

# Evaluation of agropolitan policy: dependency theory perspective

## Evaluación de la política agropolitana: perspectiva de la teoría de la dependencia

SAKIR, Mochammad<sup>1</sup>

### Abstract

This study aims to determine the evaluation of agropolitan policy from the perspective of dependency theory that specifically discusses the influence of corn-based agropolitan programs on the area of corn production land, farmer income, educational, and health conditions. This research uses a quantitative approach. The results showed that in the implementation of agropolitan corn-based land area programs, farmers' net income increased.

**Key words:** policy, agropolitan, farmers, dependency theory

### Resumen

Este estudio tiene como objetivo determinar la evaluación de la política agropolitana desde la perspectiva de la teoría de la dependencia que discute específicamente la influencia de los programas agropolitanos basados en el maíz en las áreas de tierra de producción de maíz, ingresos de los agricultores, educación y condiciones de salud. Esta investigación utiliza un enfoque cuantitativo. Los resultados mostraron que en la implementación de los programas de áreas de tierra agropolitanas basadas en maíz, el ingreso neto de los agricultores aumentó.

**Palabras clave:** política, agropolitan, agricultores, teoría de la dependencia

---

## 1. Introduction

The agropolitan development approach was conceived for the first time in Indonesia by the Ministry of Agriculture in order to increase the income and welfare of farmers (through the letter of the Minister of Agriculture of the Republic of Indonesia Number 144 / OT.201 / A / V / 2002 concerning the Development of Agropolitan Areas) and strengthened with the birth of Law Number 26 2007 concerning Spatial Planning.

Even though agricultural development with an agropolitan approach is considered strategic, there are several main problems faced, namely in the agropolitan concept, the agricultural development model should rely on local resources, but agricultural development policies are still general despite the fact that natural resources have varied characteristics (Winoto & Siregar, 2016). Then, a lot of productive land turned into residential areas. Potential available land resources have not been used optimally due to limited human resources, access to technology and capital, as well as weak agricultural infrastructure, where irrigation networks, village roads, bridges, and other infrastructure must be addressed to spur agricultural growth and development.

---

<sup>1</sup> Mochammad Sakir. Social and Political Sciences, Ichsan University, Gorontalo, Indonesia. Email: mohammad.sakir@yahoo.co.id

This certainly raises questions on the economic and social influence of farmers from agropolitan programs with corn entry points in Gorontalo Province. This is because Gorontalo Province has launched a corn-based agropolitan program as a superior program with the aim of increasing farmers' income and welfare. This research is different from previous studies which more examined the increase in farmers' income in terms of macro and at the time the program was implemented. This study will examine the effect of the corn-based agropolitan program in terms of the microeconomic conditions of corn farmers after the program is implemented. Socio-economic conditions according to Mueller and Parcel, imply two scopes namely social and economic (Williams et al., 2004). Social conditions in the study include education and health, while economic conditions include the area of agricultural land and production, as well as farmers' incomes.

Agropolitan area development policy as a policy choice is felt to be very important, considering its development which utilizes and promotes concepts in accordance with local uniqueness, excellence, and reliability, especially in developing countries (Sirojuzilam et al., 2018). If examined in the discipline of public administration, an administrator in making a policy that leads to the nature of achieving the goals of development itself by understanding the theory of development. The benefits of development theory including as the guidelines, or assumptions to see phenomena in development. Thus, agropolitan is a phenomenon of the second-generation development theory, namely the theory of dependency.

This study refers to the explanation of the dependency theory which is one of the theories that sees development problems from the point of view of third world countries (Frank, 1967; Santos, 1970). The development model according to the dependency theory is to maximize the internal factors which are called in the modernization theory as inhibitors of the development movement. It is precisely according to the theory of dependency that the causes of development problems in some third world countries are external factors, namely unequal relations between developed and lagging countries or intervention from developed countries towards lagging countries.

In the study of development theory, especially this dependency theory, the agropolitan concept of Douglass (1975) was born. This concept emerged in the 1970s to 1980s. In other words, the concept of agropolitan carries the philosophy of the dependence of disadvantaged regions on more developed regions. In it, assumptions emerge which show efforts for local independence and overcome exploitative relations with more developed regions.

