

Analysis of Land Conversion and Function of Rice Production Increase Efforts in Padangsidempuan City, North Sumatra

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Abstract: Agricultural land conversion is caused by internal factors (urban growth, demography and economy); Internal factors (age, age, education level, number of dependents, dependence of land), and regulatory factors that affect growth, especially agricultural sector. The purpose of this study is to determine the factors and magnitude of the influence of each independent variable (X) on conversion of landeconomics give influence equal to 42,5%, while internal variable (X2) that is age, age, education level, land dependence gives 38.0% value and regulation variable (X3) as much as 20.4%. The rate of land transfers in Padangsidempuan city is high, about 3% per year so that the area of rice field in 2012 is 4,145 hectares which is estimated in 2033 to live 1,616 Ha. It is expected that local government of Padangsidempuan do socialization, implication and evaluation of land use change in Padang (Y). This research used survey method conducted in September 2017 until December 2017 to 45 farmers of respondents in six sub-districts in Padangsidempuan City, namely Padangsidempuan (Ps) Utara; Ps. Tenggara; Ps. Selatan; Ps. Batunadua; Ps.Timur ; a and Ps. Angkola Julu. The data collected were analysed in combination, descriptively and regression analysis. The results showed independent variables (X) influence the significance of the variable Y with the value of $F(2.45) = 4.714$, $p < 0.05$). Furthermore, there are real influence from each variable, that is: external variable (X1) consist of urban growth, demography and idempuan City, Northof Sumatera.

1 INTRODUCTION

The continued growth of the population and the rapid development of the city and the rapid development of all sectors will be a challenge in terms of fulfilling food needs. More and more people will need increasing food needs, while on the other hand is not followed by the addition of new or printed areas of new rice fields. In 2013, the number of Indonesian population reached more than 240 million people and North Sumatra Province according to BPS data 2014 amounted to 13,766,851 people spread in 33 districts / cities in North Sumatra. The area of rice field in North Sumatra in the period of 7 years (2010- 2017) continues to decrease that can be seen in 2010 reduced to 115,961 hectares, 2011 again decreased to 115,897 hectares, 2012 again reduced to 109,585 hectares, 2013 decreased again to 93.338 hectares, and in 2014 live 87,594 hectares.

North Sumatra Province in 2016 is one of the provinces of food centres in Indonesia as occupying the position of no 4 nationally producing food sources of rice in Indonesia after West Java, Central Java and East Java. The amount of rice production in North Sumatra province reaches 4,610,097 tons, an increase from 2015 from 4,044,829 tons, which means an increase of 13.96% (Data of Agriculture Office of North Sumatra, 2016). The achievement of this increase in production may in the next few years not be achieved due to the very high land conversion in the region. According to (BPS, 2015) in the Province of North Sumatra there has been an average land conversion of about 10,000 ha/year. This figure is quite high when compared with other provinces.

Land is a strategic natural resource for development. Almost all physical development sectors require land, such as agriculture, forestry, housing, industry, mining and transportation. In agriculture, land is a very important resource, both for

farmers and for agricultural development. This is based on the fact that in Indonesia agricultural activities are still based on land (land based agriculture activities). Land has become one of the main elements in supporting the continuity of life since humans first occupy the earth. Land serves as a place of human activity to maintain existence. The first activity is the use of land to grow crops.

Land use change may occur due to changes in the spatial plan of the region, the wisdom of development direction and due to market mechanism. The last two things happen more often in the past because of the lack of understanding of society and government officials on spatial planning. The alignment of agriculture to non agriculture occurs widely in line with development policies that emphasize growth aspects through the ease of investment facilities, both to local and overseas investors in the provision of land (Widjanarko, et al, 2006).

Padangsidempuan is one of the potential areas of food agriculture land in North Sumatra province that has IP > 2.7 and even occupies the position of no 1 in Indonesia with rice field area of 4,045 Ha with productivity level of 6 tons / ha so that in recent years Padangsidempuan City still self-sufficient in food, especially rice. On the other hand in the achievement of rice production has a serious enough obstacle that there is a significant reduction of productive agricultural land from year to year although the Government of Padangsidempuan City has poured the Regional Regulation Padangsidempuan No. 04 of 2014 About Spatial Plans Padangsidempuan City including the arrangement of the area agriculture and plantation and Decree of Mayor of Padangsidempuan Number 86/KPTS/ 2015 on Sustainable Agriculture Land In the City of Padangsidempuan. According to data from the Agriculture Department of Padangsidempuan City 2015 which states that there is a land transfer of 2-3% per year even though it has issued regulations through Regulation but this still can not be prevented. This is due to various reasons including demographic factors such as population growth, urban development and also economic and social reasons.

