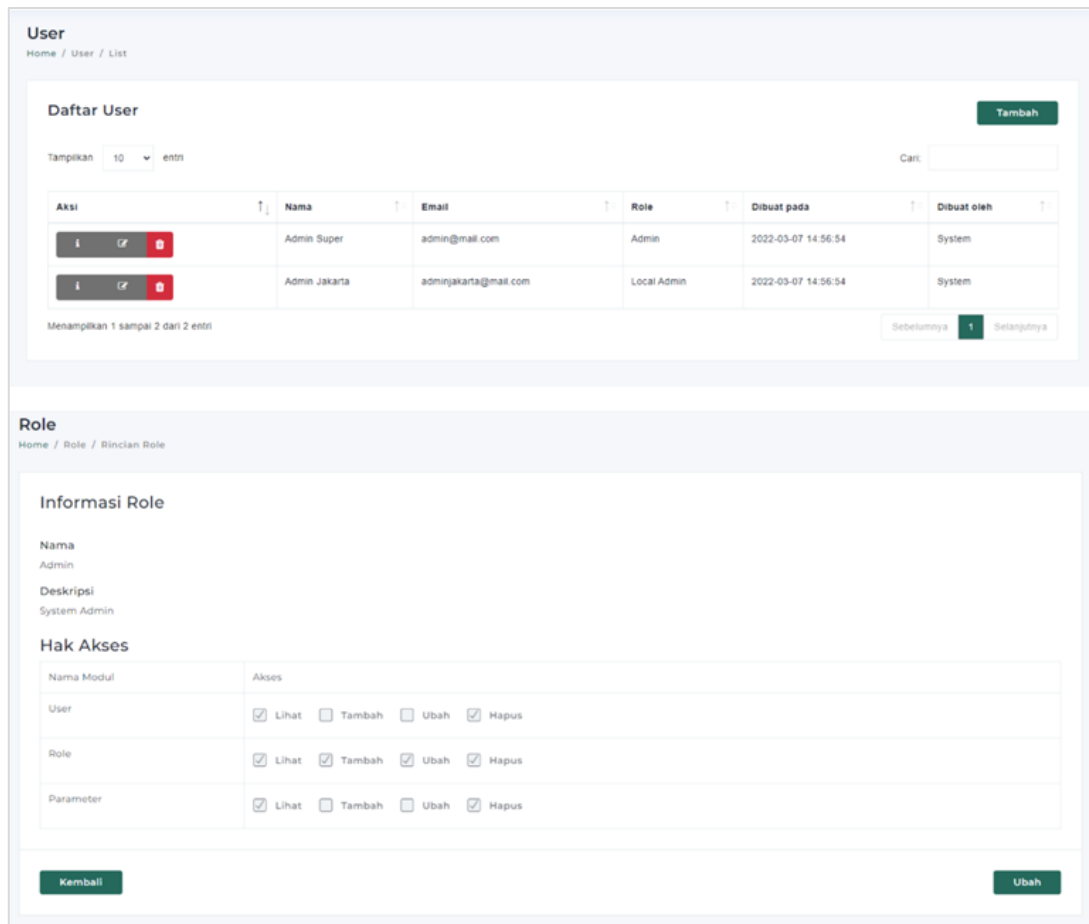


Figure III.9 User Registration Interface (JICA Project Team)

b) Log-in for VLC Software

To enter this application, the user can enter the email address and password registered in this application. If the email and password entered by the user are correct, the user will be redirected to the home page.



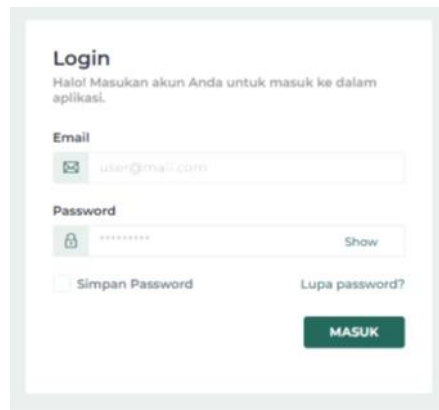


Figure III.10 Log-in Interface (JICA Project Team)

### c) Project Creation

To input data and information, user need to create a project in the project menu in advance. After the creation, user can input general information of the VLC project such as name of the project and location.

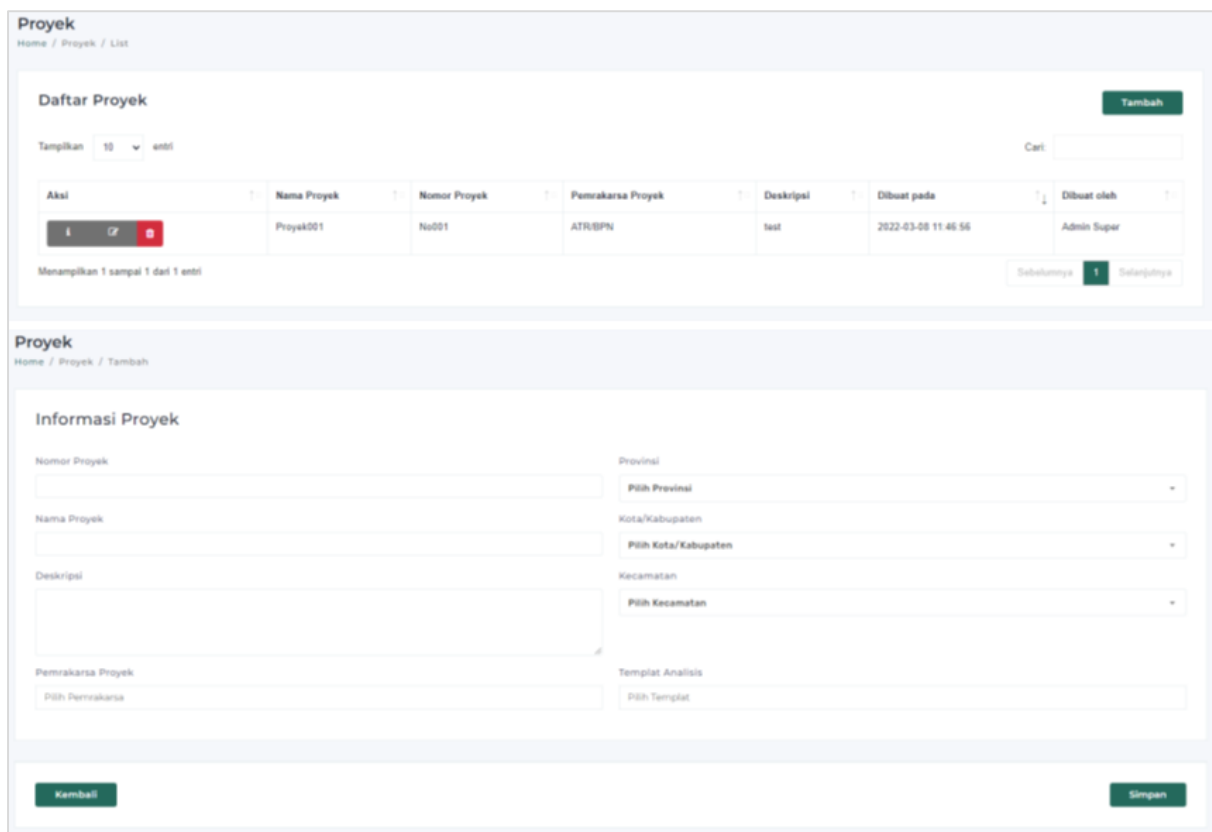


Figure III.11 Project Creation Interface (JICA Project Team)

### d) Data Input for Feasibility and Potential Analysis

To input data for analysis, user needs to select the analysis stage (Identification, Planning or Implementation) and inputs the required parameters of the VLC project.

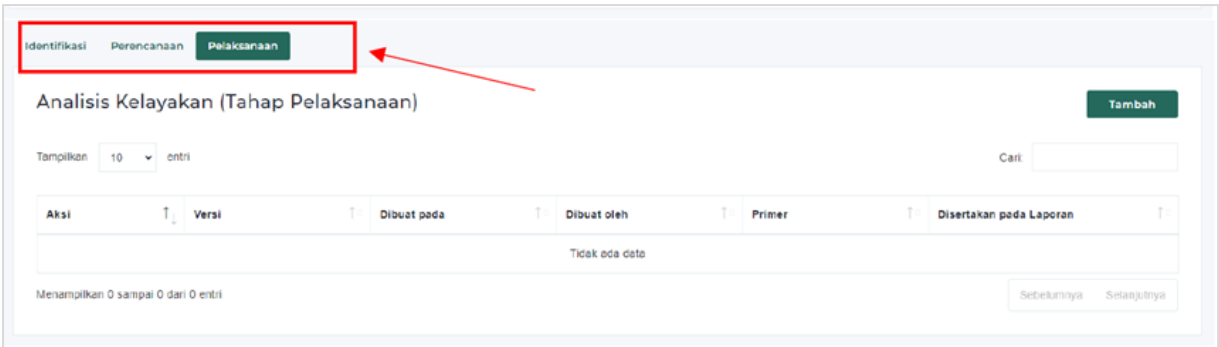


Figure III.12 Selection of Analysis Stage (Identification, Planning or Implementation) (JICA Project Team)

**Input**

Item	Simbol	Nilai	Satuan	Keterangan
<b>General</b>				
Financial Support by Government (Subsidy etc.)	Gs	<input type="text"/>	Juta IDR	
<b>Existing Basic Data</b>				
Project Area	A	<input type="text"/>	m2	
Total number of household	N	<input type="text"/>	HH	
Total area of private lands	Aa	<input type="text"/>	m2	
Total area of public lands	Ab	<input type="text"/>	m2	
Total area of public facility lands	Ac	<input type="text"/>	m2	
<b>Planning Data</b>				
Designated FAR	FAR	<input type="text"/>	-	
Ratio of Public Facility Area	R	<input type="text"/>	%	
<b>Cost Data</b>				
Unit cost for land development	UCa	<input type="text"/>	Juta IDR/m2	
Unit cost for VLC building	UCb	<input type="text"/>	Juta IDR/m2	
Market price of apartment	MVa	<input type="text"/>	Juta IDR/m2	
<b>Property Price Data</b>				
Existing asset value (inc. building)	Va	<input type="text"/>	Juta IDR/m2	
Market price of apartment	MVa	<input type="text"/>	Juta IDR/m2	

Figure III.13 Interface for Data Input for Feasibility Analysis (for Identification Stage) (JICA Project Team)

Faktor Nilai Kawasan		
Lokasi kegiatan	Jarak ke Pusat Kota	--Pilih--
Tingkat Kenyamanan Hidup	Jarak ke fasilitas komersial skala besar eksisting	--Pilih--
Aksesibilitas Infrastruktur	Aksesibilitas terhadap infrastruktur teknis sekitar (penyediaan air, listrik dsb.)	--Pilih--
Prioritas dalam kebijakan pemerintahan	Ditetapkan sebagai pembangunan kawasan prioritas oleh pemerintah	--Pilih--
Risiko bencana banjir	Tingkat pengaruh bencana	--Pilih--
Faktor Nilai Transportasi		
Aksesibilitas terhadap jaringan jalan	Konektivitas terhadap jalan utama	--Pilih--
Faktor Tingkat Kesulitan Pembangunan		
Kendala topografis dan geologis	Kemudahan konstruksi dari aspek topografis dan geologi (berbukit, terdapat kanal, tanah lunak dll.)	--Pilih--
Ketersediaan tanah kosong	Rasio tanah kosong pada lokasi kegiatan	--Pilih--
Ketersediaan Pemilik Tanah		
Ketersediaan pemilik tanah	Rasio perorangan yang bersedia ikut kegiatan	--Pilih--

Kembali
Simpan

Figure III.14 Interface for Data Input for Potential Analysis (for Identification Stage) (JICA Project Team)

#### e) Printing Analysis Report

User can print out the result of each analysis.

Identifikasi
Perencanaan
Pelaksanaan

### Analisis Kelayakan (Tahap Identifikasi) Tambah

Tampilkan  entri Cari:

Aksi	Versi	Dibuat pada	Dibuat oleh	Primer	Disertakan pada Laporan
Tidak ada data					

Menampilkan 0 sampai 0 dari 0 entri Sebelumnya  Selanjutnya

---

### Analisis Potensi (Tahap Identifikasi) Tambah

Tampilkan  entri Cari:

Aksi	Versi	Dibuat pada	Dibuat oleh	Primer	Disertakan pada Laporan
<input type="button" value="i"/> <input type="button" value="f"/> <input type="button" value="d"/>	1	2022-03-11 12:59:35	Admin Super	ya	Tidak

Menampilkan 1 sampai 1 dari 1 entri Sebelumnya  **1** Selanjutnya

Figure III.15 Interface for Printing Out of Analysis Result (JICA Project Team)





















#### f) Editing of Parameter, Analysis Template and Calculation Formula

Administrator can change, add and delete the parameter, analysis template and calculation formula for the analysis in order to meet actual condition of the VLC project, and to adjust and upgrade of the analysis method in future.

**Kategori Parameter**  
Home / Kategori Parameter / List

**Daftar Kategori Parameter** Tambah

Tampilkan 10 dari 12 entri Cari

Aksi	Nama	Deskripsi	Indeks	Dibuat pada	Dibuat oleh
 	Property Price Data		5	2022-03-07 14:57:31	Admin Super
 	Existing Basic Data		2	2022-03-07 14:57:31	Admin Super
 	General		1	2022-03-07 14:57:31	Admin Super
 	Cost Data		4	2022-03-07 14:57:31	Admin Super
 	Participant's Agreement		6	2022-03-07 14:57:31	Admin Super
 	Asset value before project		9	2022-03-07 14:57:31	Admin Super
 	Lead Area		7	2022-03-07 14:57:31	Admin Super
 	Planning Data		3	2022-03-07 14:57:31	Admin Super
 	Quick check results		12	2022-03-07 14:57:31	Admin Super
 	Project cost		10	2022-03-07 14:57:31	Admin Super

Menampilkan 1 sampai 10 dari 12 entri Sebelumnya 1 2 Selanjutnya

Figure III.16 Interface for Parameter Editing (JICA Project Team)

**Templat Parameter Analisis**  
Home / Templat Parameter Analisis / Ubah Data

**Informasi**

Kategori Parameter  
Existing Basic Data

Label  
Text

Simbol  
A

Unit  
m2

Indeks Posisi Parameter  
1

Deskripsi  
text

Parameter Input \*ceklis jika parameter digunakan sebagai input

Parameter Kriteria

Kembali Simpan

Figure III.17 Interface for Editing of Analysis Template (JICA Project Team)

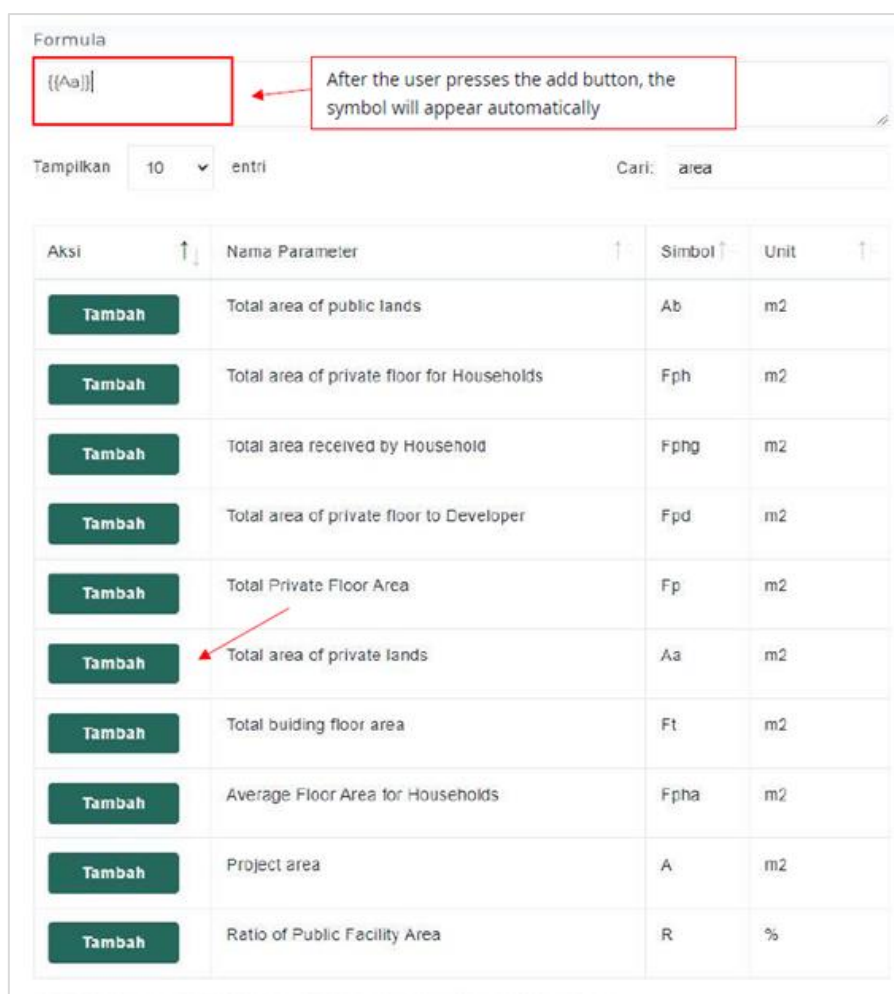


Figure III.18 Interface for Editing of Calculation Formula (JICA Project Team)

#### III.4.4 Training for VLC Software Operation

JICA Project Team hold the training session on VLC software operation for staffs of the Directorate of Land Consolidation and Land Development on 23rd March 2022. Outline of the training session is shown in Table III.4.

Table III.4 Outline of Training Session for VLC Software Operation (JICA Project Team)

Items	Description	Remarks
Date	23 <sup>rd</sup> March 2022	
Venue	Meeting Room of Directorate of Land Consolidation and Land Development (2nd floor of ATR/BPN Sabang Office) and on-line participation (Zoom)	
Agenda	Session 1 (9.30 a.m - 11.45 a.m.): <ul style="list-style-type: none"> <li>- Objective and outline of VLC software</li> <li>- Operation of VLC software</li> <li>- Role of super administrator</li> </ul> Session 2 (1.00 p.m. to 3.00 p.m.): <ul style="list-style-type: none"> <li>- Software installation and management</li> </ul>	
Participants (Trainee)	8 staffs of Directorate of Land Consolidation and Land Development	
Trainer	1. Rendy Leara (Prismatama Cipta Teknologi) 2. M. Bhovdair (Prismatama Cipta Teknologi)	



Figure III.19 Training Session for VLC Software Operation (23<sup>rd</sup> March 2022) (JICA Project Team)  
 The outcomes of the training session are summarized in Table III.5.

Table III.5 Outcomes of Training Session for VLC Software Operation (JICA Project Team)

Items	Description
Session 1	<p>a. Participants have fully understood the functionality of the software.</p> <p>b. Participants understood the circumstances of the use of software where the calculation is to support their decision making and as a tool to verify studies/plans from other stakeholders as well as understand that this software does not replace a full-scale project feasibility study.</p> <p>c. The participants have given several inputs to the software which are:</p> <ul style="list-style-type: none"> <li>- Several Bahasa Indonesia terms are to be readjusted;</li> <li>- To add a maximum score of potential analysis to the calculation page;</li> <li>- To add a fillable notes column for feasibility analysis.</li> </ul> <p>d. Participants fully understood the management of both users and formula and they understood the relationship of formula edit/creation and prevailing technical guidelines where formula shall follow prevailing tech. guidelines.</p>
Session 2	<p>a. Participants have understood how to install the software, the participants have previous experience in installing similar software thus they had no issue in understanding the steps. They have been made aware of the manual book / user guide in case they need to revisit</p> <p>b. With the guidance from the trainers, the software has been installed on a DLC PC and have been connected to the local network (intranet). Thus, DLC people within DLC building are able to access a fully functioning software to try-out and learn further about the software.</p> <p>c. During the training, it has been determined that Pak Syaefullah shall be the key technical user for the VLC Software.</p> <p>d. The participants understand that regarding accessibility from outside DLC building would require an internal discussion between DLC and PUSDATIN who maintain the IT environment. Such discussion shall include open IP policy within ATR/BPN and this shall be initiated by DLC themselves. As of now, access from outside is currently facilitated by 3rd party hosting for 1 year as a temporary hosting.</p> <p>e. During this session, it has been agreed upon DLC that the name of the software will be e-KTV software.</p>

### III.5 Development of VLC Promotion Video

#### III.5.1 Objective

Through the activities of supporting for VLC pilot project, it was identified that following issues are the bottleneck to promote VLC project implementation. For the improvement, it is necessary to disseminate information and knowledge of VLC system as well as benefits and mechanism of VLC.

- (a) Lack of landowner's willingness to participate VLC project;
- (b) Lack of private developer's investment to VLC project;
- (c) Less understanding of government officials on technique for planning and implementation of VLC.

For this context, JICA Project Team proposed to develop VLC promotion video to disseminate VLC system to both of public and private sector. Objectives of VLC promotion video from viewpoints of each stakeholder's group are follows:

- (a) For community and landowners: To encourage understanding of purpose, benefit and process of VLC project;
- (b) For private developers: To share information that VLC project will be their business opportunity;
- (c) For government agency/officials: To encourage understanding that VLC will be one of the solutions for urban issues, and enhance knowledge of methodologies for planning and implementation of VLC project.

#### III.5.2 Outline of VLC Promotion Video

JICA Project Team proposed the outline of the VLC promotion video and discussed with Directorate of Land Consolidation and Land Development. The outline of VLC promotion video is shown in Table III.6.

The video consists of two packages of (V1) for community and landowners and (V2) for government officials and private company. V1 contains explanation of general of VLC system such as background, objective, overall process and mechanism, project benefit and project image. V2 additionally contains technical explanation for the VLC procedure and mechanism.

Table III.6 Outline of VLC Promotion Video (JICA Project Team)

	<b>V1: For Community/ land owners</b>	<b>V2: For Government Official/Private Company</b>
Target Viewer	Communities in dense or slum, >17 years old, primary to secondary education and informal occupation	<ul style="list-style-type: none"> <li>• Structural and functional officers</li> <li>• Regents/Mayors and related regional agencies</li> <li>• Ministries and Agencies</li> <li>• Developers, banks and other financing institutions.</li> </ul>
Time Length	2 to 3 minutes	5 minutes
Channel for Dissemination	ATR/BPN, DLCLD and partnering Directorate's Social Media channels	ATR/BPN, DLCLD and partnering Directorate's Social Media channels

	<b>V1: For Community/ land owners</b>	<b>V2: For Government Official/Private Company</b>
Message	<ul style="list-style-type: none"> <li>• Land in urban areas are limited, people should adapt to live vertically</li> <li>• Communities in the dense area will have a role in increasing the quality of life through LC,</li> <li>• LC is govt. program that supports development without relocation / improve without remove.</li> <li>• LC affirms the legal certainty of the community's land rights.</li> </ul>	<ul style="list-style-type: none"> <li>• Land readjustment (especially in slum area) is a problem that many regional governments face. LC/VLC can become a solution to the issue. LC/VLC can become a solution for such issue.</li> <li>• LC/VLC cannot be done by one stakeholder, it requires collaboration between various parties.</li> <li>• Both government and communities can receive many benefits from LC/VLC</li> </ul>

### III.5.3 Preparation of VLC Promotion Video

LC Team developed the draft story lines for 2 packages of video based on draft contents proposed by JICA Expert Team. 1 package of video has contents for government agency audiences and the other package of video is targeted for the general public audience.

Development of the VLC software was carried out by the outsourcing to the local consultant under the management of JICA Project Team and LC Team. Based on the story lines, JICA Project Team prepared the TOR for the procurement of the subcontractor. The schedule of the development is shown in Table III.7. Through the tender process, PT Prismatama Cipta Teknologi was selected as the local consultant.

Table III.7 Schedule of VLC Promotion Video Development (JICA Project Team)



### III.5.4 Development of VLC Promotion Video

LC Team conducted the meetings with JICA Project Team and PT Prismatama Cipta Teknologi to develop the script of VLC promotion video which include the narrations and timelines of each video part. After the approval of the script by the of Directorate of Land Consolidation and Land Development, PT Prismatama Cipta Teknologi developed the video contents.





Figure III.20 Meeting for VLC Promotion Video Development (19<sup>th</sup> August 2022)

### III.5.5 Deliverable

VLC promotion video was completed at 21<sup>st</sup>, October 2022. The video contents as the screen shots are shown in Table below. The general flow of the Video as written in the storyboard starts from explaining the background of why VLC is needed. This is then continued by a brief history explanation on LC in Indonesia then directly followed by the concept of VLC. This is the further explain the process and mechanisms of VLC based on Ministerial Regulation 12/2019. On the final parts of the video, it showcases the success case in Minato 2-chome higashi VLC in Tokyo, Japan. And then the video concludes with a closure by the DG of Land Acquisition and Land Development and Director of Land Consolidation and Land Development for the government agency audience and general public audience respectively.

<p>Scene showcasing the background of the necessity of urban redevelopment where sub-optimum spatial plan creates unorganized neighbourhood</p>	<p>This scene further explains that unorganized neighbourhood has high potential to create slum areas due to uncontrolled urbanization.</p>

Scene where the concept of VLC is introduced in animation format.

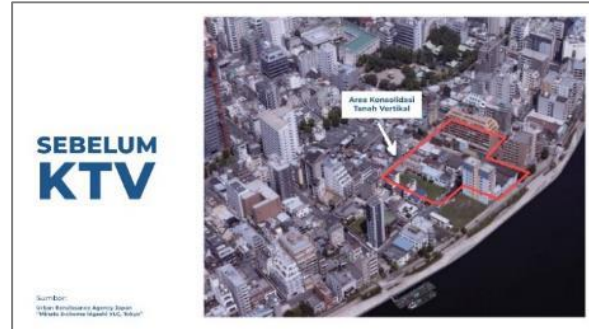


Scene animating the benefits of VLC for communities and general public

Scene to animating the process and mechanism of VLC based on regulations.



Scene animating VLC benefits for government side.



Scene explaining the before VLC in Japan case study



Scene showcasing the results of VLC in Japan case study



Closing scene by the Director General of Land Acquisition and Land Development



Behind the scene of the closing statement scene with Director of Land Consolidation and Land Development.

Figure III.21 Screenshots of VLC Promotional Video and Behind the Scenes

## Chapter IV. Land Valuation

### IV.1 General

Land value is an important factor to manage a sound and proper land transaction market by the land administrator. Information on land value is a mandatory input for various services in the Ministry of Agrarian Affairs and Spatial Planning/ National Land Agency (ATR/BPN), such as its regular function to determine PNBP tariffs (non-state tax revenue) for services at land offices following the Government Regulation No 128/2015. Land value information is also a crucial input in the planning and preparation phases for land acquisition, land consolidation, and spatial planning projects.

