Land Valuation Survey in Indonesia

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SUMMARY

Land Valuation in Indonesia has been recognized earlier for taxation. Ministry of Finance through its Land Tax Directorate has been working with the valuation for nearly 100 millions parcels till today. However, since the fiscal cadastral system is intended for taxation purposes, there is a policy not to tax too much to the public. The results do not yet reflect the fair value. There is always a long debate whether to refer to the tax value for other purposes such as land expropriation, state assets valuation, and so on.

In fact, there are emerging demands to have a land valuation that more reflect the fair value. The real value itself should also comprehensively reflect the market (financial) value and/or non market (non-financial) value embedded in a legal land objects. The legal land objects will include a piece of land or and legally defined which has a certain economic function. This fair value, in turn, will be beneficial for all society to support the sustainable development as a reference for land market, land asset management, land tax and fees, land policy making and other decision related to land.

This paper will elaborate some discussion beginning with present valuation methods, change over to more market oriented methods, market data collection, market valuation, non-market valuation, and lesson learned from pilot projects. These works are supported by IPSLA (Institutional Partnership for Strengthening Land Administration) in Indonesia, a collaborative program funded by Sida, Sweden and the Government of Indonesia. IPSLA is a project for institutional co-operation between Badan Pertanahan Nasional (BPN), the National Land Agency in Indonesia and the Swedish sister-organization Lantmateriet. One of the components in the co-operation program is development of methods for land valuation in Indonesia.

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BACKGROUND

Land Valuation in Indonesia has been recognized earlier primarily for taxation. Ministry of Finance through its Land Tax Directorate has been working the valuation for nearly 100 millions parcels till today. All the data are stored in their fiscal cadastre system. However, since the value recorded in the fiscal cadastral system is intended for the taxation purposes, there is a policy not to tax too much to the public. The results do not yet reflect the fair value. There is always a long debate whether to refer to the tax value for other purposes such as land expropriation.

PURPOSES WITH LAND VALUATION IN INDONESIA

Based on that background, there is a need to have a land valuation that more reflect the fair value than the present value determined for taxation, NJOP. The fair value is the value that is the most probable value to the real value of an object. The real value itself should also comprehensively reflect the market (financial) value and/or non market (financial) value embedded in a legal land objects. The legal land objects will include a piece of land or and legally defined area which has a certain economic function. This fair value, in turn, will be beneficial for all society to support the sustainable development as a reference for land market, land asset management, land tax and fees, land policy making and other decision related to land.

It has to be decided when "fair" value is the same as market value and when a non market value shall be used. Non market values may mostly be used where the market is not developed. It shall be possible to take environmental, ecological and cultural factors into consideration when the non market value is determined. One purpose with the non market valuation is to protect areas from exploitation that may give profits in the short run but also contribute to environmental problems in the long run.

PRESENT VALUATION METHODS

In order to fulfill the urgent need to have the fair land value, BPN-RI focuses on mass valuation methods to have all land valued in the short run. This mass valuation involves the data collection, data processing and information presentation on the digital map.
The market valuation method refers to the International Valuation Standards, IVS. On the other hands, the economic resource valuation method is not covered by the IVS.

The problem to meet the standard is the market data itself as a required basis for market valuation. The land market is not transparent. In Indonesia, the market data of transaction

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price is only known by the parties involved in the transaction. Due to avoid the transaction tax which covers 5% for each party of the sales price, people intend to hide the transaction price. Hence, the valuer in most cases asks the opinion of the people who are involved in the transaction or the people who are expert in land value. Such kind of data might degrade the reliability of the data.

In the first year of conducting the task, BPN has collected approximately 8000 market data which cover the area of 200.000 Ha. However there are some problems in processing the data. The first problem is the data adjustment. This adjustment would cover the building adjustment to get the land value, time adjustment, type of right adjustment, type of data adjustment, and other adjustment. There is no valid data to support this adjustment due to the lack of experience of the people working for valuation. The other problem is the value mapping. Since the data are collected in the grid basis that cover 500 m x 500 m area, the data do not reflect the existing value zone. There is a difficulty in processing the data to form the value zone automatically as long as the quality of market data is not sufficient. Therefore, the value zone produced might be different with the real value zone in the field.

CHANGE OVER TO MORE MARKET ORIENTED METHODS

The valuation is a marriage between science and art. Science itself might fail to form the valuation zone. The art component has not been included in the previous project due to the lack of confidence doing it. However the application of art component can be minimized by using enough reliable data for data processing. Consequently, there is a must to improve the methodology for data collection and data processing in order to have reliable result.

