

Proceeding 1st International Plantation Conference

“Capacity Building, Development, and
Sustainable Technology”

IPB International Convention Centre
Bogor, Indonesia
19-21 December 2012

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PROCEEDING
THE 1st INTERNATIONAL PLANTATION CONFERENCE
Bogor, Indonesia, December 19th-21st 2012

“Capacity Building, Development, and Sustainable Technology”



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Malaysia



Faculty of Agriculture
Bogor Agricultural University
Indonesia

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Jointly published by :
Faculty of Agriculture, Bogor Agricultural University (2013)
Faculty of Plantation and Agrotechnology, Universiti Teknologi MARA (2013)

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Layout and Design : Annisa Hasanah,SP

SPATIAL PATTERN OF PALM OIL DEVELOPMENT IN NORTH SUMATRA AND SOUTH KALIMANTAN

A CASE STUDY OF ACTUAL UTILIZATION AND LAND HOLDING STATUS

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ABSTRACT

Oil palm plantation in Indonesia has been recognized for its fast and wide area development. Its development has related to regional spatial planning, either in new develop or established area. Some problem in spatial perspective regarding socio problem and physical environment due to oil palm have occurred in these areas. This study are carried out in 2012 at several districts in North Sumatra that recognized as an established region for oil palm area, and South Kalimantan that recognized as a new palm area development. Data used are actual oil palm map, land holding status map and regional spatial planning map, and these data are analyzed using GIS overlay method. The result shows that there are some variations in spatial occupation of oil palm regarding large holding company and community and its impact to environment and social problem.

Key words : palm oil utilization, land holding status, spatial planning, GIS, environment problem

INTRODUCTION

Palm oil plants in North Sumatra province have been occurred since Dutch era and already established and steady number (Badrun, 2010), meanwhile palm oil plants in South Kalimantan province has started since 1990's and it tends to increase. So far, the palm oil estates have dominated areas of some districts in these provinces.

Currently in Indonesia, some disputes about lands are being existed and tend to be increased, particularly between large concession companies with local communities, that the number is in line with the increase of investment for large holding estate (Barus and Rusdiana 2009). Many local communities have complained to local governments that their livelihood systems have been destroyed by the development of oil palm due to loss access to previously unmanaged land, or declining of land productivity due to physical impact of current oil development and others.

So far land ownership of many farmers in Indonesia are small, and tend to be smaller due to the effect of inheritance system, agricultural land conversion for other usage (Nasoetion, 1994; Setiawan, 2008; Winoto 2011). The need for minimum size of land accessibility for community has been recognized by government through program of agrarian reform plus (Winoto 2011). Currently government of Indonesia plans to redistribute land for farmer particularly from state land such as abandon or unproductive land of large holding status either

from forest concession or oil palm concession. At the same time, formula for distribution of land is needed to developed (Sunito et al. 2012). However, authorization for spatial planning and its utilization belongs to local government, while legal status for large concession are managed by Ministerial of Forestry and National Land Agency, so that it creates more complex for solution.

In order to understand and develop solution, then it is important to know spatial characteristics regarding district spatial planning, actual oil palm crops, and land holding status and its potential for non oil palm crop development.

The purposes of the study are :

- a. To investigate the actual occurrence of palm oil plantation and the actual large land holding status
- b. To characterize of spatial pattern of district spatial planning, palm oil crop and land holding status
- c. To investigate availability land for non oil palm crop development

METHODOLOGY

Location of research area

The study was conducted on 3 districts in North Sumatra (Langkat, Deliserdang, and Serdang Bedagai) and 2 districts in South Kalimantan (Tanah Laut and Tanah Bumbu). The oil palm areas in North Sumatra has been established since Dutch Era in Indonesia, meanwhile, the oil palm areas in South Kalimantan are just recently developed. The research area is presented in Figure 1.



Figure 1. Location of research area : (a) North Sumatra and (b) South Kalimantan

Data and tools

Several maps used in the research : Palm oil map (2010, Mapping of Some Perennial Crops, Ministry of Agriculture); Several draft district spatial planning (2012, District of Planning); Land holding status (2012, National Land Agency); Land permit (2012, Districts Office), Land system (RePPProT, 1989). All maps have scale 1: 50,000 or larger, except Land system map with scale 1:250,000. Field observation was conducted on August - September 2012 with focused on selected physical environment and socio-economic observation.

