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RELEVANCE OF AGRARIAN REFORM IN INDUSTRY 4.0: LAND DISTRIBUTION VS LAND BANK

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Abstract

Redistribution of agricultural land is regulated in Indonesia by Constitution (Undang-Undang) No 56/1960. Its main purpose is to improve the welfare of farmers by releasing and distributing land for farmer's possession as part of the Indonesian Land reform Program. The program was held to provide an equitable share of farmer's living resources in order to create social justice. However, it is not clear on how effective this program is, because based on a research conducted by Research Centre for Population (Peneliti Pusat Penelitian Kependudukan) of the Indonesian Institute of Science, Indonesia is currently encountering a crisis of regeneration of farmers from old farmers to the younger generation in the village. This research explored the possibility of Indonesia's agricultural development in Industry 4.0 Eras, when the young people unwillingly to be farmers anymore. This may cause Indonesia to turn into an importer country. This regeneration crisis also has the potential to affect the conversion of agricultural land into non-agricultural land functions and further endangering Indonesia's food security. This talk explores a study on the number of land conversion function in Indonesia. This study was done by surveying data collected from Government Data Statistic. The study found the optimal percentage that was most effective for the Land Redistribution Program, which was less than five percent. Moreover, is Land Bank may become the next solution for the crisis. This study is hoped to be able to further develop awareness of the importance of Land Redistribution Program evaluation. In addition, it is also hoped that the government can consider other programs to improve people's welfare, while at the same time still preserving Indonesian agricultural land.

Keywords : agrarian, land distribution, land conversion, land reform, farmer welfare, land bank

A. Introduction

In 2011, the concept of "Industry 4.0" was first introduced at the Hannover Messe industrial exhibition in the city of Hannover, Germany. It commenced the transformation of fundamental challenge to the way economies and societies organize themselves in domestic policy by technological advances (WEF 2019). The World Economic Forum White Paper for the year of 2019 also acknowledge that this wave of technological disruption is coinciding and interacting transformations in the global economic and political context. This notion already been intensively delivered through entire sector. The concept proposed by the industry 4.0 approach relies on creating an environment in which all elements are connected to each other in a seamless and effortless way (Braun 2008).

Agrarian, the main sector in economic, roles as a food provider also received major influence from the technology development, resulting in the emergence of term like Agricultural 4.0 dan Farming 4.0 (Braun 2018). Moreover, notice from Braun (2018) that agricultural business model innovations require the combinations of economic benefits with sustainable agricultural approach for human and environment. It generates significance necessity of constant resources, namely human and land. Thomas Robert

Malthus's 'Dismal Science' states that population growth in a country will always be faster than food growth in a country. The problem derived from food production resources scarcity, especially for agricultural land, considering the existing in limited number. Since land is a vital object for dwelling and government infrastructure projects.

In order to maintain the sustainability of agricultural land, the key factor in agrarian sector, since 1961 Indonesia conducted Agrarian Reform Program. It regulated by Constitution (Undang-Undang) No 56/1960 and held by Ministry of Agrarian and Spatial Planning Affairs. Agrarian Reform was conducted with main purpose to improve the welfare of farmers and in the other hand, it also increasing the economic growth and productivity nationally. Land reform conducted by releasing and distributing land for farmer's possession as part of the Indonesian Agrarian Reform Program. The program was held to provide an equitable share of farmer's living resources in order to create social justice as mandated in UUD 1945.

During the first period of President Joko Widodo's rule in 2015-2019, Agrarian Reform was concluding as one of his major programs, namely *nawa cita*, and used for Republic Indonesia Medium-Term National Development Plan (RPJMN) arrangement. Until August 2019, realisation of land distribution from expiration of Right to Cultivate (Hak Guna Usaha (HGU)), abandoned land, and other State Land is 573.432 parcels or an area of 440.085 Ha, and land distribution from releasing of forest areas with the realization of certificate issuance of 25,310 parcels or an area of 19,490 Ha.

In addition of Industry 4.0 is taking shape, the government must consider the changing in agricultural industry. Which system more reliable in regards of government role to undertake scarcity, is it land distribution program or the land bank system that can generates the sustainability.