The improvement of the data collection methodology should first of all cover how to collect data. The standard for the valid data must be established. The true transaction price from the party is the most valid data, followed by the listing price and the report from the other market valuation in the last place. Opinion from the owner of a piece of land should be avoided, because they are not the component of land market unless the owner wants to sell his/her land. The improvement of data processing methodology to produce the land value zone should also been made. If in the previous methodology, the data are used to form the land value zone, the order should be reversed. The valuer should determine a preliminary land value zone in advance by surveying the field and collect the data from the appropriate sources. Once the land value zone boundaries have been determined, the valuer then could find the reliable data to get the value for each zone. In reality creation of value zones is an iterative work. The valuer starts with a preliminary division in value zones to collect market data covering areas with different value levels. Analysis of collected market data may result in changes in zoning or prove that the first preliminary division was correct.

In the process to determine land values in Indonesia the Swedish experts will contribute with advises and experiences based on the same type of activity in Sweden. Some mistakes you have to do yourself. But if you can learn from others experiences and mistakes you may avoid some mistakes and reach the goal faster.

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The goal for BPN is to develop a mass valuation system based on modern technique. To reach that goal there is a need to put several sub-systems in place.

MARKET DATA COLLECTION

There is no other way instead of field survey to get the market data in Indonesia. This is mainly due to no such data base is developed. The surveyor/valuer has to do the door knocking in order to get the relevant data for the survey. The survey itself could take more than 60% of the time consumed for overall project. To minimize such devastating effort, a land transaction data base should be developed and maintained. BPN-RI as the official agency to register the land transaction should collect the information of recent (last 2 years) transactions and present it in the spatial way.

The mass valuation of land started with some pilot projects. The first approach for market data collection was a bit technical and more concentrated on quantity than quality. A lesson learnt is that the methods for market data collection have to be refined. There are different types of market data and mostly a need to combine the different types to get a sufficient number of observations.

Sales

The best type of market data is real transactions with real prices. Sales can be captured from the Land book or from contracts presented at BPN-office to register changed ownership. The problem with stated prices is already mentioned. It is that the parties cheat with the stated price to avoid taxes and fees. Present tax-system does not contribute to a transparent market.
Only few transactions can provide the true stated prices. They include transaction between companies and developers (company) who just sold their land in the primary market. There are also possibilites to have realiable data. Most top branded brokers in Indonesia actually have the good records of transaction. Now, BPN look the possibilities to encourage them to provide their data to BPN. One possibility is that staff at the local BPN-office systematically ask property owners about real price when they come to register the purchase. But you would still not know if the received information is reliable due to their worries being investigated. Some benchmarking may be needed to sort out transactions with obvious false prices. For useful purchases there is a need to complete the information with some data or characteristics for the property.

Asked prices

The number of sales is limited in many areas. That means other types of market data has to be collected. If there are properties for sale it is possible to work with asked prices. The source may be advertisements from Internet or papers. In urban areas with a developed market it is rather common with advertments to market properties for sale. In rural areas there may be a need of interviews to receive information about properties for sale. A problem is that asked price is often higher than final price after negotiations. Therefore the price in observations

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based on asked price shall be deducted in some way. There is a need to compare asked price with final price after negotiations to see some pattern for how to deduct the asked price.

Expert Knowledge

A third possibility is to ask local experts like developers, brokers and head of village about values to receive additional market data. For the first stage of the work with market data collection in a certain area it is very useful to interview local experts to create the first preliminary division in value zones. In localities where the land market and also the credit market is developed properties are valued for mortgages. Another idea is to make it mandatory for banks to deliver information from valuation reports for mortgages to BPN.

Priority of Type of Market Data

The number of reliable sales is limited. Therefore other types of market data also have to be used. But some types of market data are better than others. The priority can be like this.

1) Open market sale with real price
2) Property for sale with asked price
3) Valuation report from expert
4) Local experts opinion
5) Property owners opinion
6) NJOP (assessed value)

There are mainly three problems with the sales. The first is all sales of unregistered land. If the buyer finds it to costly or troublesome to register his purchase he will not do it. The only way to find information about a sale that is not registered is to go in field. The second problem with a sale is to find out if it is an open market sale or not. Sales that have not taken place in the open market shall be marked to have a possibility to sort them out before the analyses. The third problem is to find the real price. Information about the real price is probably best captured from the owner or from the neighbourhood, for example from head of village. A suspicious owner may sometimes give false information about the price.

The second type of market data comes from properties that are for sale. In some areas where the market is active it is rather easy to collect information about asked prices from advertisments.

Market data collection in Indonesia is very time-consuming. Methods for efficient data collection have to be refined all the time to save time and costs and to improve quality of collected data.

Market data collection is one type of activity where it would be useful with developed collaboration between BPN and the taxation authority, PBB. In principle these two state authorities have decided to co-operate but in practise much more can be done to avoid

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duplication of work. Lack of collaboration between state authorities is not unique for Indonesia. Co-operation may exist at the local level but there is a need of standards that facilitates exchange of information.