Method for analysis

The first is to figure out a spatial pattern of oil palm crop regarding status and spatial planning, then the maps of oil palm, land holding status, district spatial planning and land permit are overlaid. Distribution occurrence of oil palm crop regarding its land status is observed visually and quantified statistically. After that, from the map, a relation between legal status and spatial planning and oil palm is extracted, and observed spatially.

The next method is to develop land accessibility for non oil palm crop. The GIS overlaid method is implemented, then some further extractions are carried out. The extraction rules are: the available land has to be located in non protective area, currently not as oil palm plantation, not as settlement, no legal occupation status (large holding company or land permit), and land capability class 1, 2, 3. Land capability classes follow criteria of USDA and modified by Arsyad (2000), where class 1, 2 and 3 potential for agricultural utilization. The result of the overlay method is then visually observed and statistically quantified.

The complete diagram of the method is presented in Figure 2.

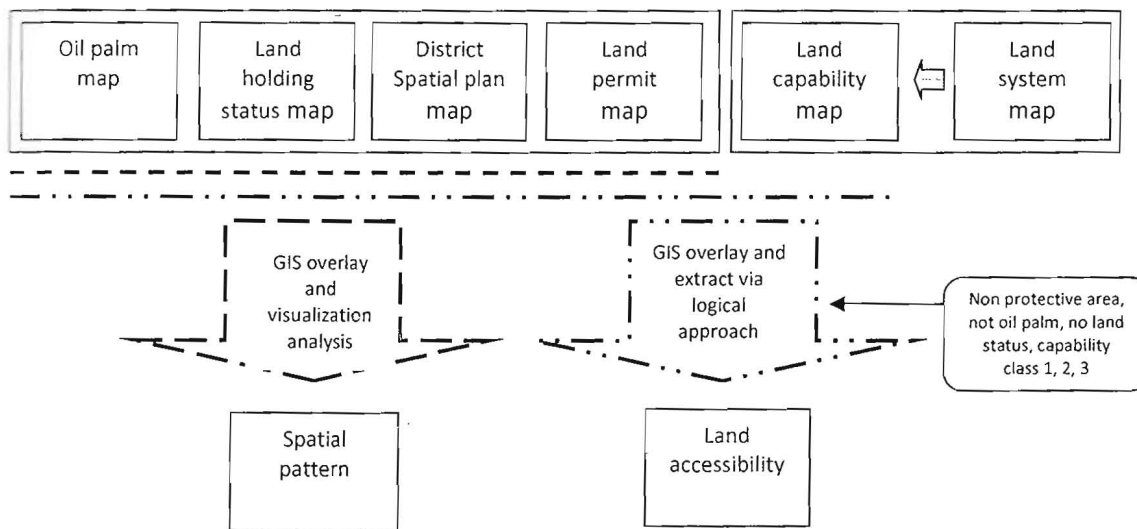


Figure 2. Illustration of method implemented in the research

RESULTS AND DISCUSSION

Spatial Pattern of Oil Palm in North Sumatra

Figure 3 exhibits the actual oil palm dominantly in Langkat and Serdang Bedagai district, and less areas in Delisedang district. One important reason is related to closeness of Deliserdang District to Medan, Capital city of province, where settlements are dominant in the area. Based on the field observation, some agricultural areas of Serdang Bedagai, where a new air port is being developed, are considered to be converted. It is predicted in the next several years these areas become build up areas. However, in these areas some land disputes are very clearly visible through many claims of ownership of such as land, both from local community or some non government organization or companies and others. The staff of land agency and district secretariat also claims some conflicts between community with large concession oil palm company. In general, land disputes

more common occur in Deliserdang, following in Serdang Bedagai and the least in Langkat.

In term of legal status for actual oil palm, Figure 3 shows some information, that many oil palm estates in North Sumatra do not have legal status or belong to small holding company. The picture shows that the number of large holding (*HGU – Hak Guna Usaha*) spatially is less compared to occurrence of oil palm estate (see also Appendix). Based on field observation, many oil palm estates particularly in Langkat are owned by rich people, with sizes of estate is more than 25 Ha. According to Indonesian regulations (Act of Agrarian Law, No 5, 1960; Ministerial of Agriculture Decree, No 26, 2007), the oil palm with size more than 25 ha, should be legalized as a large holding status, and then it is obligated to have a particular legal occupation, such as HGU. However, some ownership of these oil palm estates questioning about the importance of HGU, as most of them do no need further budget from the bank, where generally HGU is used for guarantee (mortgage). In addition, they mention also the difficulty in obtaining HGU certificate.