However, land value information has been publicly available only in the unit of value zone by Zone-based Land Value Map (Peta ZNT). Meanwhile, all the services in the land offices are requested in the unit of individual land parcel. In order to cope with this situation, the Parcel-based Mass Land Valuation Application (PentaBit) was developed in 2018. This application provided a good result of Parcel-based Land Value Map (Peta NBT) when it was tested using the dataset from Central Jakarta Land Office.

In 2019, Corruption Eradication Commission (KPK) began a campaign to municipalities to utilize Peta ZNT in determining tariffs and taxes related to property sales. Municipal authorities have been using the block map as the property database, which was introduced by Directorate General of Tax in 1986. The block map combines parcel map and zone-based land value map, containing parcels with tax object selling value (NJOP). PentaBit was improved to accommodate additional functions necessary for ATR/BPN's land business. It was done by developing data processing unit in 2019 to cope with multiple accesses, big data analysis and heavy processing through migration from ArcGIS 10.0 platform to ArcGIS 10.6. Then continued by developing the data utilization unit in 2020 with a well-tailored application of migrating from the block map to land value map such as Peta ZNT and Peta NBT.

At the same time, the accuracy of land value has been raised as a big issue in politics. How PentaBit calculates the land value of a particular parcel is the comparison method of transaction cases. Peta ZNT provides zone-based land value by average of at least three transaction cases in the same zone. It is obvious that the accuracy relies on the value of transaction cases. To cope with this issue, there have been organized several FGDs some of which were attended by the Minister. The project presented "Standard Land Price Publication System in Japan" and explained how to control the land market as a tool of the land administrator.

### IV.2 Parcel Based Mass Land Valuation System (PentaBit)

#### IV.2.1 Issues of Peta ZNT

The main issue of Peta ZNT is that its base unit is zone based, while the base unit in the land administration is parcel based. The existing work scale of Peta ZNT is a small-scale map of 1:25,000 up to 1: 10,000. These conditions have caused some problems such as:

- (1). Several parcels located at a border of the zones may have more than one value;

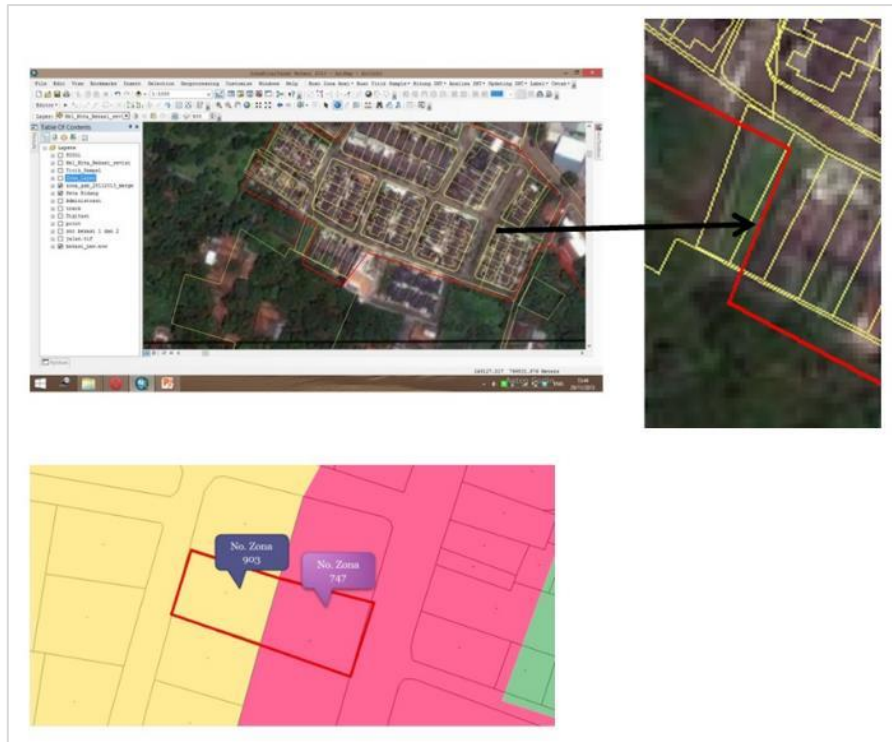


Figure IV.1 Satellite imagery base map to delineate zone in Peta ZNT

and 2) unable to provide precise value because Peta ZNT is a wide area coverage which may consist of dozens of parcels, while each parcel has different variables to indicate its value, including: (i) parcel frontage dimension, (ii) geometric form, (iii) land use, (iv) status of ownership, (v) the distance of parcel to highways, collector roads, etc.

## IV.2.2 Development of PentaBit

### IV.2.2.1 Objective

The parcel-based land value is needed by numerous stakeholders, who may use this value for many purposes such as:

- (1). by Implementing agencies in the planning phase of land acquisition to estimate compensation for the land;
- (2). by Directorate of Land Consolidation to use as the base value for land consolidation;
- (3). by appraisers as a reference value to appraise compensation amount during the implementation phase;
- (4). by Directorate General of Spatial Planning as the input data to conduct detailed spatial planning;
- (5). by local governments for land and building tax (PBB) and land and building rights acquisition fees (BPHTB); and
- (6). by Ministry of Finance for income tax (PPh).

There have been studies on land mass valuation using the Geographically Weighted Regression (GWR) method, which yields a sufficient land value from viewpoints of the science assessment side. The development of software for land valuation that can support the above purposes and activities, especially in determining the large mass land estimation, should facilitate performance in data

processing of parcel-based land valuation. It is required to be a computer application that is easy to operate.

#### IV.2.2.2 Scope of work

The application of Parcel Based Mass Land Valuation is the most critical module to develop a Peta NBT. Hence, the application should be developed by using ArcGIS software which ATR/BPN commonly uses. ATR/BPN has been using ArcGIS software as a platform for the Peta ZNT application since 2013. Technical specifications that must be fulfilled in the development by the internal standard operating procedure of the then Directorate of Land Valuation are:

- (1). GIS-based software using Arc GIS.
- (2). Land valuation process using Geographically Weighted Regression (GWR) analysis;
- (3). Desktop-based GIS software applications including the input of survey data either directly or conversion of tabulation data (Microsoft excel) and Building Value Processing using the installed unit method.
- (4). Integration of Zone-based Land Valuation application with an additional feature of comparative data market techniques for individual samples and zone comparison technique.

The application is developed in three phases, PentaBit 1 to 3. PentaBit 2 integrated with PentaBit 1 under ArcGIS 10.0 platform is required to work under Arc GIS 10.6 platform to cope with multiple accesses, big data analysis and heavy processing. The basic concepts of the application, where PentaBit 2 contains all of the tools in PentaBit 1 with additional processes, are as follows:

- (1). field data acquisition and analysis, which is connected with the Survey 123 data collection platform and allows analysis of the field data;
- (2). data splitting and merging in the preparation phase so that data preparation can be conducted per sub-district while data analysis is conducted per city/ district;
- (3). to insert the existing Peta NBT;
- (4). to insert the most recent parcel map (for updating);
- (5). to insert the Land Consolidation Plan (for land consolidation);
- (6). to identify land parcels without changes in shape, size, access road segment, and zonation, by using the information from Peta NBT;
- (7). to update information on land parcels with shape, size, access road segment, and zonation changes.
- (8). to update information on all land parcels related to distances to facilities, relative positions from risks, and other factors involved for land value prediction;
- (9). land value prediction after updating information on land parcels with changes in shape, size, access road segment, zonation, distances to facilities, relative positions from risks, and other factors involved for land value prediction.
- (10).land value prediction after land consolidation work;
- (11).land value prediction after land changes on zonation in spatial planning;
- (12).land value prediction whether or not utilized in accordance with spatial planning.
- (13).comparison of predicted land values before and after land consolidation;
- (14).comparison of predicted land values before and after changes on zonation in spatial planning;



- (15).comparison of predicted land values whether or not utilized in accordance with spatial planning; and
- (16).map layout for legalization.

In the third phase, the focus is shifted from developing data processing unit to developing data utilization unit. The primary purpose of PentaBit 3 is to ensure effective and efficient utilization by municipalities whose responsibilities include determining tariffs and taxes related to property sales. PentaBit 3 provides:

- (1). an online system on land value information service of PentaBit 2 products for municipalities;
- (2). an offline system on land value information service of PentaBit 2 products for municipalities;
- (3). a system that facilitates gradual migration from block map to Peta NBT;
- (4). a system that enables online verification of land value information by the land owner; and
- (5). a system that facilitates participatory land value mapping.

#### IV.2.2.3 Deliverables

The formation of PentaBit is shown in figure IV-2.

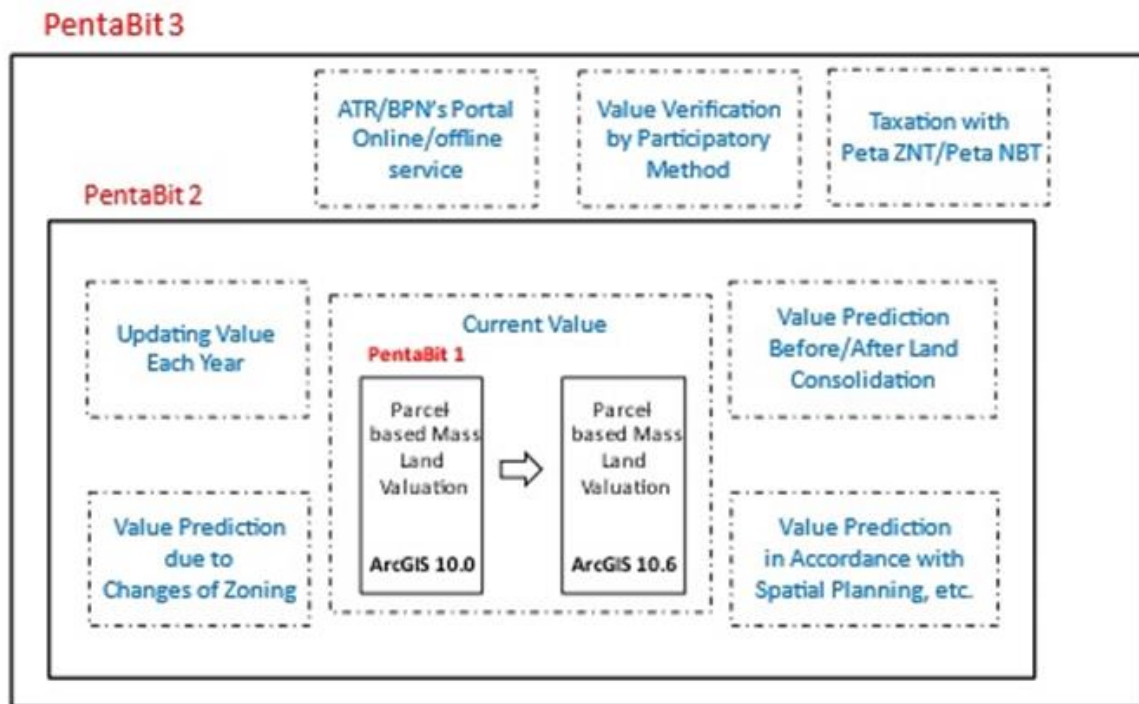


Figure IV.2 Development of PentaBit 1 to 3

##### IV.2.2.3.1 PentaBit 1

PentaBit 1 consist of a PentaBit application that provides the prediction value in the unit of individual land parcel with variations of predicted land parcel values based on the parcels' variables data such as road classes, parcel's shape, etc. Therefore, it is expected to be closer to variations of land values in reality. Hereby are several screenshots from the PentaBit application:

(1). Figure IV-3 below shows the function of joining parcels with road network captured in PentaBit application.

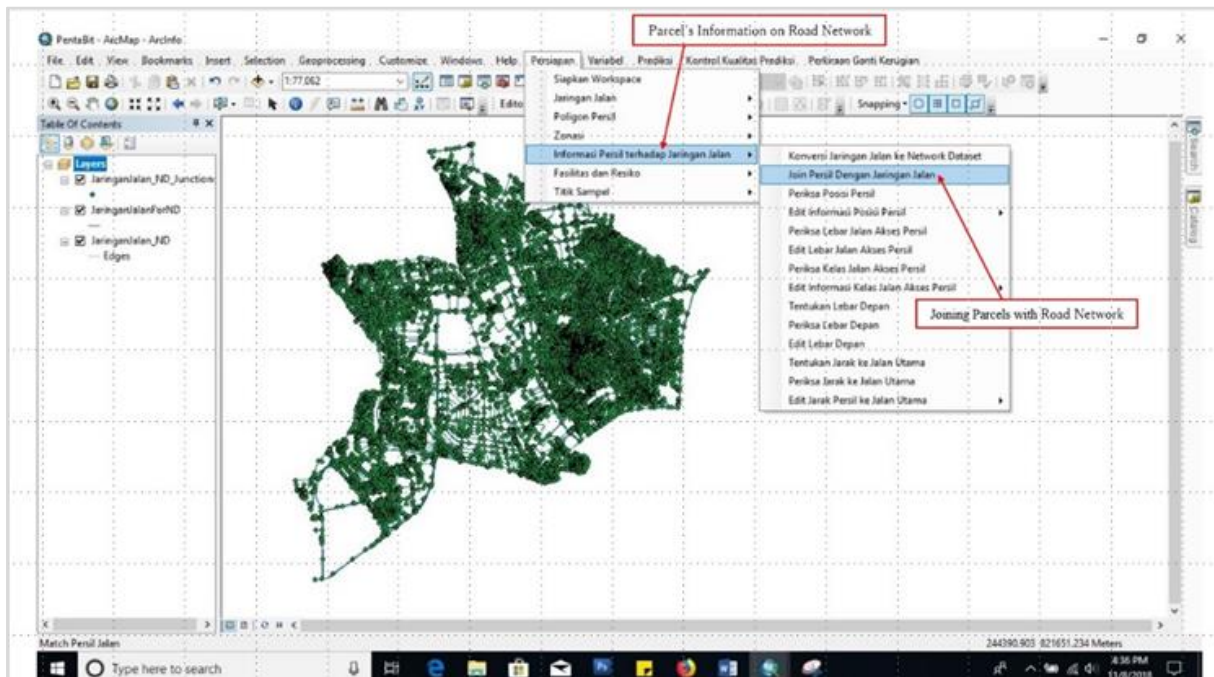


Figure IV.3 The function of joining parcels with road network

(2). Figure IV-4 below shows layers of parcels colored based on road classes captured in PentaBit application.

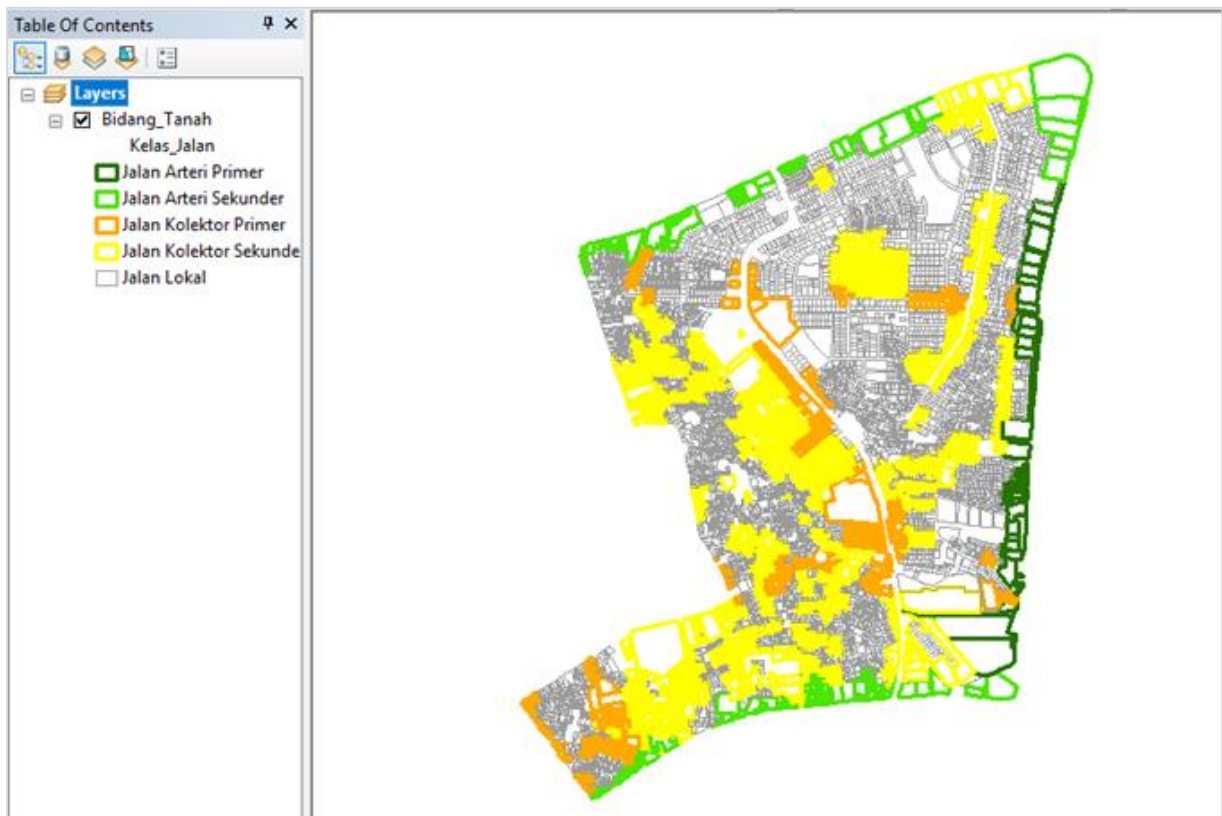


Figure IV.4 Layers of parcels colored based on road classes





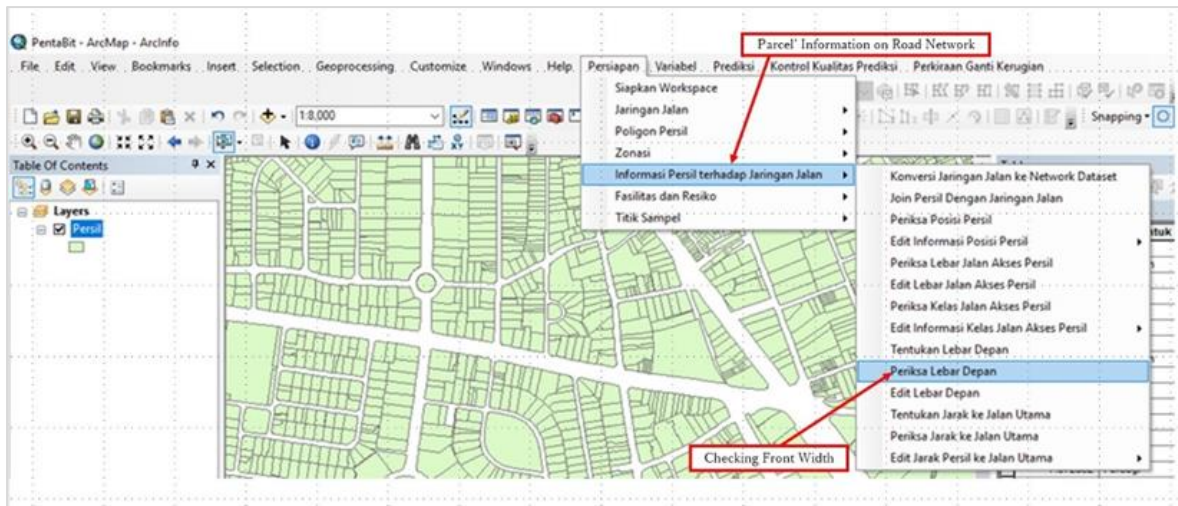


Figure IV.6 The function of checking front width

(2). Figure IV-7 below shows layers of parcels coloured based on zonation (i.e., agricultural zone, industrial zone, and so forth) captured in PentaBit application 2.



Figure IV.7 Layers of parcels coloured based on zonation

(3). Figure IV-8 below shows NBT map of Surakarta/Solo City (Central Java Province) made by PentaBit application 2.

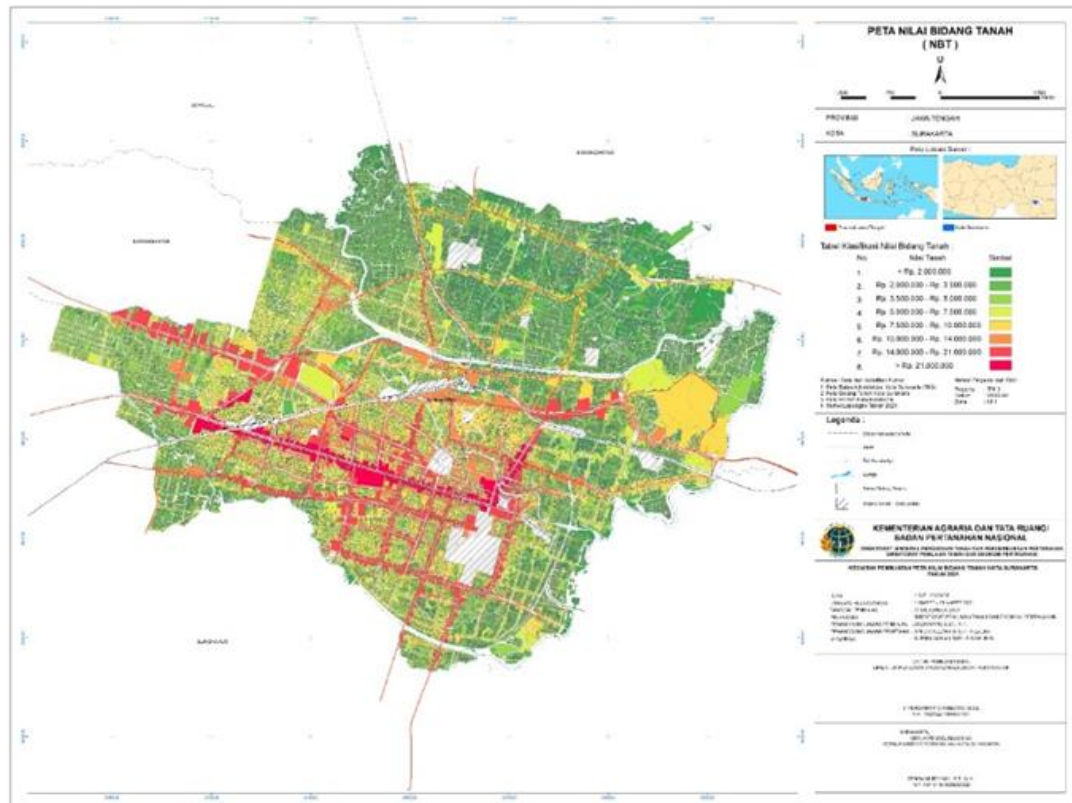


Figure IV.8 NBT map of Surakarta/Solo City (Central Java Province)

#### IV.2.2.3.3 PentaBit 3

As a series of projects, the project of developing the application for parcel-based mass land valuation phase 1 (PentaBit 1) and phase 2 (PentaBit 2) focused on developing data processing unit. In PentaBit 3, the focus is shifted to developing data utilization unit. The development of Land Valuation Portal and Mobile application for Participatory Land Value Mapping were included in this PentaBit 3. Land Valuation Portal is an ArcGIS enterprise-based portal that contains information related to land valuation, both in the form of Parcel-based land value data (NBT), Zone-based land value data (ZNT), and other related information.

On the other hand, Mobile application for Participatory Land Value Mapping is a mobile application that enable online verification on land value information by a land owners/communities so they can participate in providing accurate information on land values by submitting information such as location (position), parcel photos, proof of land transaction and other evidence.

Hereby are several screenshots from the PentaBit 3:

(1). Figure IV-9 below shows the general module as a support module in the land valuation portal before entering the spatial or map module.

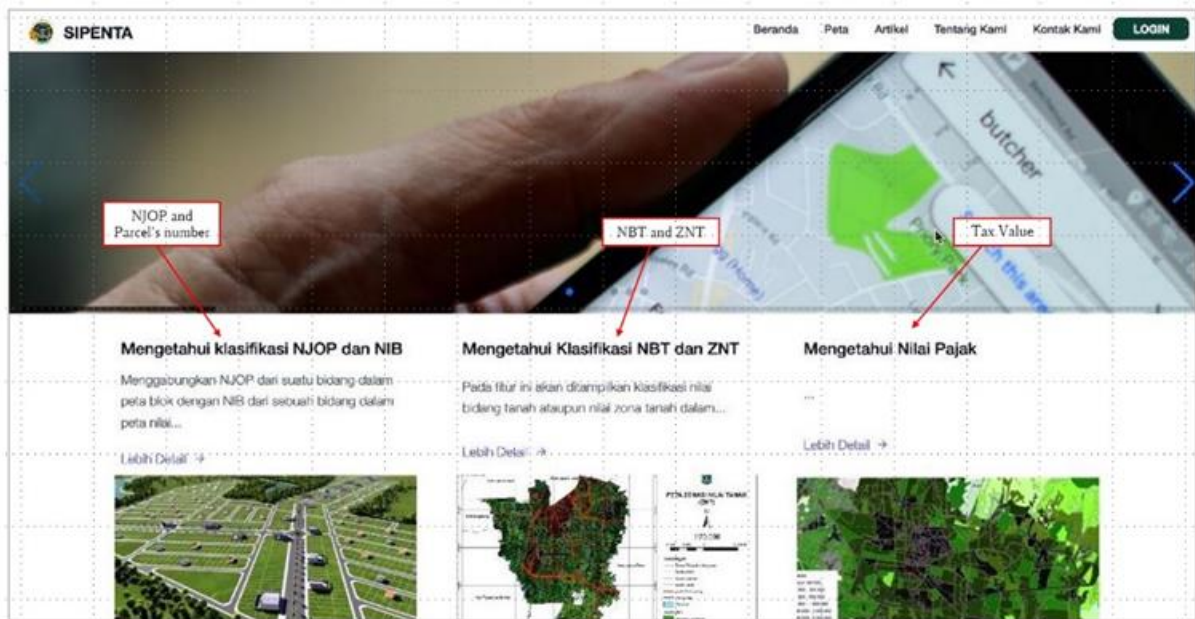


Figure IV.9 General module in land valuation portal

(2). Figure IV-10 below shows the Spatial Module/Map Module in the land valuation portal to display the NBT, ZNT and Sample Value data.