SYSTEMATIC COLLECTION OF MARKET DATA

Forms

Special forms have been developed for market data collection. The forms have already been revised based on the experiences from the first valuation projects. For example type of market data shall be included in the form (sale/asked price/experts opinion).

An estimation of what part of the price belongs to the building if there is a building shall also be carried through at an early stage. If most of the price belongs to the building there is no idea to use the sale for land valuation. The form should be marked "high part building value" and sorted out. It is not useful to analyze and adjust purchases with building values exceeding 20 percent of total value. A model including a cost approach tend to give less accurate values or adjusted prices than use of the comparison approach or the income capitalization approach will do. However, there should be a strategy to collect the data in the urban area where most of the land are covered by building.

Identity of an Observation

The intention is to build a separate database for market data (sales and other market observations). So far data is stored in Excel. A central database is not in operation yet.
Every observation must have a unique identity. The same land parcel can be sold several times but it is a new sale every time. It must be possible to make a selection from the database easily to work with. Therefore there is a need of codes for province and local area for each observation if they shall be stored in a central database.

Standardisation of Price

To compare prices for different properties there is a need to standardise them. For land parcels price per m^2 is the most common way to standardise.

Time Factor

The point of time for the valuation is 31 December the year of valuation. Prices for sales that have taken place earlier must be adjusted according to price trends. There is a need of standardised methods for determination of price trends and price development factors.

Legal Status Factor

The legal status of ownership varies for the observations. If the sold property is not freehold the price shall be deducted with the costs to transfer it to freehold.

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Type of Price Factor

Asked price is mostly higher than real price. Therefore the price in observations based on asked price shall be deducted in some way.

MARKET VALUATION

Market Valuation is the ultimate goal in providing the information of land value. The market valuation in Indonesia is intended to provide the land value information for the purpose of land transaction, investment, land expropriation and land fees and taxes. For the purpose of general information the mass market valuation is adequate. However, for the special purpose an individual valuation is necessary to have the more accurate result.
For the mass valuation of land there is also a need to work more with definitions. For example when shall the value be determined in accordance with present land use and when shall the base for the valuation be highest and best use? The system for land use planning is not very strict in Indonesia and that causes problems for the valuation. The sales data often reflect the "speculated" highest and best use not the legal one.

NON MARKET VALUATION

However, nor all the land either the other legal land object have the market value. Some land or natural resources zone might have never been transacted in the market. One example is the natural resources that provide oxygen and habitat for human life. The other example is the historical site that has the historical value for the society. In some cases those zone above have also another economic tourism value. They are valuable but there is no market data of transaction for such objects. Therefore, the non market valuation approach should be applied for those objects.

STANDARD OPERATE PROCEDURES FOR LAND VALUATION

BPN has produced a standard operate procedure (SOP) for land value maps and one for areas for economic valuation. The SOP's should be used both for BPN's own internal organisation and for external valuers as guidelines for the activities in the processes.

Specification and skill demands for valuers have been made both for internal and external valuers. The minimum education level is bachelor's degree if you are employed by BPN. For external there is compulsory to have a license edited from BPN. Ministry of Finance already has the authority to give these licenses to valuers but BPN can work with additional requirements depending of the objectives for the valuation situation.

The processing of spatial data was formerly handled with the interpolation method of contour. However, this method was found ineffective in the early stage of spatial data processing. The value zone generated does not reflect the real value zone. As advised by the Swedish experts,

the preliminary value zone is defined. Some re-survey to define the preliminary zone were then conducted. However, due to the 500m x 500 m grid data distribution not all the defined zone have the adequate number of data. Hence, some value zone might have the value that is generated from the "not enough" statistic analysis. This is only one available method, and in the future it must be examined if there are other methods that can be appropriate to use.

It has to be clarified if the land value printed and coloured on the maps shall be with or without any investments. It must be an accurate definition of what is included in the land value, because the market data consider current use and could be anything from paddy fields to parcels with houses to be demolished.

The market data used for mass valuation and individual valuation shall be adjusted due to the normative purchase. The ranges given in the SOP's should be looked over to get even better adjustments. It would even be taken into consideration if it is enough to have three different adjustments for mass valuation and six for individual valuation.

A strategy for storing data must be launched. For instance it is very important that market data is stored in a certain data base, where the data can be cleaned, adjusted and sorted out if necessary.

GIS

GIS is a very useful tool for presentations and analysis in connection with the land valuation project. The goal is to develop and implement such a tool. But to start with there is a need to form a strategy for development of a GIS. Some problems that have to be dealt with have been identified. For some of the problems mentioned below solutions are already on the way. Some others that are more complex may take longer time to solve.

