

# COVID-19 Pandemic and Land Administration Modernization in Indonesia

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**Key words:** electronic services, fit for purpose, land administration

## SUMMARY

Globally, many sectors have been affected by the COVID-19 pandemic, the land sector is no exception. With the ongoing pandemic in Indonesia, many aspects of the land sector have experienced changes and losses, both by land service providers, namely the government agencies itself and the public, private sector, investors, and other parties must also participate in running and transforming the land administration system – as a form of adaptation to the COVID-19 pandemic.

The relationship between the COVID-19 pandemic and the land sector has pointed out that it can lead to property eviction, massive social upheaval, formation of slum settlements and increasing the poverty rate. In line with the country goal to break the chain of COVID-19, several land affairs and spatial planning policies aimed at regulating the system internally and embracing stakeholders has been implemented during the pandemic – all to maintain and improve economic stability in Indonesia. The highlighted transformation regarding land services as an adaptive form to the COVID-19 pandemic is a massive development and digital innovation in public services era 4.0 e.g., E-services on Mortgage, Mortgage Release, Land Value Zone, and Land Registration Certificate, E-certificate, Land Certificate Virtual Handover, and also other digital/online services held by the land offices.

Elaboration on the transformation programs on land services implemented during the pandemic is delivered through this paper. As mentioned in the Strategic Plan of 2020 to 2025 (Republic of Indonesia, 2020), the world standard in terms of land management and spatial planning is expected to be achieved by 2025. Therefore, using the elements of Fit for Purpose Land Administration (Enemark et al., 2015), the transformation programs were assessed – whether they already meet the requirements of society today, and ascertained – that incremental improvement can be placed over time.

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## **1. INTRODUCTION**

Indonesia has been administering its land registration system since 1960 through the enactment of National Basic Agrarian Law. By then, the land registration was conducted manually. The survey was held using variety tools of topography survey techniques: measuring tape to theodolite. During that time also, most of the land was also surveyed locally, the field survey result was calculated and plotted on paper-based manner – hand drawn, and all the documentation were recorded manually – handwritten. As technology developed, the land administration system is also evolving to become modern. Computer and the development along with it appeared to fasten the process – especially on registering and recording data, and also shorten the process.

Since 2017, the land registration system in Indonesia has been changing quite massive due to the implementation of complete-systematic land registration program (called PTSL). PTSL is an innovation method from the government of Indonesia to provide the basic needs of the community by administering parcels and issuing the land certificate. The rate of land registration which was previously less than one million parcels per year, suddenly increased by 5 million parcels in 2017 until 9 million parcels by 2020. This rapid change is also resulted to the needs of strong infrastructure to support the system – which then go hand in hand with the land administration modernization.

In the beginning of 2020, the Corona Virus Disease 2019 (COVID-19) pandemic started and affected many sectors – including the land sector. To anticipate the worst possible scenario regarding the COVID-19 pandemic, the Government of Indonesia adapted by taking some changes on its land policy. It is inevitable that technology has been a major part of implementing adaptation respond to COVID-19 pandemic – where this has also taken quite a few portions in the process of modernizing land administration. The aim of this paper is to outline the relation of COVID-19 pandemic and the modernization of land administration in Indonesia.

## **2. MODERN LAND ADMINISTRATION**

It is hardly easy to find the exact definition of modern land administration. Land administration is defined as “the process of determining, recording and disseminating of information about ownership, value and use of land when implementing land management policies” (International Organization for Standardization [ISO], 2012). The modern itself refers to the actual or present activity that is currently running or at least recently happened. But the term ‘modern land administration’ has already been used several times on the discussion related with land administration system. Williamson et al. (2009) mentioned that building and maintaining the capacity of people and institutions on the systems that administer the relation between people and land is what so called the foundation of modern land administration. The issue of the

cadastral data quality was brought by Siriba et al., (2011) as one of the most important elements for modern land administration. Williamson et al. (2009) concluded that to reach the goal of sustainable development, the concept of modern land administration requires the four aspects of land tenure, land value, land use, and land development – known as the land management paradigm, to be implemented so it can control the systems related with land rights, restrictions and responsibilities.