Some of the results of empirical research on the concept of agropolitan show that the agropolitan model can support local agribusiness based on economic development (Rusastra, 2002; Collier, et al., 1993). The economic dimension of sustainability utilizes the diversity of agroecosystems to achieve minimum dependence on external inputs, and crop-livestock integration to offset limits on economies of scale with economies of scope and yield stability, resulting in increased productivity, food security, and stability of farmer's income. As such it can serve the purpose of poor farmers' livelihoods and equity. These practices also enhance social sustainability (Altieri, 1999; Gliessman, 1990). Several studies on agropolitan programs conducted (Eilenberg, 2014; Hashemianfar, et al., 2014; Dardak, 2007), show that regional development and community economic empowerment currently still depend on economic development, equity and national stability. The results of an empirical study were otherwise carried out by Sirojuzilam & Muda (2016), which showed the failure of the agropolitan program in improving the farmer's economy therefore the results of empirical verification from various studies on the agropolitan program are still inconsistent. This study aims to determine the evaluation of agricultural policy from the perspective of dependency theory that specifically discusses the influence of corn-based agropolitan programs on the area of corn production, farmer income, educational conditions, and health conditions.

## 2. Methods

This research uses survey method. In this research design, the questionnaire was used as a data collection tool for farmers as participants in the corn agropolitan program in Gorontalo Province. The quantitative approach in this study is aligned with the research variables which focus on the influence of the corn-based agropolitan program on the socio-economic conditions of corn farmers in Gorontalo Province in the form of research results in the form of numbers that have meaning. The research sites will be carried out in three districts, namely Gorontalo Regency, Boalemo Regency, and Pohuwato Regency.

This study uses panel data, in which the population is corn farmers who participated in the corn-based agropolitan program from 2007 to 2019 in Gorontalo Province, which totaled 2,815 farmers in three districts. The number of samples is 310. Furthermore, to draw representative samples representing each district, carried out using simple random sampling. Data collection techniques used were questionnaires and observation. After all research data has been collected, data analysis is performed with statistical tests on hypotheses.

**Tabel 1**  
Hypothesis Testing Criteria

Measurement	Statistical Hypothesis	Research Hypothesis
H1: The average farmer land ownership (Ha) in 2019 ( $\mu_2$ ) is greater than the 2007 average ( $\mu_1$ ).	$H_{01}: \mu_2 > \mu_1$	Corn-based agropolitan programs affect the area of corn farmers in Gorontalo Province
H2: The average corn production (Ton) in 2019 ( $\mu_2$ ) is greater than the average in 2007 ( $\mu_1$ )	$H_{02}: \mu_2 > \mu_1$	Corn-based agropolitan programs have an effect on farmers' corn production in Gorontalo Province
H3: The average income of farmers (Rp) in 2019 ( $\mu_2$ ) is greater than the average in 2007 ( $\mu_1$ )	$H_{03}: \mu_2 > \mu_1$	Corn-based agropolitan programs affect the income of corn farmers in Gorontalo Province
H4: The average educational condition (degree of education) in 2019 ( $\mu_2$ ) is greater than the average in 2007 ( $\mu_1$ )	$H_{04}: \mu_2 > \mu_1$	Corn-based agropolitan programs affect the educational conditions of corn farmers in Gorontalo Province
H5: The average health condition (health status) in 2019 ( $\mu_2$ ) is greater than the 2007 average ( $\mu_1$ )	$H_{05}: \mu_2 > \mu_1$	Corn-based agropolitan programs affect the health conditions of corn farmers in Gorontalo Province.

Source: Primary research data, 2019

## 3. Results

Hypothesis testing is done by paired sample t-test, which are two measurements on the same subject to the effect of corn-based agropolitan programs. The measure of influence in 2007 and 2019 of the corn-based agropolitan program was measured, with the basic premise that if the corn-based agropolitan did not make a difference, the mean difference was 0 (zero). The results of hypothesis testing using paired sample tests can be seen in the following table.