This paper will criticize and examines by SWOT Analysis for both system in the government point of view that promote their role as the guardian of national economic sovereign. Qualitative data will be deriving from literatures that prominence with both systems and the quantitative data such will support the conclusion. This discussion limited on economic perspective. Land distribution would rule out the land dispute, while land bank system focusing on finance instrument.

Since the high demand of land, we will lose more agricultural land continuously when it does not manage properly. This study is an urgent matter to decide how to maintain the agricultural land sustainability. As Alexander (2015) stated "Both people and land lie at the heart of community and it is land that creates the place and the space; we are stewards of land, and it support and protects us; we neglect and abuse land, and it soon mirrors our fractured community".

B. Material and Methods

1. *Land Distribution Profile in Indonesia*

Land Reform in Indonesia began with UUPA 1960 issued and in accordance with Perpu 56/1960 concerning Determination of Agricultural Land Area. The regulation intend was to distribute land to landless farming communities by providing a minimum of two hectares of agricultural land.

Based on 2013 Indonesian Ministry of National Development Planning White Paper, up until 2012 there was four major problem in National Agrarian Reform Program (NARP) implementation:

- a. Land which becomes the object of agrarian reform (TORA)-as already compiled in the Draft Government Regulation (RPP) of Agrarian Reform-derived from the following eight types of land status categories:
 - 1) State land as a former abandoned land
 - 2) Land conversion forest area;
 - 3) State land that arise from other sources (free state land, state land from western rights, state land originated from arising land);
 - 4) Former swapraja land;
 - 5) State land originating from former minerals, coal and geothermal mining;
 - 6) State land originates from the release of forest areas;
 - 7) State land originates from exchanges or other civil law acts others in agrarian reform context; and
 - 8) Land surrendered by the right holders to the state for agrarian reform.
- b. Unenviabilities of proper agrarian reform's recipient data;
- c. Indistinct Operational Land redistribution delivery mechanism;
- d. Cadastral measurement and identification of the tenure, tenancy, usability, and Land Use (P4T) does not cover all national areas yet.

Table 1: Land Distribution Performance 2010-2014

Year	Allocation		Realisation		Percentage	
	Total Area	Average/ year	Total Area	Average/ year	Total Area	Average/ year
1961-2004	2.398.001	54.500	1.153.685	26.220	48.11%	48.11%
2005	5.482	5.842	15.579	15.579	284.18%	266.67%
2006	2.346	2.346	7.018	7.018	299.15%	299.15%
2007	92.151	92.151	86.295	86.295	93.65%	93.65%
2008	267.363	267.363	240.627	240.627	90.00%	90.00%
2005-2008	349.519	87.349	367.701	91.925	105.20%	105.24%

Source: Ministry of Agraria an Spatial Planning Affairs Renstra 2010-2014

2. **The Basic Concept of Land Bank**

Land Bank concept has been widely applied in many countries, thus far many expertise defines it differently. Alexander (2015) approach Land bank as “governmental entity that focuses on the conversion of vacant, abandoned, and foreclosed property into productive use.”. While Koesoemo (2015) stated Nederland, which is use this system to support their agricultural industry, has minimum two public institution that define the land bank description: Dienst Landdelijk Gebied (DLG) lead land banking as “The structural acquisition and temporary management of land in rural areas by an impartial state agency with the purpose to redistribute and/or lease out this land with a view to improve the agricultural structure and/or reallocate the land for other purposes with a general public interest”. While Domeinen define it as an activity of “holding of land for strategic purposes like infrastructure and city extension”. Maria S.W Soemardjono formulates the function of land banks, including:

- a. Land collectors or land keepers;
- b. securing land for various development needs in the future (land warrantee);
- c. land purchaser;
- d. land distribution for various development purposes (land distributor).

Koesoemo (2015) depict the concept of land banking as a means of land management from The Netherlands as one of the originators, in 3 (three) groups, namely:

a. Exchange land banking;

The land bank will purchase land which will then be retained for a while it is released/exchanged with third parties

b. Financial instruments; and

Carried out by the government buying land for leasing to farmers for a long period (generally 26 years). This concept emerged in agricultural sector, for example a farmer is experiencing financial difficulties as working capital, so he can sell his assets and land to the land bank with the right to repurchase after a certain period and the farmer can also continue to work on the land by renting to a land bank.

c. Land bank as developer.