Adopting the land management paradigm, Indonesia has made 4 (four) functions of land (tenure, value, use and development) as the main core of its organizational management in managing land as a valuable resource. The land policy is including those four aspects as a basis to achieve the goal of actualization of trusted and world standard service on spatial planning and land management for the community. The paradigm is formulated as a policy to manage land and spatial affairs – where the land tenure and ownership arrangements represent the function of ‘Land Tenure’, land appraisal and development represents ‘Land Value’ and ‘Land Development’, while the ‘Land Use’ function is represented by spatial planning and planning. The adoption of Land Management Paradigm is meant to actualize the modern land administration in Indonesia.

The prominent thing on the implementation of Land Management Paradigm is the certain information related with the parcels. Assured products require a process to be conducted as efficient and effective as possible – and technology is playing such an important role to achieve it. Declaring that ‘Digital Transformation in the Land Sector’ as one of their agenda to improve the services of land and spatial planning, Indonesia expected that the improvement can also boost the economy.

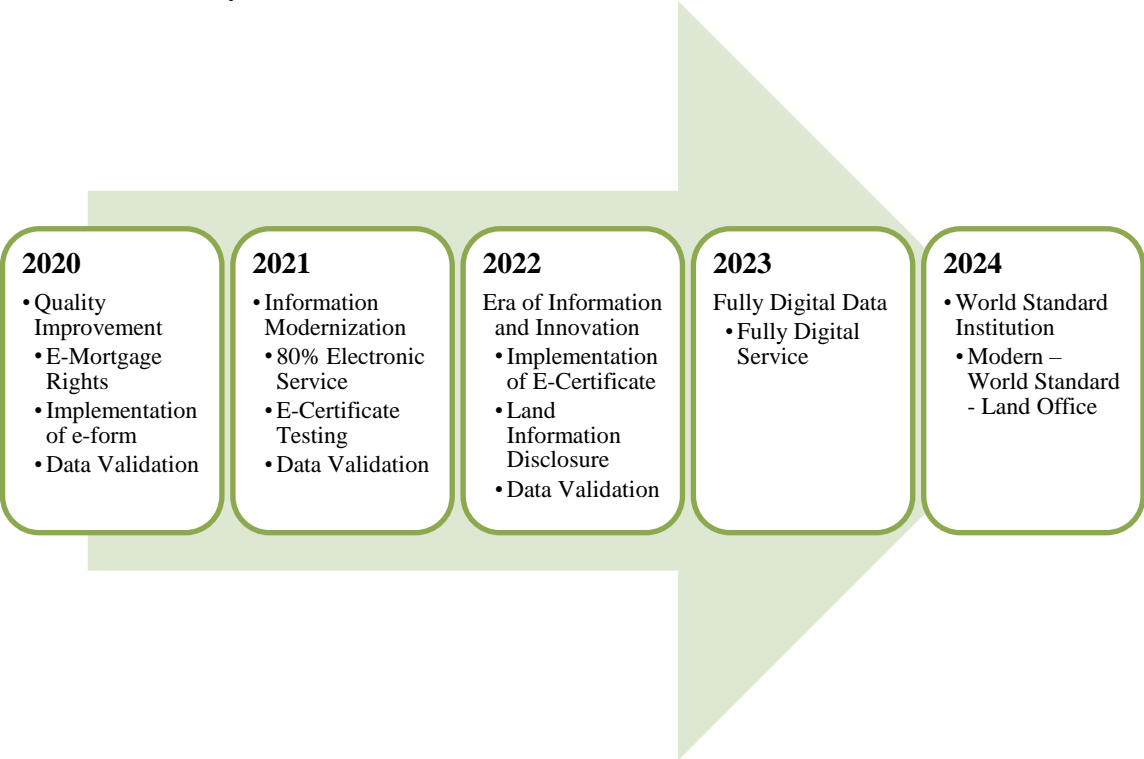


Figure 1. Digital Transformation Roadmap of Indonesia in the land sector

Ministry of Agrarian Affairs and Spatial Planning/National Land Agency (ATR/BPN) as the institution who have the responsibility to organize the land and spatial planning affairs in Indonesia, described their digital transformation roadmap as can be seen on Figure 1. As what has been planned on the roadmap, the focus of the organization for the actualization of digital transformation specifically on the land sector was established. Supporting the goal, important aspects such as the organizational structure, legal instruments, technology infrastructure, human resources capacities, and also data infrastructure were analysed and prepared to anticipate the action.