**Table 2**  
Paired Sample T-Test Test Results Land Area, Corn Production, Farmer Income,  
Educational Conditions, and Farmer's Health Conditions in 2007 and 2019

<b>Variable</b>	<b>Correlation</b>	<b>t<sub>count</sub></b>	<b>t<sub>table</sub></b>	<b>df</b>	<b>Sig. (2-tailed)</b>
Farmers' land area in 2007 and 2019 from the agropolitan program	0,27	9,90	1,96	309	.000
Farmer corn production in 2007 and 2019 from the agropolitan program	0,74	13,21	1,96	309	.000
Farmer income in 2007 and 2019 from the agropolitan program	0,72	34,79	1,96	309	.000
Farmer education conditions in 2007 and 2019 from the agropolitan program	0,34	52,86	1,96	309	.000
Farmers' health conditions in 2007 and 2019 from the agropolitan program	0,36	48,15	1,96	309	.000

Source: Processed Data, 2020

The results of the significance test of farmers' land area in 2007 and 2019 from the corn-based agropolitan program, also resulted in the tcount of 9.90 at 309 degrees of freedom, and this value was greater than the ttable of 1.96. Sig value (2-tailed) is 0,000 and smaller than the critical value of 0.05 (0,000 <0.05) means reject H0, where the difference is not equal to zero, meaning that there is a significant increase in farmland area of the corn-based agropolitan program in Gorontalo Province. Thus, it can be concluded that the corn-based agropolitan program affects the area of corn farmers in Gorontalo Province. Corn-based agropolitan programs have an effect on farmers' corn production in Gorontalo Province. Corn-based agropolitan programs affect the income of corn farmers in Gorontalo Province. There is an influence of corn-based agropolitan programs on the educational conditions of corn farmers in Gorontalo Province. There is an influence of corn-based agropolitan programs on the health conditions of corn farmers in Gorontalo Province.

Discussion of the results of the analysis of the influence of the corn-based agropolitan program on farmers' economic conditions is seen through different tests based on land area, corn production, and farmers' income, and the influence on social conditions is seen based on the educational and health conditions of family members of farmers. Following is the description of the results of the different test statistics through the paired sample t-test method.

### 3.1. Effect of corn-based agropolitan programs on farmers' land area

The results of the significance test of farmers' land area in 2007 and 2019 from the corn-based agropolitan program in the three districts sampled also showed an increase in farmers' land area in all these districts, with the largest average increase in land area found in Boalemo District, by a difference the increase in land area (mean of paired sample test) between 2007 and 2019 from the corn-based agropolitan program was 0.40 hectares. Thus it can be said that the corn-based agropolitan program, has had an effect on the maximum utilization of agricultural land in accordance with its designation. This result confirms the concept of underdevelopment proposed by Frank (1967), which refers to a situation where the source (in a country) is not used, causing the region in the country to not advance because the land is not used on a scale consistent with its potential.

The results of statistical tests also prove that an increase in farmers' land area in 2019 from the corn-based agropolitan program. The results of the test of the significance of farmers' land area in 2007 and 2019 from the corn-based agropolitan program, that the t value was  $9.90 >$  from the t table value of 1.96. From the comparison of the t-count value and the t-table value, it is evident that there is a significant addition of farmers' land area from the corn-based agropolitan program in Gorontalo Province, so it can be concluded that since the implementation of the corn-based agropolitan program in Gorontalo Province, the area of farmers' land has also increased.

### **3.2. Effect of corn-based agropolitan programs on corn production**

The results of the study in Gorontalo Province as described in the previous section show that in the three districts that were sampled, all of them showed a correlation between increasing corn production in 2019 from the corn-based agropolitan program. The results of the significance test of corn production in 2007 and 2019 from the corn-based agropolitan program in the three sample districts also showed an increase in the number of farmers' corn production in all of these districts, with an average increase in the number of corn farmers' largest production found in Boalemo District, with the mean difference in the amount of corn production (mean of paired sample test) between 2007 and 2019 from the corn-based agropolitan program was 2.54 tons. in one growing season. Thus it can be said that the corn-based agropolitan program can increase farmers' corn production. This result confirms the concept of underdevelopment proposed by Frank (1967), which refers to self-reliance activities by efforts to increase food production to avoid dependence on imported products from other regions.

Statistical test results prove that an increase in farmers' corn production in 2019 from the corn-based agropolitan program. The results of the significance test of farmers' corn production in 2007 and 2019 from the corn-based agropolitan program, that the t value was  $13.21 >$  from the t table value of 1.96. From the comparison of the t-count value and the t-table value, it is proven that there is a significant increase in farmers' corn production from the corn-based agropolitan program in Gorontalo Province, so it can be concluded that since the implementation of the corn-based agropolitan program in Gorontalo Province, the farmers' corn production has also increased.

