

Kertajati International Airport's Potential To Develop Aerotropolis at Majalengka

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Abstract. West Java is the province with the largest population and the largest industrial center in Indonesia, but the West Java PDRB is not in the Top Level especially the smallest PDRB in Majalengka in West Java and business inlets and outlets not in West Java due to the absence of adequate airports or seaports for the industry. The purpose of this research is to develop Kertajati Airport and apply the Aerotropolis Concept in West Java and the cities in it to be integrated, especially Majalengka to be a focused Wheel of Economy at Kertajati Airport which has the potential to improve Economy and Industry in West Java. The method applied in this study is Qualitative, with a Case Study Model. Where the approach uses direct interviews in depth. Journals and Articles are reviewed as references for this study. The results of this study are that PT BIJB continues to run the Aerocity Concept until Finished, after the completion of Aerocity, PT BIJB will focus development towards the Aerotropolis Concept. Because West Java has the potential to develop Aerotropolis which has been planned by the Government of West Java in the REBANA Triangle (Cirebon, BIJB, Patimban). With the concept of Aerotropolis Industry and Economy, West Java can increase rapidly due to manufacturing, e-commerce, telecommunications and logistics industries, hotels, retail outlets, entertainment and exhibition centers, and office space for business people who often travel or are involved in global trade integrated with Kertajati Airport, also features a wholesale trade center and integrated transportation facilities.

Keywords: west java, airport, aerocity, aerotropolis

1. Introduction

Various types of business activities create an effect on the acceleration of growth around the airport area. The business or its activities that underlies the airport models are (1) passengers, services and goods, business sectors; (2) the growth of the airport area which continues to increase in size and economic interests and (3) airports operators in terms of financial and their business partners benefits (Appold & Kasarda, 2011) [1]. With the Aerotropolis concept an airport will be the center of various activities surrounded by existing supporting facilities such as offices, commercial areas, entertainment areas, medical services to the academic and industrial world. Professor John Kasarda explained the definition of Aerotropolis as "A multimodal freight and passenger transportation complex which supports efficient, cost-effective, sustainable development in a defined region of economic significance, centered around a major airport" (Kasarda, John D. and Lindsay, Greg, 2011). The explanation is the process of developing the function of an airport in an area that is not only a means of supporting air transportation. Airport in the beginning is one of the entrances of people and goods from one place to another. This makes the airport the main focal point for the development of the surrounding area. Airports serve as a magnet that will attract activities and business of people getting closer to the airport. The greater the number of people who come and go, the more supporting facilities needed. Initially there may only be movement of passengers and goods. But gradually this movement will require other supporting facilities.[2]

Majalengka is one of the districts in West Java that has the potential to be developed into something bigger than just a city with an international airport. Aerotropolis can be a concept that is able to develop the spatial layout of Kertajati International Airport and its surroundings to make the Airport City.[3]

2. Literature Review

Professor John Kasarda explained the definition of Aerotropolis as "A multimodal passenger and freight transport complex that supports efficient, cost-effective and sustainable development in an area of economic significance, centered around the main airport". (Kasarda, John D. and Lindsay, Greg, 2011). Aerotropolis is the development of an integrated area consisting of housing, offices, hotels, and other commercial activities. Therefore, Kertajati International Airport can be a city center that lifts the economy of Majalengka city. In addition, the incorporation of commercial functions into airports could develop the proximity of the airport with retail complexes, offices, hotels, and other relevant facilities (Appold & Kasarda, 2011) from :[1]

In this study, "Aerotropolis is an urban complex whose spatial layout, infrastructure and economy are focused on airports. By analogy to a traditional metropolis consisting of a central city and its rings on the edge of a bustling city, the aerotropolis consists of city centers, airports and corridors and aviation related business clusters related to housing development".[4]

The development, further development and the definition of the business model are considered part of the strategic process of a company[5]

Regional Potential is all resources that are available and that can be used, exploited and taken advantage of to be developed further so that they can improve and create adequate regional capacity[6]

Majalengka is one of the districts in West Java that has the potential to be developed into something bigger than just a city with an international airport.[3]

Aerotropolis development has several criteria, namely the spatial structure that must place the airport has the highest hierarchy, the area of aerotropolis is an area within a radius of 30 kilometers from the airport, zoning that regulates the intensity of density and height of buildings, land use dominated for mixed use land, functions the area as a business and commercial area, providing business areas with CBD (Central Business District) concept that accommodates various fields of business and industry and accommodates residential facilities, integration between the city center and the airport, and multimodal transportation that is fast, affordable, and easily accessible.[2]

The study conducted by Zhongzhen et al. (2016) with a case study in China in the area developed by several airports (Multiple Airport Regions/ MARs) discussing the agreement of several airports related to before, the city center, also related to airport accessibility and economic potential developed or with said other airports catchments water must be prepared together with a relatively tight airport. In addition to the quality and services of land transportation and networks offered. Two transportation networks must be well developed, namely transportation and network networks and schedules that are tailored to consumers.[3]