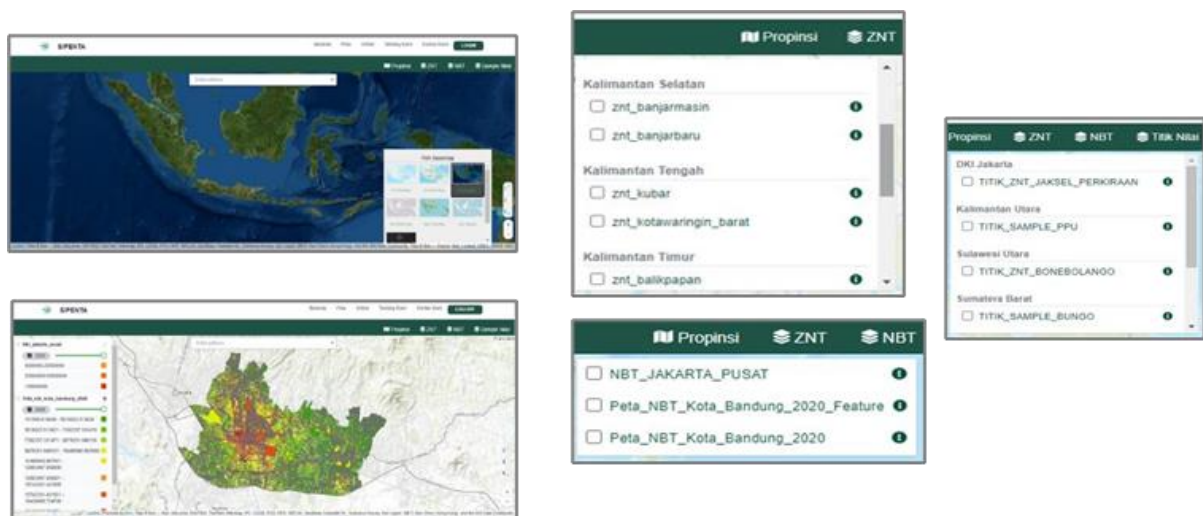


Figure IV.10 Spatial Module/Map Module in land valuation portal

(3) Figure IV-11 below shows the User Management/Admin Module in land valuation portal which, among others, can access data obtained from the land owners/communities through the Mobile application for Participatory Land Value Mapping.



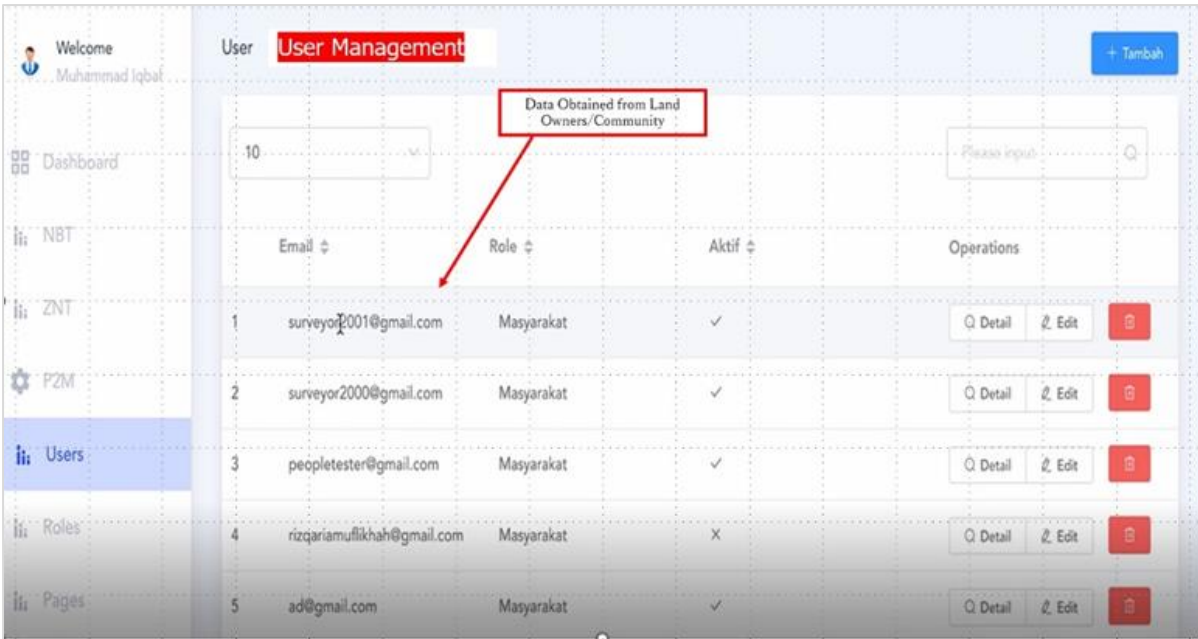


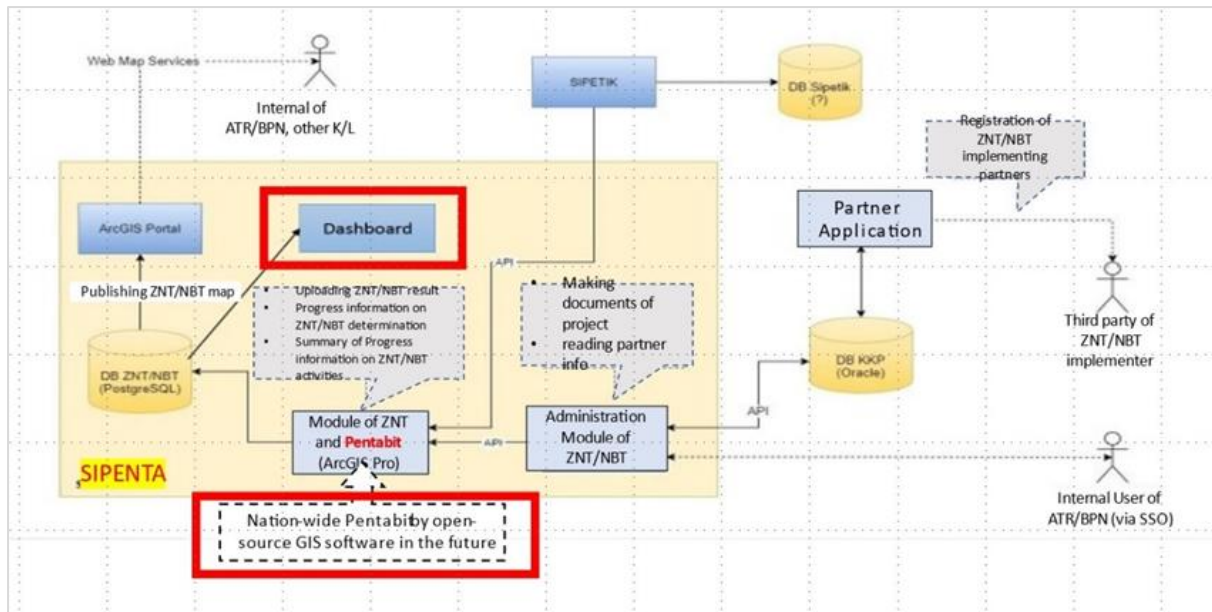
Figure IV.11 User Management/Admin Module in land valuation portal

(4) Figure IV-12 below shows the Mobile application for Participatory Land Value Mapping Module to facilitate the land owners/communities to participate in submitting data/information related to land values.



Figure IV.12 the Mobile application for Participatory Land Value Mapping Module

Pentabit has been incorporated into the Information System of Land Value of Ministry of ATR/BPN (SIPENTA), as pictured in the following figure:



#### IV.2.2.4 Accuracy of Land Value

Provision of land value information is called “System Infrastructure” side by side with “Physical Infrastructure” since it is also vital for social and economic activities. There are several types of land value information publicly provided such as the block map Peta ZNT and Peta NBT. As mentioned above, the information accuracy is crucial for managing a sound and proper land transaction market. There has been no system in Indonesia to provide a reliable standard land price that should be used to estimate land value as benchmarking.

The project has introduced a Japanese case that is called Standard Land Price Publication System by Land Value Public Notice Law. Ministry of Land, Infrastructure, Transport and Tourism of Japan (MLIT) announces land prices of 26,000 standard sites and local governments announce land prices of supplementary 20,000 standard sites every year. Those pieces are appraised by appraiser committees every year and have roles as follows:

- (1). to be indicators for land transaction;
- (2). to be criteria for land appraisal;
- (3). to be criteria in calculating price of land acquisition of public interest;
- (4). to be standards for land inheritance evaluation and property tax assessment; and
- (5). to be the criteria for the price review of land transaction by National Land Use Planning Law.

Based on the standard land price, the governments also announce two types of land prices, which are:

- (1). Roadside Land Price for Inheritance Tax;
  - (a) As of January 1st, every year
  - (b) Announced to the public on July 1st
  - (c) By National Tax Agency
  - (d) To be used for the benchmark to calculate land value in inheritance/gift tax
  - (e) Around 80 % of Standard Land Price

- (2). Roadside Land Price for Property Tax
  - (a) As of January 1st, of every three years
  - (b) Announced to the public on April 1st
  - (c) By municipality governments
  - (d) To be used for the benchmark to calculate land value in Property tax
  - (e) Around 70 % of Standard Land Price

## Chapter V. Land Bank Establishment and Operations Preparatory Support

### V.1 Background

In 2020, the Directorate of Land Valuation (DLV) was appointed by the Secretary General of ATR/BPN to spearhead the technicalities of the establishment of Land Bank. According to the second amendment of Record of Discussion dated on January 27, 2021, an activity to support Land reserve, Land economics, management and development in accordance with Renstra of ATR/BPN 2020-2024 it was agreed that the Project should further continue in the field of the development of Land Bank Agency in the spirit of the new UU 11/2020. With ATR/BPN supervising the development of a new Government Regulation together with other line ministries for the establishment of a Land Banking Agency, JICA team had a role to facilitate support in the development of the Land Banking Agency Government Regulation through a series of Preliminary Studies of Land Banking Technical aspects based on overseas examples to accelerate the processes to achieve a sound Land Bank organization.

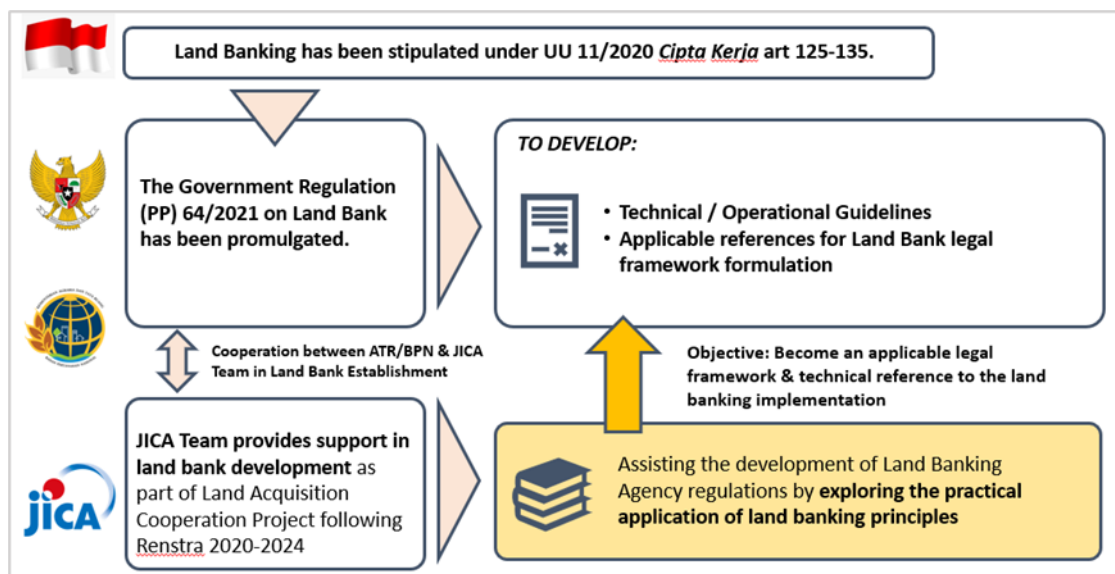


Figure V.1 Technical Support Scheme for Land Bank Studies

### V.2 Scope of Work

#### 1. International Case Study:

To provide a role and responsibility of overseas Land Bank-like agencies as a benchmarking process to gain lesson learned reference for Indonesian Land Bank (LBI). The study aims to become an applicable legal framework & technical reference to the land banking implementation.

#### 2. Conceptual Business Scheme and Organizational Structure:

To gain insights on how LBI shall work in the confounds of prevailing regulatory framework and provide hypothetical business scheme and optimum organization structure.

3. Highest and Best Use Criterion for Land Bank Lands:

To provide a quick analysis criterion to ease LBI decision making on choice of development path for their current owned/managed lands.

4. Business Model and Financial Sustainability:

Refining the LBI business scheme to provide an initial guidance in business sustainability against LBI mandate.

V.3 Study Results

All Land Bank related studies has been done with the support of PT Geonusa Scientia (GNS) as contracted consultants. Below are the deliverables developed together between JICA Project Team and GNS.

V.3.1 International Case Study

V.3.1.1 Results

The study has conducted benchmarking analysis using 7 benchmarking countries as long lists, all of whom had been considered as well-established Land Bank agency with different concepts of Land Banking. All 7 benchmarking countries are United States of America (USA), Japan’s Urban Renaissance, South Africa, United Kingdom (UK), Australia, Taiwan and Philippines. The study proceeds in shortlisting into 3 countries based on level of relevancy to be analysed further which are USA specifically Ohio Lucas County Land Bank, Japan specifically the Urban Renaissance (UR) agency and Land Bank of Taiwan (LBOT).

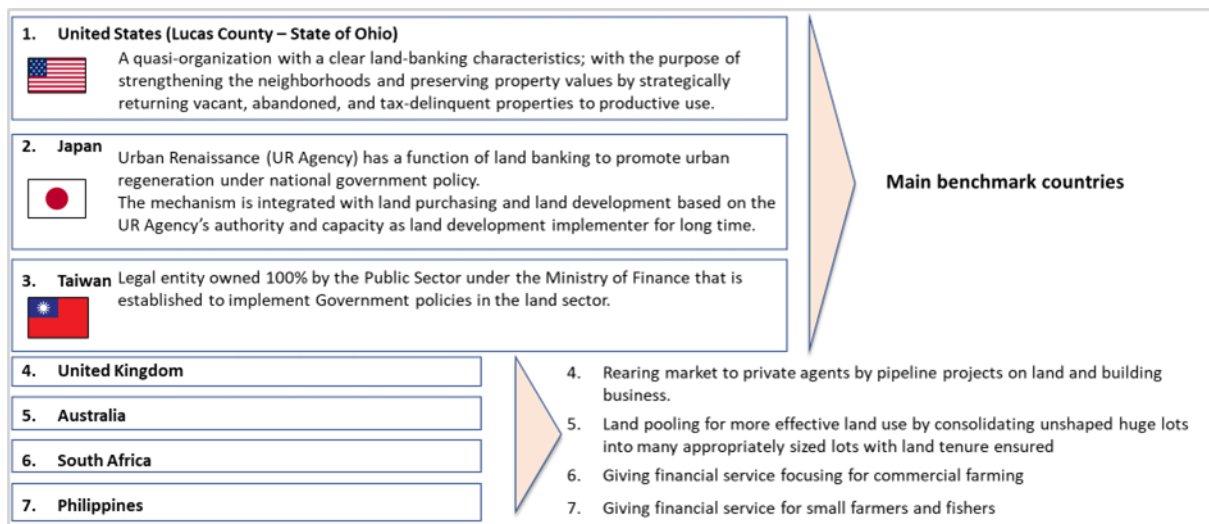


Figure V.2 Shortlisted Benchmarking Countries

(1) Japan Case Study

In Japan, the land banking activities are performed by a special agency called Urban Renaissance with the objective of promoting urban regeneration through the purchasing low-used or vacant lands and the redeveloping and utilization (as a countermeasure for declining land transaction since 1990’s).

UR has a function of land banking to promote urban regeneration under national government policy. The mechanism is integrated with land purchasing and land development based on the UR Agency's authority and capacity as land development implementer for long time.

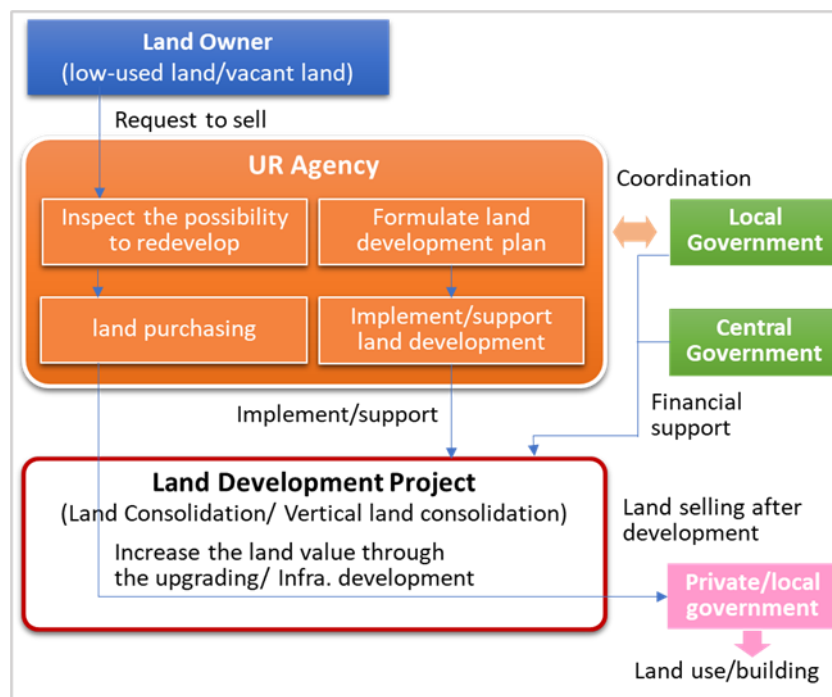


Figure V.3 Urban Renaissance Land Banking Mechanisms

#### Lessons learned from Japan's Urban Renaissance Case Study

- (a) Key 1: Inspect the land redevelopment possibility in advance of the purchasing:  
UR agency carries out F/S on the lands and surroundings in order to achieve the Land Banking objective.  
For Indonesia case, LBI would need to establish detail criteria/inspection system for land purchasing in complying with the objective of LBI.
- (b) Key 2: Integrated with land development project:  
UR agency is also authorized to implement LC/ VLC project to increase the land value. They have knowledge and capacity for the project.  
For Indonesia case, LBI would need to clarify the integrated mechanism with land purchasing, development methodology and development implementation agency
- (c) Key 3: Non-profit from land banking:  
UR agency is not required to gain profit from land banking in order to support private sector's profitable land usage. (But not allowed to make financial loss).  
For Indonesia's case, need to include financial aspect study to check profitability balance purchasing and selling before the purchasing.

#### (2) United States – Ohio Lucas County Case Study

A quasi-organization with clear land-banking characteristics; with the purpose of strengthening the neighborhoods and preserving property values by strategically returning vacant, abandoned, and tax-delinquent properties to productive use.



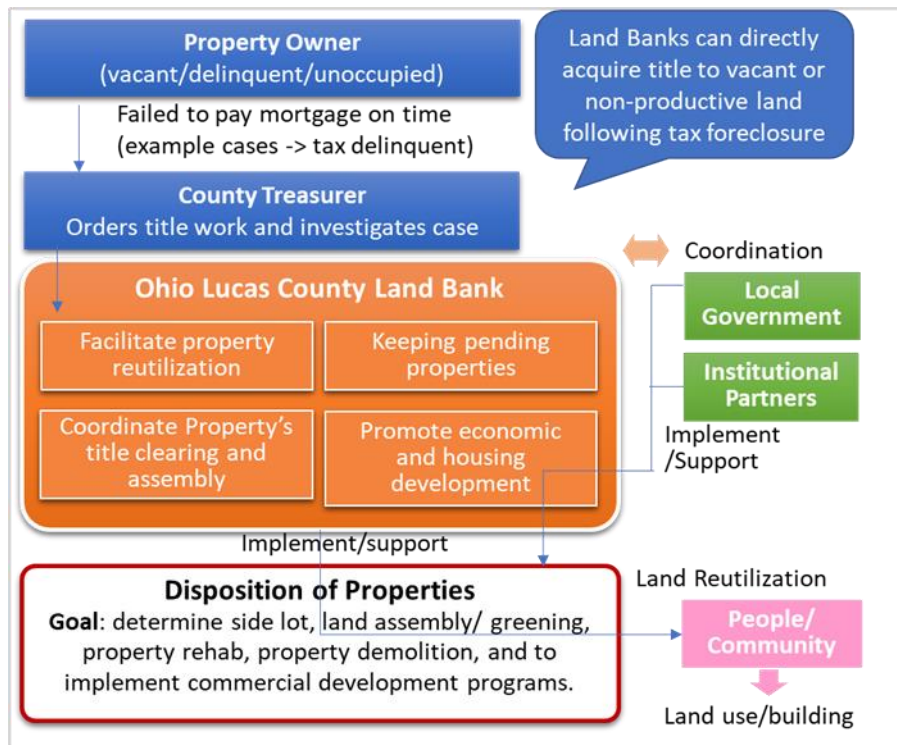


Figure V.4 Ohio Lucas County Land Bank Mechanism

#### Lessons learned from Ohio Lucas County Land Bank

(a) Key 1: Effective Partnerships by Strategically Utilizing All Available Resources from Various Government Offices and Community Partnership:

The Ohio state Land Bank cooperates with various agencies such as County Treasurer for Tax Foreclosure, local private contractor for Property Inspection, Rehab, and/or Demolition, local police for identifying criminally troubled properties and with Local Communities for neighborhood services from Public School, Urban Farming, and even Art purposes. Based on this, LBI would need to have close coordination with various government agencies throughout multiple related sectors.

(b) Key 2: Non-Profit Quasi-Governmental Organization (QGO) flexibility:

This flexibility allows Ohio Land Bank to act more like a private entity but at times move like a government entity. The Ohio Land Bank can acquire properties from Tax Foreclosure, Forfeited Land, Property Donations, and Direct Purchasing. At times they can step in to focus and streamline tax foreclosure procedures, directly acquire title to vacant or nonproductive land following tax foreclosure. Learning from this, in order for Land Bank Indonesia to be able to move swiftly, LBI need to be free of stiff bureaucracy that commonly occurs in government agencies.

(3) Land Bank of Taiwan (LBOT) Case Study

LBOT is the only bank designated by the government of the Republic of China as a specialized bank to handle real estate land aimed at the construction of buildings or private houses and national economic development in coordination with implementation in government housing, agriculture and land policies.

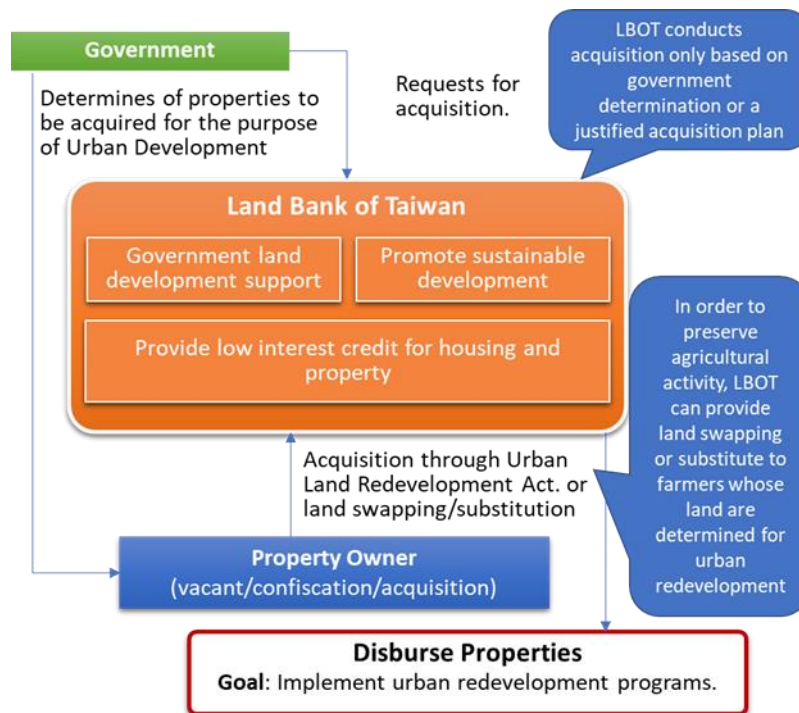


Figure V.5 LBOT Land Banking Mechanism

#### Lessons learned from LBOT

- (a) Key 1: In the purpose of urban land redevelopment, LBOT conducts purchases based on government determination or justified plan:  
LBOT does not actively purchase available land without any economic benefit justified plan to avoid underutilized property or bad spending. For Indonesia case, there would be a need to establish detail criteria/planning system for land purchasing in complying with the objective of Indonesian LB to ensure quality spending.
- (b) Key 2: LBOT is positioned as a partner for farmers: In order to preserve agricultural activity, LBOT can provide land swapping or substitute to farmers whose land are determined for urban redevelopment. This has increased the level of acceptance and trust in society. During socialization, LBI can be positioned socially as an agency that supports sustainable development that upholds balance between urban development and agriculture preservation to gain level of acceptance and trust.

Further details on overseas benchmarking can be seen in attachment V.1.

