

The influence of land development and planning on urbanization in Barito Kuala, South Kalimantan, Indonesia

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Key words: Land Management, Territorial Development, Spatial, Urbanism, Cadastre

SUMMARY

The study of land tenure in rural and suburban areas is a recurring theme of geography. In XXth century, the phenomena of suburbanization has been well accepted in the research of land property. But since the XXIth century, the most the wetland markets, those in Barito Kuala (the suburb of Banjarmasin), in particular, are faced with obstacles that directly affect the forms and rhythms of urbanization, land transformations and land structures. It seems interesting to consider the case of Barito Kuala; the wetland-rural area changing to spectacular urban process. Faced with a rapid development of rural urbanization and land investment, the Barito Kuala has many respects a privileged space for the observation modes of immigrant legal ownership.

This paper aim to compare dynamic of population history and land use in Barito Kuala, between the XXth and the XXIth century. The XXth century characterized by the growth of population and cleared-land to agriculture, which is linked to transmigration program. But the urbanisation in the XXIth century, where the government made a new policy about utilization of idle land considerable “unvalued” into the productive land (plantation of palm oil). For the XXth century, I took two sample of map (1926 and 1994), which represent the beginning and the end of century. The map of 1926 had been digitalized from the old map Netherlands taken from Leiden library (the time where Borneo was under the reign of the Netherland). USGS provides the second map, years of 1994, by image satellite LANDSAT, after the first transmigration had been placed. The next century, while the agrarian office has intensively controlled the land administration, I used the database of land acquisition and transaction from year 2006 to September 2016. The results will show how the population, land transformations and land structures move as a result of spatial planning.

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1. INTRODUCTION

Barito Kuala region is a place of concentration for urban planning and urban development in South Kalimantan. The influence of urban history on development of river settlements is shown in almost all along the rivers and canal and most remarkable in confluence, like Marabahan. The wetlands stands for complexity and sensible of ecosystem change. A large of surface economically unvalued, make it's sensational to try to use more the land. The impact of land is particularly strong history in transmigration program. Finally, land rights (proprietary) strategies against the occupation of their land, especially when the transmigration program (1975-1990), are more intensive. They are particularly visible in *Wanaraya and Tamban* (paling byk transmigrants).

Barito Kuala is on the flat expanse of territory with gradients of 0-2 per cent, with a height of elevation ranging between 1-3 meters above sea level. It is a wetlands area, where