Although the aerotropolis phenomenon has been discussed in many articles in the media, academic discussions of it have been relatively few. Stevens et al. (2010) produced a model of the factors integral for evaluating the competitiveness of aerotropolises, including economic development, land-use, infrastructure, and governance. Furthermore, Baker and Freestone (2010) indicated that land development and cost are critical problems faced by stakeholders. Wang and Hong (2011) introduced the following competitiveness criteria: industrial diversification, aggressive construction, trade liberation, regulation rationalization,

environmental convenience, globalized operations, and business management. Skouloudis et al. (2012).

3. Research Method

The methodology that applied in this research is using a qualitative method with case study model. The method used in this study is a qualitative research method - a case study, where this approach is used to better understand, study, and investigate objects in depth (Creswell, 1998).from :[6]

This studies use to assign the most appropriate model to analize Kertajati Airport.

Based on the theory about the research, researchers believe to use that method because this research method focuses on the description in the form of sentences that have deeper meaning that comes from journals, and reports with various things that have relevance. Focus on this research are (1) Kertajati Airport for the development of Aerotropolis, (2) Factors that affecting the potential and development of Kertajati Airport.

SIZE	Stage - I	Stage - II	Stage-III	Ultimate
Airport Area	873 Ha			1800Ha
Runway	3000m x 60m (runway 1)	3500m x 60m (runway 1)	3500 x 60 m (runway 1)	3500 x 60 m (runway 1)
			3000 x 45 m (runway 2)	3000 x 45 m (runway 2)
Perpend Exit Taxiway	7	11	16	16
Rapid Exit Taxiway	2	4	6	6
Parallel Taxiway	2	7	8	8
Parallel Exit Taxiway	3	3	3	3
Cross Taxiway	1	1	2	2
Commercial Apron Size	397.980 m ²	490.400 m ²	663.800 m ²	862.200 m ²
Terminal Size	83.700 m ²	121.100 m ²	162.150 m ²	209.500 m ²
Terminal Capacity	5 juta penumpang/tahun 5 million passenger/year	8 juta penumpang/tahun 8 million passenger/year		± 18 juta penumpang/tahun ± 18 million passenger/year
Commercial Area	1 unit	1 unit	1 unit	1 unit
Cargo Terminal Size	0.004 MT/tahun 0.004 MT/year	0.07 MT/tahun 0.07 MT/year	0.6 MT/tahun 0.6 MT/year	1.5 MT/tahun 1.5 MT/year

4. Discussion and Result

4.1 Kertajati Airport Profile

West Java International Airport (BIJB) located in District Kertajati, Majalengka is approximately 68 km from the city of Bandung, the capital of West Java province. Strategically placed around the growing area of West Java, accessibility Kertajati service is guaranteed by the highway and railway connecting Bandung, Kertajati, and Cirebon, and toll road Cileunyi - Sumedang - Dawuan (Cisumdawu) to connect Bandung and Kertajati; Cikopo toll road - palimanan (Cipali) connecting Kertajati and Karawang Industrial Estate; and also a direct link to the port of Cirebon.

Kertajati overall service is built on an area of 1,800 ha and its construction is divided into three stages. Currently new development completed ditahap terminal 1A with an area of 96 200 square meters. As for the ultimate airport terminal brings the concept of peacocks have reached 209 500 sq m.(PT BIJB, 2017)

4.2 The Purpose of Bandara Kertajati

The purpose of West Java International Airport (BIJB) in Kertajati because the location is very strategic. This is not only to overcome the limitation of airport infrastucure that exist to serve passengers and goods, but also in order to improve safety and smoothness of air transportation and to promote overall economic development. Basic principles of West Java International Airport in Kertajati, Majalengka District are can guarantee security and flight safety, consider ease of achievement for users. Can be developed to fulfill air transport demand increase, guaranted long-term operations and environmentally sound and economically affordable for users and airport organizer.

The construction of the airport has also been considered that West Java as one of many province that have potential of natural and artificial resources are high and become an investor destination, as well domestic and international tourist. Therefore, it needed an necessary outlet especially airport as a gate in and out the area in order to support the development of West Java in the future.[7]

4.3 Kertajati Airport Potential To Aerocity

Strategically located in the 3480 ha of development, Aerocity Kertajati International Airport and will adopt the Single Gate Service Management to achieve strategic objectives. Implementation itself consists of five (5) stages, the preparatory phase (2015), phase I (2015-2020), stage III (2016-2025), stage III (2025-2035) and Phase IV (2035-2045). Phase I will focus on Developing the service, the third phase will concentrate on the Aerocity Kertajati Development, Phase III will Kertajati as aerotropolis growth, and as a final step, Kertajati Aerocity will act as an enabler of a sustainable economy.