To run a GIS there is a need to have access to staff with good knowledge in GIS. BPN-RI needs to have some skilled staff in their own department but also possibility to use experts from other departments in BPN and also from other organizations. More cooperation between BPN units is needed. GIS is by its nature cross organisational and the same problems will probably occur in different organisational units. A GIS network for the staff using GIS in BPN is a good idea. This network can share experiences, ideas, data, etc. Developed cooperation with other agencies is also needed. With printed maps the demarcation between different map making and using agencies was clear. When using GIS these boundaries will be fuzzier. There is a lot to be gained from more cooperation between agencies such as BPN, BAKOSURTANAL (the small scale mapping authority), Directorate General of Tax, the forest agencies etc. This cooperation may include common coding systems, sharing of data, sharing of imagery served as background data, training, experience of GIS, etc. For example PBB and BPN have different identifiers for the cadastral units and different ways of defining. One problem is that data storage today is very local. Data probably exist in different versions on many different computers. A common map server (file based) with a central storage of essential data (base map, ground control points, cadastral information, thematic data) would be very good and give access to updated maps for more staff.

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For historic reasons there are many different brands of GIS/mapping software in BPN. In the long run it will be hard to maintain the human resources and share tools in such a situation. But before any strategy can be developed, a needs assessment of the use of GIS in BPN must be undertaken.

Images and small scale data may be used to give a smaller scale map in between the areas with large scale maps. These data should also be stored on common servers. Small scale data is produced in other agencies and should, if possible, be bought from them.

Small Scale Applications.

In GIS you frequently move between large and small scales. There are different solutions how to display the whole country or larger parts of it. Sometimes the lat-long coordinates are displayed as a graticule which is reasonably good since Indonesia is close to the equator, but still the scale will vary in the map and the areas measured will not be totally right. In some case a central TM3-zone is chosen as the nation-wide projection. This is a very interesting approach, but since the scale factor and false easting is the original, it leads to large errors far away from the central meridian and negative coordinates. It would be quite simple to adjust the values of one central TM3 (or UTM-zone) to make an appropriate projection for the country. The mapping organisation BAKOSURTANAL may have useful experiences.

GIS provides a means for seamless and scale independent view of data. BPN traditionally use TM3° for map production. Using GIS will, in the long run, increase the need to look at data in other ways, for a kabupaten, province or the whole country without the map sheet boundaries. Therefore some thoughts must be given to how to store data. This is to some extent depending on which GIS software that is used. One possibility is to store all data in WGS84 lat-log and project it to the appropriate zone when needed.

EXAMPLES FROM PILOT PROJECTS

A number of land valuation projects have already been carried through in different parts of Indonesia. Lessons are learnt from each project and these lessons will be used to improve the work in coming projects. Below some of the projects are mentioned and also something about the result from each project.
Cilegon

Market data was collected according to a technical approach where the idea was to cover the whole area with observations in a grid. The need of quality of market data was underestimated. That means it was very difficult to analyze market data and to receive a proper result. Quality of market data is more important than quantity.
Malang and Bali (Denpasar)

The market is developed and it has been possible to collect reliable market data to create a land value map. However, due to originally designed to collect the data within the 500mx500m grid the market data collected is limited. When the resurvey was conducted to

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defined the presumed value zone, only 36% (Bali) and 42% (Malang) of value zone have more than 3 market data. Furthermore, only 55% (Bali) and 68% (Malang) of value zone have minimal number (2) of data for averaging. Unfortunately no resurvey to collect more market data was conducted due to budget limitation.

The benchmark used to sort the data out is the ratio between standar deviation and the zone mean value itself. The 30% ratio is set. The result shows that the average ratio is 11% in Bali and 14% in Malang which is shown that Bali market data is more reliable. However this methodology to verify the statistical results need to be tested and developed.

The land value map of both Malang and Bali are shown in the attachment. Every zone has its own value and shown in one of 8 (eight) different colour). However, there is no spatial indicator (colour or shade) that show map user the quality of the value zone.

It is intended to update the land value map every year. The existing land value map data will be combined with the sales data base within the fortcoming year. It is expected that the updated land value map every year has more reliable data and hence more accurate land value zone.

CONCLUSIONS

It is a challenge for BPN to start a project with mass valuation of land in Indonesia. Methods have to be developed for Indonesian conditions. Market data collection is more difficult in Indonesia than in many other countries. A non-transparent market has to be seen through.

There is a need of an extensive training program for all staff involved in land valuation. Training has to be combined with practice. Staffs involved in the valuation at the local level need support and guidance from the central level.

A prerequisite for market valuation is a working market. Methods have to be developed for valuation of land where the market is not developed yet.

There is a need for a strategy for a GIS for land valuation. Access to competence in GIS is necessary for development of such a tool. Data have to be organized in a proper way to facilitate spatial analyzes.

BIOGRAPHICAL NOTES

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