### **3.3. Effect of corn-based agropolitan programs on farmers' incomes**

Statistical test results prove that an increase in farmers' gross income in 2019 from the corn-based agropolitan program. Significance test results of farmers' gross income in 2007 and 2019 from the corn-based agropolitan program, in which the tcount was  $35.49 >$  of the t table value of 1.96. Likewise, the results of the test of the significance of net income for farmers in 2007 and 2019 from the corn-based agropolitan program, where the value of tcount was  $34.79 >$  of the table value of 1.96. From the comparison of the value of the tcount value and the value of the ttable, it is proven that there is a significant increase in the gross income and net income of the farmers from the corn-based agropolitan program in Gorontalo Province, so it can be concluded that since the implementation of the corn-based agropolitan program in Gorontalo Province, gross income and income net farmers have increased.

Increased gross income and net income of farmers in 2019 from the corn-based agropolitan program in Gorontalo Province, much supported by policy interventions carried out by the Gorontalo Province government, by setting corn prices at farm level, where the lowest selling price is Rp 2,700 per kilograms for shelled corn with 17 percent water content, and dry shelled corn with 15 water content is sold at Rp. 3,000 / kg (the lower the water content, the higher the selling price). For the selling price of corn in the warehouse, dry shelled corn with 17 percent water content is IDR 3,500 / Kg, and dry shelled corn with 15 moisture content is IDR 3,900 / Kg. Determination of the quality of maize yield or measurement of corn moisture content, is carried out in the Seed Certification Center of Gorontalo Province Corn Moisture Testing Unit or with a tester, and if there is no tester,

then it is done in several ways, namely by being bitten (to find out the level of drought) Putting the foot in a bag (if there is corn attached to the foot means that the water content is still high, and by checking the color, if the color of pale corn will be appreciated cheaply and if the color is bright means the quality of corn is good. If there is unsold corn, then corn This will be used by farmers for self-consumption as their alternative food, this condition confirms the results of a study by Scrimgeour et al (2002), which recommends that agropolitan development, which he calls self-centered development, requires government intervention in the form of regulations to cut structural barriers. Recommendations made by Scrimgeour et al (2002) is a synonym of dependency theory (Frank, 1975), which in broad outline is a situation where major decisions that affect economic progress in developing countries such as decisions on commodity prices, investment patterns, monetary relations, are made by individuals or institutions outside the country concerned.

### **3.4. Effect of corn-based agropolitan programs on the educational conditions of corn farmers**

One of the efforts made by the Gorontalo Province government in implementing a corn-based agropolitan program is to carry out physical development activities in the agropolitan development area, including the construction of educational and health facilities. This confirms Friedmann's statement (1979), that one of the supporting agricultural activities in the agropolitan area development effort is to provide complete facilities and infrastructure. The agropolitan area must be equipped with facilities like urban areas. The facilities include road networks, educational institutions, health institutions, financial institutions, offices, extension services and technology experts, transportation, telecommunications, electricity, clean water, farmers' institutions, and public infrastructure and facilities. With the availability of these facilities and infrastructure, especially education and health facilities and infrastructure, it is hoped that the conditions for education and health of farmers in the agropolitan area will be better. Andika et al (2020) states that the resources allocated for education and health contribute to economic growth. The government must pay attention to policies to encourage the private sector to invest more in education and health.

Statistical test results prove that the educational conditions of farm family members, in 2007 and 2019 from the corn-based agropolitan program in Gorontalo Province showed an increase in the average score of the educational conditions of farm family members, where the educational conditions of farm family members in 2007 were 1, 82, while in 2019 the corn-based agropolitan program was 2.56. Thus, seen from the mean (average) condition of education in 2007 and 2019 from the corn-based agropolitan program, there was an improvement in the educational condition of family members of farmers after the corn-based agropolitan program by 0.74. Education helps a person to gain knowledge, skills/values, values, and attitudes, which help to achieve a better quality of life (Ross and Wu, 1995). The dependency theory of Frank (1967) basically agrees with the lack of capital and the lack of expertise as a cause of dependency.

