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VALUATION OF EX-MINING LANDS: THE PREFERRED METHODS

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Abstract:
Redevelopment of brownfield sites in Malaysia has been increasing over the years due to scarcity of land. The redevelopment of land is done to lands that no longer have their initial function such as ex-tin mining lands. Due to increase in redevelopment of ex-tin mining lands, government valuers carry out many valuations for land alienation purpose. However, discussion on valuation of ex-tin mining lands in Malaysia is very limited. Therefore, the objectives of this paper are to identify the factors that need to be taken into account in the valuation of ex-tin mining lands; and to determine the preferred methods of valuation for ex-tin mining lands. This paper adopts a qualitative approach by interviewing the experts and analysing the data using Atlas.ti to achieve the objectives.

Keywords: Valuation Methods, Factors Affecting Value, Ex-Tin Mining Land

1.0 INTRODUCTION

The mining industry was one of the leading industries in Malaysia back then. Our country produces minerals such as tin, coal, bauxite, gold, iron-ore, ilmenite and manganese**.** According to Yap (2007), it has been centuries since the mining of tin ore started. The first area in Malaysia to be discovered with tin ore was the Kinta Valley, the richest tin deposit in the world back then. Malaysia was the largest producer of tin in the world back then in 1985. In the early 80s, the minerals industry played an important role in the country's economy. However, in 1986, the price of minerals especially tin fluctuated too much making the industry no longer the main contributor to the country's economy. When the mineral extraction decreases, the mining area is closed and it will be abandoned. After the minerals have been extracted or the area abandoned, it becomes a lake. The areas that were closed or where the operations have stopped only are considered as brownfields.

Various interested parties are now reclaiming the ex-tin mining lands for redevelopment. There are a few ex-tin mining lands in Malaysia used for redevelopment including The Mines, Sunway Lagoon Resort, Clearwater Sanctuary Golf Resort and Lake Titiwangsa. The mining land is a state land. The land will be surrendered back to the state once the mining lease has expired. In order to redevelop the land, the interested parties need to apply the state land from the respective State Government. The government will award the land through land alienation as stated in the National Land Code subject to payment of premium. The amount of premium is based on some percentage from the market value set by the State Government Abd Rasid (2008). The role of Jabatan Penilaian dan Perkhidmatan Harta (JPPH) in this case is to determine the market value of the ex-tin mining land. After the State Government has approved the application, it will instruct JPPH to value the ex-tin mining land for the purpose of land alienation.

The majority of previous studies were limited to the valuation of ex-mining lands specifically on contaminated ex-mining lands. This research focuses on the valuation of ex-tin mining lands, which is lacking in research in Malaysia. With this in mind, this research will be conducted using the qualitative approach so that the respondents can express more and give their unlimited opinions on the factors that need to be considered in the valuation of ex-tin mining lands and the preferred methods of valuation to value ex-tin mining land.

2.0 LITERATURE REVIEW

Property development is very significant as it helps to increase the economic level of the country. The definition of property development varies depending upon the people's perspective. Reed and Sims (2008) defined property development as a process that involves the change or improves the usage of a land to create a building that is for people to occupy. It is considered to be a complex process as it uses a scarce resource which is land. There are many processes in the development, which are initiation, evaluation, acquisition, design and costing, approvals, commitment, implementation and managing. The acquisition process starts with the acquisition of land. Development can be done either on greenfield sites or on brownfield sites. A greenfield site is a new site while brownfield is a site that has been previously used.

Sarni (2010) defined brownfield as an area that was previously used as an industrial or commercial area that may or may not be contaminated but has the potential to be redeveloped after being cleaned and rehabilitated. According to Chun-Yang and Talib (2006) ex-mining land is under the category of brownfield site which may or may not be contaminated. There are a few sites that are considered as brownfield sites in Malaysia including ex-mining sites, motor workshops, petrol stations, oil depots, former railway yards, bus depots, abandoned rubber factories, landfills, industrial sites and sites with underground storage tanks. Ex-mining land could be awarded through land alienation as stated in Part Five of the National Land Code. A premium will be imposed based on the market value of the land for the land alienation.