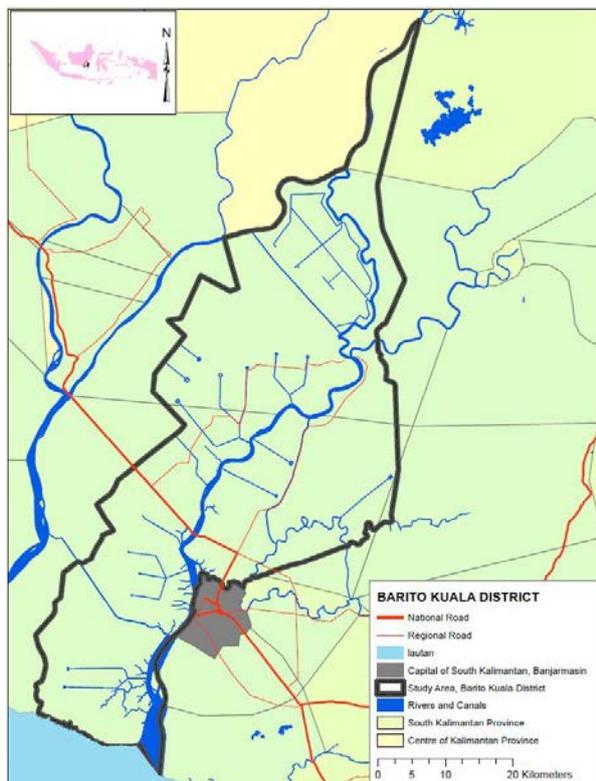


Figure 1. Barito Kuala District

most of its territory is surrounded by rivers and swamps that constitute a tidal marsh. This condition causes the soil contains peat that comes from the remnants of the low marsh plants. Geologically, this area is a lowland which are compiled by alluvium sediment (fomed in Holocene), separated by meander rivers, then forming spacious marshes. Alluvial sediment available in this area can be divided into two, namely unit older alluvium (Qal), consisting of gravel, sand, silt and clay and unit younger alluvium (Qa), consisting of silty fine sand, silt clay, clay, mud and peat. Alluvial areas generally used for rice fields because the area is quite fertile. Another commodity independently cultivated crops are citrus, pineapple, corn, and coconut. The acidity of this soil reaches a pH of 3-5, so that the ground water in this place cannot be directly consumed by the public, because it contains iron and sulfur compounds or commonly known as firit solution. The nature of the acid is so high that

its use should be supported by a good drainage system.

Barito Kuala is crossed by the Barito River and small streams both natural and artificial that support transportation and irrigation agriculture in the region, and also the nearest city from the capital of South Kalimantan, Banjarmasin.

2. LAND DEVELOPMENT IN BARITO KUALA

2.1 Barito Kuala in XX century

The population origin of Barito Kuala, called tribes Bakumpai, implemented a farming system called Behuma system. Behuma system means farming by moving, as a manifestation of human interaction with nature. The system is highly dependent on the fertility of the land which is determined by the availability of humus from different species of animals and plants that live, then die and decompose on the forest floor.

At the beginning of the twentieth century (1900 -1938), Barito Kuala district was under Banjarmasin region (called Afdeling Banjarmasin en Ommenladen). Banjarmasin en Ommelanden section was divided into two subdivision (oonderafdeling); subdivision Bandjarmasin with Bandjarmasin as a capital and subdivision Bakoempai with Marabahan as a capital. In 1938, the department of Bandjarmasin added two subdivision; subdivision Martapura and subdivision Pelaihari. Martapura was separated from Bandjarmasin region on 1959, followed by Barito Kuala on 1960 and Pelaihari on 1965, as the formation today.

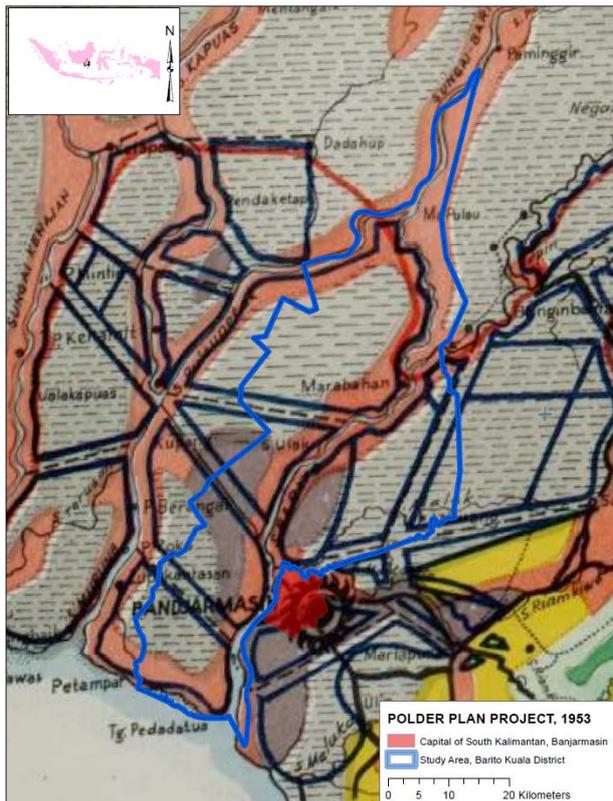


Figure 2. Polder Plan in 1953
(sources : Library of Leiden University)

In years of 1905 – 1940, the Dutch colonial period, they started to reduce the population density in Java by moving some Javanese to another island like Sumatra, Kalimantan, Sulawesi and Papua, this move called colonization program. The aim of this program is also to obtain labor with low wages and move farmers from Java. In 1937, the Dutch was putting the first tentative colonization (about 68 households) from East Java in Tamban district, Barito Kuala. The success of the colonization people from Java in agriculture were heard until upstream area, so that in the year of 1939, the migrations from upstream to downstream (South of Barito Kuala) took place. Their livelihood mostly is farmer near the tidal area of Barito river. Besides, they also have been introduced about rubber plantation, coconut plantation etc.