Generally carried out by the private sector by purchasing large amounts of land with the expectation that in the future there will be changes in the function of the land location (speculation) such as changing into residential areas, recreation, economic activities so that it will increase the value of the land.

In Indonesia, land bank system has been adopted by private and regional public sector, but nationally yet. In regard to the land acquisition referred to UU 2/2012 concerning Land Procurement for Public Interest, government both central and regional are obliged to guarantee the availability of land for public use and funding. Furthermore, it was determined that in the land acquisition needs to be considered, several things such as:

- a. spatial plans;
- b. national / regional development plan;
- c. the strategic plan; and
- d. work plan for each agency that requires land

3. *Agricultural Sector Development in Indonesia*

a. **Human Resources**

BPS data notes that in 2003-2013 period, the number of farmer households decreased by 5,10 million, from 31,23 million in 2003 to 26,14 in 2013, further the 2013 agriculture census reports that the number of farmers is reduced by one million people per year. This figure is quite astonishing because it has implications for the sustainability of the agricultural sector. Moreover, Indonesian agricultural model is a family farming model that has been proven capable of maintaining agricultural production and farmers existence.

Therefore, BPS stated the smallholder household growth also experienced negative growth 25,07 percent, from 19,02 million in 2003 decreased to 14,25 million in 2013. The absolute degradation number happen in Central Java Province with 1,32 million household and 81,04 percent in DKI Jakarta. Meanwhile, the positive countermeasure occurs in Papua Province with 135,61 thousand number of household escalation or 79,87 percent.

The cause of the declining of agricultural subject can be formulated as follows:

- 1) Reduction of smallholder household with land ownership less than 0,10 Ha are 5,04 million or 53,75 percent from 2003;
- 2) Based on BPS 2011 Catalog, 47, 57 percent of farmers are in the age group ≥ 50 years old, which means their productive age projection maximum only 20 years ahead;
- 3) Buletin Anggaran DPR (2017) stated that farmer is unattractive profession due the welfare concern. The enhancement of Agricultural productivity is unparallel with welfare growth. It is reflected in the declining of Farmer Exchange Rates (NTP) that close to 100, means the acceptance of farmers is almost break even with the production's expenditure and left small amount of profit. Beside that the low bargaining power of farmers shows that agribusiness supply chain system not yet supports farmers' welfare.
- 4) Wiyono (2015) in his study stated that the income per capita of the agricultural sector was the lowest compared to others. In addition, 39 percent of farmers' education level is not completed elementary school. Although education is biased in this sector, it does not close the possibility of education levels can help innovations that increase agricultural productivity.
- 5) Nurmawiya and Kurniawan (2019) formulated the most of the farmers in Yogyakarta are not ready to encounter industry 4.0 era in term of quantity and quality.

- 6) According to the World Bank, urban in Indonesia has an average population growth of 4.1 percent per year and made Indonesia as country with the rate of urbanization the fastest in the world. Minister of Village, Development of Disadvantaged Regions and Transmigration notes currently the percentage of population in rural areas are still 50.2 percent of total population in Indonesia. This situation issued population reduction predictions until 2035 rural population will decreased by 0.64 percent per year.

b. Natural Resources (Land) Availability

Wiyono (2015) in KRKP Farmer Regeneration Study Report represent the real correlation between area of land ownership with parental interest make his son a farmer. Respondents whose land ownership was more than 1 hectare will encourage their children to become farmers, in the other hand, respondents who own less than one hectare of land do not want his son works as a farmer. Understandable reason of this matter is because of land area immensely related to efficiency. The more land area, level efficiency is getting higher and resulted in significant rise of productivity.