#### V.3.1.2 FGD Conducted

Topic	FGD on International Case Study Benchmarking
Date	16 June 2021
Attendants	<ul style="list-style-type: none"> <li>a. Secretary General of Ministry ATR/BPN and Acting DG of Land Acquisition;</li> <li>b. Special Staff on Data Management, Minister of ATR/BPN;</li> <li>c. ATR/BPN Expert on Land Acquisition;</li> <li>d. ATR/BPN Expert on Law;</li> <li>e. ATR/BPN Expert on <i>Pembinaan UKM</i> and Economics;</li> <li>f. Head of ATR/BPN Data and IT Center;</li> <li>g. Head of Planning and Cooperation Bureau;</li> <li>h. Head of Finance and State Asset Bureau;</li> </ul>

	i. Head of Legal Bureau; j. Director of Land Consolidation and Land Development k. Director of Land Valuation
Summary	1. Project Team presented the benchmarking results and gained support for further studies related to Land Bank establishment. 2. ATR/BPN team provided inputs on the direction of the study 3. Further coordination are to be done directly with land bank agency after land bank agency is established

### V.3.2 Conceptual Business Scheme and Organizational Structure

#### V.3.2.1 Results

As an institution in charge of land management activities in accordance with Article 1 paragraph 1 of PP 64 concerning Land Bank which reads "The Land Bank Agency, hereinafter referred to as the Land Bank, is a special agency (sui generis) which is an Indonesian legal entity established by the central government which is given special authority to manage land", therefore the LBI should have a business scheme plan that contains concepts that can be implemented in land management in the future. The following is the proposed hypothetical LBI business scheme:

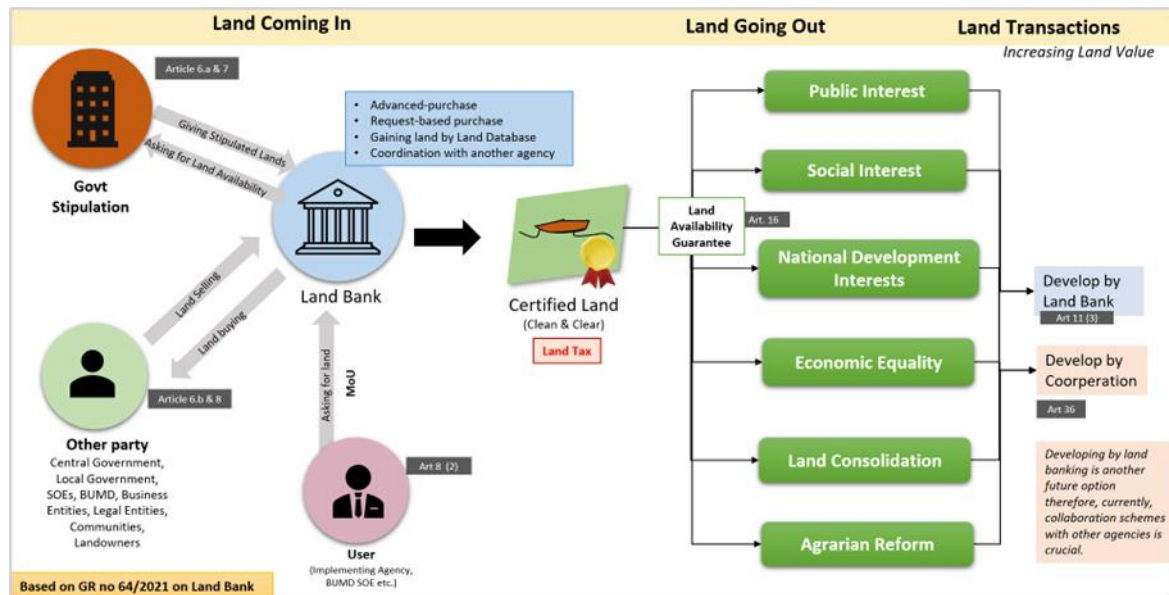


Figure V.6 Hypothetical Flow of Land of LBI

In general, the land acquisition process by the LBI is as follows:

#### (1) Advanced Purchase

is the process of land acquisition by the LBI obtained from the purchase of land which can be carried out by the LBI without any request or database. The LBI can analyze the need for land acquisition itself based on the strategic plan that has been prepared also for the purpose of providing land for certain interests.

#### (2) On-Demand Purchase/Purchase by request

Land acquisition by purchase on request is a land acquisition process based on the request of an agency or user to LBI for a function, for example, an industrial estate manager requesting land from LBI for industrial estate development purposes. So, LBI will try to analyse which location is an industrial area plan, then the LBI will conduct an assessment of the land price in that

location and also analyze the suitability of the development plan with regional and national spatial planning. After matching, then LBI can make a preliminary purchase of the land/land and redistribute it to the party who has requested it or in this case is the Industrial Estate Management.

(3) Land Gaining from Land Database

In this case, it is possible for LBI to obtain some land/land whose data is obtained from the land base data, such as the acquisition of abandoned land and so on.

(4) Coordination with other agencies

Coordination with other agencies is the purchase or procurement or even acquisition of land by coordinating with other agencies which will later be planned for the purpose of distributing land for various functions as stated in Article 16 PP 64/2021 concerning Land Bank which must ensure the provision of land for public purposes, Social Interests, National Development Interests, Economic Equitable Interests, Land Consolidation Interests and Agrarian Reform Interests. This is an important process or core process of land acquisition by LBI, this will be discussed in more detail in the chapter on land acquisition and acquisition guidelines below.

After having a land acquisition and acquisition plan, LBI will find suitable land and according to the land acquisition or acquisition plan. After the land is owned by LBI, the next process is to ensure the land is free from all disputes (clean and clear). Land obtained by LBI then becomes LBI's assets, it is possible that LBI needs to allocate funds for land taxes in land acquisition such as income tax (PPH), Value Added Tax (PPN) and Acquisition Tax (BPTHB).

#### V.3.2.1.1 Business Scenario 1 - Land Provision for Public Interest

The authority of LBI for Public Interest, in relation to LBI as a state institution, it can accommodate the needs of providing public interest with the appropriate authority. In Government Regulation 64 of 2021, Article 16 of LBI guarantees the availability of land for public interest (point a). The availability of land for public interest which can be guaranteed by LBI consists of 24 types of public interest, which are described in more detail in Article 17. Several strategic points that must be considered in fulfilling the public interest by LBI include:

- (1) Land compensation method by Law 2/2012 for Land Acquisition
- (2) Sources of funds for land acquisition for the public interest can come from the APBN, APBD, the private sector, property developers, etc.
- (3) In relation to meeting public needs from various existing uses (for example from the use of business land areas, residential needs and roads, etc.), LBI can clarify the existing/available land, along with its acquisition by continuing to coordinate with the relevant Ministries/Institutions (at central level), with implementation in accordance with applicable laws and regulations and fair to all parties.
- (4) To avoid land speculation, land for infrastructure is needed to be secured by LBI first.

An example of a case of providing land for the public interest is the provision of WWTPs from former mining areas. With LBI, if an area in the City/Regency needs IPAL land immediately, it will not burden the Regional BPN Office in requests for land fulfilment and administrative completeness. So that the provision can be directly under the authority of LBI while still being guided by the applicable provisions in accordance with the legislation and coordination with various relevant authorities

#### V.3.2.1.2 Business Scenario 2 - Land Provision for Social Interest.

Land Bank, through PP 64/2021 for social purposes: "Support in ensuring the availability of land for social purposes as referred to in Article 16 letter b consists of guaranteeing the provision of land for the purposes of education, worship, sports, culture, reforestation, conservation, and other social interests of the community." In accordance with article 23 letter d, LBI has the authority to determine service rates in terms of land use in the form of lease, lease purchase, sale and purchase, and other forms, which are determined by the Implementing Body. However, for social purposes, as explained in Article 26, the tariff for the use of land for social purposes is set at Rp. 0.0 (zero rupiah). This means that for social purposes, the fees incurred for rent, lease purchase, sale and purchase and other forms are free, or free of charge. However, it must still prioritize the principle of justice from the land owner.

An example of a Social Interest supported by LBI is School Construction. Because one of the fields of Social Interest is education. Schools can be the center of community social activities in residential areas. Provision of land for the construction of educational facilities can take into account the demand for a sufficient number of compulsory school residents to accommodate educational needs in the surrounding environment. LBI can play a role by making an inventory of abandoned land. In addition, the population in the vicinity is relatively dense and there is a need for education, so LBI provides land and converts the abandoned land into schools.

#### V.3.2.1.3 Business Scenario 3 – Land Provision for National Development Interest

Through PP Number 64 of 2021 in article 19, LBI is mandated to provide land for the benefit of national development. National Development essentially has four objectives contained in the Preamble to the 1945 Constitution, namely to educate the nation's life, promote public welfare, protect the entire nation and the entire homeland of Indonesia, and help implement world order and lasting peace.

Based on the National Medium-Term Plan (RPJMN) 2020 - 2024, one Strategic Priority Project is the National Capital City (IKN), which has the benefit of increasing the development of Eastern Indonesia (KTI) for regional equity. The indications of funding for this project are Rp 466.98 trillion, which is funded from the APBN (Rp 91.29 Trillion), Government Cooperation with Business Entities (Rp 252.46 Trillion), and Business Entities (Rp 123.23 Trillion). Implementers appointed in this project include the Ministry of PPN/BAPPENAS, Ministry of ATR/BPN, Ministry of PUPR, and Business Entities (BUMN/Private).

In this case, LBI can assist in managing land and providing land for IKN development in Kalimantan, as well as regeneration of former government buildings in Jakarta. The use of existing land that will become the IKN development plan needs to be "clean and free" first. LBI will be the party that sees the availability of land from LBI assets to be used. If necessary, land provision can be carried out through land acquisition.

#### V.3.2.1.4 Business Scenario 4 – Land Provision for Economic Equity

Based on PP 64 of 2021 on Land Bank, it is the basis for the formation of LBI. LBI has special authority to ensure the availability of land to create a just economy. Other constitutions also provide clear regulations regarding land in Indonesia. It is affirmed in Article 33 paragraph (3) of the 1945 Constitution of the Republic of Indonesia that the power given to the earth, water and natural resources contained therein rests with the state, and for that the state is obliged to regulate ownership and lead its

use. The goal is that all land in the entire territory of the Indonesian nation's sovereignty is used for the greatest prosperity of the people. This can also be the basis for the importance of economic equity

Provision of land for economic equity can be made by utilizing the Transmigration program. With the program that has been running here, LBI will be able to make a deeper contribution from land preparation to the land development process. If an area has begun to develop, LBI can develop another area in the area around the area. The process of developing and developing the Transmigration area as one of the favourites in the economic equity phase can be carried out independently by LBI from the time of receiving a request by the local district office regarding land requests for transmigration or can cooperate with the Ministry of Villages and Development of Disadvantaged Regions and Transmigration.

#### V.3.2.1.5 Business Scenario 5 – Land Provision for Land Consolidation

Whereas basically the provisions for the implementation of Land Consolidation activities have been stipulated in Permen ATR/BPN 12/2019 which regulates in detail regarding Land Consolidation from the planning to the supervision stage, but it is necessary to note that in the Regulation the role of LBI Agency is not stated in each Land Consolidation process. Thus, in order to provide the role of LBI Agency in the process, it is necessary to revise or harmonize the Minister of ATR/BPN 12/2019 with regulations issued by LBI Agency which will later give a role to LBI Agency. However, to provide an overview of the Land Consolidation process, here we describe the role of LBI Agency in the Land Consolidation process

#### V.3.2.1.6 Business Scenario 6 – Land Provision for Agrarian Reform

LBI also has the task of providing land for Agrarian Reform as stated in Presidential Regulation Number 64 of 2021 Article 22:

- (1) Support in guaranteeing the availability of land for agrarian reform as referred to in Article 16 letter f is a guarantee for the provision of land in the context of land redistribution.
- (2) The availability of land for agrarian reform as referred to in paragraph (1) is at least 30% (thirty percent) of the state land designated by LBI.
- (3) The Minister determines the availability of land for agrarian reform as referred to in paragraph.

Apart from being the party that will provide land for Agrarian Reform, LBI also has the authority to plan land allocation for Agrarian Reform. The plan includes an assessment of land for Agrarian Reform to potential beneficiaries as well as an assessment of the highest and best land use for Agrarian Reform.

In order to see institutional and stakeholder support for the implementation of agrarian reform and to examine the process of implementing agrarian reform, a case study was conducted in South Kalimantan Province, particularly in Tinggiran Darat Village, Mekarsari District, Barito Kuala Regency. According to the Directorate of Agrarian Arrangements of the Ministry of ATR/BPN, in 2019 a total area of 785.35 hectares of land was determined which was divided into 1,296 fields for distribution. Then, the land area of 590.16 Ha which was divided into 1,040 parcels or about 75% was successfully redistributed to the subject of the land recipients of the Agrarian Reform object.

Based on the example of this agrarian reform land redistribution activity, this activity has succeeded in improving the economy of the population so that they are more empowered. This means that land

redistribution activities are in accordance with the objectives of agrarian reform, namely equal distribution of land access for the prosperity of the people.

### V.3.2.1.7 Advisory on LBI Organization Structure

in carrying out the functions of LBI Agency as mandated in the Job Creation Law and PP 64/2021, it is necessary to strengthen at the implementing level to prepare for planning and implementation as well as supervision of the duties and functions of LBI Agency, so to achieve this an effective organizational structure is needed. and efficient. The following is an effective and efficient structure of LBI Agency, namely:

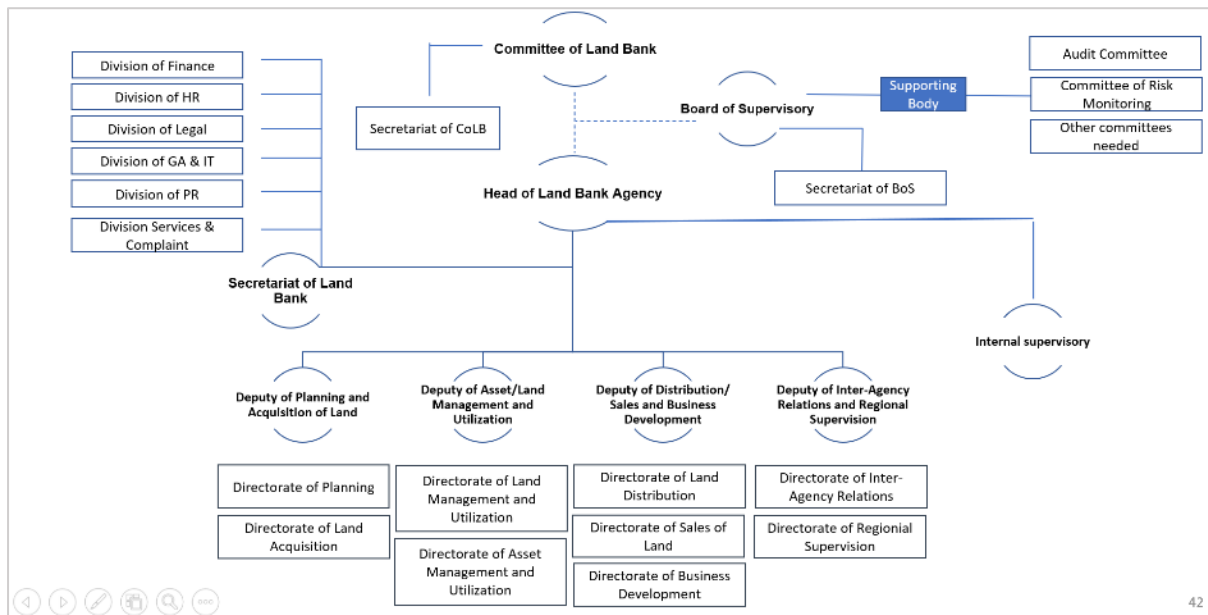


Figure V.7 Hypothetical Organization Structure of LBI

The structure with 4 deputies is an ideal structure proposal to run the business effectively and efficiently. However, as it is commonly understood that at the beginning of the establishment of LBI Agency, apart from the effectiveness aspect, of course, there are other aspects that will be taken into consideration in the formation of LBI Agency's organizational structure, including in this case the financial aspect, and the targets at the beginning of the formation, along with the proposed organizational structure. can be used as a reference for LBI Agency at the beginning of its formation.

### V.3.2.2 FGD Conducted

Topic	FGD on Technical Regulations of Land Bank
Date	19 November 2021
Attendants	a. Secretary General of Ministry ATR/BPN and Acting DG of Land Acquisition; b. Director General of Land Acquisition and Land Development c. Secretary Director General of Land Acquisition and Land Development d. Director of Land Valuation
Summary	1. Project Team presented the reference for structure of organization and business scenarios 2. ATR/BPN team provided inputs on the direction of the study and requested to provide a highest and best use criteria for Land Bank lands.



### V.3.3 Highest and Best Use Criterion for Land Bank Lands

#### V.3.3.1 Results

The study created a scoring chart where lands that are to be developed will go through a series of evaluation based on evaluation categories with a given weight. Each category will be scored and the scores will be tallied in a final score to determine its general potential.

Formula each variable

$$\text{Classification} = \frac{(\text{Score of the items}/5)}{\text{number of items per category}} \times \text{Weight per category}$$

Figure V.8 Highest and Best Use Variable Formula

If the total score is >61, the location is suitable to be developed for development such as housing development, tourism and so on in line with the flow chart above. In addition, if the total score is in the range of 30 - 70 points, it is possible that the land can be developed for Social Interest or Agrarian Reform. Meanwhile, if <30, the location seems less suitable for development.

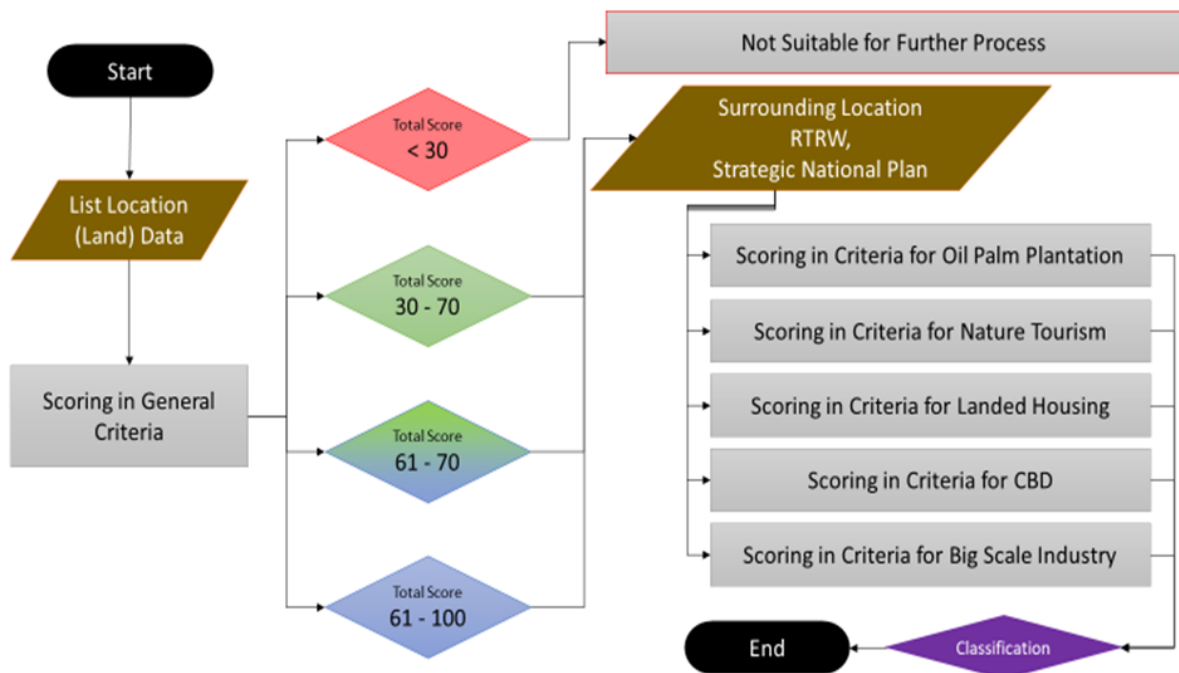


Figure V.9 Highest and Best Use Scoring Process

In this study, specific development criteria were developed such as Plantation, Tourism, Settlement, Business and Large-Scale Industry. There is a wedge analysis that occurs if the total soil score is between 61 - 70 points.



Table V.1 Highest and Best Use Criteria Matrix

No	Weight	Category	Item/Variable	Indicator/Scoring				
				5	4	3	2	1
1	5	Regional Potential	Population increase of the province where the land locates (%)	>1.5	1.3 - 1.4	1.2 - 1.3	1.1 - 1.2	<1.1
			Economic increase of the province where the land locates (%)	>5%	4.1% - 5.0%	3.1% - 4.0%	2.1% - 3.0%	<2%
2	20	Political Priority/ Importance	Priority/Importance under Central/Local Government Policy	Trade and Service	Hight/Middle Apartment/ Tourism	Lowrise resident area	Plantation/Farming	Protected Area
			Possibility of profitable use under Spatial Plan	Strategic Area	General Use Area		Conservation Area	
3	20	Transportation Accessibility	Distance to nearest road	0 - 1 km	1 - 3 km	3 - 5 km	5 - 10 km	>10 km
			Width of the Nearest Road	11 meters	9 meters	7 meters	3 meters	0 meters
			Condition of the Nearest Road (pavement condition)	Good and passable		Sometimes impassable		Impassable
			Distance to Highway/trunk road	0 - 1 km	1 - 3 km	3 - 5 km	5 - 10 km	>10 km
			Distance to Station of Pubic Transportation	0 - 1 km	1 - 3 km	3 - 5 km	5 - 10 km	>10 km
4	10	Accessibility to Economic/ Social Facilities	Distance from land location to city/district centre	0 - 1 km	1 - 3 km	3 - 5 km	5 - 10 km	>10 km
			Distance to the Nearest Economic Center	0 - 1 km	1 - 3 km	3 - 5 km	5 - 10 km	>10 km
			Types of the Nearest Economic Center	Supermarket	Grocery store/minimarket	Bank	Traditional market	Shop/stall
			Distance to hospital	0 - 1 km	1 - 3 km	3 - 5 km	5 - 10 km	>10 km
			Distance to Educational Facility	0 - 1 km	1 - 3 km	3 - 5 km	5 - 10 km	>10 km
5	5	Topographical Condition	Easiness of utilize by topological aspects (incl. soil condition, slope/flat)	Easy		Fair		Difficult
			Flood Disaster Risk	Low		Medium		High
			Seismic Risk	Low		Medium		High
6	20	Legal Aspect	Abandoned Land Ownership (owned by private or not)	Not owned by individuals/companies				Partially/wholly owned by the individuals/companies
			Land occupancy (level from viewpoint of difficulty of the acquisition)	Not occupied by individuals/companies		Partially occupied by the individuals/companies		wholly occupied by the individuals/companies
			Land mastery after the release (no mastery / someone's matestry)	Have no mastery after released				Partially/wholly mastery by the community /companies/ BMN
7	10	Land Size and Land Price	Size of land (or group of lands)	> 10 ha		5 – 10 ha		<5ha
			Current market price of developed lands at the surroudings / Zona Nilai Tanah (bhumi)	>3 mio IDR/m	2 – 3 mio IDR/m	1 mio – 2 mio IDR/m	500K - 1 mio IDR/m	<500K IDR/m
8	10	Security	Total Crimes reported by District/City	<500	500 - 1000	1001 - 3000	3001 - 5000	>5000
			Crime Rate (Risk Level of Crime by District/City)	<50	51-100	101-150	151-200	>201

When a land has passed the general criteria evaluation, further identification can be conducted to get the highest and best use for the land. For specific uses of land, the study identified 5 sector specific criteria which are:

- (i) Criteria for Landed Housing/Settlement
- (ii) Criteria for Oil Palm Plantation
- (iii) Criteria for Nature Tourism
- (iv) Criteria for Central Business District
- (v) Criteria for Big Scale Industrial Area

Details on each criterion can be seen in the final report of the particular study.

For further details, please see attachment V.3

### V.3.3.2 FGD Conducted

Topic	Discussion on Highest and Best Use of Land Bank
Date	3 March 2022
Attendants	LBI
Summary	<ol style="list-style-type: none"> <li>1. Project Team reported the formula for the highest and best use criteria.</li> <li>2. LBI would use these criteria for reference to their business procedures especially for the number of abandoned lands that they currently are processing</li> </ol>

### V.3.4 Business Model and Financial Sustainability

#### V.3.4.1 Results

In this study, the identification and conceptual design of the role of LBI in several business models. The business models are also to be used as a basis for financial sustainability analysis.

##### V.3.4.1.1 Agricultural Land Development business model.

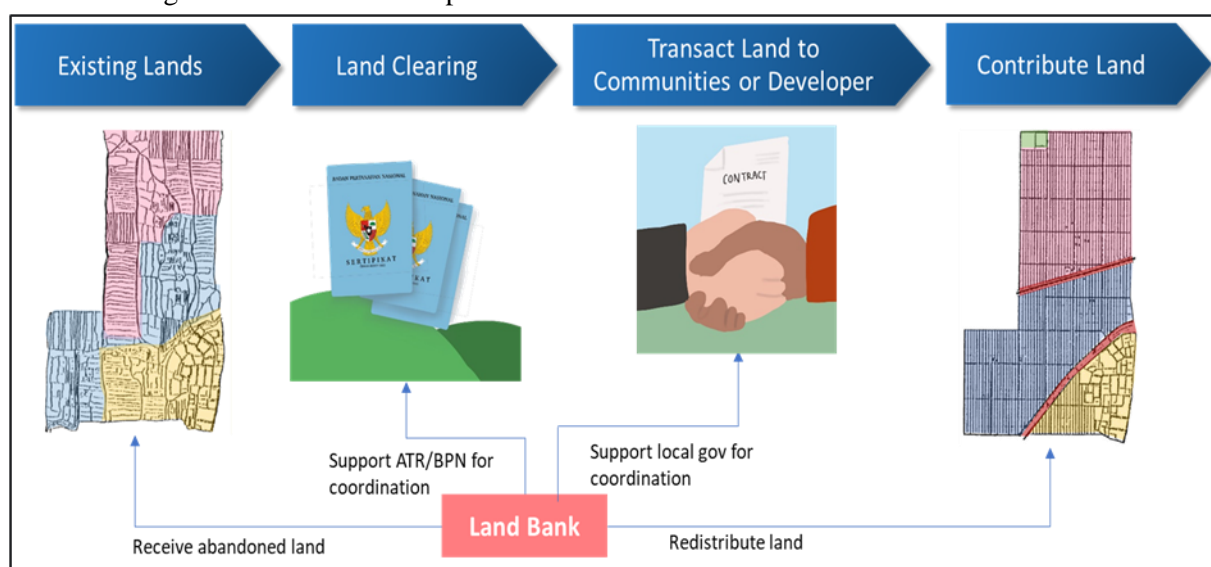


Figure V.10 Agricultural Development Business Model

The involvement of LBI in activities such as Agrarian Reform and Agricultural Land Consolidation also provides benefits for policymakers involved in agricultural land development activities.

Table V.2 Stakeholder Benefits - Agricultural Business Model

Stakeholder	Benefits
Ministry of ATR/BPN	Receive coordination support for the preparation and implementation of land consolidation
Local Government	<ul style="list-style-type: none"> <li>• Creating a well-planned area while improving the quality of agricultural areas</li> <li>• Increase land value</li> <li>• Increase local taxes</li> </ul>
TORA Subject	<ul style="list-style-type: none"> <li>• Obtaining land to cultivate</li> <li>• Increase income</li> </ul>

#### V.3.4.1.2 Urban Land Development

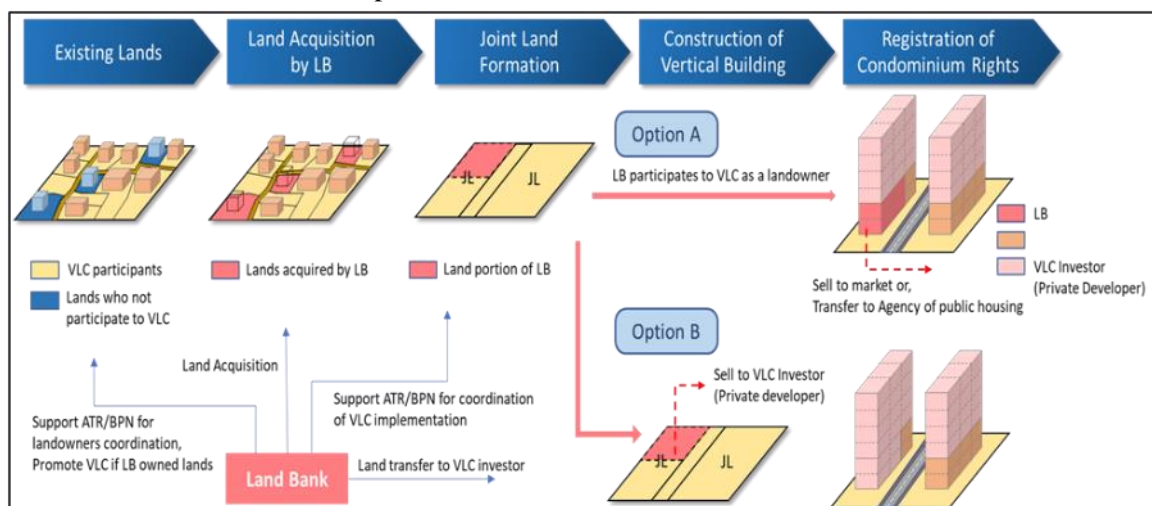


Figure V.11 Urban Land Development Business Model

LBI can also manage land for urban improvement such as Vertical Land Consolidation (VLC). Based on the Regulation of the Minister of ATR/BPN Number 12 of 2019 concerning Land Consolidation, what is meant by Vertical Land Consolidation is land consolidation organized for the development of vertically oriented areas and buildings.