In 1953, the government made a reclamation plan to open about 7.000 ha wet rice filed, in Negara watesheed – creeks of Barito River. The goal is to

control the level of all water, whether sea water, river water or rainwater, that enable farmers to practice intensively rice field. The embankments are more expensive and more difficult to achieve, hang on and, in fact, will never be completed. In 1958 the polder plan was officially abandoned, only a single real polder is completed, in Alabio, South of Amuntai.

The next step of the opening the first swamp in Indonesia was initiated by Minister of Public Works and Power (1956-1958) called Dredge Project, Drain and Reclamation, which connects the two major rivers by building a canal so access to wetlands can be easily done.

This idea was originally planned to include the construction of channels, between many plan, few was realized including the connecting of Barito River (South Kalimantan) with Kapuas Murung River (Central Kalimantan), called Anjir Serapat (28.5 km), Anjir Tamban (25.3 km), and Anjir Talaran (26 km in Barito Kuala). With the construction of these channels (Anjir), the untouchable land had possible to access by built handil (water system that is made from the riverbank into the interior with a width of 2-3 meters, in the 0.5-1.0 meters, and a length of 2-3 km). The distances between handil is 200-300 meters. Handil is connected by trenches, so that resemble to fish fins(1). In this era of thriving marsh area along Anjir only around 2-3 km overhanging entrance limited the ability of people to make Handil go inside..

In the end of XXth sicle, Indonesia's food condition was really bad. The government has imported about 2 million tonnes of rice, which spend too many davisana negara. Therefore, the government try to seeks a way to improve food availability, one of the plan is the opening of the swamp which about 5.25 million hectares to simultaneously support the improvement of the food supply program together with the transmigration program within 15 years, known as the opening of the project tidal rice fields (P4S) fields for transmigration people. The center area has 5,515 Ha, including irrigated 5.241 Ha.

Some swamps that have been 'touch' developed into towns and district. The province of these districts became the center of agricultural production and growth centers. Until 1995, the swamp have been opened by the government was about 1.18 million hectares and 3.0 million hectares by the local community. In gener al, the area opened use for the development of rice and plantations.

2.1.1 Land for Transmigration

Since the 1960s, the Indonesian government started the implementation of tidal wetlands, which aims to: increasing food production, especially rice, in order to achieve self-sufficiency in food (rice); provision of agricultural lands and settlements for migrants; as a supporter of a common resettlement program organized by the Government; support the development of the region; increase farmers' income and creation of a safer situation along the coastal area. The transmigration is the same with colonialization, it change only the name, because the term of colonialization was too pejorative in that periode and neither emigration nor immigration was appropriate, the transfer of population taking place between the islands of the same sovereign State. Each transmigran family receive a home, food rations and a set of 2 ha are divided into 250 m² of garden, 1000 m² of paddy fields already cleared (called cultivated land I) and 750 m² still covered with various ages' forest recruits (called cultivated land II).

In Barito Kuala, paralely followed the gouvernement programmed, in 1979, the first transmigran arrived. These family were the first transmigrants of project tidal rice fields that will used the irrigation system called the *garpu* system. The *garpu* system avoids the construction of dams and roads. The canals are used as way communication, irrigation and drainage canals due to backlash of the tide. This system is particularly made for the tidal rice field, and was firstly introduced in Barambai district. It is located 1.5 km west of the Barito River, which is 40 km away from Banjarmasin and 55 km away from Marabahan. (Peta Lahan pasang surut). This new irrigation system then become the primary transportation. The locals can move to another place using *jukung*, the traditional small ship that use until now. From 1969 until 1973, almost 5000 transmigration had been move to this 5 district in Barito Kula (Barambai, Marabahan, Tamban, Alalak, and Wanaraya)(2). The various state development projects (roads, highways, equipment) combined with the actions of community associations, for a partial improvement of living conditions in these neighborhoods.