## **2.1 Digital Transformation in the Land Sector**

As an irreversible change process based on the significant use of information and communication technology, digital transformation should provide added value for companies or corporations. Joko Widodo – the president of Indonesia – promoted digital services to the public with a program known as DiLan (Digital Serving). As a transformation program on digital land service, it was initiated to make the land services be possible to be accessed by the public electronically from anywhere and anytime – so that it will become effective, efficient, and transparent. There are two strategic goals related to land and spatial affairs that has concerns on digital transformation: (1) Optimizing land and spatial planning information services as the basis for state revenues in the context of self-financing; and (2) Realizing a modern service office that provides products, services and a land & spatial information centre electronically based on information technology.

The importance of digital transformation is clearly evident as it was mandatory for all the government agencies to provide services in a digital manner – so they can meet the public needs and not outdated at the same time. Currently, technology is rapidly changing almost every aspect of the humans' life: the way people move, communicate, and do transaction. Various applications provide features that enable faster, better and cheaper services, while the current generation also demands that interactions and transactions be carried out using technology. Imagine if this situation is not captured and followed up by a digital transformation program, it is possible that the services related to land and spatial affairs will be disruptive and lose its relevance, lose additional income from various opportunities (monetization of land services), and of course will get customer complaints for not being able to provide expected service (technology-based, fast, easy, flexible, and quality). In carrying out its digital transformation in the land sector, several strategies are implemented to be the keys to the success of its digital transformation: commitment of the leaders, clear and measurable roadmap, support and collaboration from the stakeholders, and also availability of the resources.

Representing commitment to the digital transformation in the land sector, the leaders of ATR/BPN emphasized his interest towards the action. The commitment was confirmed through the roadmap of the organization in digital transformation as can be seen in Figure 1. Year of 2020 was the initial year by starting to apply electronic signatures to all employees, and also implementing Electronic Mortgage Rights and digitizing/validating land data. 2021 was the year of digital service in which the addition of electronic services, namely electronic information e.g.: Land Checking, Letter for Land Registration Information (SKPT), and Land Value Zone. This roadmap will be continued until it reach the main target: to become the world

standard institution – marked by becoming one of the 40 countries on the Ease of Doing Business (EODB) ranking.

The stakeholders are playing an important role as the key of success on the digital transformation in the land sector. It is possible to conduct the digital transformation without support and collaboration from all stakeholders – including from the government agencies/ ministries, private parties, local government, and also the public itself as the customers. For example, the support of private stakeholders in the E-Mortgage service where financial services – the banks, are directly involved in the use of the E-Mortgage system, from registration to the issuance of the E-Mortgage. In addition to this, the collaboration in the land sector has been established: with 431 Local Governments regarding data integration of Land and Building Rights Acquisition Fees (called BPHTB) with the Directorate General of Taxes, with the Ministry of Finance regarding income tax (PPH) data integration, with National Cyber and Code Agency (BSSN) regarding the use of electronic signatures, and the Ministry of Home Affairs regarding demographic data integration.

The last aspect – availability of resources, consists of several components including human resources. It is unavoidable that digital transformation requires competent human resources, therefore there is an urgency to prepare a competent human resource in the land sector. The scope of human resources development is the character, professionalism, and competency to build a remarkable human resource – which will be implemented to actualize the work program for the digitalization transformation in the land sector.