Significance test results also prove that there is an improvement in the education conditions of family members of farmers in 2019 from corn-based agropolitan programs. The test results of the significance of farmers' education conditions in 2007 and 2019 from the corn-based agropolitan program, also resulted in a tcount of 52.86 at a free degree of 309, and this value is greater than the ttable value of 1.96, meaning rejecting H0, where the difference is not equal to zero, meaning that there is an improvement in the educational conditions of farmers from the corn-based agropolitan program in Gorontalo Province. The increasing condition of the education of farm families in this agropolitan development area, proves that farmers already have an awareness of the importance of education, as a provision for the future of family members.

### 3.5. Effect of corn-based agropolitan programs on the health conditions of corn farmers

The health condition of farmers and family members as seen from the availability of health facilities, types of treatment carried out, the use of health services, in 2007 and 2019 from the corn-based agropolitan program, has increased based on the results of data analysis described previously.

Statistical test results also prove that the health conditions of farmers and family members, in 2007 and 2019 of the corn-based agropolitan program in Gorontalo Province showed an increase in the average health conditions of farmers and family members, where the health conditions of farmers and their family members in 2007 was 1.63, while in 2019 the corn-based agropolitan program was 2.41. Thus, seen from the mean (average) health conditions in 2007 and 2019 from the corn-based agropolitan program, there was an improvement in the health conditions of farmers and family members in 2019 from the corn-based agropolitan programs by 0.77. Although there has been an improvement in the health conditions of farmers and family members after the corn-based agropolitan program, the number of facilities and health workers is still minimal. The lack of facilities and health workers in the agropolitan area will certainly make it difficult for farmers and family members to get health services, and will greatly affect the productivity of farmers because healthy farmers will produce a good performance and contribute to the development of the agropolitan area. This condition confirms the opinion of Hawks & Ruel (2006), which states that in a farming community, poor health can reduce income, efficiency, and productivity, then a decline in the ability of farmers to overcome health problems and inhibit economic development. Health affects the agricultural system by affecting the health conditions of farmers.

Significance test results also prove that there is an improvement in the health conditions of farmers and family members after the corn-based agropolitan program. The results of the significance test of farmers' health conditions in 2007 and 2019 from the corn-based agropolitan program, also resulted in a tcount of 48.15 at a free degree of 309, and this value was greater than the ttable value of 1.96, which means rejecting  $H_0$ , at where the difference is not equal to zero, meaning that there is an improvement in the health conditions of farmers from the corn-based agropolitan program in Gorontalo Province.

Corn-based agropolitan programs can improve economic conditions (land area, production, and income) and social conditions (education and health) of farmers in Gorontalo Province, but do not eliminate the dependence of some farmers as desired by the dependency theory echoed by Frank (1967). The author assumes that all farmers are not free from the clutches of collectors/middlemen in the agropolitan development area due to two moderator variables. The two moderating variables that the authors identified in this study are land use policy, and institutional strengthening of farmers.

The land-use policy is related to the control or ownership of agricultural land owned by the regional government that has not been touched or exploited by farmers. Land ownership is related to the area of land used by farmers to grow corn. This aspect of land ownership is important according to the author, because farmers who are under the authority of collectors/middlemen are farmers who have an area of 1 hectare of land and farmers. In addition, in the district area in Gorontalo Province, there are still vast areas of dry land that have not been utilized for farming. For this reason, this condition must be considered by the government in formulating the direction of physical use of space in the form of land tenure policies that favor farmers, as stated by Quesnay, the most productive farmers, therefore, he suggested that the policies taken by the government should be aimed at increasing the standard of living of farmers (Deliarnov, 2015).

Institutional strengthening of farmers has a strategic point in driving the agribusiness system in rural areas. Strengthening farmer institutions greatly contributes to increasing the independence and welfare of farmers. The author assumes that corn farmers who try individually will continue to be at the disadvantage because farmers manage their business with a narrow land area and low capital. Likewise, marketing activities carried out

collectively, provide greater opportunities to achieve marketing cost efficiencies and increase the bargaining position of producers (corn farmers) in their corn product trading chains. Farmer resource management by farmers involves managing input, production processes, and outputs so as to achieve high productivity.