Kertajati Aerocity will act as an enabler of economic growth east of West Java, especially in CIAYUMAJAKUNING (Cirebon - Indramayu - Majalengka - Kuningan) Region. Kertajati Aerocity will serve as an industrial corridor by having direct access to the Karawang Industrial and Bandung Metropolitan Area, where he will develop CIAYUMAJAKUNING region at the same time. Likewise, the connectivity will be supported by several types of transport infrastructure; Cisumdawu (Cileunyi - Sumedang - Dawuan) Highway that connects Metro Bandung to Kertajati, Cikapali (Cikampek - palimanan) highway that connects Karawang Industrial to Kertajati and Kertajati to Cirebon, also the construction of the railway from Bandung to Kertajati and Kertajati to Cirebon.

Kertajati Aerocity will promote and strengthen the creation of "growth engine" of the economy in the western part of Indonesia. Some stakeholders such as local government, central government, investors, and the public will take advantage of Kertajati Aerocity Development. Kertajati Aerocity will increase the income and purchasing power of local communities, increase the level of well-being, create local business climate, and generate employment for the community. As for the government, it will stimulate the local economy, strengthen the development of industry, business and tourism sectors, encourage the cultivation of natural resources to support high value-added industry, income taxes, and many others. Investors will gain access to global markets, security and safety, reducing costs to become more competitive in the market and a production base to ease the entrance to the market of ASEAN. (PT BIJB, 2017a)

5. Assessment of the Aerotropolis with the building blocks of the regional city

Does the aerotropolis resemble the regional city's building blocks? Could it be that the aerotropolis's ideal urban form is a regional city like Amsterdam? (Kasarda 2006, 2011) The building blocks of the regional city are briefly defined thus (for a thorough exposition, see Calthorpe and Fulton 2001, 52-60):

5.1 Centers

Mixed-land use in nodal locations characterizes the territorial city's center at any scale — from the neighborhood, to the village, to town, to city, to region. Central locations of offices, residence, and civic facilities access, particularly when connected throughout the region with multi-capital transportation. "Core commercial areas" supply economies of agglomeration for businesses and nodal locations, and the profits of accessibility for households. Compare Hotelling's (1929) principle of minimum differentiation (see also Brown 1990, 1992; Banai 1998). An indicator of the center's (intra) approachability is pedestrian-familiar land use — particularly due to housing-office mix in proximity to transit stops, as is multi-capital (inter) relatedness of centers.

5.2 Districts

The regional city's centers are mixed-use, fine-grained, and pedestrian-scale. Centers therefore except the land use that characterizes areas with a primarily urban function, typically with large building footprints, such as university campuses, industrial warehouses, retail stores, and airports. The territorial city accommodates these coarse-grained uses in its sectors rather than its fine-grained, mixed-use urban centers. Sector recognize the functional of the metropolitan sub-areas thematically. When there exists thematic union, the recognize and legibility of the city-district image is enhanced (Lynch 1960). The life activity of central business districts linked to imageability is one example. Corridors and centers provide to the viability of districts with legible landmarks. The dense urban form averts sprawl—a liability—within the district. moreover, a chaotic urban form (sprawl) contributes to a lack of legibility (see also Lynch 1960, 1976). For discussion of corridor, district, and node in airport-development planning see Blanton 2004; Schaafsma, Amkreutz, and Gukker 2008; Lee, Gosling, and Irvin 2008; Freestone 2009; Freestone and Baker 2011.

5.3 Preserves

The regional city is recognized by natural characteristics—physiographic and aquatic characteristic, and greenfields attributable to the metropolitan region's geographic place in nature. The preserves are the natural regional city's boundaries or edges, for examples San Francisco's bay and Seattle's waterfront. The preserves also supply natural buffers—open spaces, greenbelts, and the like—between grouping in the regional city. The regional city's grouping unities are thus uniquely recognized. Regional ecosystem connectivity—within multi-purpose watershed management with scenic (recreational) and local drainage, and flood supervise—is worth. The preserves provide natural instruction to planning and design at the