Actualizing digital transformation in the land sector, the current agenda as mentioned in the roadmap is carrying out validation and acceleration on data collection. In the future, all land parcels data that have been collected in the database and become the largest land data in Indonesia are expected to make it easier for to serve the community in a well, fast, efficient, transparent and safe manner. The land parcel data collected in the system will be built in the existing geospatial database, where each land parcel will be integrated with textual attributes that not only represent the subject of the land parcel (rights), but also restrictions and responsibilities of those land parcels. With the availability of valid and complete land parcel data in all regions of Indonesia, ease of data interoperability both on a national and global scale will be achieved. In practical terms, the realization of a land-based basic layer will provide benefits, including: (1) Ease of providing good, fast, efficient, transparent and safe land services; (2) Ease of data interoperability with stakeholders and other data resources; (3) The increased value of information generated through data integration with multiple sources; and (4) Obtaining income from managed information; and Efficiency in budget planning and coordination.

## **2.2 Indonesian Land Policy During COVID-19 Pandemic**

As the initial official action to respond COVID-19 pandemic, the government of Indonesia established the committee to handle the disease case and recovery in the early of March 2020 as stipulated in Republic of Indonesia (2020). Handling the disease, the government did not lockdown the country but restricted the social activity. Whilst, aiming at recovering the affected economy, the government took action on logistic support, electricity subsidy, tax relief,

financial stimulus and credit restructuring (Republic of Indonesia, 2021). In the land sector, the first impacted aspect was the fact that the land services – which was normally be taken out physically, then restricted to be taken out physically. The number of the services were started to be reduced in some land offices – or should be stopped at all, due to some restrictions for the disease prevention. What made it even worse, it was still uncertain when the pandemic would end.

Supporting the government to break the chain of COVID-19, several policies in the land sector have been implemented. These policies were aimed at regulating the system internally and embracing stakeholders to run in line with the government policies – specially to maintain and improve economic stability in Indonesia. Some of the policies that have been implemented are:

1. Optimizing the use of technology in the implementation of the land sector activities e.g., massive e-office implementation within the organization, increase human resource capacity by implementing online learning and webinars through the Learning Management System application, conduct virtual land acquisition implementation evaluation meetings for toll roads and dams, increase public outreach through organizing virtual exhibitions, etc;
2. Developing online and offline combinations, especially in the realization of National Strategic Projects (PSN) such as Agrarian Reform and Complete-Systematic Land Registration (PTSL);
3. Actively supports the government's efforts to break the COVID-19 chain by implementing strict health protocols in offline events, limiting the number of visitors at the land office, routine health tests for COVID-19 screening, and being active in vaccine delivery programs;
4. Participating in driving the nation's economy in the midst of a pandemic, including through the realization of the accelerated procurement of goods and services in 2021 with Pre-DIPA in the third quarter of 2020;
5. Encouraging household consumption of rural communities as well as being integrated with increased production of agricultural goods through the use of abandoned land, particularly through the Agrarian Reform program. Optimizing the Agrarian Reform target in 2021 by carrying out the legalization of community assets accompanied by Civil Society Organizations (CSOs) or Non-Governmental Organizations (NGOs);
6. Support accelerated development to assist economic recovery and maintain economic growth by encouraging land acquisition for infrastructure. Accelerated land acquisition is expected to support improved economic growth during the COVID-19 pandemic;
7. Encouraging the growth of the property sector by integrating spatial planning, both in air, land, sea and in the earth, which is called a Spatial Plan (RTR) product.

### **2.3 Digital Innovation as a Response to COVID-19 Pandemic**

Looking back to the beginning of COVID-19 pandemic, it happened right when the digital transformation roadmap in the land sector was initially started. As a response to that, not only the timeline was needed to be adjusted but most methodologies to achieve the goal should also be modified. The first 3 months of the pandemic, the unclear situation and the rapid spreading

of the disease made some offices implemented the work-from-home system, some of the land offices even shut down their services cause most of the officers were infected with COVID-19. Such working situation was slowing down the progress of the digital transformation that was already planned in the beginning.

As a response to the situation and along with the government’s policies on COVID-19 pandemic that has been dynamically changing, the actions in the land sector then also adjusted. Most of the adjustment involved the role of technology and digital innovation. Due to restriction on physical contact, meetings were conducted online. The huge transformation regarding land services as an adaptive action to the COVID-19 pandemic was a massive development and digital innovation in public service 4.0. Below are the highlighted digital innovation in the land sector that has been very massively taken out as a response to COVID-19 pandemic.