In order to carry out the mandate of PP 64 of 2021, LBI have the authority to carry out land maintenance and security can play a role in urban land development by participating in Vertical Land Consolidation (VLC) activities. This vertical building can be used as a residence or mixed use. For example, the lower floor is for business activities and the upper part is for flats. When the government (Ministry of ATR/BPN) determines an area for Vertical Land Consolidation activities, LBI can participate in VLC activities as a landowner. If in the area that has been determined to be implemented by VLC there are some people who do not want to participate or are non-participants, then LBI will negotiate to acquire the land.

Table V.3 Stakeholder Benefits - Urban Development Business Model

Stakeholder		Benefit
Land owner	VLC Participants	Proceed VLC project without delay for negotiation with non-participants
	Non-Participants	Faster moving-out with compensation
Ministry of ATR/BPN		<ul style="list-style-type: none"> <li>Proceed VLC project without delay by negotiation with non-participants</li> <li>Receive coordination support for preparation and implementation</li> </ul>
Local Government		<ul style="list-style-type: none"> <li>Create well-planned urbanized area and improve people's quality of life</li> <li>Increase tax revenue by land value increment</li> </ul>
VLC Investor (Private Developer)		<ul style="list-style-type: none"> <li>Reduce initial investment cost of compensation for non-participants</li> <li>Proceed VLC project without delay by negotiation with non-participants</li> </ul>

V.3.4.1.3 Timely Land Provision

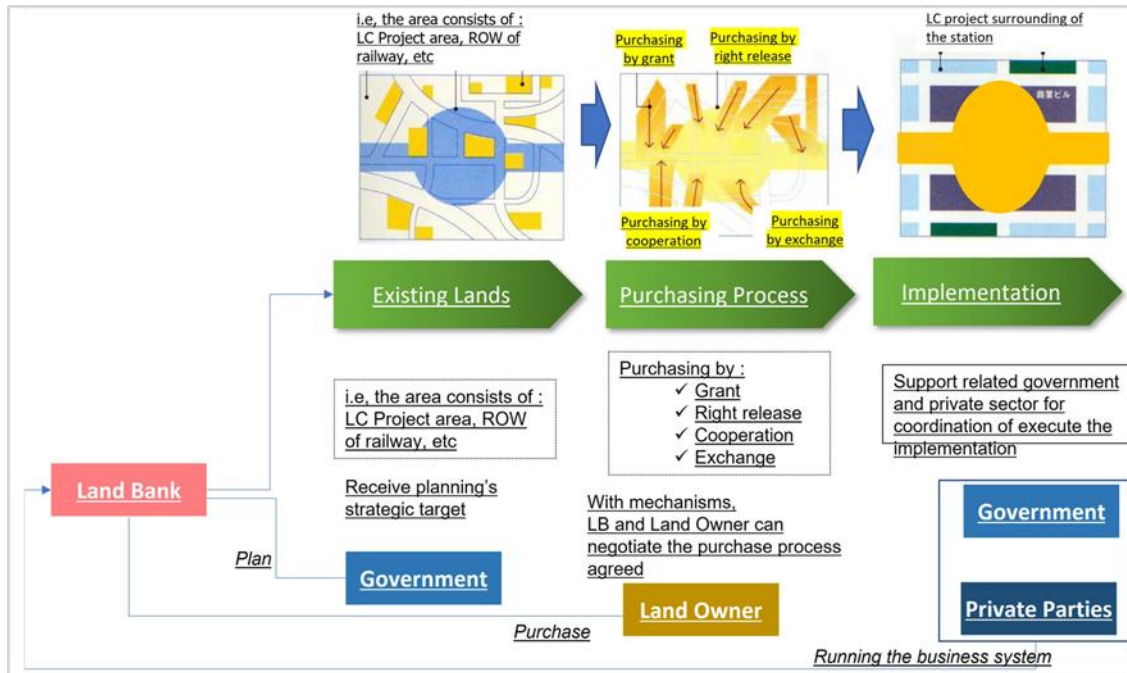


Figure V.12 Timely Land Provision Model

The positioning of LBI on a timely land acquiring process. The land transaction process itself consists of “land before” sessions, “land purchase process”, and implementation. Following are the functions of various parties, which are the government, landowners and the private sector.

In the “land before” process, LBI together with the local government received a plan related to the development targets to be carried out. This process is also to prepare for pre-negotiations which will be carried out during the next process, which is the “land purchase process”. The land purchase process involves land owners and land banks. In this process, the principle of justice is used, what the best mechanism is chosen by the landowner. Land transactions offered by LBI are through the mechanism of buying and selling, grants, exchange of rights, relinquishment of rights, grants, cooperation and others. After getting approval from both parties, go to the 'implementation' process, where this process involves the private sector and the government on land consolidation that has been completed through land purchases. This implementation process involves good coordination between land banks, the government and the private sector so that development runs smoothly and properly.

Table V.4 Stakeholder Benefits - Timely Provision Business Model

Stakeholder	Benefit
Landowner	<ul style="list-style-type: none"> <li>○ Land owners have some of the best selling mechanisms that can be selected according to the land owner's best considerations</li> <li>○ Buyers of land are trusted parties</li> <li>○ Offers made on land will be commensurate with the value of the land owned</li> </ul>
Government (ATR BPN, PUPR, dll)	<ul style="list-style-type: none"> <li>○ Government (ATR BPN, PUPR, etc.)</li> <li>○ The government can monitor the ongoing strategic target process</li> <li>○ The government can oversee the use of land swaps</li> <li>○ Save costs and speed up the land acquisition process</li> </ul>
Investor (Private Developer)	<ul style="list-style-type: none"> <li>○ Reduce initial investment costs and time/delay for developing projects</li> <li>○ Best deals on assets</li> <li>○ Guaranteed land availability, can directly enter the development process</li> </ul>

#### V.3.4.1.4 Land Development with Public Private Partnership Scheme (PPP).

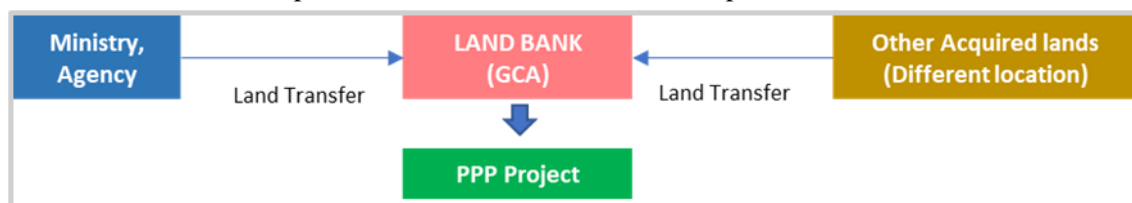


Figure V.13 Land Bank as GCA Model

To accelerate development, overcome the limitations of the APBN and capital in financing infrastructure or other developments, the PPP scheme is the solution. By regulation, it is possible for

LBI to carry out collaborative activities in land management. This is stated in PP 64/2021 regarding Land Transactions to 3rd Parties (Article 3(2)e, 11(3), 14(2) and 30); Land development with cooperation (article 36) and urban improvement for commercial zones (article 17).

LBI can become the GCA (Government Contracting Agency) . Land Banks can obtain land from Ministries/Institutions or obtain it from other methods of acquisition (acquisition) in different locations. LBI may coordinate to produce pre-feasibility studies, plans for Government support and Government Guarantees, stipulation of procedures for returning the investment of the Implementing Business Entity, and land acquisition for PPPs

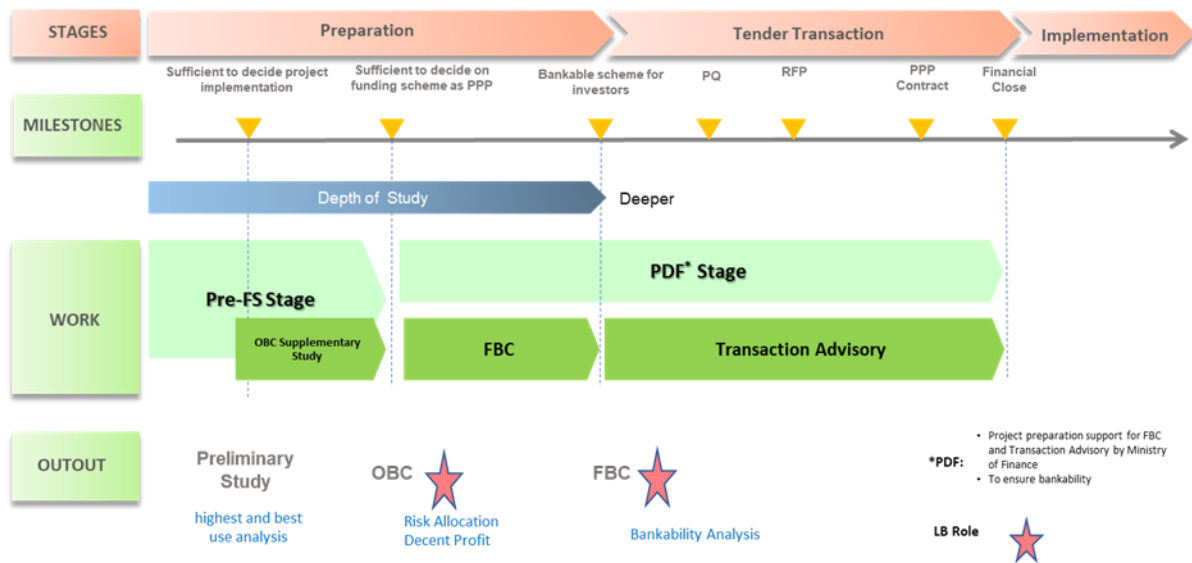


Figure V.14 Process of PPP Preparation

Furthermore, the contribution of LBI can focus more on the Preliminary Study stage with the highest and best use analysis, OBC with a proper risk and profit analysis and FBC with the final analysis of bankability. To prepare the PPP project, LBI as the GCA is required to develop an OBC (Outline Business Case or Business Outline) and FBC (Final Business Case or Final Business Project). OBC provides information to determine the PPP project funding scheme, while FBC provides concrete conditions and requirements to ensure bankability. Ensuring the bankability of the project during preparation is critical to ensuring that the project can be implemented.

Table V.5 Stakeholder Benefits - PPP Model

No	Stakeholder	Benefit
1	Government	<ul style="list-style-type: none"> <li>Accelerating Infrastructure development as a PPP scheme process supported by LBI</li> <li>Asset security to avoid being abandoned by using it</li> <li>Well-planned land use with a PPP scheme that is planned effectively and strategically.</li> <li>Receive coordination support for preparation and implementation.</li> <li>Increase tax revenue based on land value increase.</li> </ul>




2	Investor/ Third Party	<ul style="list-style-type: none"> <li>• Reduce initial investment costs and time/delay for developing projects</li> <li>• There is no need for analysis for asset utilization and preparation because it has been carried out by LBI</li> </ul>
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#### V.3.4.1.5 Financial Sustainability

##### a.) Land Bank Product Assumptions

The study simulates the cashflow of LBI and projects on a 20-year timeframe. First the study identifies the products of LBI and its legally potential expansions. Which are as follows:







Table V.6 Basic LBI Product Assumptions

No	Products	Remarks
1.	HPL Land (Clean & Clear) 	The land acquired/gained from the Government land, then Handed Over to LBI. Then Land Bank issuing HPL land that clean & clear to third parties.
2.	HGU/HGB Land 	The land acquired/gained from the Government land, then Handed Over to LBI. Then Land Bank issuing HGU & HBG land that clean & clear to third parties.
3.	Agrarian reform 	<p>Agrarian Reform in accordance with Presidential Regulation of the Republic of Indonesia Number 86 of 2018 is a restructuring of the structure of control, ownership, use, and utilization of land that is more equitable through Asset Management and is accompanied by Restructuring of Access for the prosperity of the Indonesian people.</p> <p>As mandated in PP 64/2021, Land Bank should manage 30% from its total land to agrarian reform activity.</p>



Under Land Bank's regulatory framework, the study identifies potential business models as explained in the subchapters above and summarizes into several products that can possibly be rolled out starting from 2025 as a form of expansion. The products are as follows:



Table V.7 Land Bank Expansion Products Assumption

No	Products	Remarks
1.	HPL Land (Clean & Clear) 	The land acquired/gained from the Government land, then Handed Over to LBI. Then Land Bank issuing HPL land that clean & clear to third parties.
2.	HGU/HGB Land 	The land acquired/gained from the Government land, then Handed Over to LBI. Then Land Bank issuing HGU & HGB land that clean & clear to third parties.
3.	Agrarian reform 	<p>Agrarian Reform in accordance with Presidential Regulation of the Republic of Indonesia Number 86 of 2018 is a restructuring of the structure of control, ownership, use, and utilization of land that is more equitable through Asset Management and is accompanied by Restructuring of Access for the prosperity of the Indonesian people.</p> <p>As mandated in PP 64/2021, Land Bank should manage 30% from its total land to agrarian reform activity.</p>
4.	Agriculture 	Agriculture in section was different from the section for agrarian reform. In this section, agriculture was designed as commercial one. For example: Featured/Flagship Plantation that has a big multiplier economic effect like Palm Oil, Rubber, Coffee, Coconut, and Cocoa that can be expanded by Land Bank to get higher income & profit.
5.	Residential 	The issue of housing shortages or known as the backlog is still happening. LBI can make a housing provision program to participate in efforts to overcome the housing shortage (backlog) and encourage low-income people (MBR) to have decent houses.
6.	Industry 	One way for Indonesia's economic development is to equalize the national industry as a pillar and driver of the national economy. LBI can participate in helping to make this happen by providing land for industrial development needs.



No	Products	Remarks
7.	Commercial 	<p>The provision of land for the commercial sector is the most attractive for LBI, because it has fast returns and high profits. The example of the commercial products are land provision for Office for Rent, Rental Retail, Appartement for Retail, Hotel, Convention Hall, Warehouse Complex etc.</p>
8.	Infrastructure 	<p>Provision of Land for General Purposes is one of the mandates of LBI. In this scenario, LBI can assist in providing land for toll roads. The construction of toll roads will affect regional development and economic development. Improve mobility and accessibility of people and goods.</p> <p>Toll road users will benefit from savings in vehicle operating costs (BOK) and time compared to when passing through a non-toll road. Land Bank can get a return on investment through toll revenue which depends on the certainty of toll rates.</p>

b.) Land Bank Cost Assumptions (Million per Hectare)

Table V.8 Expenses Assumption

Rp million							
Land Acquiring Expenses/Ha	HPL Land (Clean & Clear) - Komersial	Agriculture	Residential	Industry	Commercial	Infrastructure	Agrarian reform
Land value	28.6	1,500	8,500	7,500	10,000	6,000	
Inventory and survey	1	1.8	1.8	1.8	1.8	1.8	1.8
Measuring, mapping, and registering land	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Litigation and legal	4.00	18.2	18.2	18.2	18.2	18.2	18.2
Maintenance and security	2.86	13	13	13	13	13	13
Building Land Tax (40% x 0,5 % of land value) per year	0.11	0.2	0.2	0.2	0.2	0.2	0.2
Appraisal (KJPP)	1	1	1	1	1	1	1
Establishment of a security post/office	1	2.2	2.2	2.2	2.2	2.2	2.2
Sub-total	42.07	1,539.9	8,539.9	7,539.9	10,039.9	6,039.9	39.9
Land Development Expenses/Ha							
Supporting professional fees	76.24	76.24	76.24	76.24	76.24	76.24	76.24
Licensing fees	23.93	23.93	23.93	23.93	23.93	23.93	23.93
Land formation cost	650.03	650.03	650.03	650.03	650.03	650.03	650.03
Infrastructure cost	1,389.10	1,389.10	1,389.10	1,389.10	1,389.10	1,389.10	1,389.10
Estate Management cost	16.70	16.70	16.70	16.70	16.70	16.70	16.70
Sub-total	2,156.00	2,156.00	2,156.00	2,156.00	2,156.00	2,156.00	2,156.00
<b>Total</b>	<b>2,198.08</b>	<b>3,695.90</b>	<b>10,695.90</b>	<b>9,695.90</b>	<b>12,195.90</b>	<b>8,195.90</b>	<b>2,195.90</b>

The cost component of land development in this subchapter relates to the administrative costs and fees and developing basic infrastructure (i.e., roads and pipelines). The biggest expenses rises from the industry and commercial business sectors both as land acquisition expenses and land development expenses.

c.) Land Bank Funding Options

Based on prevailing regulations, land bank can gather fundings from:

<b>GR No. 64 of 2021 on Land Bank Authority</b>	<b>Presidential Regulation No. 113 of 2021 About Structure and Implementation of Land Bank Authority</b>
<p>Own revenue as referred to in paragraph (1) in the form of:</p> <ul style="list-style-type: none"> <li>a. revenue from asset utilization;</li> <li>b. revenue from leasing, hire purchase, and other services;</li> <li>c. revenue from the sale of assets;</li> <li>d. revenue from business development cooperation with other parties;</li> <li>e. revenue from grants and exchanges;</li> <li>f. revenue from management;</li> <li>g. revenue from assets;</li> <li>h. revenue from yields on securities issued by the Republic of Indonesia;</li> <li>i. interest yield and/or bank imbalance;</li> <li>j. revenue from business; and/or</li> <li>k. other valid revenue as determined by the Decree of the Head of the Executing Agency.</li> </ul>	<p>Land Banks may earn revenue from business activities including:</p> <ul style="list-style-type: none"> <li>a. revenue from land use;</li> <li>b. revenue from the utilization of non-land assets;</li> <li>c. investment;</li> <li>d. revenue from the management of the entrusted land;</li> <li>e. revenue of management and consulting services;</li> <li>f. revenue of rental, lease purchase and other services;</li> <li>g. revenue of the sale of assets;</li> <li>h. revenue of business development cooperation with other parties;</li> <li>i. revenue from the acquisition of grants and exchange;</li> <li>j. revenue from management;</li> <li>k. revenue from asset disposal;</li> <li>l. revenue from yields on securities issued by the Republic of Indonesia;</li> <li>m. revenue of interest and/or bank fees;</li> <li>n. company results; and/or</li> <li>o. other valid revenue as determined by the Decree of the Head of the Executing Agency.</li> </ul>

d.) Assumed LB Targets

Below is the target of sales of land products on several sectors.

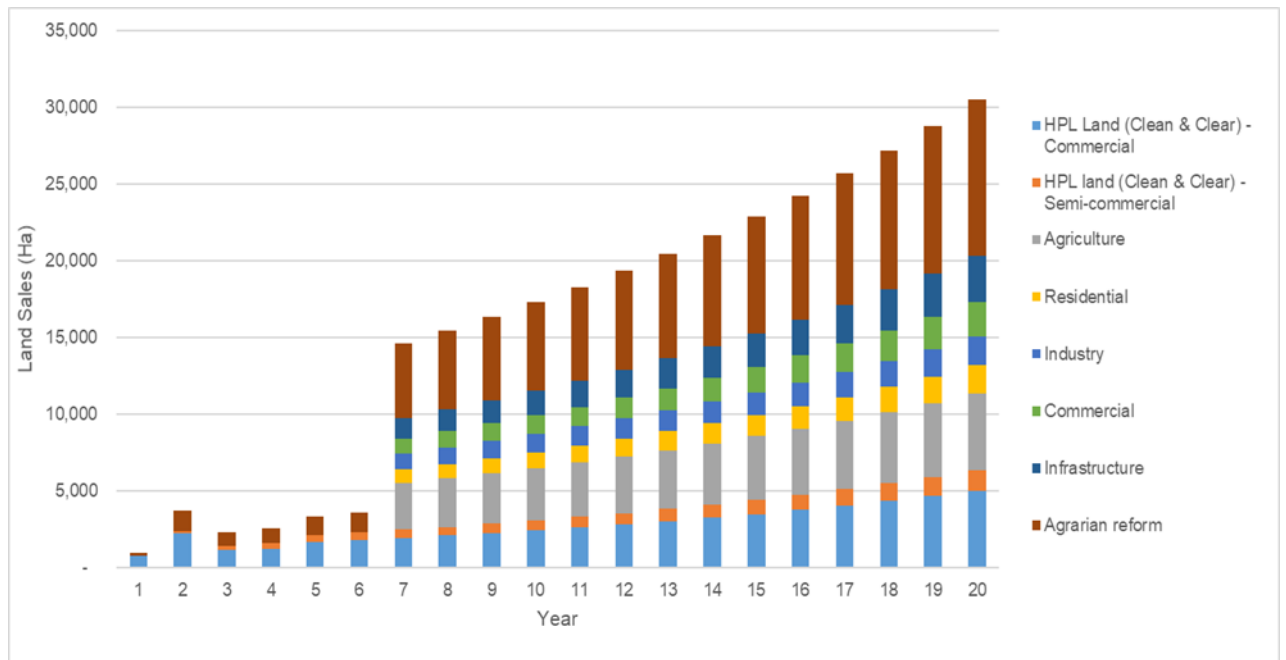


Figure V.15 LBI Sales Projection

e.) Financial Projections

Scenario 1 – with expansion

In scenario 1, which involves business expansion, there are an additional 12,154 ha of agricultural, residential, industrial, commercial, and infrastructure land in the initial year of expansion (7th year). Government projects such as the Ministry of Public Works and Public Housing (PUPR) and the private sector may propose land requests. In the preceding section, land demand is discussed in further detail.

The results of the 20-year financial projections indicate that after the initial and second-year state funding of Rp 2.5 trillion, further funds are required for business expansion in the sixth year. The required amounts amount to 75 trillion IDR. In this scenario, the funds are provided via a loan with an effective annual interest rate of 6% and a 15-year repayment period. The funds are used to finance business expansion, namely in the seventh year for land acquisition and development. In the fifth year, the cash balance was Rp 1.45 trillion, and in the sixth year, loan funds totaled Rp 75 trillion, resulting in a cash balance of Rp 77.17 trillion at the end of the sixth year. These funds can accommodate business expansions requiring Rp 75,96 trillion in business capital in the seventh year. The cash balance increased to Rp 144.39 trillion in the tenth year, Rp 309.98 trillion in the fifteenth year, and Rp 615.24 trillion in the 20th year. More details can be seen in the table below.

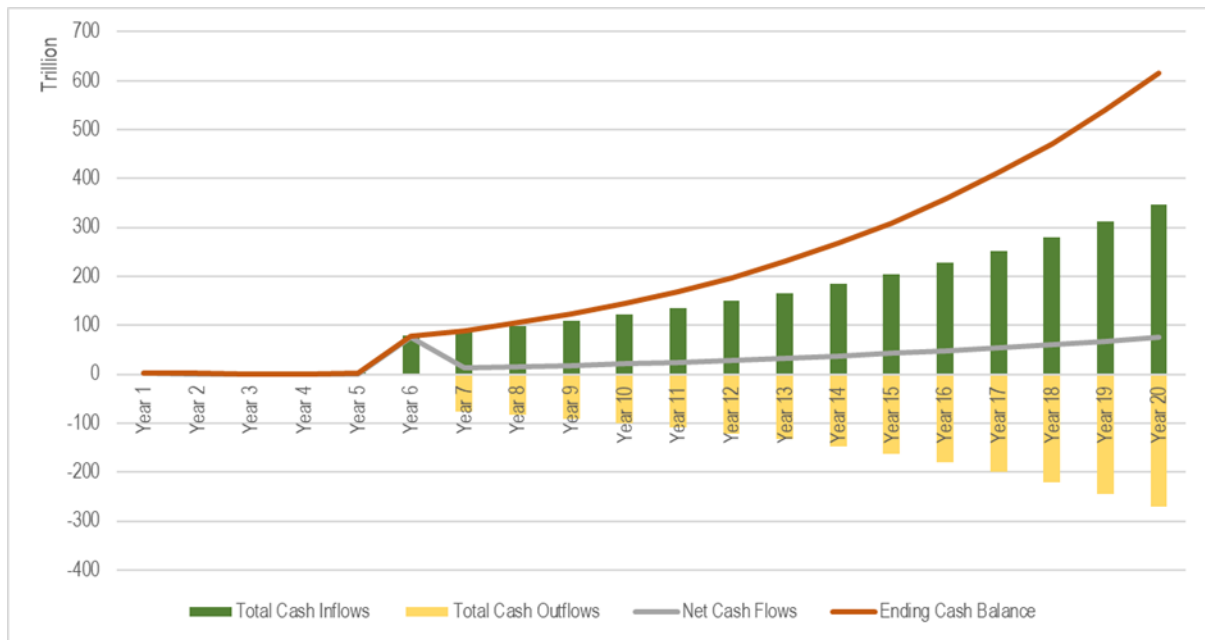


Figure V.16 Graph of Cashflow Projection - Scenario with Expansion (IDR)

Scenario 2 – no expansion

The second scenario is land bank activity without business expansion. After the initial five years, land sales increase at a rate of approximately 7.5% per product annually. In accordance with inflation, operating expenses likewise increased at a steady rate of roughly 5 percent annually. From the sixth to twentieth year, the initial five-year business process remains relatively unchanged.

According to the financial projections, the state capital of Rp 2.5 trillion is sufficient to fund LBI's operations. However, it should be emphasized that the expense of land acquisition and development, as well as land sales, are performed in stages over the period of one year. This is intended to ensure that LBI has sufficient cash flow to fund its operations. In the sixth year, for example, the cash flow at the beginning

of the year was Rp 1.45 trillion, but the requirement for expenditure money was Rp 2.86 trillion. Therefore, it is required to govern the right cash inflows and outflows in order to operate the business so as to generate sales and cash inflows totalling Rp 3,580 billion. The final cash balance reached Rp 5.58 trillion at the end of the 10th year, Rp 10.55 trillion at the end of the 15th year, and Rp 13.47 trillion at the conclusion of the 20th year.