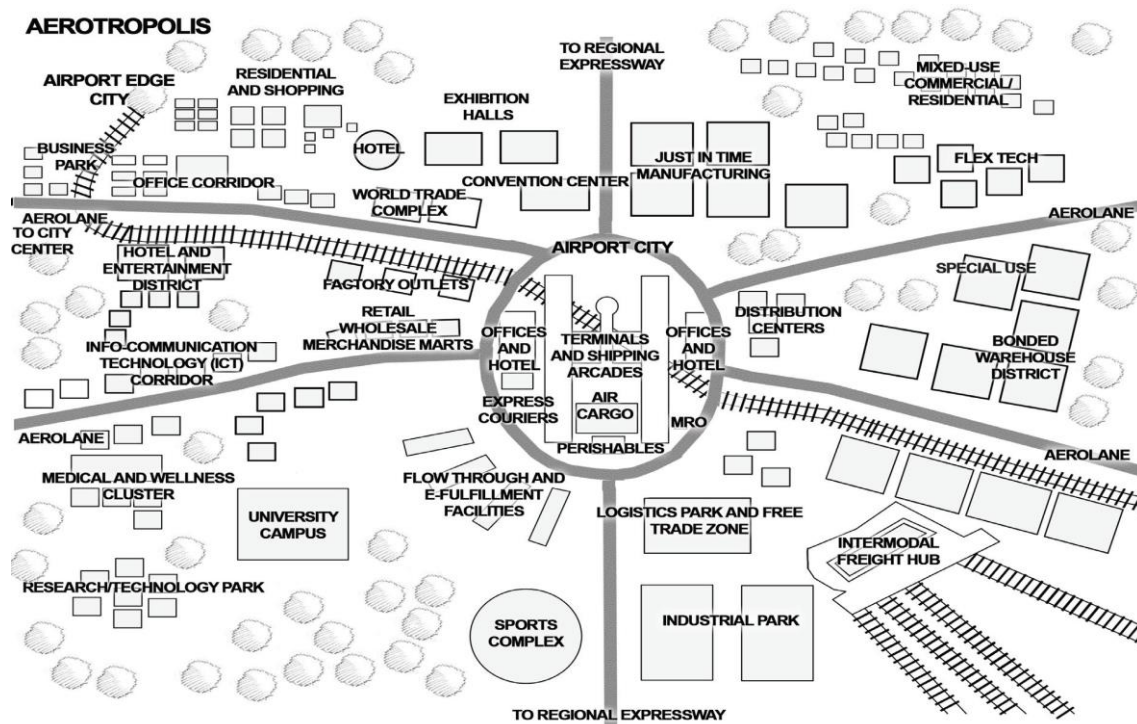
regional scale, with characteristic that cross municipal boundaries (McHarg 1969, 1995; McHarg and Steiner 2006; Calthorpe and Fulton 2001; Farr 2008; Barnett 2011). The environmental consequences of urban increase that does not respect the region's ecology are well-known.

5.4 Corridors

The region's ecological systems form natural passage, such as ridges, open spaces, rivers, and streams. The interconnection of the natural tract ensures the region's viability. Corridors form the "skeletal" structure that explain the region's future. Alike important to the grade of life are the region's humanmade corridors—transportation systems. The multimodal framework of corridors similarly contributes to the region's vitality. Multi-modal relatedness in transportation corridors exemplify the regional city.

The building blocks are mutually improving. For instance, if the corridor is light-rail or bus-rapid transit (LRT or BRT), transit-oriented developments (TOD) offer the benefit of central location in which to live with access to jobs throughout the metropolitan region's linked centers (Calthorpe 1993; Bernick and Cervero 1997; Calthorpe and Fulton 2001).

[8]



6. CONCLUSION

West Java is the largest Industrial Center in Indonesia and has the most population in Indonesia, but its income is seen from West Java PDRB not at the Top Level, after reviewing it turns out that many businesses are not in West Java because West Java does not have Port like seaPort and adequate airports for industry. For this reason, the West Java Regional Government is building Kertajati Airport at the international level, because Husein Sastranegara Airport in Bandung cannot be developed.

PT BIJB is currently running the Aerocity Concept which is under construction but in the future PT BIJB will develop towards the Aerotropolis Concept. Kertajati Airport has the potential to develop Aerotropolis in accordance with the plans of the West Java government

which already has a master plan in the hands of REBANA (Cirebon, BIJB and Patimban). Aerocity development has been inline with the West Java government's plan to generate an aerotropolis concept but in developing aerocity there are obstacles such as environmental permits, because this amount of construction is the first time in Majalengka. With aerocity development, the total reached 5300ha, the Majalengka regional government requested further study of environmental impact analysis (EIA) for the application of aerocity in Majalengka. Aerocity development in Majalengka will have 7 clusters including aerospace park, logistic-hub, business park, creative technology center, energy center, residential / town ship and airport area. With the concept of REBANA triangle aerotropolis (Cirebon, BIJB, Patimban}) will be integrated with each other, increasing the Volume of Industrial and Economic West Java can increase rapidly because the economic wheel is centered at Kertajati Airport and manufacturing, e-commerce, telecommunications and logistics, hotels, outlets retail, entertainment and exhibition centers, as well as office space for business people who often travel or are involved in global trade integrated with Kertajati Airport. Aerotropolis is also equipped with a wholesale trade center and integrated transportation facilities. (Interview: Andi Syaputra, Kepala Departemen Pengembangan Bisnis PT BIJB Aerocity Development)

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