### 2.3.1 Electronic Land Services

As mentioned in Republic of Indonesia (2020), to increase land services and the implementation of spatial planning several indicators are manifested, including: (1) large coverage of certified land parcels that are digitized and well georeferenced; and (2) number of regional offices and land office that implement digital-based modern land services. The policy, which has been stated in Presidential Regulation Number 86 of 2020, was followed up by implementing Electronic Land Services to support land services in the new normal era and implementing land service initiatives.

Electronic Land Services that have been implemented by Ministry of Agrarian Affairs and Spatial Planning (2020) are 'Electronic Mortgage Services' and 'Electronic Land Information Services' such as the land value zone, land certificate checking, and letter of land registration information. Based on data obtained in 2021, the percentage of land services carried out electronically was increasing. In 2021, 55.5% of land services were carried out electronically, increased by 31.3% from 2020. All electronic mortgage services and information boosted in 2021, the highest one was the E-Land Information Services for the Land Value Zone (called ZNT) by 253.4% (See Figure 2).

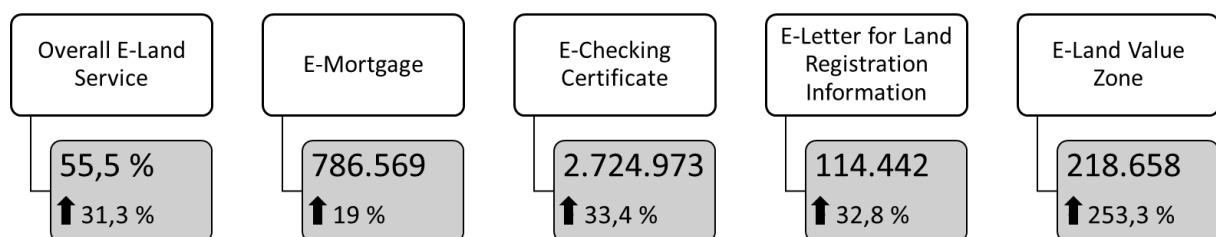


Figure 2. Statistics of Electronic Land Services in 2021

As an impact on electronic services, there is a requirement on the material: a qualified land data. In line with the roadmap where 2021 was declared to be the year of data quality, data validation activities were taken into action to support electronic services. The improvement progress was reflected by the increasing percentage of quality data in 2021 from the previous year (2020). Based on the existing data, number of electronic service land books – from the electronic services, increased by 238.1% compared to 2020. It showed that public interest in electronic

services was getting bigger. In terms of land book validation, there was a rise by 4.6%, parcel validation was 8%, and electronically ready data, namely the condition where land and parcel books were integrated, mapped and valid, went up to 9.9%.

Right now, the 4 electronic services in the land sector are: E-Mortgage, E-Checking for Land Certificate, E-Letter of Land Registration Information and E-Land Value Zone. The digital service for mortgage has been conducted through online browser where the authorized party – bank, can make the request for the service through the internet browser application link: <https://docs.atrbpn.go.id/htel/bank>. Until March 2022, 1,499,978 Certificates has been carried out through E-Mortgage in Indonesia – issued by the 480 Land Office, with an estimated value of IDR 1.243 trillion or USD 86,7 billion.

On the other hand, the E-Checking for Land Certificate can be carried out through the notary as the partner of the government in the land sector – by using the working partner application (<https://mitra.atrbpn.go.id>). The last two services of electronic information: Land Value Zone and E-Letter of Land Registration Information can be personally requested by users through ‘Loketku’ and ‘Sentuh Tanahku’ Applications.