Abd Rasid (2008) reported that valuers need to think through the factors such as market perception of environmental health risk, possible legal and financial liabilities and remediation costs. It has been claimed by Adair and Chan (2005) that environmental factors that is in the property itself or at the property around it will affect the value of the property. In the UK, there is Land Contamination Guidance for Chartered Surveyors as cited by Gronow (1998) that provided a list detailing the breadth of knowledge required for a Chartered Surveyor to give advice on contaminated lands. Referring to Richards' (1996) study, he mentioned that Peter Patchin has described the term "stigma" which inferred a "negative intangible" affected by the fear of hidden cleaning costs, problems related with cleaning work involved, fear of public liability and fear that it cannot be mortgaged. It was also declared by Bond & Kennedy (2000) that a researcher that first introduced the term "stigma" was Peter Patchin where it is used to value the properties that have contamination couple with a lack of sales comparable for this type of property. The value of contaminated property will experience market-value loss due to site cleaning costs as it brings liability to the public and compounded with the presence of stigma even after the cleaning up of the site.

In valuing the contaminated land, a study conducted by Richards (1996) found that most of the respondents who are the valuers being interviewed, applied the investment method in a traditional term and reversion format and after deriving the capital value, it will be deducted with the remediation costs. As mentioned by Chan (1999) a contaminated site has lover value than the clean land due to the process of getting the development approval, the cost for cleaning the site and also other high costs involved. The model is as follows:

Development value of contaminated site:

$$V = E - (C_e + C_1 + C_c + C_0) - C_d - P$$

Where,

V	=	land value
E	=	expected completion value of project
C_e	=	cost of EIA
C_1	=	legal cost in case of dispute
C_c	=	clean-up & long term monitoring cost
C_0	=	loss of opportunity cost during development application and clean-

up period
C_d = development cost (including finance cost)
P = developer's profit & risks cover

Abd Rasid (2008) added that this is the impaired valuation approach or affected valuation approach as it takes the land value of the property where contamination exists. This model is easily understood by a valuer because of its simplicity. Additionally, there is also an approach that uses unimpaired value. Syms (2007) focused on the procedure to be followed in preparing the report for a property that is going to remain as the existing use, which is industrial. However, if the property is not involved in change of land use, the remediation may be take many years.

Bond and Kennedy (2000) stated that the valuation methods for contaminated land are capital-based method, income-based method, profits method, residual method, full discounted cash-flow method, sales comparison method and income capitalisation method. A study conducted by Antai (2003) revealed that the valuation methods used are sales comparison, income approach, cost to remediate and residual method. A research by Chan (2009) reported that comparison method, capitalisation method, cost approach, hypothetical development method, discounted cash-flow method and environmental balance sheet approach are being used by valuers in the valuation of contaminated properties.

3.0 METHODOLOGY

A qualitative approach is used to achieve the objectives of the research which are to identify the factors that need to be taken into account to value ex-tin mining land and to determine the preferred method of valuation for ex-tin mining land. The data collected through primary source which is through structured interviews with government valuers who has experience in conducting valuation of ex-tin mining lands in the State of Perak. A set of question was prepared for the interview and the questions are flexible as they depend on the response given by the respondent. The question is divided into three parts namely Part A, Part B and Part C. Part A is regarding the demographic background of the valuer, Part B focuses on achieving the first research objective which is to identify the factors to be taken in valuing ex-tin mining lands; and Part C is focused on achieving the second research objective which is to determine the preferred method to value ex-tin mining lands. The sampling used is purposive sampling as the research requires specific respondents to be interviewed. The total population is 11 but the sampling taken is 3. A qualitative software, Atlas.ti© is used to transcribe and interpret the interview findings.

4.0 ANALYSIS AND FINDINGS

The interview form is divided into three parts which are:

a) Part A – Demographic Background
b) Part B – Factors to be taken into consideration in valuing ex-tin mining lands
c) Part C - The preferred methods to value ex-tin mining lands

PART A - Demographic background

General demographic data was gathered during the interview sessions, which includes the respondent's position, office branch, years of experience in valuation, qualifications, years of experience in valuation of ex-tin mining lands, and years of conducting or supervising the valuation.

Respondent 1

Respondent 1 is a senior valuation officer in JPPH Ipoh branch with qualifications of Bachelor of Estate Management. The respondent has 10 years of experience in conducting valuations of ex-tin mining lands.

Respondent 2

Respondent 2 is a senior valuation officer in JPPH Taiping branch with the qualifications of Master in Green Architecture. The respondent has 10 years of experience in conducting valuations of ex-tin mining lands.

Respondent 3
Respondent 3 is a valuation officer in Teluk Intan branch with the qualifications of Bachelor of Estate Management. The respondent has 10 years of experience in conducting valuations of ex-tin mining lands.