Based on the description of the problem of this condition is the basis of the author in determining the variables to be tested through research activities while other factors that are minor are not described in detail but supported descriptive data from the field. This research aims to :

1. Analyzing the factors that affect of land conversion and function in the research area
2. Analyzing the rate of land conversion and function in Padangsidempuan City

2 RESEARCH METHODOLOGY

The study was conducted in Padangsidempuan for four months starting from September to December 2017 with seven sub-districts covering the Southeast Padangsidempuan Subdistrict consist of P. Selatan, P. Batunadua, P. Utara, P. Hutaimbaru and P. Angkola Julu. This research is classified as the type of quantitative research in the form of calculations analysed by using statistical analysis and the method used in the survey method (Mardikanto, 2006). Primary data collection is done by spreading the questionnaire to the respondent.

Each of the variables tested both independent (X) and dependent (Y) by using ordinal data types and using Likert scale. The Quisiner tested was developed based on predetermined indicators. Variable X1 (External Factor) consisting of urban growth factor, demography and economy, X2 Internal Factor) consisting of age, education, dependent amount, land ownership and dependence on land and X3 (Regulation) form of regulation and weakness of regulation. All the variables tested were rated by using the Likert Scale with 4 levels of scale and the type of data used were ordinal data. Variable Y (Land Acquisition Rate) is measured by the indicator determined.

Sampling was conducted on 45 farmer respondents who randomly understood about the land they manage and experienced land conversion, whether it is farmer owner, tenant or rent. To know the factors that affect the Land Use in the City of Padangsidempuan this is done with the analysis of the axes of arithmetic along with the following mathematical formulas:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + \mu$$

Information :

Y: Land Acquisition Rate

X1: External factors

X2: Internal factor

X3: Regulation / policy

To know the suitability of model of analysis of these factors used coefficient of determination (R²) and F test (whole test). The value of determination (R²) is to know the accuracy of the model used shows the amount of the ability of independent variables explain the effect on the dependent variable, expressed by what percentage of dependent variable is explained by the independent variable entered into the regression model. The value of R² ranges from 0 to 1 and if the result is close to 1, then the model is said to be good.

The coefficient of determination is formulated as follows:

$$R^2 = \frac{SS_{REg}}{SS_{Tot}} \quad \text{or} \quad R^2 = \frac{\sum (\hat{Y} - \bar{Y})^2}{\sum (Y_i - \bar{Y})^2}$$

Information:

\hat{Y} = The estimated value of the dependent variable

\bar{Y} = Average value of the dependent variable

Y_i = Observation value

R^2 = Coefficient of Determination

Test F is used to determine the level of influence of all independent variables (X) together to the dependent variable (Y) or to determine whether the independent variable (X) together affects the dependent variable (Y).

F table = (k-1), (n-k): α

Information:

R^2 = Coefficient of determination

k = Number of regression coefficients

n = Number of samples

α = Critical value

3 RESULTS AND DISCUSSIONS

3.1 Respondent's Characteristic

Based on the results of research conducted that the number of respondents as much as 45 farmers who are farmers who have transfer land floor both owners, tenants and tenants with characteristics of respondents consist of age, last education, gender, land area, land ownership status and cropping frequency IP) in detail can be described as follows.

a. Ages

Table 1. Respondents distribution based on ages

No	Ages Criteria (year)	Quantity (person)	Percentages (%)
1	25 – 37	9	20
2	37,5 – 50	20	44,44
3	50,5 – 62	10	22,22
4	62,6 – 75	6	13,33

Source : Primer data (2017)

Based on table 1 can be concluded that it can be concluded that most farmers are still classified as productive age. This can be seen from 45 respondents 39 farmers (86.67%) is still classified as productive age. This means that farmers in the age range 25 - 62

years can still do good farming, especially planting rice paddy fields.

b. Education

Table 2. Respondents distribution based on education

No	Education Criteria (year)	Quantity (person)	Percentages (%)
1	Primary School	9	20
2	Secondary School	10	22,22
3	High School	21	46,67
4	University	5	11,11

Source : Primer data (2017)

Based on table 2 can be concluded that the level of education of farmers most respondents can be said to be quite good. It can be seen from all respondents there are 57.77% educated from high school and university.

c. Gender

Table 3. Distribution of respondents by sex

No	Sex	Quantity (person)	Percentages (%)
1	Male	37	82,22
2	Female	8	17,78

Source : Primer data (2017)

Based on table 3 it can be concluded that the farmers of respondents in general are male (82.22%) and 17.78% have female gender. In this region, the father is more dominant in carrying out the farming business, although at certain stages in doing women's in the rice field of business is more dominant such as planting and weeding weeds.