### 2.3.2 Mobile Application Sentuh Tanahku (Touch My Land – App)

Along with technology development, public demands for the easiness to access information – including land information. Responding to the challenge, an application was launched: ‘Sentuh Tanahku’. It was designed to be a super app for the land sector needs, and it can be downloaded easily for free via Google Play Store or Apple Store. Although the application was launched prior to the pandemic, but it gained more popularity since the pandemic. By using Sentuh Tanahku, public can easily access information about the land parcel, for example before the transaction of either buying or selling land, people can access the application to get any information about the targeted land. It eases the buying-selling transaction in a way public can share the information regarding certified parcels to other fellow users. Other instant function is to find out the location of the land that can be shown on the application interface. Through the application, public can also find out the requirements for land transfer or other land service information, such as the requirements, processing time and costs. By 2021, Sentuh Tanahku also included a new feature for participation mapping for the unregistered parcels. The public's interest towards ‘Sentuh Tanahku’ has been increasing annually, currently there are 60,359 verified users by the end of 2021.

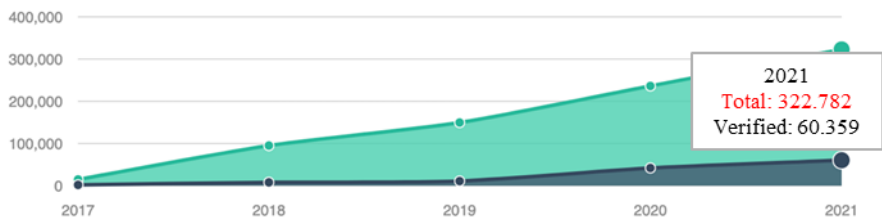


Figure 3. Number of sentuh tanahku user annually



### 2.3.3 Loketku (My Counter – App)

The Ministry of ATR/BPN continues to strive to provide easy services to the community by promoting service innovations, Loketku is one of them. Loketku is a website-based application which is an online land self-service service for the community. The public can register the application file for land services throughout Indonesia from home. This Loketku service makes it easier for people who need services from the Land Office, people can determine their own schedule and determine what are the requirements needed, so that the necessary documents can be prepared. This Loketku application was launched on September 24, 2021 or to coincide with the 61st Anniversary of Law Number 5 of 1960 concerning Basic Agrarian Regulations (UUPA).

### 2.3.4 Land Certificate Virtual Handover

Unlike the other innovation which was meant to deliver services online, the land certificate virtual handover aimed to deliver the product of the land services: the land certificate. The land registration process output in Indonesia is a land certificate which include the information of land as an object, the name or the subject of the land, and the related attributes. For the land registration conducted sporadically, the product will be delivered individually. On the other hand, certificates from systematic procedure (so called PTSL) which was held by the government has been handed out physically in a group – by gathering all the certificate recipient in the same place and hand out the certificate.

During the early months of COVID-19 pandemic, the handout for land certificates was delayed. This affected indirectly for the economy since the land certificates are one of the important capitals in running business. To support the government goal for economy recovery during COVID-19 pandemic, the handout for land certificates that used to be done physically – then conducted in a combination both online and offline. Where the certificates are received in an offline manner by the land officers (the land certificates recipient are summoned to the designated location and time), but the hand-out of the land certificates are done symbolically by the President as the icon of the nation – or represented by the minister (see Figure 4).



Figure 4. Land Certificate Virtual Handover by the President of Indonesia (Land Office of Tanah Laut, 2021)

### 3. EVALUATION: REVIEW ON THE DIGITAL INNOVATIONS

Implementation of digital innovations as a response to the occurrence of COVID-19 pandemic are indeed in order to fulfil the digital transformation programs as established on the roadmap. However, with all the limitations that arise, its emergence which requires a lot of adjustments has actually helped a lot as a solution to run the land sector programs in the difficult situation. For example, the E-Land services, Sentuh Tanahku and Loketku – the innovations which previously carried out manually through physical contact between customers and land office officers. With the emergence of these digital services and applications, there are conveniences that allow customers to carry out several land services online – there is no need to risk transmitting or contracting COVID-19.

Another example is the land certificate virtual handout – a ceremonial event that used to be held directly. Although the ceremonial event seems to be less important for some people, but the impact of the delay during the first months of the pandemic was quite big. With the delay in submitting certificates due to the COVID-19 pandemic in early 2020, it is indirectly postponing some part of the economy. For this reason, the innovation of handing out the land certificates virtually – where the President as the state icon, handing out the land certificates to the community – in an online manner (through video conference application), is considered a form of step to realize economic stimulus. Because by receiving a certificate, it is hoped that the guarantee of legal certainty will provide an opportunity to do business – then trigger the financial activity and boost the economy.