The transmigrant makes the population of Barito Kuala double. Barito Kuala attended by various tribes in Indonesia, mostly from Bali and Java. The transmigrants implement commodity are rice cultivation in accordance with the original offer. Most of cultivated land II was cleared. Some cleared lands are directly planted, but many of them are abandoned for reason waiting for venture capital. The cleared-abandoned land, usually was a Galam forest, then slowly overgrown by reeds. A huge number of Galam were felled, mostly into paddy fields, create timber Industry Company reached its heyday. The communities use the river, creeks and canal-canal to access the interior part and cut down a tree, in order to sell his timber at a timber company.

The timber company in Barito Kuala began to emerge at the end of the twentieth century (around 1990). In Tamban and Alalak districts, there were an emerging industry of wood value-added processing. In Tamban district there are 6 major plywood industry and many of home scale wood industry. The most famous wood in Barito Kuala are Galam and Ulin. These woods are used by the community for building materials, roads, offices and buildings. Timber industries absorbing a lot of manpower, so that the population in the region continues to increase.

The legalisation of land rights was not really considered, the people respected the 'limite' by how lrga the area use.

2.2 Barito Kuala in XX century

At the beginning of this XXI century, the agricultural sector is very important. Barito Kuala recorded the largest producer of rice in the province of South Kalimantan. Recorded in 2009, Barito Kuala accounted for about 16, 23% of the demand for rice in South Kalimantan, and successfully listed as rice self-sufficiency district.

In this district, Galam wood grown in a variety of areas, including around people's homes, so that is difficult to control the exploitation Galam by the government. These plants are like plantation crops that can live in any place. According to a note, timber production Galam in Barito Kuala per year to 20,000 (2009) cubic meters making the district as Galam largest producer in South Kalimantan.

The wood industry in Barito Kuala became one of the main livelihood of the people there and also quite interesting to invite newcomers, both from within and outside Kalimantan, to be wood factory employees. The golden era of this wood absorbs a lot of manpower. The timber industry in the district Tamban, PT. Barito Pacific, was employing nearly 3,000 people, PT Daya Sakti Unggul was employing nearly 1,500 people, and many other timber industry companies with a considerable number of employees.

To preserve the forest and ecosystem balance, the government of Barito Kuala regulate the exploitation of Galam; such as limitation of area where Galam can be cutted. The number of companies that can use the timber is also limited. The government also issued the regulation no.9 in 2000 on the retribution of forest products. The difficulty of obtaining basic materials of wood, added with the difficulty of following the government's policy on logging quota and the absence of a clear solution from the government to cope as well as rescuing the timber industry, make this sector weakened. The government's policy is considered detrimental to the timber business climate. Convolutated regulation makes the sector to experience economic burden of high-cost conditions.

Raw material shortages were making lumber mills one by one to stop operating. The place that used to be noisy (industrial machinery and passing people wearing the typical uniform of the company), now leaving only empty buildings overgrown with weeds.

Thousands of workers staged a demonstration to the company's large-scale wood industry in which they work, waiting for clarity of status and severance.

2.2.1 Idle land for Plantation Oil Palm

At the end of 2006, communities in Barito Kuala was introduced to palm with the entry of several large companies. The provisions of the Government contained in the Minister of Agriculture No. 26 in 2007 and updated Regulation of the Minister of Agriculture No. 98 of 2013 stressed that since February 2007 the case of oil palm plantations, the core company is obliged to build a community garden in the vicinity where the land area is obtained from 20 % permit the company location or build a community garden on the land around it (called nucleus estate smallholder oil palm plantation). Until now, many people are turning to palm oil commodity following the plasma core partnership program organized by these companies.

3. RESULTS

3.1 Population in Barito Kuala

To study about migration in Barito Kuala in early XXth century, I can't use the number of population but I use the land use map. Indonesia, itself, began intensive population census starting in 1960. Population on 1900 is obtained based on the calculation of the population density estimates made by the Netherlands (source: la legend of old map South Kalimantan population density). The next population data obtained on 1960, the data released by BPS, Jakarta. From 1900 to 1961, the population growth was very low, about 22.781 persons over 60 years, from 65.736 inhabitants in the year 1900 to 88.517 in 1960, or only 0.4% per year.