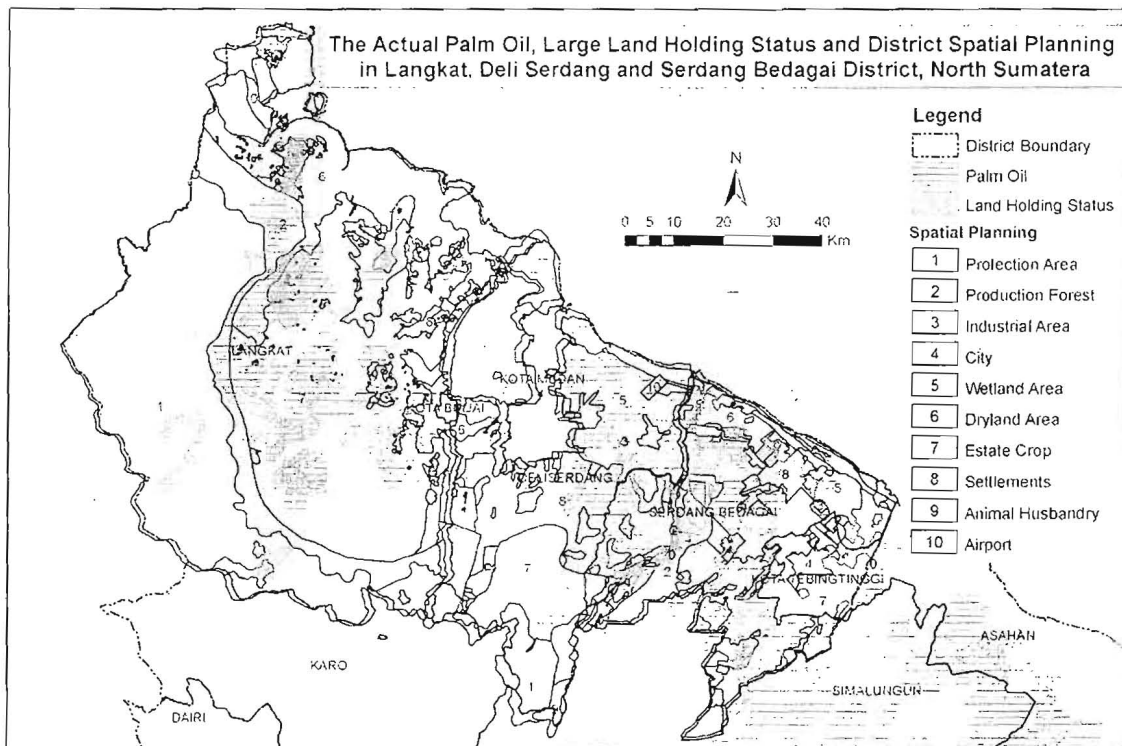


Figure 3. Spatial pattern of Oil palm and Land status regarding Spatial Planning in North Sumatra

Another paradox from spatial character can be seen from the occurrence of land hold status at spatial zone and the existence of actual oil palm is not located in proper spatial zone. Figure 3 shows few land holding status (HGU) locates in the conservation area, particularly in Langkat District, and few land holding status at dry land agriculture zone but no actual oil palm crops. The first case, there is no impact for land use forest conversion or land degradation, however this data shows some improper implementation in the development. The second case, land holding without actual crop, this may be related to neglected land (*lahan*

terlantar), where currently, Indonesian Government wants to allocate such as land to other utilizations and become a target for agrarian reform.

Furthermore, the existence of actual oil palm in many places that not in line with the district spatial planning occurring in the three districts. This situation may relate to at least two situations, are: (a) people do not follow spatial planning in their activities, and (b) improper spatial planning development. Some land uses do not in line with spatial planning, indicate by some oil palm estates locate in the wetland zone, dry land zone and forest production zone. The occurrence of oil palm crop in wetland zone currently become national problem due to its potential hazard to secure food security, compare to its occurrence in dry land and forest production area. Based on limited discussion in the field, some people do not recognize the existing spatial plan, and some of them consider for economy benefit after conversion. In this case, land rent of paddy is less than land rent of oil palm. Similar argument is valid for the existence of oil palm in dry land and forest production area.