The readiness level assessment for the digital transformation of land services in Indonesia by Kusmiarto et al., (2021) showed that it still needs improvement, specifically in the core sections which are technology infrastructure, legislation and regulation, and data infrastructure, strategies, and governance. Therefore, an evaluation to assess the innovation cases in this paper as part of the digital transformation in the land sector, was conducted using the fit-for-purpose elements. The fit-for-purpose approach was chosen to assess the innovations because the approach concept fits the idea of modernization land administration, where it should meet the public's needs and open for any improvement. Considering the fact that the designated innovations are not covering the whole aspects of a land administration system, an adjustment to the elements of fit-for-purpose was made with the relevancy of 2 criteria: (1) accessible; and (2) transparent. The 2 criteria are chosen as it was mentioned in the organization's strategic goal that to achieve the goal of becoming the world standard organization, the land sector services should be both accessible and also transparent. In the end, the 2 criteria are considered to be compatible with the 3 fit-for-purpose elements: participatory, reliable, and upgradeable.

Participatory – the first element, is included as it represented the accessible criteria. Level of participation in capturing and using data to ensure the community support is considered to be in line with the goal of having an accessible digital innovation. The second element – reliable, is defined to already meet the criteria for a transparent innovation – where the authoritative and up-to-date data or information shared throughout the innovation are meant to support the information disclosure (be transparent regarding the land data and information). As the last element, upgradeable is playing an important part of the evaluation component. To achieve the

'accessible' criteria, a digital innovation should be open for an incremental improvement following the society needs – thus the upgradeable element is a requirement.

The evaluation is taken by reviewing the digital services innovation in the land sector to respond the COVID-19 pandemic. As elaborated before, there are 4 official digital innovation related to land services during COVID-19 pandemic: Electronic Land Service, Sentuh Tanahku, Loketku, and Land Certificate Virtual Handover. However, since the Land Certificate Virtual Handover has a different characteristic of classification with the other 3 innovations, it was not included on the further review. Thus only 3 applications: Electronic Land Service, Sentuh Tanahku, Loketku, which were analysed using the 3 elements of fit-for-purpose (participatory, reliable, and upgradeable). The result of the investigation using statistical data of the applications from the internal source of the Ministry of Agrarian Affairs and Spatial Planning and also literature review is presented in the following section.

### 3.1 Participatory

Exploring the participatory element for the first innovation, the Electronic Land Services, it is known that there was an increasing number on Electronic Land Services carried out in 2021 – compared to the initial implemented year in 2020. The current Electronic Land Services involved different stakeholders: E-Mortgage involves the bank, E-Checking for land certificate targets the notary, and the last two services (Land Value Zone and E-Letter of Land Registration Information) are requested by the public as an individual customer. For the E-Mortgage, the banks should log themselves to make a request service on mortgage through the application: <https://htel.atrbpn.go.id/Account/Index>. Prior to E-Mortgage, the checking for land certificate is also possible to be carried out in an online manner where the notary make request on application for government's partner in the land sector: <https://mitra.atrbpn.go.id/>. The other 2 land information services – Land Value Zone and E-Letter of Land Registration Information can be applied by anyone using Sentuh Tanahku, with a requirement to install and register first.

The increase also happens for Sentuh Tanahku in terms of public's interest where there were 60,359 verified users by the end of 2021. Public can access the application after download them in the smartphone and register. In Sentuh Tanahku, the participatory level is specifically existed on the features menu. It allows the participation of people to contribute in giving information attributes in the 'plotted parcel' feature. The participatory mapping feature was added in the menu last year (2021), and from 43.567 requests for parcel validation through Sentuh Tanaku, 34% of them were already approved while 13% were rejected. Same with Sentuh Tanahku, Loketku application is also open for public. It can be accessed through Sentuh Tanahku or the browser (<https://loketku.atrbpn.go.id/>), both requires the users to log in using the account that already registered in Sentuh Tanahku. Currently, there are 5.043 requests for land services that has been made using Loketku Application.