PART B - Factors that need to be taken into account in the valuation of ex-tin mining lands
The interview carried out is a semi-structured interview and therefore, further questions were asked to the respondents where necessary. There are various factors that are taken into account. The findings from the interview are summarized using a network by Atlas.ti©. Figure 1 shows the network produced by the software.

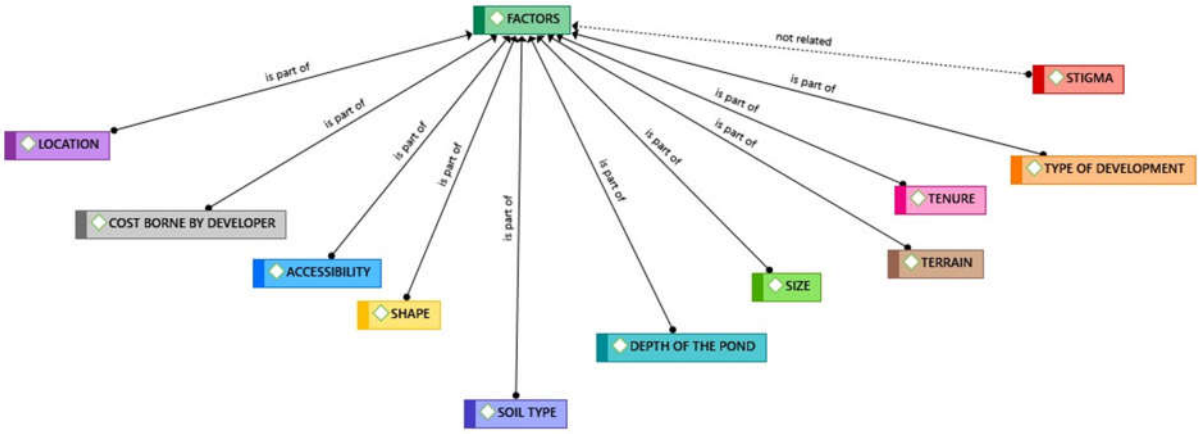

Figure 1 Factors affecting value

Based on the network of relationship of factors (coded in green), it shows a few factors that are taken into account. Location (coded in purple) is an important factor as different location has different potential and different surrounding which affect the value of the land. The cost borne by the developers (coded in grey) need to be considered in the valuation, as it is the development costs that need to be deducted. These costs include piling, retaining wall, cut and fill and contingencies. Next factor is the accessibility (coded in light blue) indicating how people will get to the land whether it has an access road and easy to reach. The shape of the land (coded in yellow) will be taken into account because an evenly shaped land is easier for the planner to plan the layout as compared to an odd shaped land. The soil type (coded in dark blue) can be sandy and muddy which soil structure will influence the cost for filling the pond. The depth of pond (coded in turquoise) is important, as a deeper pond would require more earth to fill it. The size of the land (coded in light green) is also taken into account as an optimum sized land is considered good rather than a land that is too small or too big. The terrain (coded in brown) which is the physical condition of the land is to be considered as it affects the value. The tenure of the land (coded in pink) has a high impact on the value as a freehold land has a higher value than a leasehold land. Last but not least, the type of development (coded in orange) is to be noted because it will decide whether to fill or maintain the pond. Maintaining or filling the pond involves different cost.

However, stigma (coded in red) is not related to the factors, which means that they are not taking stigma as the factor that affects the value. The interview revealed that stigma factor is not be taken into consideration, as it is something that is abstract. Furthermore, it was confirmed in the interview that ex-tin mining land is not contaminated land and thus, the additional factors that were stated in the literature is not considered during the valuation.

PART C - Preferred methods of valuation

There are 2 methods that are preferred by the valuers in doing the valuation for ex-tin mining land. Based on the network in Figure 2, the methods are comparison method (coded in pink) and residual method (coded in dark blue). It was found that discounted cash-flow method (coded in red) is not preferred due to time constraints.