Furthermore, the improper spatial planning development can be stated as another reason for occurrence of some oil palm estates in some places. From discussion with several staffs in the office of districts spatial planning, appears some reasons for spatial inconsistencies. One, the current spatial plan was revised through the central government assistance and the provincial project (*bantuan teknis dari Kementrian PU dan Provinsi*), without field observation particularly for actual land use and without detail data of physical character. Second, the data used was secondary data, that it generally contained less detail such as physical data.

Spatial Pattern in the South Kalimantan

Figure 4 exhibits the actual oil palm distribution almost evenly in southern areas of both districts, Tanah Laut and Tanah Bumbu. The relative evenly distributed of the oil palm relates to the emergence of oil palm as potential economic sources, and many companies invest in oil palm industry. So far, some land disputes are being arisen also here, but it has less number compares to the land dispute in North Sumatra.

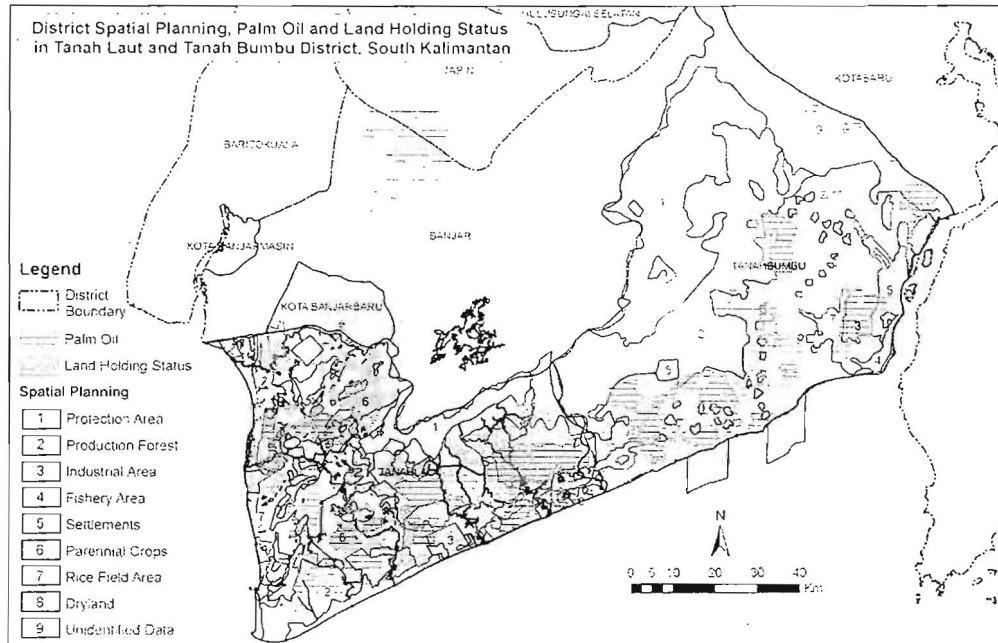


Figure 4. Spatial pattern of Oil palm and Land status regarding Spatial Planning in South Borneo

During field discussion, some local people already complain about the legal status of oil palm concessions. In the past the local people do not intent to manage large size of land and use it as they need. A family usually manages intensively less than one hectare land, but at the same time one also has an access to unmanaged land for other utilizations, such as for fire works, building, etc. As many unmanaged lands, that in the past it might be owned by local people or government land, have been converted into oil palm crops or other intensive usages particularly for coal mine, then the local people are facing less resources and willing to have more resources. During the year of 2011, several complains have been occurred and dispute between oil palm company and people, and it tends to increase.

From legal status perspective, Figure 5 shows that dominant oil palm estates in South Kalimantan have legal status, only few of oil palm estates do not have legal status. The picture shows that dominant of large holding status (HGU - *Hak Guna Usaha*) have overlapped areas with the actual oil palm crops. However, the fact is many of the actual oil crops locate outside of the boundary of legal status. Based on field finding, dominant of the ownership of oil palm belong to big companies, but some of them have a good relation with community. This is tied to oil palm following PIRBUN type or Core -Plasma type development (plasma concept). So far, in the area without plasma concept, some land disputes between local people and company occur.