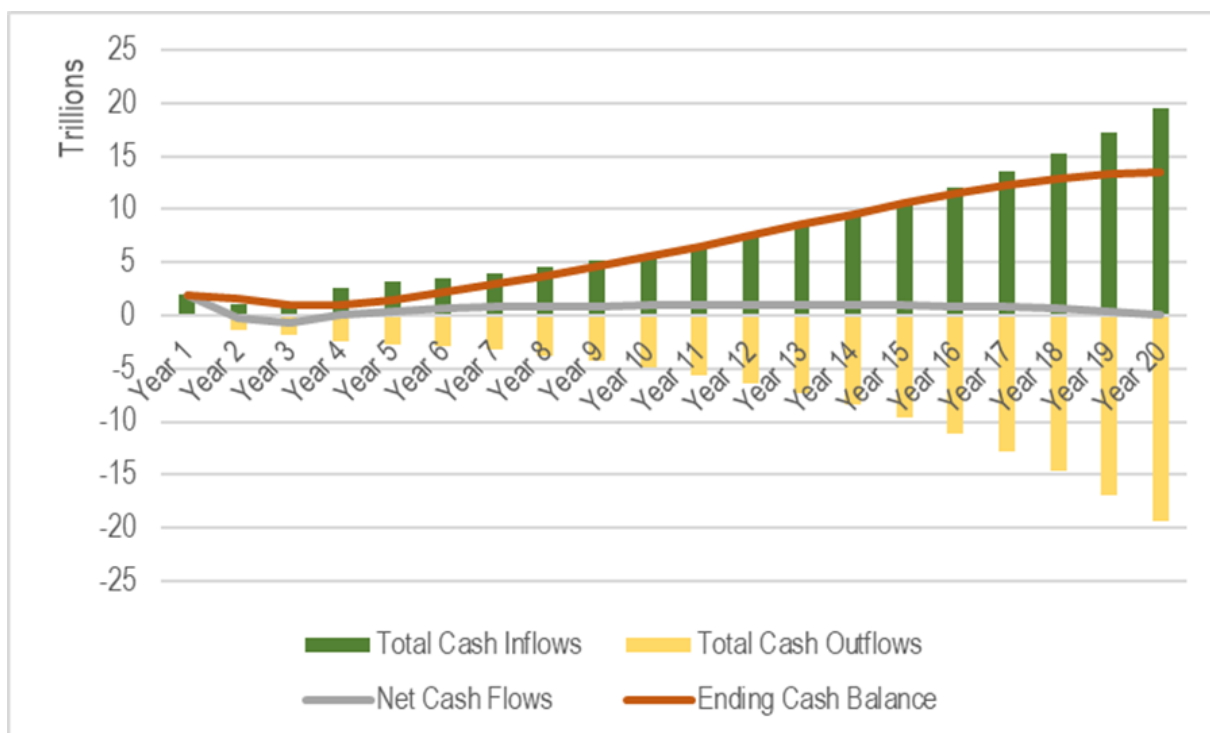


Figure V.17 Graph of Cashflow Projection - Scenario without Expansion (IDR)

### Income Statement

In scenario 1, Land Bank increases its operations in its seventh year of operation. The results of the financial predictions indicate that LBI reported a loss for the first three years and a profit beginning in the fourth year. The loss increased to Rp 683 billion in the third year, before turning a profit of Rp 100 billion in the fourth year. Because of its commercial expansion, Land Bank's earnings climbed dramatically in its seventh year. The profit increased by more than 17 times over the previous year, reaching Rp 12,58 trillion. In the succeeding years, Bank Tanah's profit estimate steadily increases, with the bank earning Rp 21.29 trillion in the tenth year, Rp 42.28 trillion in the fifteenth year, and Rp 75.63 trillion in the year 20.

In scenario 2, without business expansion, Land Bank's income statement for the first six years is identical to scenario 1. The difference begins to appear in the seventh year, when Land Bank's profit growth does not expand much without expansion. The profit was Rp 423 billion in the fifth year, Rp 929 billion in the tenth year, Rp 978 billion in the fifteenth year, and Rp 118 billion in the twentieth year. The fall in the 20th year was attributed to an increase in development expenditures, which were anticipated to climb by 10% yearly, outpacing revenue growth of 7.5%.

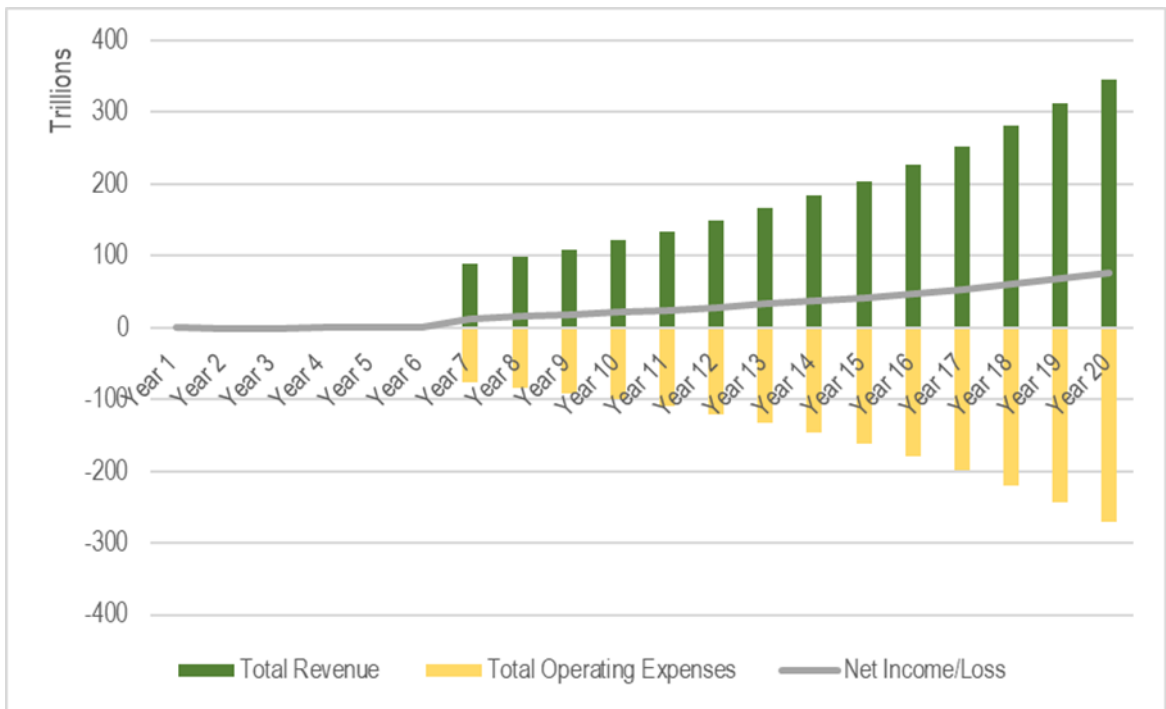


Figure V.18 Graph of Income Statement - Scenario with Expansion (IDR)

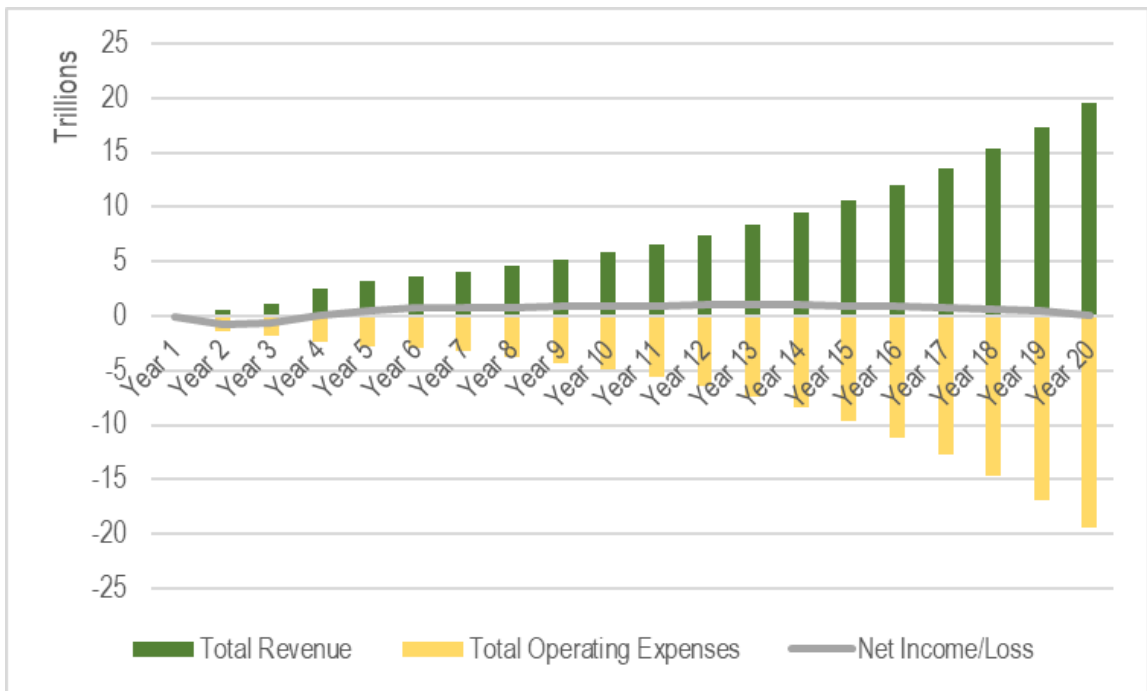


Figure V.19 Graph of Income Statement - Scenario without Expansion (IDR)

#### V.3.4.1.6 Conclusion

- (1) Agricultural land development is one of the efforts to increase land value and optimize land use for agriculture. LBI Agency in developing land for agriculture is a party that supports the

Ministry of ATR/BPN in implementing Agrarian Reform and Land Consolidation for Agriculture.

- (2) Urban land that has a population density and activities need to be developed so that the existing land limitations can still be used optimally, one solution is to vertical land consolidation in the form of vertical residential development. The involvement of LBI in this activity allows for profit by selling the Joint Land or VLC buildings from the land acquisition.
- (3) Land Banks can moderate negotiations between landowners and development implementers as well as the government to fulfil a satisfactory agreement on timely land provision with the best possible process.
- (4) In Land Development with PPP or PPP Scheme, LBI can provide support to GCA in terms of providing land for PPP projects. In addition, LBI can also become a GCA (Government Contracting Agency). Land Banks can manage land from Ministries/Agencies or obtain it from other acquisition methods in different locations. Furthermore, the contribution of LBI can focus more on the Preliminary Study stage with the highest and best use analysis, OBC with a proper risk and profit analysis and FBC with the final analysis of bankability.
- (5) Land Bank business model profile

## FEATURES

### TIMELY ACQUIRING LAND

Securing land for proce development is a compusion. Land Bank can purchase at best time. Land Bank can support for timely acquiring land as stated in GR 64/2021 and PR 15/2021.

**PROCESS OVERVIEW**

**WHAT'S THE BENEFIT FOR STAKEHOLDERS?**

- Land Owners**
  - Have option of several sale mechanism that suits best to the owner.
  - Flexibel Buyer
  - Good offer.
- Government**
  - Improve the strategic target's romoring
  - Supervise the land exchange at ligation
  - Cost effective and accelerate to land acquisition
- Investor/ Private Parties**
  - Reduce initial investment cost and time delay for develop project
  - Best offer for the asset
  - Land availability guarantee, may directly go to development process

## About Us

Land Bank is a special agency (su1 general) which is an Indonesian legal entity formed by the central government which is given special authority to manage land.

**LAND BANK VISION:**  
"To be a trusted body in the field of sustainable land provision based on the principles of good governance in order to increase economic growth."

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# LAND BANK INDONESIA

Your number one choice when it comes to all things in Land Management

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## AGRICULTURE DEVELOPMENT

Agriculture Development is related to Agrarian Reform and Land Distribution. Based on GR 64/2021 article 7.29, Land Bank Agency has special authority to guarantee availability of land for Land Consolidation and Agrarian Reform.

**PROCESS OVERVIEW**

**WHAT'S THE BENEFIT FOR STAKEHOLDERS?**

- ATR/BPN**
  - Receive card right on support for preparation and implementation
- Local Government**
  - Create well planned area and improve agriculture quality
  - Increase land value
  - Increase tax revenue
- TORA Subject**
  - Get the land to be cultivated
  - Increase income/return

## URBAN IMPROVEMENT

High population density in urban areas encourages urban improvement in developing Vertical Land Consolidation (VLC) for residence or mixed-use. As Subur Law 2020, the provision of land for the candidate of lots can be carried out with VLC by land owners.

**PROCESS OVERVIEW**

**WHAT'S THE BENEFIT FOR STAKEHOLDERS?**

- Land Owner**
  - VLC Participants**
    - Receive VLC project without delay for negotiation with non-participants
  - Non Participants**
    - Earlier negotiation with developer
- ATR/BPN**
  - Receive VLC project without delay by negotiation with non-participants
  - Receive redistribution support for preparation and implementation
- Local Government**
  - Create well planned urbanized area and improve people's quality of life
  - Increase tax revenue by land value increment
- VLC Investor (Private Developer)**
  - Reduce initial investment cost and time delay for development
  - Provided Contract will be ready by negotiation with non-participants

## LAND DEVELOPMENT BY PPP

In cooperative development, investment in the form of the state budget and cost in financing infrastructure or other development, the PPP scheme is the solution. Land Bank can be the Government Contracting Agency (GCA).

**PROCESS OVERVIEW**

**WHAT'S THE BENEFIT FOR STAKEHOLDERS?**

- Government**
  - Accelerate infrastructure development, especially for PPP, will supported by Land Bank
  - Reduce cost by cost effectiveness by using PPP
  - Choose well-planned urbanized area by using PPP scheme
  - Receive card right on support for preparation and implementation
  - Increase tax revenue by land value increment
- Investor/ Private Developer**
  - Reduce initial investment cost and time delay for development
  - So need to have an offer for the asset and mechanism because it has been identified by B

Figure V.20 Land Bank Business Brochure Draft

(6) The results of LBI's 20-year financial projections provide some important insights into the development of its business. First, if LBI develops various new products, its business will expand rather swiftly. For instance, LBI can work with the Ministry of Public Works and Public Housing (PUPR) to provide infrastructure and public housing land.



Government Regulation No. 14 of 2015 pertaining to the Master Plan for National Industrial Development mandates the provision of industrial estates as another illustration. If LBI can provide apart of required 35,000 hectares of land between 2025 and 2035, LBI's operations will expand dramatically. In this prediction, it is assumed that LBI is responsible for 30% of the industrial area's requirements, thus the results are identical to the financial projections outlined in the preceding section.

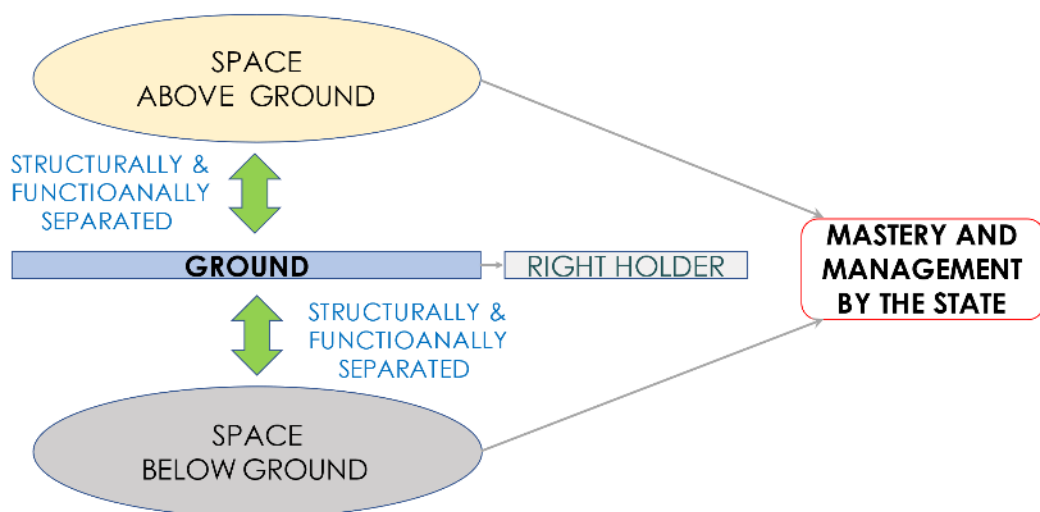
For further details please see attachment V.4 and V.5.

#### V.3.4.2 FGD Conducted

Topic	Final Reporting of Financial Sustainability Study
Date	12 <sup>th</sup> October 2022
Attendants	LBI
Summary	<ol style="list-style-type: none"> <li>1. The financial projection has been built upon based on the annual budgeting plan of LBI under close discussion between LBI and the project team.</li> <li>2. The study results have been received by LBI.</li> <li>3. The meeting is a final meeting and closure of a 1-year support from JICA Project team.</li> </ol>

## Chapter VI. Land Rights Above and Below Ground

Even before the project started, there had been discussed on how to legalize the land rights above and below the ground by the government, academia and professionals. Regulations were drafted several times and the latest attempted one was a draft Permen in 2019. The basic idea in the draft Permen to secure the space above and below the ground for the new rights is to take out the space where it is structurally and functionally separated from the right of the ground and to become under the mastery and management of the state.



It is also said that the use of the space above and below the ground shall not disturb the public interest and the ground right holder's interest. If there are any disturbances it is needed to get an approval from the ground right holder by a notarial deed with possible compensation. Then the government grants the space with a land/space title to the third party.

Those conceptual way of thinking has been legalized in Omnibus law and PP 18/2021 on Land Rights. However, implementation rules such as compensation method, registration of the space and protection of buildings installed in the space as well as guideline of technical study for deep below ground have not been prepared.

## VI.1 Introduction of Sectional Superficies

Sectional Superficies was introduced by the project as a case of three-dimensional space use in Japan. The project has given a presentation at several occasions including an intense meeting with Directorate General of Determination of Land Rights and Land Registration. Inputs from the project included:

- (1). How to apply Sectional Superficies in infrastructure provision such as MRT, urban expressway and tunnels;
- (2). Legal framework of Sectional Superficies;
- (3). Restrictions imposed to the land owner by Sectional Superficies;
- (4). How to calculate compensation; and
- (5). How to register Sectional Superficies right.

For sectional superficies in Japan, may refers to attachment VI.1

The project conducted the study tour to Japan three times. During the tour the participants had an occasion to visit the location of Sectional Superficies and receive a lecture such as:

- (1). three-dimensional road to promote effective and advanced land use in urban areas at Hanshin Express way;
- (2). land acquisition of toll road projects and Sectional Superficies of tunnel portal sections at NEXCO west;
- (3). integrated development with mall and provision of metro facilities such as entrances in private space with land title at Tokyo metro; and
- (4). deep underground public use at Metropolitan Area Outer Underground Discharge Channel.

The presentation to minister on study tour result can be referred to attachment VI.2

The project also provided some lectures and information on the deep underground legal framework in Japan including law, cabinet order and ordinance to an ATR/BPN official who was then trying to make a doctoral dissertation on deep underground use. The law and regulation on spatial measures for public use in deep below ground can be refers to attachment VI.3

## Chapter VII. Land Development

### VII.1 Study on IKN development by TOD of government assets under PPP scheme

#### VII.1.1 Objective

As stipulated in RPJMN and Renstra 2015-2019, inventory and management of government land had been conducted but good control and proper use had yet to be achieved. The land of ATR/BPN headquarters is located just in front of newly opened MRT ASEAN station. The ATR/BPN office buildings are more than 50 years old and their renewal plans were then undertaken with various land development policies accommodated to verify those policies as a model case. One of those plans was a plan of TOD concept and vertical land consolidation method with PPP scheme. ATR/BPN headquarters are annexed at several locations inside DKI such as Sabang and Kuningan. Those annexes were also a target of such attempts.

Based on an agreement between ATR/BPN and Bappenas, ATR/BPN planned to submit a result of Preliminary Study on Government Land Use of ATR/BPN Assets in 2019, which was postponed because of COVID-19 and an unclear schedule of IKN (New capital in Kalimantan) development. The Preliminary Study was expected to take a strategic location adjacent to the MRT station and CSW elevated busway station and to realize a transit gate covering government office districts in the Pattimura (PUPR)-Sisingamangaraja (ATR/BPN) block. It was also expected to design redevelopment and transformation of ATR/BPN headquarters area becoming a good model of sustainable buildings and TOD development through various development approach such as vertical land consolidation.

The objectives were summarized: 1) to explore promising alternatives of ATR/BPN headquarters area development; 2) to conduct Preliminary Study through engineering aspects and legal/regulatory aspects; and 3) to provide a grand design of masterplan level with a probable financial scheme. The objectives were further resolved as follows:

- 1) to review previous discussions and preceding works as well as relevant laws/regulations including land administration policies to explore the possibility in preparing a more comprehensive study plan;
- 2) to prepare a development concept with drawings which indicate coverage of a target area, zoning policy, transportation access, function of buildings in accordance with a sustainable building principle, infrastructure and facilities provision;
- 3) to conduct a schematic design of land use, infrastructure provision and building floor arrangement, as well as to estimate approximate costs.
- 4) to analyze the schematic design through compatibility of development concept, legal/regulatory restrictions and cost benefit.
- 5) to recommend necessary legal/regulatory framework for realization, and to propose appropriate financial schemes.
- 6) to compile the study results as a Preliminary Study for PPP project

#### VII.1.2 Scope of work

The study was carried out to achieve the objectives in line with section (1) to section (8) set out below.

#### (1). Preparation

There had been discussions on a schematic design of the target area initiated by ATR/BPN with referring international best practices including Japanese cases which was learned at the counterpart training in Japan in 2018.

#### (2). Development concept building

Several development concepts which were composed of development goals, land management policy, socio-economic impacts and private involvement were drawn and made into conceptual plans for stakeholders' discussion.

#### (3). Schematic design

Alternatives of schematic design were developed based on selected development concepts. Schematic design should clearly reflect development concept, view development method such as vertical land consolidation and refer to financial availability with approximate cost estimation. The building redevelopment should embrace Green Building principles.

#### (4). Analysis of schematic design

Multiple criteria were determined to make a comparison of alternatives. The criteria should include compatibility of land management policy, legal/regulatory restrictions, engineering easiness, socio-economic impact, cost benefit, private sector interests and financial sustainability.

#### (5). Recommendations/proposals on legal/regulatory framework and financial schemes

Amendments on legal/regulatory framework to realize desirable development concept and appropriate financial schemes in consideration of public funding availability and private financing initiative should be proposed.

#### (6). Preliminary Study

A draft Preliminary Study by compiling (2) to (5) above was prepared. The draft Preliminary Study should be examined by stakeholders including FGD and finalized by accommodating comments of stakeholders.

#### (7). Focus Group Discussion (FGD)

The FGD meeting, which was supposed to lead a study direction and provide an advice on the study, should be held by inviting stakeholders both inside and outside ATR/BPN.

#### (8). Important Consideration

The Preliminary Study should be prepared in consideration of not only engineering aspects but also legal/regulatory aspects which had to be a conflict between a best engineering design and legal/regulatory restrictions. Included could be: 1) recommendations on reviewing of government land utilization policy and relevant laws/regulations; 2) proposals on amendments of Spatial Planning and Building Code; and 3) proposals on establishment of financial schemes. The Preliminary Study was also a process to have a consensus building. Gathering opinions/comments from stakeholders in a timely manner and their feedbacks were important elements and ways of the study.

### VII.1.3 Study result

The study result was presented at FGD in October 2019 inviting MOF, Bappenas and ATR/BPN as well as Indonesian and Japanese private developers. The presentation document is attached as the attachment VII-I.

Outline of the study result was: 1) comprehensive TOD concept with an explanation of the MRT corridor 1 TOD master plan and the revised RDTR; 2) background of redevelopment in ATR/BPN asset at Sisingamangaraja, and new asset development in the new capital, IKN; 3) proposal and vision of development area in Sisingamangaraja and the new capital; and 4) development scheme and possible PPP scheme as well as their relation to HGB on HPL.

#### (1) Target area and land use

The figure below shows the target area of the study. ATR/BPN HQs is located just in front of Asean station on the east. The study focused on the area within 500m from the station.



Figure VII.1 Target Area

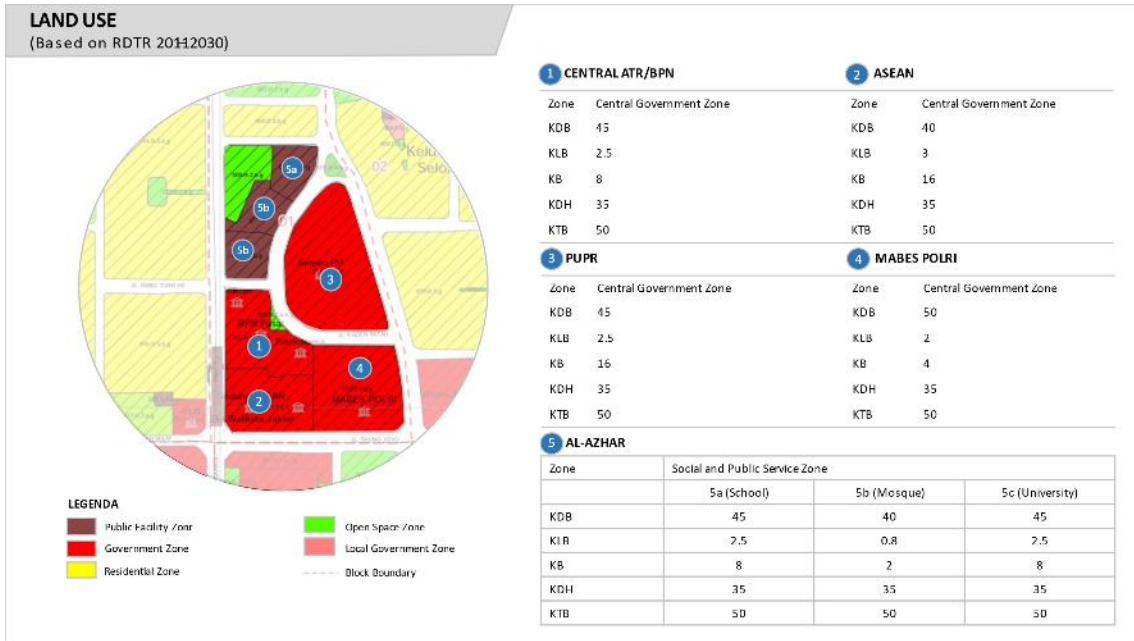


Figure VII.2 Land Use of Target Area

(2) Area development plan and GFA by TOD

One of the initiatives stipulated in Permen No.16/2017 on TOD Area Development Guideline to promote TOD is bonus and transfer of Grant Floor Area (GFA) of the building. In the area development plan shown in the figure VII-3, ATR/BPN constructs interconnecting pedestrian bridges to MRT stations and the surrounding buildings, and also provides the portion of its GFA for the MRTJ office.