d. Land Area

Table 4. Distribution of respondents based on land area

No	Land Area (Ha)	Quantity (person)	Percentages (%)
1	0,1 – 0,5	25	55,55
2	0,6 – 1,0	15	33,33
3	1,1 – 1,5	4	8,88
4	> 1,6	1	2,22

Source : Primer data (2017)

Based on table 4 it can be concluded that the farmers of the respondents have a small enough land to be managed ie between 0.1 - 0.5 Ha and this is more dominant (55.55%), which has a land of 0.6 to 1.0) while those who have land more than 1.1 Ha only a small part of 11.1% or 5 people from 45 respondents.

e. Status of Land Ownership

Table 5. Distribution of respondents based on land ownership status

No	Status of Land Ownership	Quantity (person)	Percentages (%)
1	Rent	17	37,77
2	Owner	26	57,77
3	Working on	1	2,22
4	Rent + Working on	1	2,22

Source : Primer data (2017)

Based on table 5 can be seen that the farmers of respondents who own their own land that is 26 people (57.77%) while the farmers who rent and cultivate that is 42.23%. In terms of land ownership, farmers are more dominant to own paddy fields, but the land is very narrow (0.1 to 0.5 Ha) owned by 55.55 of the total respondents. This means that the land owned by farmers is not sufficient to meet the needs of life when making farmers as the main income. Based on the results of interviews with respondents that the farmers who still cultivate their own land is generally not only work farming but have other jobs outside farmers such as buildings, trade, workshops, rickshaw and other attractions.

f. Planting Frequency

Table 6. Distribution of respondents by frequency of planting

No	Frequency of plants	Total	Percentages
1	1,0- 1,5	-	-
2	1,6 - 2	4	8,89
3	2,1 - 2,5	8	17,77
4	2,6 - 3,0	33	73,33

Source : Primer data (2017)

Based on table 6 it can be concluded that most farmers in Padangsidempuan City have an intercropping frequency of between 2.6 - 3 per year, in the sense that the farmers in this area have done intensive cultivation. Conditions like this can be said farmers have been empowering the land optimally. Based on interviews with farmers that the intensity of planting or the frequency of planting is quite high due to the condition of water sufficient for cultivation and other factors ie the land managed by the farmers are mostly rent and rental system is the rental system per year, so with this rental system farmers seek to manage continuously in order to gain profit.

3.2 Factors Affecting of Land Conversion and Function

a. The influence of the joint (compound) variable X to Y

To see the magnitude of the effect of variable X to Y where the variable X consists of external variables (X1) consisting of three sub variables namely urban growth, demography and economy, while the internal variable (X2) consists of 5 sub-variables namely age, education, , land area and dependence on land and Regulation Variable (X3) consisting of two sub variables namely Form of policy and weakness of Implementation of regulation. the results can be seen based on the calculation in the Summary Model shown by the R square value.

Model Summary

R Square	Adjusted R Square	Std. Error of the Estimate
,638	,407	2,28601

a. Predictors: (Constant), Weaknesses Legal Aspects, Economic Factors, Land Area, Land Dependency, Demography, Forms of Policy, Development of City, Education, Quantity of Families, and Ages.

The magnitude of R square (r²) is 0.638. This number indicates that the bears influence variables X1, X2 and X3 on the rate of land use by calculating the coefficient of determination (CD) with the following formula:

$$\begin{aligned}
 CD &= r^2 \times 100\% \\
 &= 0.638 \times 100\% \\
 &= 63.8\%
 \end{aligned}$$

This figure explains that the effect of variables X1, X2 and X3 to the rate of land transfer is 63.8%, while the remaining 36.2% (100% - 63.8%) is influenced by other factors. In other words, the variable rate of land transfer can be explained using X1 (external), X2 (internal) and X3 (regulation) variables of 63.8% while 36.2% influence is caused by other variables outside of this model.

To know the effect of shared variable X to Y can be seen by comparing the value of F arithmetic with F table. Based on the analysis results obtained F calculated value of 4.714 while the value of F table of 2, 018. Value 4.714 > 2.018, it can be concluded F arithmetic > F table, so Ho is rejected and H1 accepted. This means that there is a linear relationship between external, internal and regulatory variables on land conversion. The conclusion is that the external, internal and regulatory variables jointly affect the rate of land transfer function is 63.