A paradox also can be seen from the occurrence of land hold status in improper zone and the existence of actual oil palm is not located in proper spatial zone. Figure 4 shows few land holding status (HGU) locate in the conservation area, particularly in Tanah Bumbu District, and few land holding status are located at the wetland, dry land agriculture and forest production zone but without actual oil palm crops. The first case, there is no impact for land use forest conversion or land degradation, however this data shows some improper

implementations in the development. The second case, land holding without actual crop, this may categorise as neglected land (*lahan terlantar*), where currently, Indonesian Government wants to allocate such as land to other utilization and become a target for agrarian reform.

Furthermore, the existence of actual oil palm in some places that not in line with the district spatial planning occurring in these two districts. This situation relate may to at least two situations. are : (a) people do not follow spatial planning in their activities, and (b) improper spatial planning development. Some land utilizations do not follow the existing spatial planning, indicate by some oil palm estates locate in the wetland zone, dry land zone and forest production zone. The occurrence of oil palm crop in wetland currently become national problem due to its potential hazard to secure food security, compare to its occurrence in dry land and forest production area. Based on limited discussion in the field, some people do not follow the existing spatial plan, and some of them consider more for economy benefit after conversion. In this case, land rent of paddy is less than land rent of oil palm. Similar argument is valid for the existence of oil palm crop in dry land and forest production area.

Furthermore, the improper spatial planning development can be stated as another reason for occurrences of oil palm crops in some places. From the discussion with staffs in the office of districts spatial planning, appears some reasons for spatial inconsistencies. There are at least three reasons found. The first, the lack consideration of the importance of detail data. So far detail of physical data is not put properly, and is not supported by sufficient data. The second, political-economy factor is more important, and proper technical issue has no place in decision. The third, the lack of socialization of spatial planning to community.

Land accessibility for non oil palm in North Sumatra

Land accessibility for non palm crops in North Sumatra can be seen in Figure 5. This figure shows that some areas in these three districts are accessible for non palm crops. The areas in Langkat and Deliserdang has in compact shape compare the areas in Serdang Bedagai. However, the largest access land is available in Langkat, and follow in Serdang Bedagai and the smallest area in Deliserdang. If we refer to problem of land dispute at these three districts, then this situation is understood, as the highest land dispute is Deliserdang and less in Serdang Bedagai, and the smallest in Langkat. This figure proves that the lack of land accessibility to local community may still come, as the need of land for some local community for their livelihoods. From field finding, many communities want to have access land from expired land holding status, as people perception that when a legal status of concession has been expired, then such land will be a agrarian subject of reform, and it may distribute to community.