In 1960, the year in which Barito Kuala's population began to climb dramatically. The increase in the total population of South Kalimantan not only because of the number of births increased, but more his part is the migration of people from various regions (by transmigration program) over the island seeking a new life in this region. Transmigration offered in Barito Kuala was transmigration tidal rice by using the fork system. Between 1969 and 1973, 4.271 transmigrant (890 families), from Bali, Java-East, Central Java, West Java and Yogyakarta were installed in Barambai by the Ministry of Transmigration. They are joined in 1973 - 1974 by Hundreds of spontaneous migrants, bringing the population to 4.741 in March 1974 (Hardjono 1977: 73). From 1960 to 1970, the population increase around 3% per year (from 88.517 inhabitants in 1960 to 128.089 people in 1970).

The transmigrants make the population of Barito Kuala double. Barito Kuala welcomed by various tribes in Indonesia, most of Bali and Java. On arrival, each family received a house, food rations and a 2-ha set are divided into 250 m² of garden, 1000 m² of rice fields already cleared (called cultivated land I) and 750 m² still covered by forest (called cultivated land II). The transmigrants products mostly are mostly the rice.

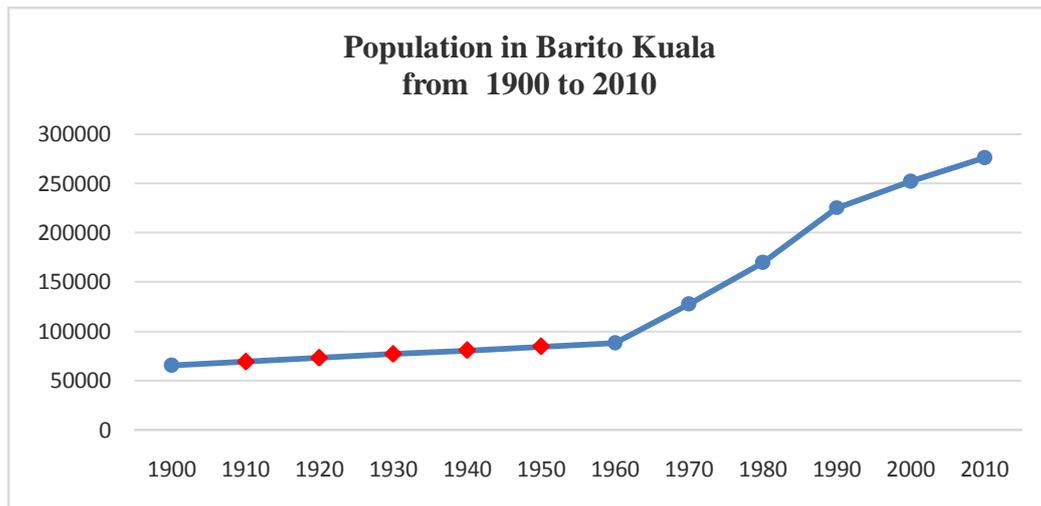


Figure 3. population in Barito Kuala from 1900 to 2010

At the beginning of the twentieth century, the majority of the population in Barito Kuala is Bakumpai tribe, most of them based in the city Marabahan, while the others live along the river. Marabahan was a port and stopover for the crops trading industry. Bakumpai people rely heavily on water to life, because their heritage knowledge is that land along the riverbanks are usually fertile and suitable for rice commodity. In addition, the entrance and exit of water in rice fields more easily managed so that the constraints of soil fertility and soil acidity can be overcome. The water river pouring into rice fields contain organic materials that are needed for plant growth once the leaching process soil acidity and toxic materials takes place smoothly. Along the Barito river, creeks appear at the bend of the river where the city began to form (Marabahan, simpangnoengki, serapat, belandean, etc.). They introduced a system of farming called banjar system, that rely on the tidal river.

Migration people from Marabahan to South of Barito Kuala seen in the years of 1954. This migration was the results of some reasons :

1. The north people heard a succes farmer in Tamban (result of agriculture colonialization by the Dutch government in 1937). This succes was heard until upstreams, so that people interested in farming in Tamban and surrounding.
2. Peat fire around Anjir Serapat in 1928 (3). This incident make local farmers take advantage of dry land by changing into the paddy fields, from km.14 to km.28.
3. The finalization of anjir serapat supported by the government in 1937. This news encourage the land opening around Anjir Serapat.
4. The dredging of the second anjir, called Anjir Tamban that connects the Barito River in South Kalimantan and Kapuas River in Central Kalimantan in the colonial government around 1936. Dredging Anjir Tamban encouraged peoples from South Kalimantan to develop agriculture by making Handil-Handil along the Anjir Tamban to irrigate paddy fields, the followed by the development of coconut plantations.