As to the participatory element, Sentuh Tanahku is making the specific room for public participation where people can not only request for service but also contribute on providing data through 'parcel validation' feature. Not specifically mention the role for participation as their feature menu, the Electronic Land Services and Loketku are also demanding for public's contribution - where all the stakeholders (Banks, Notary, customers) were asked to collaborate on making the request in an online manner.

### **3.2 Reliable**

The review for the second element – reliable, exposed that for all the current Electronic Land Services (E-Mortgage, E-Checking for land certificate, Land Value Zone and E-Letter of Land Registration Information) requires for valid information on land parcels. At present, there are ± 39 million parcels (50,13%) already validated from around 79 million land parcels – it is not yet covering the whole existing data. Along with the requirement of validated land data and information, Sentuh Tanahku which offers some features related with land service: information on the requested land application, location of the parcel, plotted parcel, land services information, announcements of PTSL and lost certificates – also needs to be supported by a validated data. A small different with Loketku application, it assists the customer to provide the information of the land services, required documents for the land services and the available schedule for the appointments with the land offices can be known using this application – this information is already provided transparently following the standard and operation procedure of the land services.

### **3.3 Upgradeable**

The last element – upgradeable is used to examine whether the innovations already included the possibility for an incremental improvement. The current electronic services in the land sector are meant for different stakeholder and user, therefore each of them is now operating in a separate system. Considering that it is just the initial year of Electronic Land Services implementation, any development of the existing systems can still be improved while anticipating for other land services to be conducted digitally sooner. Reviewing Sentuh Tanahku, looking back at the version history where 4 years ago this application was firstly started, the application has been upgrading 20 times (the current version is 3.2.13). Feature of information regarding the lost certificates was added last year. An integration with other innovation - Loketku, also happened as an upgrading, and a feature for participatory mapping was also included at the same year. For Loketku, as it was meant to simplify the process of making appointment to visit land office. The current function can still be improved, especially to transform all other services which require physical involvement (face-to-face meeting) to be facilitated through Loketku.

## **4. DISCUSSION**

From the evaluation towards the digital innovations as the COVID-19 pandemic response in the land sector, the fact that the innovations are just in the initial years of electronic services implementation for the land sector, the improvements are still needed in some aspects. They will be possibly executed along with the efforts on transforming the other land services – specially those which are still conducted in a conventional manner, considering the digital transformation roadmap in the land sector targeting the fully digital service be fulfilled by 2023.

Speaking of the increasing number of users/customers for either E-Land Services or Sentuh Tanahku, it shows not only the rise of public interest in electronic land services, but also the involvement of all the stakeholders towards the application. The case on E-Mortgage, the huge gap differences between mortgage service conducted manually and digitally can be caused by

two things: the ease of use for the digital service or the happening of COVID-19 pandemic – however, further research on the case is needed to find out the exact cause

On the aspect of reliability, the fact that the currently validated land data (ready to use for electronic service) are still half of the whole existing data (50,13%), means that it still needs improvement regarding data validation. The upgradeable element evaluation describes that room for improvement are existed in all of the innovations. The feature of information on lost land certificates was added last year as an adjustment to the facilitate the announcement of such important message – especially during pandemic where people do not visit the land office really often.

## 5. CONCLUSION

Through the evaluation and discussion, the aim of the paper which is to outline the relation of COVID-19 pandemic to the modernization of land administration in Indonesia is achieved. The modernization of land administration of Indonesia which is represented using the fit-for-purpose elements (participatory, reliable, and upgradeable) shows significant relation, where constraints happened during COVID-19 pandemic such as restrictions for physical contacts which led to limitation on movement and restrictions for visiting the land offices, were addressed by the innovation of such digital services in the land sector (Electronic Land Service, Sentuh Tanahku, Loketku, and Land Certificate Virtual Handover). The fact that the land services is targeted to be actualized by 2023 – as mentioned in the digital transformation roadmap in the land sector, the homework to be fixed immediately is to provide the complete land data validation for the whole country of Indonesia.

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