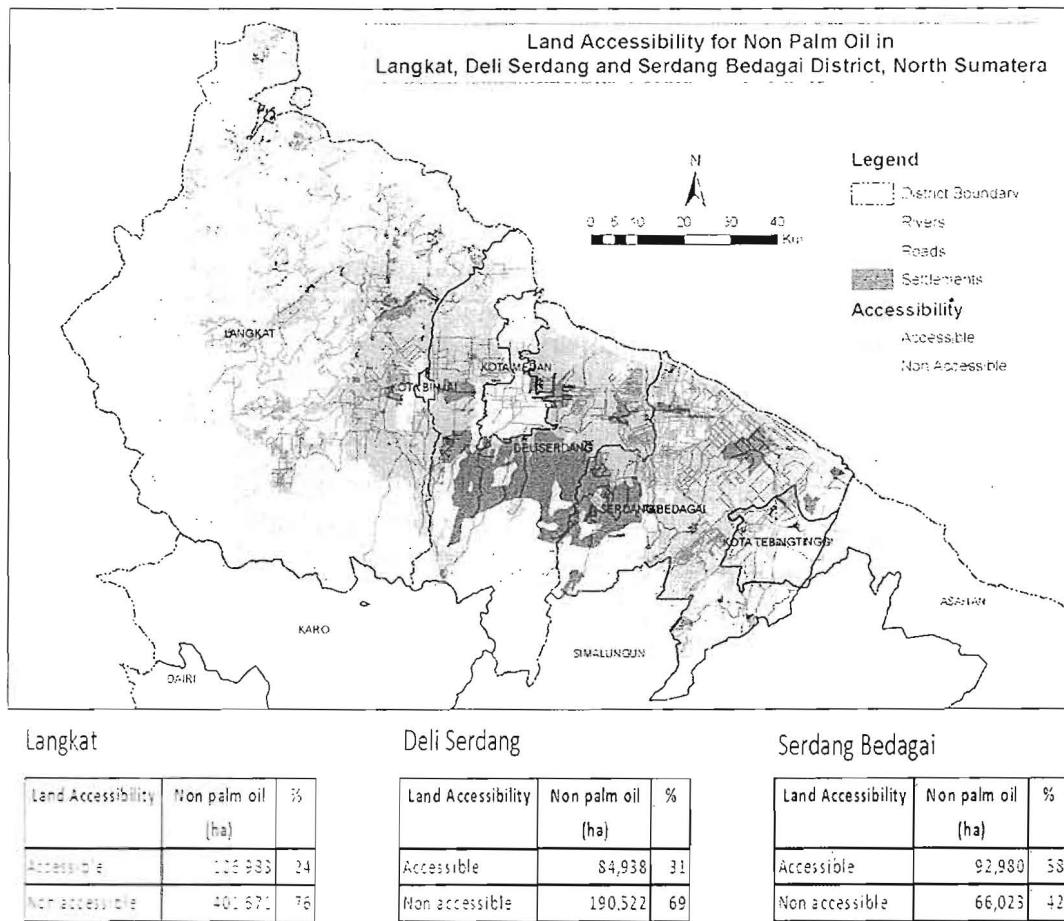
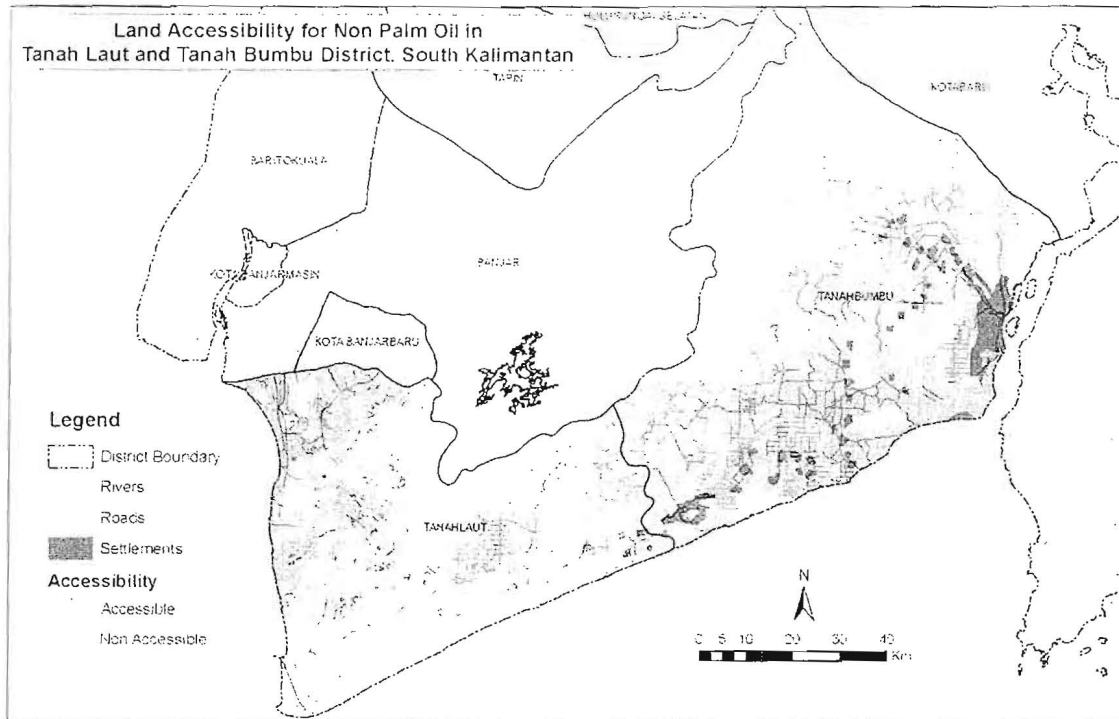


Figure 5. Distribution of accessibility of land for non oil palm crops in North Sumatra