In the end of 1980, most cultivated land II was cleared. Some cleared land is planted directly, but many of them are abandoned because of waiting for venture capital. The abandoned land, usually was a forest of Galam, then slowly invaded by shrubs. A large number of Galam have been slaughtered, mainly in the rice fields, to create wood industry

enterprises has reached its peak. The communities use the river, streams and anjir to access the interior and cut a tree, in order to sell its timber to a timber company.

The wood company of Barito Kuala began to emerge at the end of the 20th century (about 1990). In the Tamban and Alalak districts, there were emerging value-added wood processing industries. In the district of Tamban there are 6 major plywood industry and many of the timber industry ladder at home. The most famous wood of Barito Kuala is Galam. This wood is used by the community for building materials, roads, offices and buildings. Wood industries absorb a lot of manpower, so the population of the region continues to increase.

The agricultural sector becomes very important. Barito Kuala has registered the largest rice producer in South Kalimantan Province. In 2009, Barito Kuala accounted for about 16,23% of the demand for rice in South Kalimantan, and managed to figure in the self-sufficient rice district. The wood industry also in victory, Galam can cultivate almost everywhere, including around people's homes, so it is difficult to control the Galam exploitation by the government. These plants are like planting crops that can live anywhere. In 2009, Galam wood production in Barito Kuala per year to 20,000 cubic meters making the district as the largest producer of Galam in Kalimantan of South Kalimantan.

The timber industry has become one of the main livelihoods of the population and it is also attracting newcomers, both inside and outside Kalimantan, to be employed by the wood factories. The golden age of this wood absorbs a lot of manpower. The wood industry in the Tamban district, for example, PT. Barito Pacific employed nearly 3,000 people, PT Daya Sakti Unggul employs nearly 1,500 people and many other companies in the wood industry with a considerable number of employees.

To preserve the forest and ecosystem balance, the government of Barito Kuala regulates the exploitation of Galam; Galam can be cutted. The number of companies that can use the timber is also limited. The government also issued the regulation no. 9 in 2000 on the retribution of forest products. The difficulty of obtaining basic materials of wood, with the difficulty of following the government's policy on logging quota and the absence of a clear solution from the government to cope as well as rescuing the timber industry, make this sector weakened. The government's policy is detrimental to the timber business climate. Convolutated regulation makes the sector to experience economic burden of high-cost conditions. To preserve the balance of forests and ecosystems, the government of Barito Kuala regulates the exploitation of Galam; Such as the limitation of the area where Galam can be cut. The number of companies that can use wood is also limited. The Government has also published Regulation No. 9 in 2000 on the remuneration of forest products. The difficulty of obtaining wood raw materials, coupled with the difficulty of following government policy on logging quotas and the lack of a clear government solution to save the timber industry, weakened sector. Government policy is considered to be detrimental to timber affairs. A complicated regulation makes the sector to the condition of economic burden of high cost.

The shortage of raw materials made wood factories stop functioning one by one. The place was noisy, with industrial machines and passing people wearing the typical uniform of the company, now leaving only empty buildings overgrown with grass. Thousands of workers organized a demonstration to the large-scale wood industry of the company, in which they work, awaiting clarity of status and separation.

At the end of 2006, the communities of Barito Kuala were introduced to palm with the entry of several large companies. The government's provisions in the Minister of Agriculture No. 26 in 2007 and updated by the regulation of the Minister of Agriculture No. 98 of 2013 pointed out that since February 2007 the case of oil palm plantations, The main company is obliged to build a community-garden-neighbors in the vicinity with the area is 20% of the total area allowed for oil palm plantation or build a community garden on the land around it (called kernel of ownership of the plantation of smallholder oil palms = called smallholder oil palm plantation). So far, many people are turning to palm oil production following the plasma-core partnership program organized by these companies.