Based on BPS data for Agricultural Land Area by Utilization in Indonesia, 2013 – 2017 there is insignificant growth number of agricultural lands in 1,06 percent and nationally Area of Wetland by Province, 2013 – 2017 growth in negative number by -0,31 percent. For conclusion the average number of agricultural land growth is less than 2 percent. Meanwhile, Pusat Data dan Sistem Informasi Pertanian Report for 2012-2016 period notes 16 percent decreasing in the number of Area of Temporarily Unused Land by Province in Indonesia, 2012 – 2016.

4. SWOT Analysis

SWOT is an acronym for Strengths, Weaknesses, Opportunities and Threats. Sammut-Bonnici and Galea (2017) define SWOT analysis as an activity to “evaluates the internal strengths and weaknesses, and the external opportunities and threats in an organization’s environment”, objectively “SWOT analysis is to use the knowledge an organization has about its internal and external environments and to formulate its strategy accordingly”. They also elaborate the used as “The internal analysis is used to identify resources, capabilities, core competencies, and competitive advantages inherent to the organization”. While “The external analysis identifies market opportunities and threats by looking at competitors’ resources, the industry environment, and the general environment”.

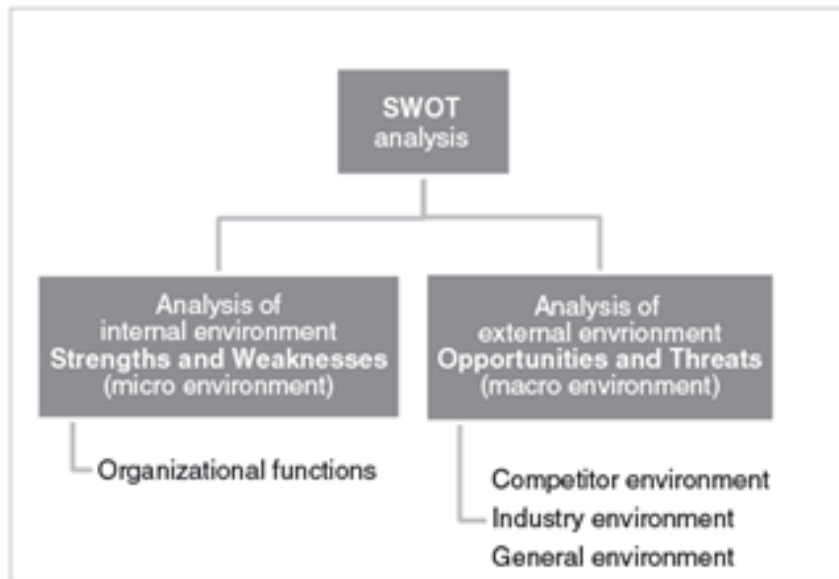


Figure 1. SWOT Analysis

Source: <https://www.researchgate.net/publication>

In regards to do this research, we use adaptation of the SWOT Analysis is Wehrich's TOWS Matrix. "The matrix identifies potential tactical strategies that could be deployed for the purpose of exploiting opportunities or defending against threats through the leverage of the existing strengths and the reduction of weaknesses" (Sammut-Bonnici and Galea,2017).

This paper adapted the matrix from tactical strategies based on four different positions:

- a. The first quadrant attempts to maximize opportunities arising from each the external environment and eliminating the system internal weaknesses that hinder its growth.
- b. The second quadrant is an ideal situation where an organization can maximize on both strengths and opportunities.
- c. The third quadrant would examine the government strategy uses the internal strengths that can counteracts threats from competitors, the industry, and the greater environment.
- d. The WT strategy in the fourth quadrant is the worst-case scenario when an organization has to minimize both its weaknesses and its threats. However, external forces may not be avoidable by the government.

All this analysis conducting in regards of preserving the agricultural sustainability.