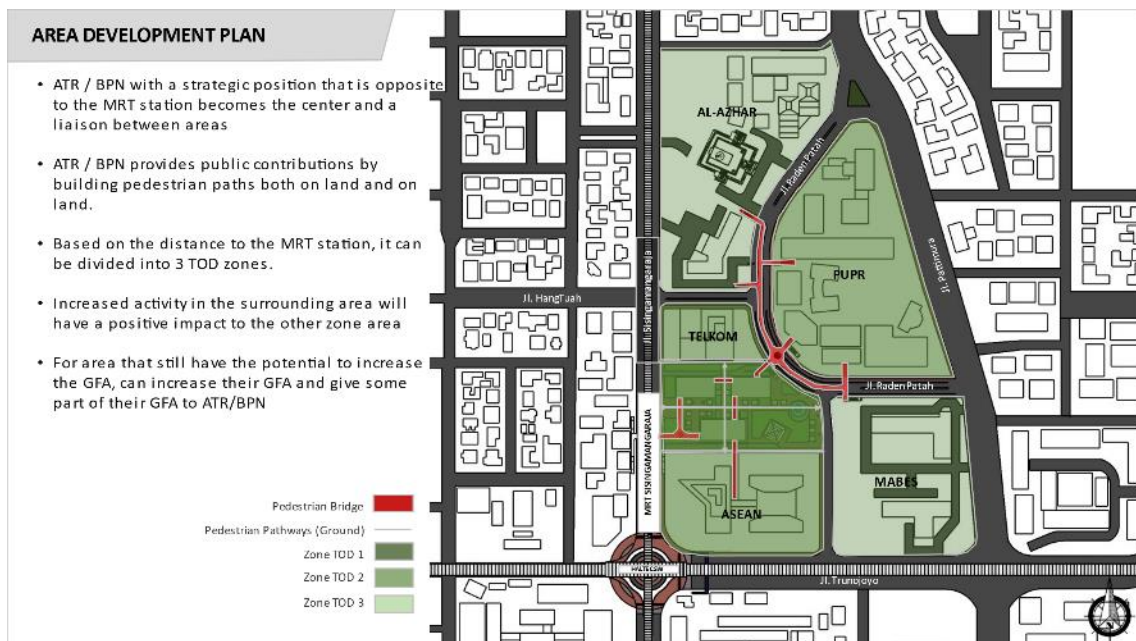


Figure VII.3 Area Development Plan and Interconnecting Pedestrian Bridges

In return to such provisions which MRTJ and the surrounding buildings receive benefits of TOD, ATR/BPN gains additional GFA by TOD scheme as shown in the figure below.



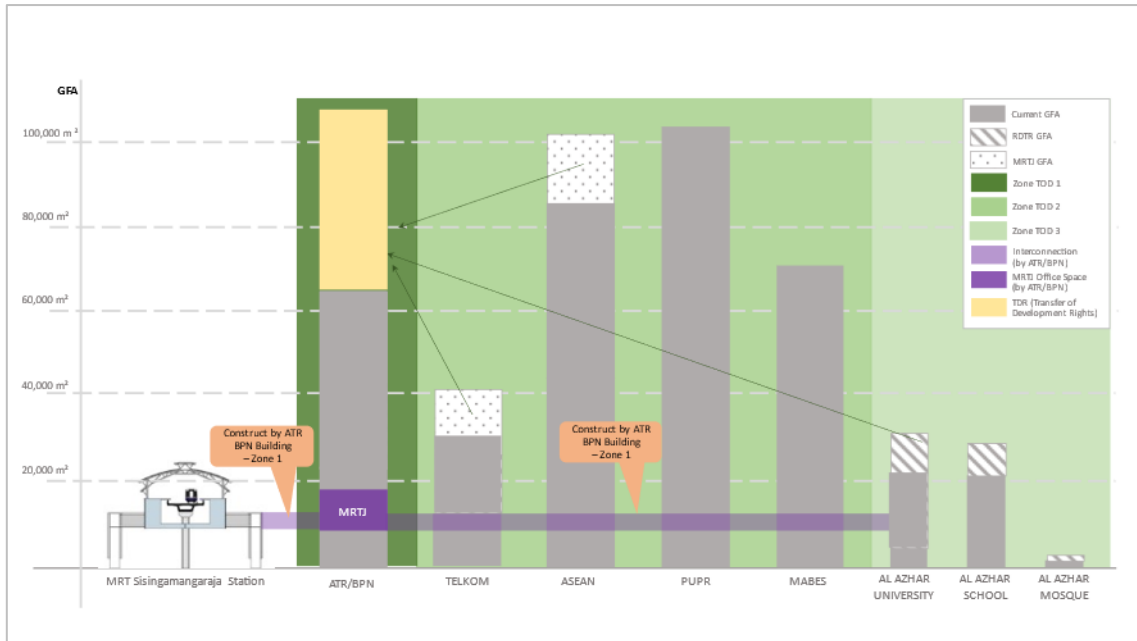


Figure VII.4 Bonus and Transfer of GFA by TOD

### (3) Development area in Sisingamangaraja and IKN

When the office of ATR/BPN moves to the new capital, the old office building will become less useful, further become a burden. It is necessary to attract private investment involvement for the development of IKN by exploring fundraising scheme apart from the state budget or the foreign and domestic loans. One of the promising funding schemes is to make the best use of government office assets left in Jakarta when moving to Kalimantan.

The figure VII-5 shows the image of redevelopment in ATR/BPN asset at Sisingamangaraja which accommodates the GFA by TOD scheme.

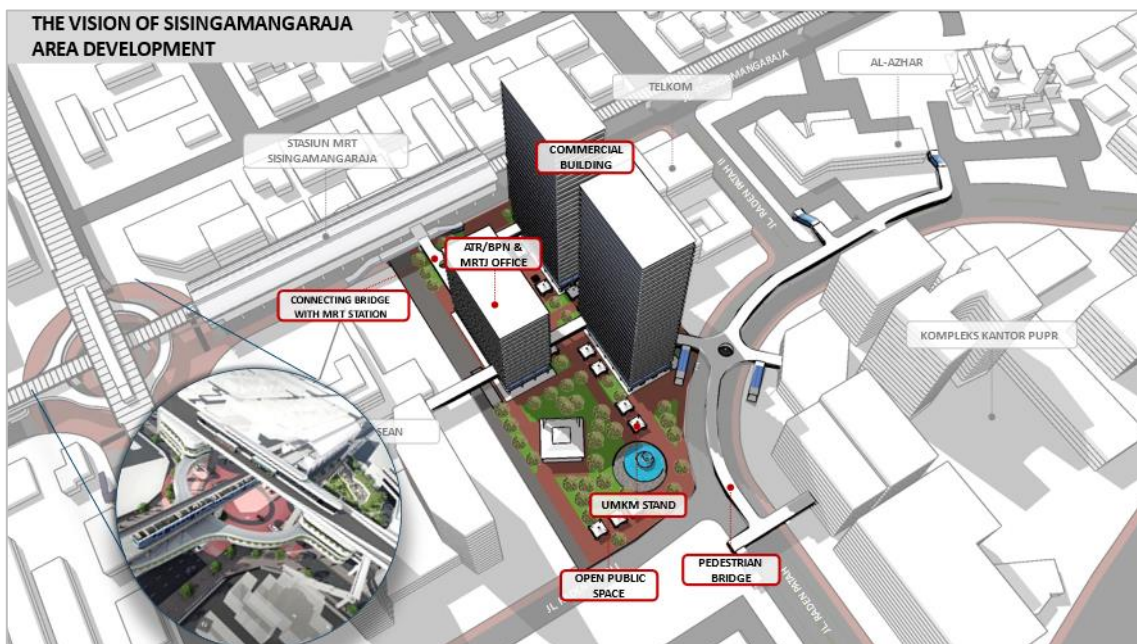


Figure VII.5 Image of Redevelopment in ATR/BPN asset at Sisingamangaraja

### (4) IKN development and possible PPP scheme

PPP scheme is mobilized to fund IKN development by using government assets left in Jakarta as shown in the figure VII-6. Private developers construct ATR/BPN office at the new capital instead of getting the development right of ATR/BPN Sisingamangaraja office area where increased GFA is granted by TOD to attract their investment. The benefit of each party is summarized below:

Stakeholders	Benefits
Government side	: New headquarters of ATR/BPN in the new capital is provided by PPP
	: Obtaining additional funding to construct other facilities in the new capital
Private side	: Obtaining profitable property development asset in a strategic transit area location in Jakarta's main corridor
	: Contributing to the development of IKN which has the potential to create a new market

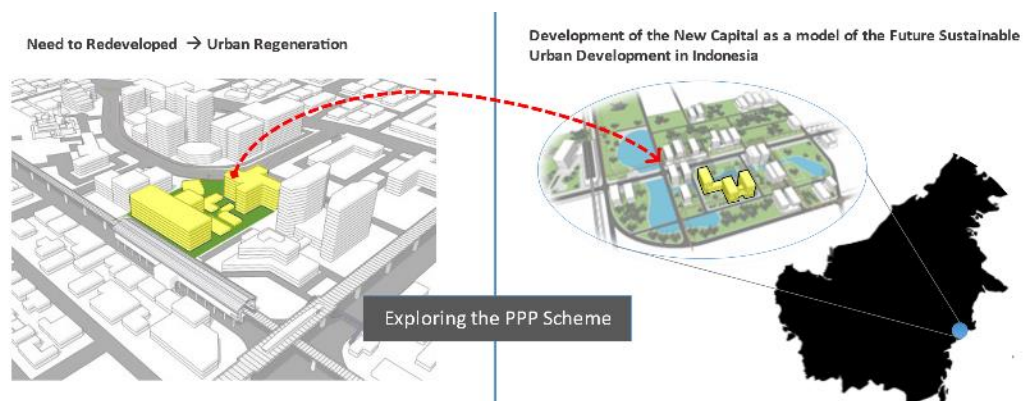


Figure VII.6 IKN Development by PPP Scheme

Three options of PPP scheme are shown in the figure VII-7. The scenario and the role of each party are as follows.

(i) PPP availability payment

- ATR/BPN headquarters building at Sisingamangaraja is retained as existing condition, and will be used as Kanwil /regional office
- Government side is responsible for construction cost of ATR/BPN new headquarters building in the new capital by the availability payment and maintains the new building and the surrounding area
- Private party funds the development investment, constructs the new building, receives investment cost by the availability payment

(ii) PPP user payment

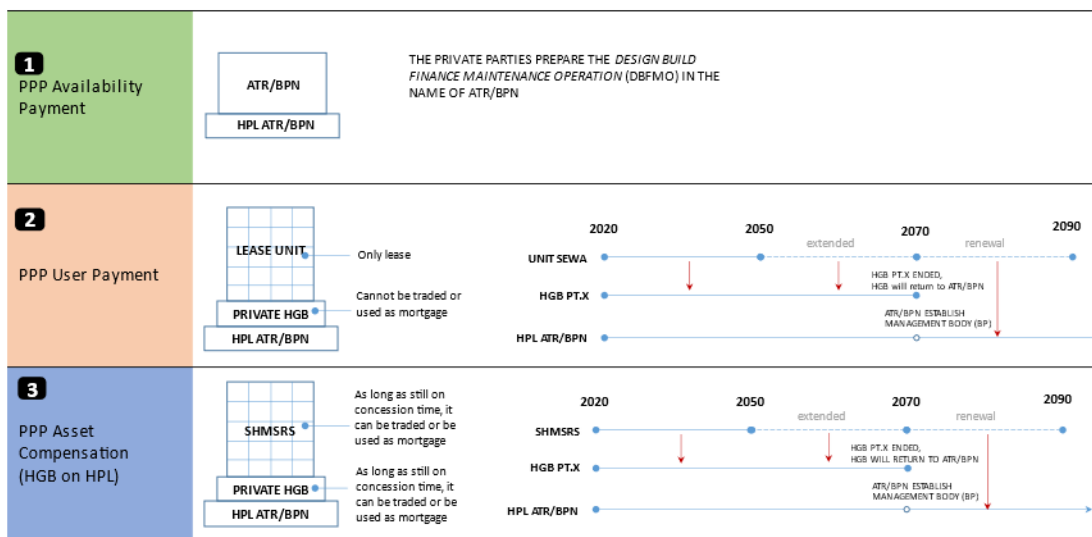
- The construction of ATR/BPN new headquarters uses PPP User Payment method.
- Government side hands over the operational and maintenance rights of ATR/BPN asset at Sisingamangaraja to the private party.



- Private party funds the development investment, construct ATR/BPN new headquarters in the new capital, receives HGB on HPL at Sisingamangaraja, and operates their own commercial building with the right of operation and maintenance of the area.

(iii) PPP asset compensation

- The construction of ATR/BPN new headquarters uses PPP Asset Compensation method.
- Government side own HPL at Sisingamangaraja, gives HGB to the private party, hands over the operational and maintenance rights to the private party.
- Private party funds the development investment, construct ATR/BPN new headquarters in the new capital, receives HGB on HPL at Sisingamangaraja and operates their own commercial building with the right of operation and maintenance of the area.



SCENARIO	JAKARTA	KALIMANTAN	BENEFIT AND FINANCING IMPLICATION	
	SISINGAMANGARAJA	NEW CAPITAL	ATR/BPN	Private
<b>1</b> PPP Availability Payment			<ul style="list-style-type: none"> <li>• Rp 210 M/ year</li> <li>• New ATR/BPN Headquarters in the New Capital is ready</li> <li>• Previous building in Jakarta can be used by Kanwil</li> </ul>	<ul style="list-style-type: none"> <li>• Income AP Rp 210 M / years (exclude VAI)</li> <li>• Concession 20 years after COD</li> <li>• Project IRR 12,11%</li> <li>• Payback Period 9 years</li> </ul>
<b>2</b> PPP User Payment			<ul style="list-style-type: none"> <li>• Rp 0</li> <li>• New ATR/BPN Headquarters in the New Capital is ready</li> <li>• ATR/BPN and MRTI office is available</li> <li>• Pedestrian bridge and open space area is available</li> </ul>	<ul style="list-style-type: none"> <li>• Concession 20 years after COD</li> <li>• Project NPV Rp 13,04 M</li> <li>• Project IRR 12,18%</li> <li>• Payback Period 9 years</li> </ul>
<b>3</b> PPP Asset Compensation (HGB ON HPL)			<ul style="list-style-type: none"> <li>• Rp 763 M</li> <li>• New ATR/BPN Headquarters in the New Capital is ready</li> <li>• ATR/BPN and MRTI office is available</li> <li>• Pedestrian bridge and open space area is available</li> </ul>	<ul style="list-style-type: none"> <li>• Concession 30 years after COD</li> <li>• Project NPV Rp 81,7 M</li> <li>• Project IRR 13,13%</li> <li>• Payback Period 6 years</li> </ul>

Figure VII.7 PPP Scheme options with financial analysis comparison

According to the figure above, Scenario 3 - PPP asset compensation method provides the highest internal return rate (IRR).

(5) Conclusion

During the FGD, the highlighted points are as follows:

- ATR/BPN new headquarters development scheme must be integrated with ATR/BPN asset redevelopment scheme in Jakarta
- ATR / BPN asset development scheme should allow private sector involvement in a PPP scheme. Private parties are an important factor in financing empowerment both for the needs of the ATR / BPN office and other related facilities as well as urban infrastructure.
- The most potential PPP scheme is the asset compensation PPP scheme, namely by granting HGB to private parties over government-owned HPL. This scheme provides a significant initial funding contribution which can also contribute to other related financing outside the financing of the new headquarters office of ATR / BPN in Kalimantan.
- The remaining challenge is how to ensure synchronization of aspects of government legislation/regulations so that HGB above HPL provides legal certainty and attractiveness for the private party.

## VII.2 Land Development Preliminary Study

### VII.2.1 Background

RENSTRA 2020-2024 (5 years strategic plan of ATR/BPN) stipulates a policy direction and strategy where land development shall be prepared to increase the economic benefits through proper land utilization and contribute to both community and state asset lands for the community's welfare and state revenue increase. It also mentions a regulatory framework that land development is accommodated by establishing Land Bank Agency who is responsible for managing land inventory.

However, concept of land development currently remains unclarified between multiple stakeholders such as ATR/BPN and Land Bank Agency themselves. Elucidating such concept to redetermine and define optimum roles and responsibilities of stakeholders in land administration and land development sectors is crucially needed. Hence, activities to develop a well-defined collaborative scheme between ATR/BPN, Land Bank Agency and other possible related stakeholders in the realm of land administration and land development are highly desirable.

Existing land management regulatory framework is lacking comprehensiveness to properly mobilize land use and land tenure, and to set up mechanisms to generate and capture land value. In the spirit of maximizing economic benefits and social welfare, current prevailing regulatory framework is missing - for example - a clear relationship scheme between land development and spatial planning to implement urban land redevelopment tools such as horizontal/vertical land consolidation, land banking system to be conducted in the provision of TOD, slum area alleviation etc.

### VII.2.2 Scope of Work

The objectives of the "Preliminary Study on Land Development Policy Perspectives and Technical Regulations" (hereinafter referred to as the "Study") are 1) to build a concept of land development by reviewing relevant regulations and studies and to explore both domestically and internationally government policies and strategies, 2) to locate land development in the spectrum of land management and make a mapping of technical regulations such as land use, land tenure, land value, land banking and urban/regional development as well as land acquisition and land consolidation, and 3) to identify

land development principles for sustainable development and roles and responsibilities of ATR/BPN as a land administrator and Land Bank as land manager.

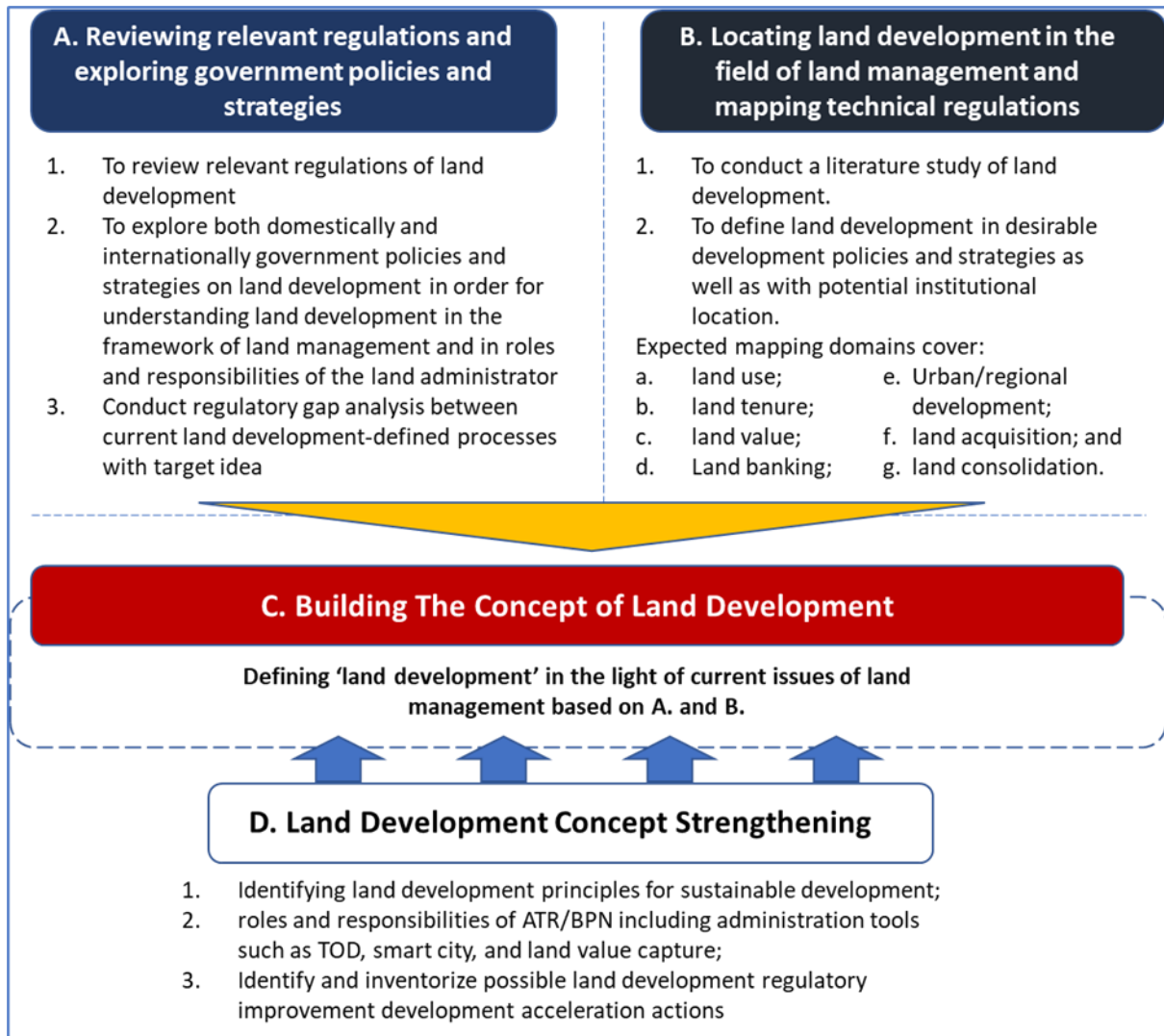


Figure VII.8 Land Development Preliminary Study Scope of Work

### VII.2.3 Study Results

The Land Development Preliminary Study has been done with the support of PT Geonusa Scientia (GNS) as contracted consultants. Below are the deliverables developed together between JICA Project Team and GNS.

#### VII.2.3.1 Defining Land Development

Based on the identified policy directions of ATR/BPN and reflecting the national level policy directions from Bappenas' national planning (2020-2024), it has been extracted that ATR/BPN's policy is further diving into land development sector.



Figure VII.9 Policy Setting of Land Development

Based on the policy directions and analysing the potential scope of ATR/BPN, the definition of land development activity can be summarized as: “Increasing the usability, quality and use of a plot of land for the purpose of placing a functional activity so that it can optimally meet the needs of life and business activities in terms of economic, social, physical, and legal aspects”.

#### VII.2.3.2 Hypothetical Stages of Land Development

The stages of Land Development is divided into 3 stages which are:

##### **Stage 1: Spatial Planning and Targeting.**

This stage focuses on spatial and market research as well as zoning analysis.

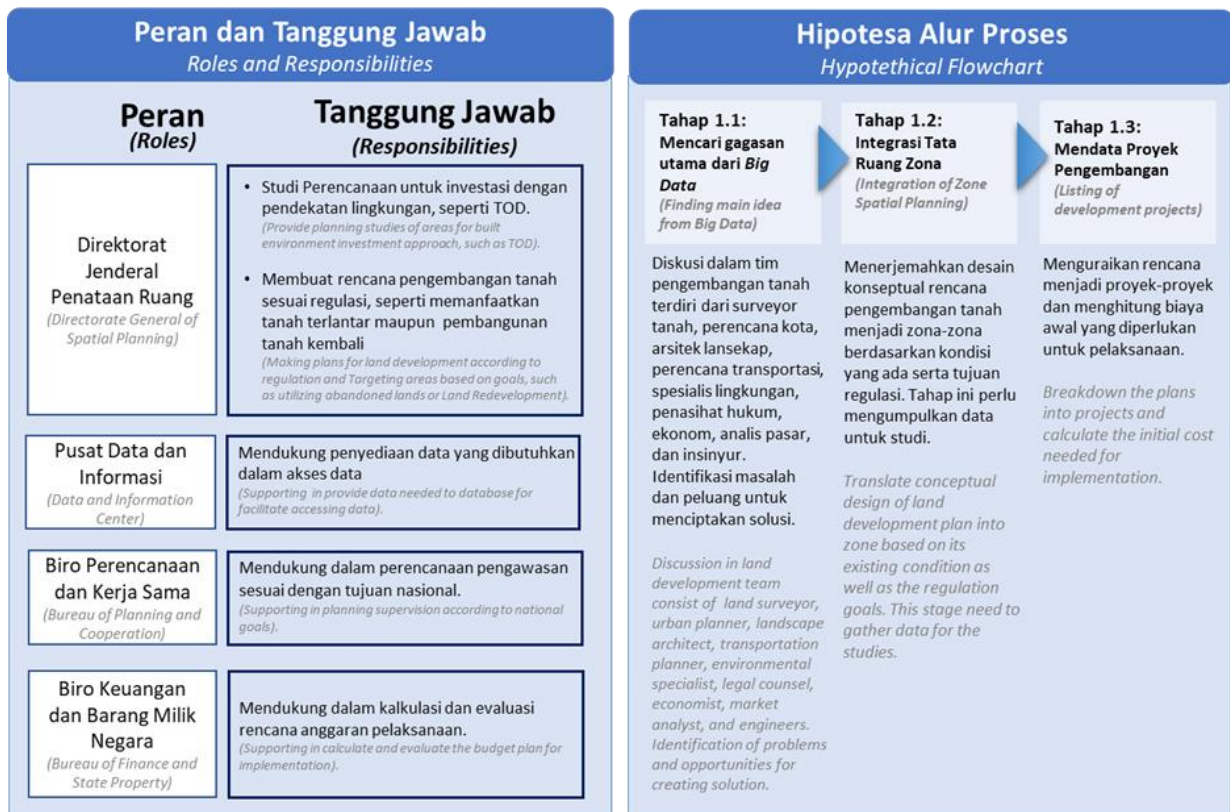


Figure VII.10 Stage 1 Spatial Planning and Targeting

### Stage 2: Land Development Planning.

This stage focuses on feasibility analysis and legal provision.