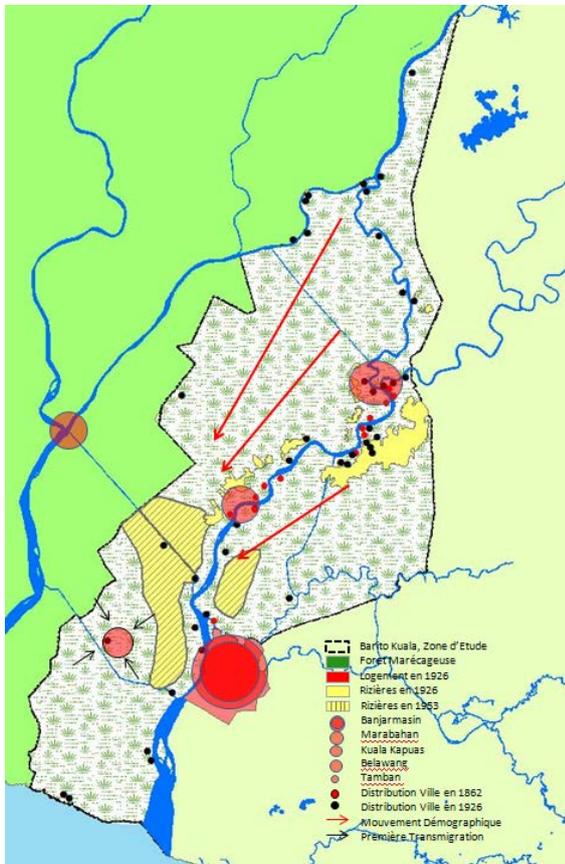


Figure 5. La migration à Barito Kuala de 1862 à 1970

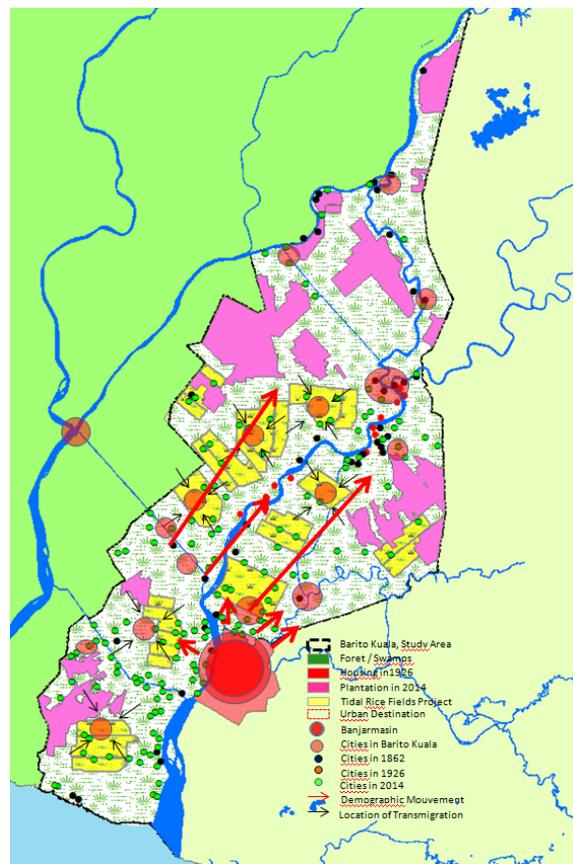


Figure 4. La migration à Barito Kuala de 1970 à 2010

BIOGRAPHICAL NOTES

Sri Karina BANGUN completed her Bachelor Degree in Institute Bandung of Technology, Indonesia, majoring Geodesy and Geomatic Engineering, in 2004. Two years after, she had an opportunity to continue her Master Degree in La Rochelle University, France, majoring Environment and Coastal Area. In 2008, after completed her master degree, she was back to her institution, Land National Agency, currently change to Ministry of Spatial Planning. Her passion to take PhD program realized in 2014 when she was accepted as a scholarship PhD Candidate in La Rochelle University. She is now in her first year of her doctoral program about development territorial and spatial planning in Barito Kuala, South Kalimantan, Indonesia.

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