Land accessibility for non-oil palm crop in South Kalimantan

Land accessibility for non palm crops in South Kalimantan can be seen in Figure 6. This figure shows that some areas in these two districts are accessible for non palm crops. The potential available areas in Tanah Bumbu has large size and compact shape compare to the areas in Tanah Laut, that has smaller in size and distribute evenly. The reason to this situation may relate to just recent development of oil palm crops in Tanah Bumbu compare to Tanah Laut. Beside that, Tanah bumbu is a relatively new district compare to more established district status at Tanah laut. So far the problem of land disputes occurs more in Tanah Bumbu, than in Tanah Laut. However, as land accessibility is larger in Tanah Bumbu, so that solving through land distribution is easier in Tanah Bumbu, despite it is still possible in both districts. So far, one other real problem in both districts are conflict with land mining for coal. Recently, land dispute are arisen not just from community but also from coal mine company.



Tanah Laut

Land Accessibility	Non palm oil (ha)	%
Accessible	124,214	40
Non accessible	188,650	60

Tanah Bumbu

Land Accessibility	Non palm oil (ha)	%
Accessible	172,197	33
Non accessible	324,562	62

Figure 6. distribution of accessibility of land for non-oil palm crops in South Kalimantan

There are four problems related to the spatial oil palm development in these two provinces. The problems are related to (a) law enforcement for formalization of large ownership status, (b) illegal occupation, (c) gap land ownership and small size, and (d) improper spatial planning.

The pattern of oil palm development in both provinces are different. Although the oil palm development has been longer in North Sumatra, but the problem of land conflict is higher here and many breaching of legal status, particularly for disobey of owner to have HGU certificate, beside many conflicts between communities and companies as the occurrences of community claiming for more lands for their livelihoods. The fact, the potential lands to be accessed by community is less in North Sumatra compare to land accessed in South Kalimantan. This relates to already large occupant of oil palm in North Sumatra. The major different also exhibits in legal status of oil palm estate. Many oil palm estates in North Sumatra without legal formal as large land ownership status means many loss of potential income from government perspectives. The number oil palm out of legal status boundary in South Kalimantan is less.

Furthermore, in Deli serdang and Serdang Bedagai districts, some illegal land occupations occur, particularly at near the new Air Port of Kuala Namu, or in the water catchment areas / protection areas in oil palm estates. The illegal occupation occurs mostly in the state onwer of oil palm (*PT Perkebunan Negara*),

and in the field it is managed by organized community, who want to speculate potency for land ownership. Meanwhile the illegal occupations in the protection area that common in private oil palm estates are managed by local community, and probably it purely relates to basic economy reason. According to the district staff in North Sumatra, many reasons for the occurrence of land disputes, but the need of larger land for livelihood become prominent as the increase of population; and community know about regulation in Agrarian Reform in Indonesia that when a large holding status has been expired, then government will consider to distribute such as land to particular community.

The spatial planning can be used as means to manage proper development in line with environment. So far, based on the spatial planning observation and discussion with local government staff, it figures out that some of actual spatial planning data have neither consider a proper community need for space, nor a proper consideration of physical carrying capacity. One importance reason is the lack of detail or proper data. Some spatial zone that are developed without proper consideration for its function for local people, and new development may degrade other areas when it operates.

As current picture of oil palm development in both provinces produces some negative situations then some solutions are needed to consider, are (a) a need formulation to balance ownership between community and large holding company, (b) a new method for land distribution and investment. The new formulation can be directly from calculation community need for land and prediction actual land availability spatially. The method for distribution of land should first direct to direct development of local community rather consider for investment consideration.

CONCLUSION

Some conclusions from this research are :

- a. Largely distribution of the oil palm crops in North Sumatra concentrate in Langkat and Serdang Bedagai, and oil palm estates in Deli serdang is less, and it might be related to conversion, while the oil palm crops in South Kalimantan distribute in Tanah laut and Tanah bumbu evenly.
- b. The number legal status of land holding estate is higher and distribute evenly in South Kalimantan than the number of legal status of land holding, which imply owners of oil palm estates in South Kalimantan is better in obeying of land regulation
- c. The district spatial planning in both provinces are not completely in line with both the actual oil palm occurrences and it's legal status
- d. Some indications of the problem in physical and socio-culture have found in both provinces that indicated from occurrences of land disputes and illegal occupations
- e. There are need a particular in balancing of land ownership of land or oil palm crop and supported by spatial planning

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