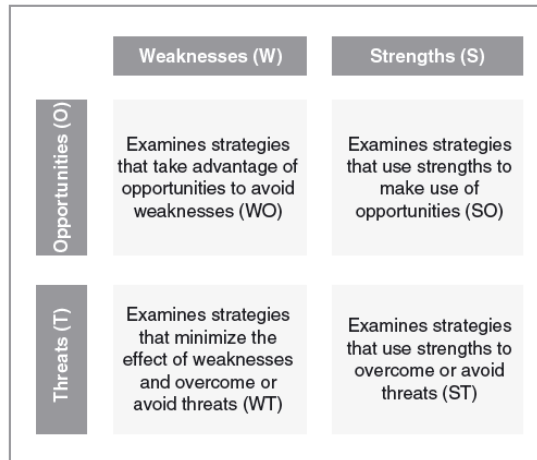


Figure 2. Wehrich's TOWS Matrix

Source: <https://www.researchgate.net/publication>

C. Result and Discussion

1. SWOT Analysis of Land Reform Performance in Indonesia

Strengths	Weakness
<ul style="list-style-type: none"> • Agrarian reform program completion; • Poverty mitigate by reducing land ownership gaps and provide access to land as an asset for land poor farmers; • National agricultural productivity improvement which is lead to the per capita income rising. • Farmers can access capital from certificates as collateral. 	<ul style="list-style-type: none"> • Regulatory is still guided by the 1960 Agrarian Law; • There are no update regulations that are in line with the progress of the times lead to Unenviabilities of proper agrarian reform's recipient data, Indistinct Operational Land redistribution delivery mechanism and Cadastral measurement and identification of the tenure, tenancy, usability, and Land Use (P4T) does not cover all national areas yet; • The state has no control over land after it has been distributed to the subject of land reform; • conversion of agricultural land cannot be prevented.
Opportunities	Threats
<ul style="list-style-type: none"> • Assistance programs for young farmers who support agriculture in terms of quantity and quality (example: Young Farmers Program) • Farmers can independently developes their agricultural business with its own assets that leads to development of agricultural productivity; • Industry 4.0 makes it easy to access supply chains that support agriculture industry 	<ul style="list-style-type: none"> • Agricultural land's transfer of function of due to poverty • Land mafia • crop failure • Farmer negative regeneration (lack of interest in continuing the farmer profession)

2. *SWOT Analysis of Land Bank System*

<i>Strengths</i>	<i>Weakness</i>
<ul style="list-style-type: none"> • The state has absolute control because the land bank is a national asset; • Land use change can be avoided except for development purposes; • Controlling land mafias who want to control ownership by exploiting the farmers poverty; • Safeguard national sovereignty from foreign ownership. 	<ul style="list-style-type: none"> • In Indonesia it is still a study discourse; • Special regulations are needed to regulate it; • It takes time to prepare the system and mechanism;
<i>Opportunities</i>	<i>Threats</i>
<ul style="list-style-type: none"> • The prospect of conceive new income from small-scale Non-Tax Revenue (Pendapatan Negara Bukan Pajak) from Right to Cultivate (HGU); • The prospect of improving high quality agriculture industry because land is cultivated by generations who really want to become farmers but are constrained by land ownership (example: Young Peasant Ambassador Program). 	<ul style="list-style-type: none"> • Opposition from pro land reform institutions in regards of poor farmers interest; • Opposition from land mafia, developer.

D. **Conclusion**

Since Indonesia encounter crisis in farmer regeneration and land scarcity, it is time for the government to start evaluating the recent land management due its scarcity and food security. Especially in the industry 4.0 era which all mechanism covers by technology, is Indonesia enable to survive with traditional farming system and struggle with the problem of providing land.

Based on SWOT Analysis, Land Reform emphasized on economic recovery of poor farmers with access to asset from land distribution. However, farmers regeneration crisis, negative growth of agricultural land, land for development purposes and limited number of TORA (Tanah Objek Reforma Agraria) became unresolved burden. Moreover, because of un-update regulation the government loses its control function, both in terms of land conversion, as well as providing land for public use.

On the other hand, Land Bank system is able to provide solutions both in economic growth and scarcity. TORA object would be maintaining as national state property and leased to farmers who need agricultural land both for industry and smallholder household. Therefore, The Government control function can be carried out optimally.

Both Land Reform and Land Bank system has an unlimited opportunity in industry 4.0 era to improve agricultural industry and leads to economic growth. However, Land Bank system offer a prospect of conceiving new income from small-scale Non-Tax Revenue) from leasing.

Eventually, both systems have the same enemy in the implementation. Intervention from many opposite parties cannot avoided, but can be minimalize and managed under steady control function system and regulation.

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