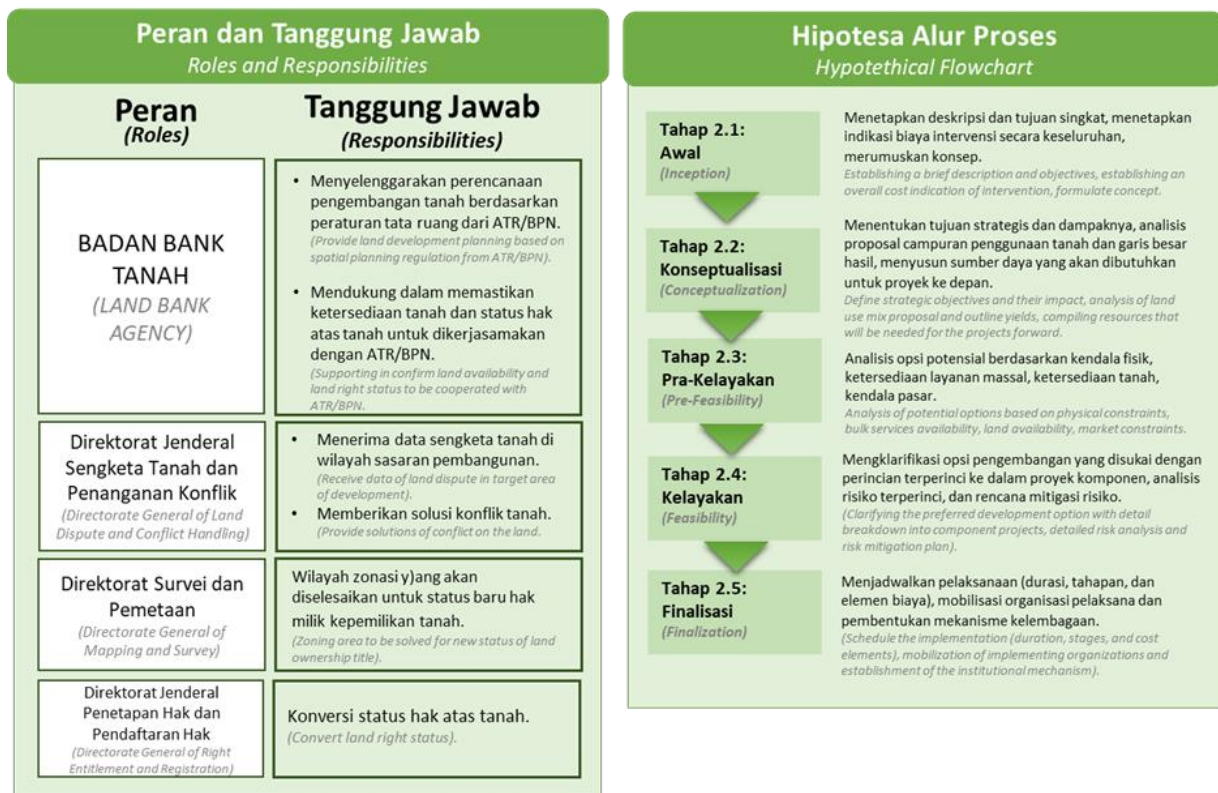
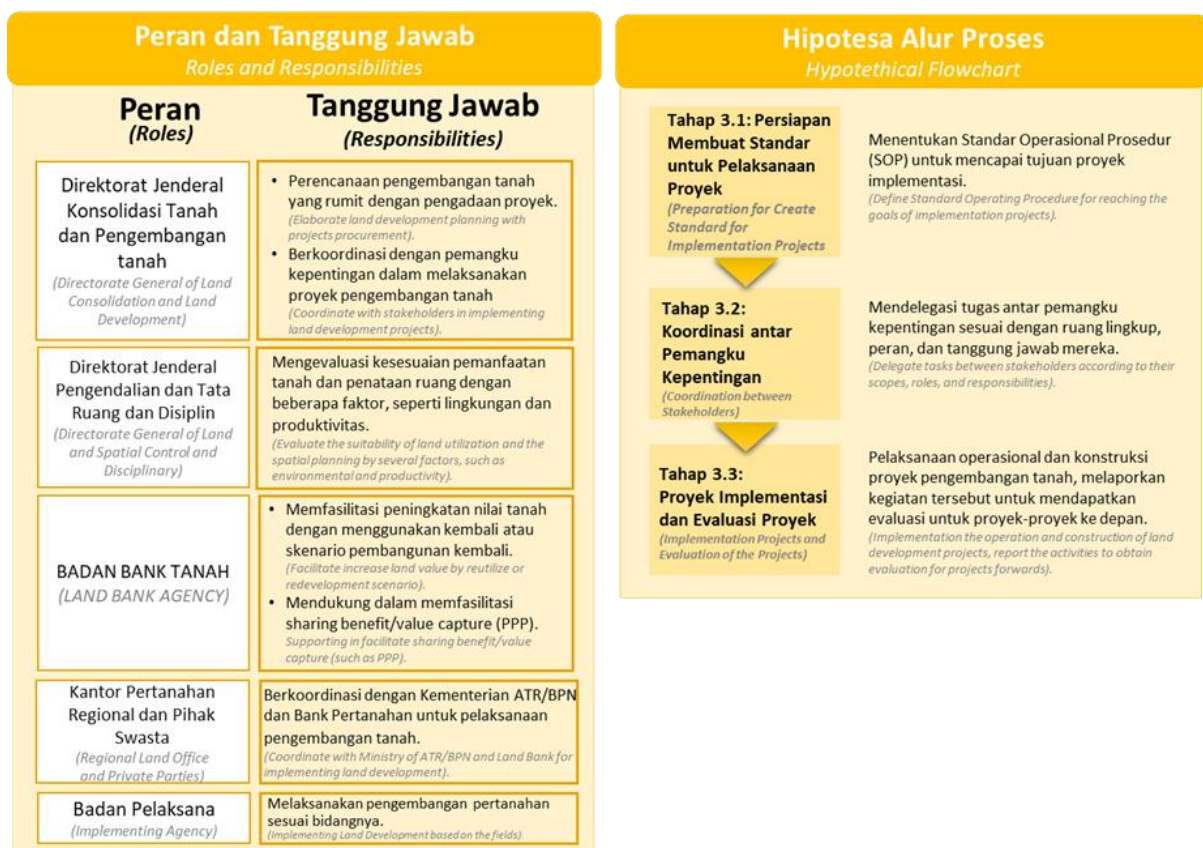


Figure VII.11 Stage 2 Land Development Planning

### Stage 3: Project Preparation and Implementation.

This stage focuses on implementation, monitoring and evaluation.



Through the preliminary study, it can be summarized that Land Development is multisector in essence. Furthermore, internal coordination mechanism within ATR/BPN is crucial to be identified for the public sector side business process.

### VII.2.3.3 Support on Land Development Regulation Draft

On September 14th 2022, DLCLD had requested support on the provision of reviewing and analysis on the draft of Land Development Regulation.

Table VII.1 Draft Regulation Review

Category	Summary	Issues/ Comments
1 Definition of Land Development (Art. 1)	Activity to change the shape of land to develop an area that creates value to increase utilization to make it more productive, useful and/or profitable in accordance to spatial planning and upholds sustainability (Article 1)	Overlap with Art. 2, 3
2 Purpose of Regulation (Art. 2,3)	a. To provide guideline to central and regional governments and other stakeholders in land development b. To increase efficiency, effectiveness and productivity of land and spatial use c. Increase land use value in accordance to each land potential	1. When should people/government follow this regulation? 2. Is there a minimum amount of land to follow this regulation?
3 Scope of Regulation (Art. 4)	a. Planning of LD b. Implementation of LD c. Construction of LD d. Monitoring of implementation of LD	
4 Basis of LD (Art. 5)	a. Land Policies b. Related Stakeholders' Policies c. Prevailing Spatial Plan Policies d. Community initiative e. Strategic Area Development Plans Policies	
5 Types of LD (Art. 9 -11)	<b>Based on Location (Article 9)</b> a. Urban b. Non-Urban <b>Based on Land Condition (Article 10)</b> a. Brownfield b. Greenfield	<b>Ownership (Article 11)</b> a. Registered b. Not Registered c. State Asset
6 Area Typology of LD (Art. 6 -8)	<b>TOD</b> Mixed use lands, radius 400-800 m from transit node, mid to high land use intensity. i. Urban TOD ii. Suburb TOD iii. Environmental TOD	<b>New Urban Area</b> Area that is planned to be self-sufficient in terms of facilities and infrastructure and other supporting substructures <b>Strategic Area</b> area that is prioritized for development due to its effect on economy, social, cultural and environment. E.g. military use and border lands, economic acceleration use, national parks, conservation etc.)

Category	Summary	Issues/ Comments
7 Lands for LD (Art. 12)	Object of land development comes from: a. Registered land b. State land that has been mastered/utilized c. State asset that is clear of ownership/mastery d. SOE/ROE/private asset lands	e. Post agrarian reform conflict or dispute resolution lands f. Expired HGU and/of HGB lands g. Forest area release of lands h. Land bank's acquired land.
8 Who does LD? (Art. 13)	Subject of LD: a. Personal b. Private companies c. SOE/ROE d. Government institution that are aiming to do land use value optimization.	Is this initiator?
9 Methods/Tools of LD (Art. 14-17)	a. Land consolidation (follow LC regulation) b. Land acquisition (follow LA regulation) c. Land banking (follow LB regulation)	For Land Banking – unclear role of Land Bank's activity. Is it pre-emptive purchase?
10 Financing of LD (Art. 37)	a. State budget (APBN) b. Regional budget (APBD) c. Community participation (in the form of the land for the development) d. *both central and regional government can provide incentives for land value increase.	e. Joint venture f. Land value capture. (Defined as the policy of utilization of increased values that are generated from investments, activities, and government policies using tax based LVC or development based LVC. g. Other legitimate financing
11 Monitoring of LD (Art. 28)	a. Monitoring is done to ensure stages conformity to regulations and	b. evaluate the economic, social and environmental effects of the project c. monitoring is done by the coordinating team of implementation
12 Process of LD (Art. 19-27)	(see next page)	

The Project Team proceeded with GNS to review and provide suggestions to the draft regulation in the area of:

#### 1) General Strategy and Defining Land Development

## Suggestions on Draft Land Development Regulation

General: Need to think about "What benefit/incentive will come to stakeholders by following this regulation?"

- ATR/BPN's technical support?
  - Fast track for approval?
  - Governmental financial support?
  - Relaxation of land use control/ tax exemption?
1. Definition/ Purpose of Regulation (need to restructure Article 1, 2 and 3):
    - Definition of Land Development: Develop/change/reorganize lands to enhance the utilization and increase value
    - Purpose of Regulation: To guide stakeholders for promoting/planning/implementation/monitoring
  2. Target of Land Development to follow the Regulation
    - Area? (xx ha or more)
    - Number of land parcels? (xx parcels or more)
    - Specific objectives? (TOD, new town, CBD, etc.)

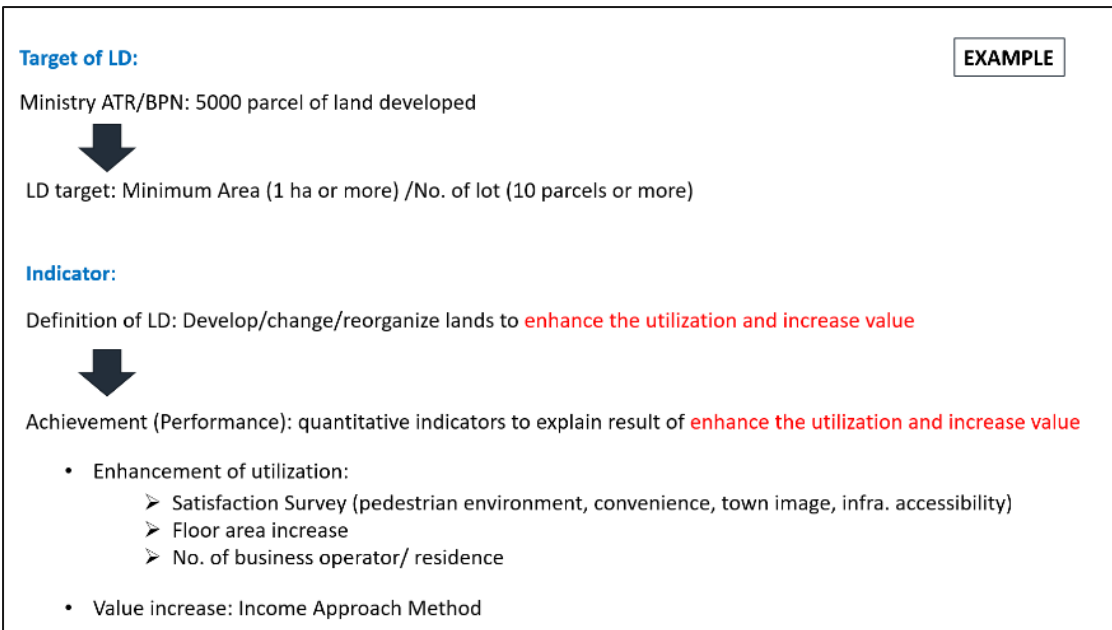
## 2) Initiator Setup and Interest Arrangement

### Suggestions on Draft Land Development Regulation

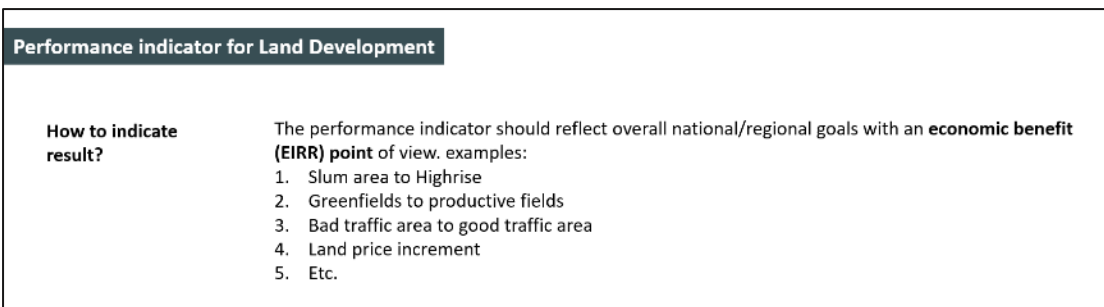
3. Initiator of Land Development (Who can propose/handle the land development? )
4. Coordination Mechanism (Need Committee to coordinate multiple stakeholders involved into land development)
5. Role of ATR/BPN (What can ATR/BPN do for the promotion and implementation?)
  - Support for initiator for preparation, planning and implementation by Planning Team
  - Management of coordination committee
  - Stakeholder coordination in planning/implementation
  - Formulation/Revision of Spatial Plan
  - Land right arrangement
  - Support for LC/VLC planning and implementation
  - Coordinate with Land Bank
  - In case of ATR/BPN's initiating L/D
    - Formulation of Master Plan for the Land Development
    - Coordinate and manage each project component by Coordination Team
6. Performance indicators for Land Development's achievement

## 3) Land Development Target Setting





**EXAMPLE**



#### 4) Masterplan Development Approach Examples.

**Scopes of Area Concept Planning**

• Purchasing Satellite Image  
• Topographical Map  
• Current Condition Survey

**Area Concept Plan**

• Set a future town image/ development goals  
• Set a planning boundary  
• Identify keys development directions/ basic urban structure to realize vision

• Develop physical plans such as urban function and facility, and land use

• Identify projects/ programs in consideration of the implementation methodology/ project owner/ development period

• Estimate costs of projects and program,  
• Identify role of stakeholders/ implementing agency,  
• Formulate development schedule

Select: PHD Project (Urban Collaborative Project)

**Current Condition Analysis**

■ **Objective:** To identify Regional/ territorial condition and political for urban development

**Analysis on Regional/territorial Characteristic**

**Current Condition Survey**

- 1. Current government policy/ plan
- 2. Urban Plan
- 3. Population
- 4. Real estate market
- 5. Existing Public-private project

**Internal Factors**

- 6. Current Land Use
- 7. Existing Roads
- 8. Current Technical Infrastructure
- 9. Existing Buildings
- 10. Land Rights
- 11. Special land use restriction
- 12. On-going project
- 13. Photo

Questionnaire Survey /Workshop for community

**Community Condition/ Demand Analysis**

**SWOT Analysis**

- Strength:** Internal factors to be emphasized
- Opportunity:** External (Regional) factors to be accelerated
- Weakness:** Internal factors to be improved
- Threat:** External (Regional) factors to be reduced/avoided

**Key Viewpoints of Area Concept Planning**

**4 Key Viewpoints**

- Government/public benefit:**
  - Conform to urban management policy
  - Create infrastructure and public service facility
  - Contribute for social and economic benefit
  - Clarify indicative economic and social impact, and benefit/cost
- Community benefit:**
  - Awareness of current issue
  - Consensus of necessity of project and the benefit
  - Disseminate information
  - Involve community into planning activities
  - Consider community's lifestyle, culture and tradition
- Technical/engineering solution:**
  - Control of traffic impact
  - Creation of pedestrian and greenery spaces
  - Prevention of disaster and pollution
  - Smart city by advanced technology
  - Smoothness of construction (e.g., step-by-step development)
- Economic Potential Enhancement:**
  - Maximize property value increment
  - Accelerate investment/ property sales
  - Attractability for ordinary peoples in property purchasing
  - Reduction of financial risk in implementation

**Project Identification/ Action Plan**

■ **Objective of Project Identification:** To identify projects and programs in consideration of the implementation methodology/ project owner/ development period based on the concept plan

■ **Objective of Action Plan:**

- To estimate costs of identified projects and program,
- To identify role of stakeholders/ agency for the project implementation
- To formulate implementation schedule

**Example of Action Plan**

Category	ID	Project/Programs	Implementer	Fund Resource	Implementation Period						
					Start Year	1Y	2Y	3Y	4Y	5Y	End
A. Urban Plan	A-1	Detailed Urban Plan	DPW/UPD	VTE							
B. Road	B-1	Pavement (Service Road A)	DPW/T	VTE							
	B-2	Pavement (Service Road B)	DPW/T	VTE							
	B-3	Widening and Pavement (Service Road C)	DPW/T	VTE							
C. Utility	C-1	Water supply installation (Zone A)	DPW/T	VTE							
	C-2	Water supply installation (Zone B)	DPW/T	VTE							
D. Urban Development	D-1	Private development (agri. land)	Private	Private							
	D-2	Land subdivision in farm land	Private	Private							
E. Event	E-1	Community street use etc.	DPW/PCA	DPW/PCA							
	E-2	Community street use etc.	DPW/PCA	DPW/PCA							

Figure VII.12 Masterplan Development Approach Examples

### VII.2.3.4 FGD Conducted

Topic	Land Development Draft Regulation Support
Date	10 <sup>th</sup> October 2022
Attendants	DLCLD
Summary	<ol style="list-style-type: none"> <li>1. Draft of Land Development regulation has been analysed and given suggestions on strategic approach and substances related initiator setup, interest arrangement, stakeholder mapping, business process, target setting and masterplan development.</li> <li>2. DLCLD has received the suggestions and further synthesize to improve the draft regulation.</li> <li>3. DLCLD has kept their interests high regarding the next potential technical analysis on Land Development.</li> </ol>

### VII.2.4 Next Steps – Preparation for Land Development Technical Cooperation

ATR/BPN and the project have recognized that the land development shall be a strengthening function to conduct ATR/BPN mission in the future as stipulated in RENSTRA 2020-2024. The figure VII.13 shows an idea of organizational structure to answer it. The project has conducted several brainstorming meetings to prepare a technical cooperation project entitled “Project for Capacity Development for Land Development Policy Making and Land Bank Management Improvement”. One of the important considerations raised in the meeting is how to respond changing demands from people and the market. And what ATR/BPN can respond by land development like other ministries respond by infrastructure development. The application form is in the attachment VII-5 which aims to deliver proper and distinct future-proof land development projects with comprehensive regulatory and policy framework supported by effective administration tools. The estimated counterparts aside from DGLA&LD will be Land Bank agency.

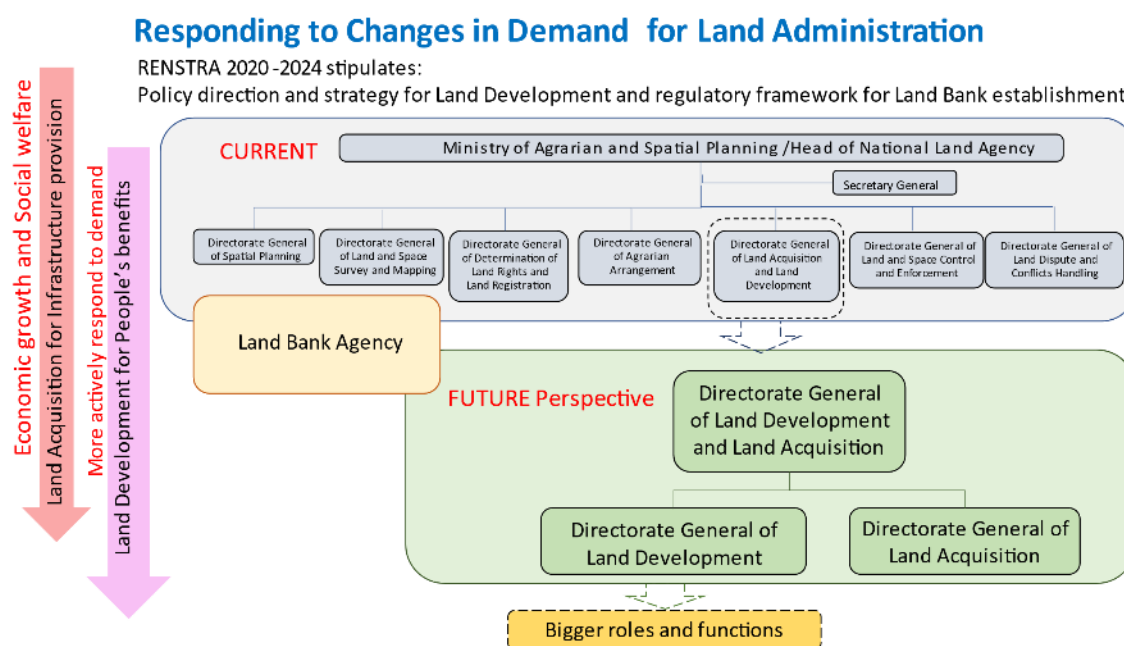


Figure VII.13 Idea of Organizational Structure for Land Development

The technical cooperation shall be held with a purpose of:

- a) To achieve clarity of land development concept with optimal role and responsibility determined across ATR/BPN, Land Bank Agency and other relevant stakeholders.
- b) To prime ATR/BPN and Land Bank Agency for the preparation of the development of the future-proof land development regulatory and policy framework and the setup of the supporting administration tools through effective capacity building and technical assistance

The target output for the technical assistance are as follows:

- i. To improve land development planning, preparation and implementation capacity for ATR/BPN members and Land Bank Agency by equipping proper technical knowledge.
- ii. To formulate land development comprehensive regulatory framework plan supported by precise stakeholder analysis, debottlenecking & risk management analysis and sustainability analysis.
- iii. To strengthen the mechanism of coordination and collaboration among land administration and land development sectors as well as relevant stakeholders for land development related policy making.
- iv. To establish implementation systems of ATR/BPN and Land Bank Agency within the scope of land development that grants effective collaborative work.

Below is the estimated timeline of the land development technical assistance

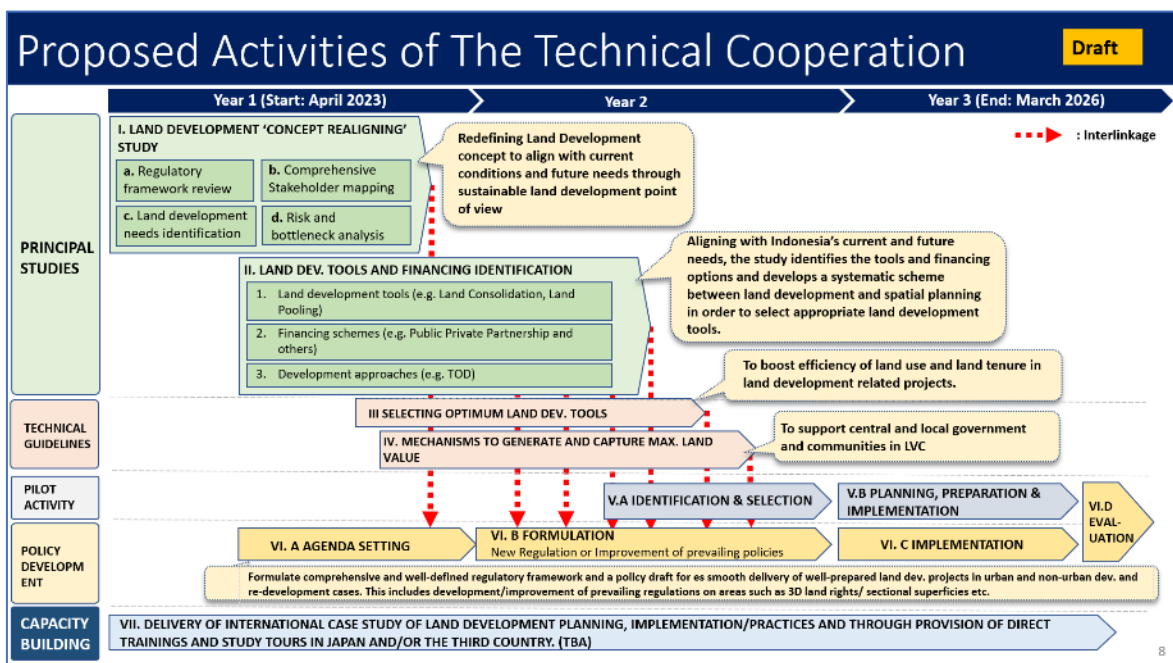


Figure VII.14 Estimated Timeline of New Technical Assistance

At the time of writing proposal of Technical Cooperation have been submitted to Bappenas and under review of Bappenas to be sent to JICA

## Acknowledgement

JICA project team has been enjoying working together with ATR/BPN people, not only counterparts for the technical cooperation, but also officials of the administration as well as staff members of the regional offices (Kanwil) and land offices (Kantah).

We are grateful for the strong leadership and initiatives directed to the project by the project director and project manager. When we started the project in 2018, the project director was Ibu Arie Yuriwin, the then Director General of Land Acquisition. She led the project in a decisive manner and helped JICA project team to be merged into ATR/BPN people for collaboration by inviting the team to any occasions not only for working but also for deepening friendship. In 2020, because of COVID-19, most activities were conducted online and on-site activities had been inevitably postponed. During that hard time Bapak Himawan Arief Sugoto, Secretary General, also Acting Director General of Land Acquisition, hence acting as the project director, gave us a precious advice to manage the situation and necessary countermeasures including project expansion not simply the period but adding the urgent themes stipulated in Renstra 2020-2024. After the re-start of post COVID-19, the third project director is Ibu Embun Sari, Director General of Land Acquisition and Land Development, who has been directing us toward a fruitful achievement of the project with accommodating JICA project team closely.

We would have had to express our sincere appreciation to each project manager by name, who helped us with on-site activities to work with regional and land offices for OJT and pilot projects. Some of them were a head of office before or after the project manager and continuously gave us a strong support. We also say a heartfelt thank-you to directors, sub-directors and officials of directorates general and the secretariat for their irreplaceable support, though some of them were not a member of the counterpart, but willing to work for the project with us. We are missing our friend, Rahmat Ganda Pandapotan Sihombing who unexpectedly passed away young.

Thanks to ATR/BPN management, the project has been able to join so many important ATR/BPN missions which cover land acquisition, land consolidation, land valuation, land banking, land rights above and below ground, and land development. Each theme established a working team which conducted an activity efficiently and effectively, shared useful knowledge and information, solved any difficulties and made the most benefit of the achievement.

Finally, we again sincerely thank ATR/BPN and GOI for providing us with a challenging and rewarding four and half years we spent at ATR/BPN Sisingamangaraja and Sabang offices.