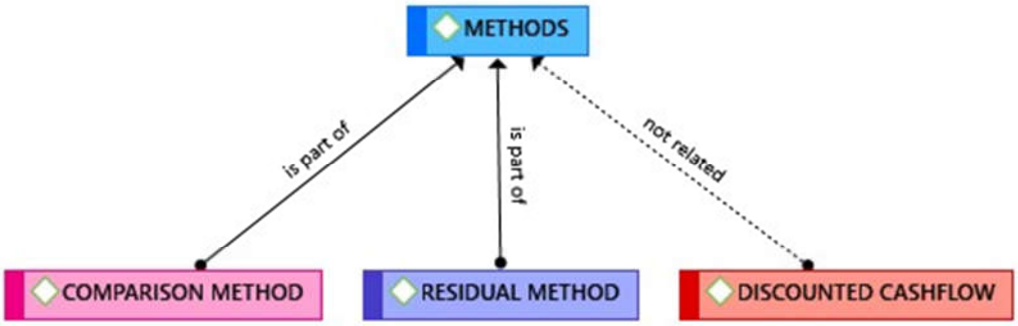

Figure 2: The Preferred Methods of Valuation

Comparison method is the preferred method as the data for the comparable is easy to get and mostly available, and the values are precise and accurate since they are current. These values can be defended if the case is referred to court. This method is easy to use and easy to understand and the valuation can be done in a short time. On the other hand, residual method is sometimes preferred because it reflects the development that will be carried out based on the proposed development plan.

5.0 CONCLUSION

From the above findings, the objectives of the research have been achieved. In carrying out the valuation for ex-tin mining lands, firstly the valuer needs to know the factors that need to be taken into account that will affect the value. The factors taken into consideration by the valuers are location, cost borne by the developer, accessibility, shape, soil type, depth of pond, size, terrain, tenure, and type of development. As for the method of valuation, the methods preferred are comparison method and residual method.

REFERENCES

Abd Rasid, F. (2008). Brownfields (Ex-mining Land) in Malaysia. Full Report on Property Valuation National Institute Of Valuation (INSPEN), pp. 1–28.

Adair, A., & Chan, N. (2005). Reporting on contaminated land: a comparison of Australian and British practice standards. Journal of Property Investment & Finance., 23(5), pp. 445–454. https://doi.org/10.1108/14635780510616034

Antai, I. (2003). Valuation of Contaminated Land in Sweden : A Comparative Study.[Master Thesis]. Stockholm Royal Institute of Technology

Boeije, H. (2010). Analysis in Qualitative Research. Thousand Oaks, California: SAGE Publications Ltd.

Bond, S. G., & Kennedy, P. (2000). The valuation of contaminated land - Methods adopted in the UK and NZ. Journal of Property Investment & Finance, 18(2), pp. 254–271. https://doi.org/10.1108/14635780010324781

Chan, N. (1999), The Impact of Environmental Planning on the Value of Contaminated Land; Australian Land Economics Review, 5(1),pp.8-20

Chan, N. (2009). Reassessing the Valuation of Contaminated Land in. Pacific Rim Property Research Journal, 15(September). https://doi.org/10.1080/14445921.2009.11104276

Chun-Yang, Y., & Talib, S. A. (2006). Overview of Brownfields in Malaysia. Jurutera, (April), pp.16–19.

Denzin, N.K. and Lincoln, Y. S. (1994). Handbook of qualitative research. Thousand Oaks, California: SAGE Publications Ltd.

Flick, U. (2011). Introducing Research Methodology: A Beginner's Guide to Doing a Research Project. Thousand Oaks, California: SAGE Publications Ltd.

Gronow, S. (1998). Contaminated land - the inevitability of an explicit appraisal model. Property Management, 16(1), pp. 24–32. https://doi.org/10.1108/02637479810202919

Newsbreak, B. (2008). Malaysia's Ex-Mines: Turning Wastelands Into Wonders. Newsbreak, pp. 1–12.

Reed, R., & Sims, S. (2008). Property Development (5th Editio). New York: Routledge. Retrieved from https://books.google.com/books?id=o7XcAwAAQBAJ&pgis=1

Richards, T. (1996). ACADEMIC PAPERS: Valuing contaminated land and property: theory and practice. Journal of Property Valuation and Investment, 14(4), 6–17. https://doi.org/10.1108/14635789610153434

Sarni, W. (2010). Greening Brownfields: Remediation Through Sustainable Development. McGraw Hill Companies Inc.

Schutt, R. K., & Chambliss, D. F. (2013). Qualitative Data Analysis. Making Sense of the Social World: Methods of Investigation, pp. 320–357. https://doi.org/10.1136/ebnurs.2011.100352

Syms, P. (2007). Contaminated land and other forms of environmental impairment: an approach to valuation. Journal of Property Valuation and Investment, 14(2), pp. 38–47. https://doi.org/10.1108/14635789610112655

Yap, M. (2007). Tin Mining in Malaysia- Is There any Revival ? pp. 12–16. Retrieved from http://dspace.unimap.edu.my/dspace/bitstream/123456789/15965/1/feature tin mining 5pp.pdf