---

## 4. Conclusions

The implementation of the corn-based agropolitan program in Gorontalo Province shows that the area of farmers' land has increased, the farmers' corn production has also increased, the farmers' net income has increased. There is an influence of corn-based agropolitan programs on the educational conditions of corn farmers in Gorontalo Province. There is an influence of corn-based agropolitan programs on the health conditions of corn farmers in Gorontalo Province. Referring to the results of the study, that the economic dependence of corn farmers in the agropolitan area on traders/middlemen, by looking at the history of the origins of middlemen that had existed before the corn-based agropolitan program, and the middlemen did have an important role for farmers in the capital system.

---

## References

- Altieri, M. A. (1999). Applying agroecology to enhance the productivity of peasant farming systems in Latin America. *Environment, Development and Sustainability*, 1(3-4), 197-217.
- Andika, A., Sari, F. A., Salam, R., Jufri, S. N., & Paradita, A. P. (2020). Sustainable Agriculture: Case Study in Barebbo Village, Bone Regency. *Journal La Lifesci*, 1(1), 1-5.
- Collier, et. al. 1993. *A New Approach to Rural Development in Java*. Twenty Years of Village Studies. Jakarta. Intersys Kelola Maju.
- Collier, W. L., Santoso, K., & Wibowo, R. (1993). *New Approach to Rural Development in Java: Twenty Five Years of Village Studies in Java*. Jakarta: Intersys Kelola Maju.
- Dardak, E. E. (2007). *The Development of Agricultural-Based Small Urban Areas to Promote Rural Development*. Doctoral dissertation, Ritsumeikan Asia Pacific University.
- Deliarnov. (2015). *Perkembangan Pemikiran Ekonomi*. Jakarta: Rajawali Press
- Douglass, M. (1975). *Agropolitan Development: Towards a New Strategy for Regional Planning in Asia*. School of Architecture and Urban Planning, University of California.
- Eilenberg, M. (2014). Frontier constellations: Agrarian expansion and sovereignty on the Indonesian-Malaysian border. *Journal of peasant studies*, 41(2), 157-182.
- Frank, A.G. (1967). *Capitalism and Underdevelopment in Latin America: Historical Studies of Chile and Brazil*. New York: Monthly Review Press.
- Gliessman, S. R. (1990). *Agroecology: researching the ecological basis for sustainable agriculture*. In Agroecology. Springer, New York, NY.
- Hashemianfar, S. A., Paknia, S., & Sabeti, M. (2014). Farm Corporations as Agropolitan Development in Iran. *IAU International Journal of Social Sciences*, 4(2), 51-67.
- Hawkes, C., & Ruel, M. T. (2006). *Understanding the links between agriculture and health*. Washington, DC: International Food Policy Research Institute.
- Ross, C. E., & Wu, C. L. (1995). The links between education and health. *American sociological review*, 719-745.



- Rusastra. (2002). *Based Agribusiness Rural Economic Development. Policy Analysis: Leading Agricultural Development Agribusiness Perspective*. Bogor: Socio-Economic Research Center.
- Santos, T. D. (1970). The structure of dependence. *The american economic review*, 60(2), 231-236.
- Scrimgeour, F., Chen, H. C., & Hughes, W. (2002). Regional Economic Development: What Does The Literature Say. *Department of Economics, Waikato University, Waikato, available at: <http://nzae.org.nz/files>*.
- Sirojuzilam, H. S., and Muda, I. (2016). Identification of factors of failure of Barisan Mountains Agropolitan area development in North Sumatera–Indonesia. *International Journal of Economic Research*, 13(5), 2163-2175.
- Sirojuzilam, M., Hakim, S., & Muda, I. (2018). Role of Planning and Budget to The Development of Agropolitan Area. In *1st Economics and Business International Conference 2017 (EBIC 2017)*. Atlantis Press.
- Williams, P., Whitfield, M., Biggs, J., Bray, S., Fox, G., Nicolet, P., & Sear, D. (2004). Comparative biodiversity of rivers, streams, ditches and ponds in an agricultural landscape in Southern England. *Biological conservation*, 115(2), 329-341.
- Winoto, J., & Siregar, H. (2016). Agricultural Development in Indonesia: Current Problems, Issues, and Policies. *Analisis Kebijakan Pertanian*, 6(1), 11-36.