ANOVA^b

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	89,566	10	9,957	4,714	,000 ^a
Residual	177,678	34	2,3,226		
Total	267,244	44			

Predictors: (Constant), Weaknesses Legal Aspects, Economic Factors, Land Area, Land Dependency, Demography, Forms of Policy, Development of City, Education, Quantity of Families, and Ages.

b. Partial influence of variable X to Y

To see the magnitude of the effect of Partial Variable X (X1, X2 and X3) on Y conversion of land level individually or partially used T test while to see the total influence (contribution) each variable can be used Beta number or Standardized Coefficient can be seen based on the results of the analysis as follows:

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error			
Constant	15,691	2,202		4,939	,000
External	6,012	,089	,425	3,131	,003
Internal	5,035	,072	,380	3,489	,003
Regulation	3,060	,094	,204	2,365	,005

a. Dependent Variable: Level of Land function conversion.

Based on the analysis of the resulting data, then obtained Model Regression equation as follows:
 $Y = a + bX_1 + bX_2 + BX_3 + \epsilon$

$$Y = 15,691 + 6,012,060 X_1 + 5,035 X_2 + 3,060 X_3 + \epsilon$$

From the calculation results obtained T count of 4.939 and the value of t table 2.08. If the value of t arithmetic > t table, then the independent variable (X) gives influence positive on the dependent variable (Y). In detail the partial effect of each variable seen from the value of t count of each X1 of 3, 131, X2 of 3.489 and X3 of 2,365. The t value of the three variables is greater than the value of t-table (2.018), meaning that the variables X1, X2 and X3 give a significant influence on Y. To see how much partial influence of each variable can be seen from the value of standardized coefficient beta for each variable where the variable X1 of 0.425 means that the external variable gives an influence are 42.5% to variable Y or land function conversion conversion, variable X2 of 0.380 or 38.0% and X3 value 0.204 or 20.4% influence on land transfer.

When analysed partially from each sub variable, then the influence of partial can be seen in table 7 below:

Table 7. The influence of partial

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error			
(Constant)	23,334	5,401		4,320	,000
Development of city (X1.1)	,388	,164	,225	2,361	,001
Demography (X1.2)	,306	,329	,158	,929	,003
Economy factor (X1.3)	,245	,171	,169	1,432	,002
Ages (X2.1)	,230	,273	,076	-,843	,405
Education (X2.2)	,557	,248	,114	2,246	,004
Total of family cost (X2.3)	,110	,275	,079	,402	,006
Area (X2.4)	,263	,197	,165	1,337	,002
Land degradation (X2.5)	,111	,211	,097	,524	,005
Policies (X3.1)	-,017	,192	-,015	-,089	,009
Legal weakness (X3.2)	,237	,169	,139	1,401	,004

a. Dependent Variable: Rate of Land conversion Function

Based on the results of the analysis obtained that sub variable X1.1 gives the most dominant influence when compared with the influence of other sub variables. This is evidenced by the value of Standardized Coefficient Beta X1.1 of 0.225 means sub variable of urban growth become the highest cause factor of land transfer. With the rapid growth of the city requires land for development in all sectors be it the education sector, economy and tourism. Based on data in the field that Padangsidempuan Batunadua Sub-district experienced a fairly high land conversion because it is directly adjacent to the city center and a strategic position as the centre of economic activity as business development. After urban growth factor followed by sub variable factor X1.3 (16,9%), X2.4 (land area) equal to 16,5%, and X3.2 (weakness of legal aspect) equal to 13,9%.

3.3 Condition of Land Conversion Function

Based on data from BPS Kota Padangsidempuan (2016) obtained data of land area from 2012 to 2016. Details can be seen in table 8 below.

Table 8: Padangsidempuan city land size (BPS, 2016)
(Data reduction of land during 2012 s/d 2016)

Districts	Land areas (BPS Data)					
	2012	2013	014	15	2016	
Ps. Tenggara	736	736	736	699	699	37
Ps. Selatan	173	173	173	173	173	0
Ps. Batunadua	1.065	1.065	1.065	610	610	45
Ps. Utara	337	337	337	333	333	4
Ps. Hutaimbaru	849	849	849	837	837	12
Ps. Angkola Julu	885	885	885	514	514	1
Total	4.045	4.045	4.045	3.166	6	9

Sources : Primer Data (2017)

Based on data obtained from BPS in table 8 it can be concluded that in 2012 the area of paddy fields in Padangsidempuan City is 4.045 Ha and in 2016 the land area of 3,166 Ha. Based on this data, it can be seen that in Padangsidempuan City there is a reduction of land in other words there is a land conversion of 879 ha or 15% of the total rice field area in 2012. This means that within 5 years there is an average land reduction of 3% per year. The rate of land transfers in Kota Padangsidempuan is high and if this can not be overcome, it will be a threat to the region in the fulfilment of food availability, especially rice.

The use of agricultural land to avoid overturning of land especially sustainable agriculture seems inevitable with the rapid development of the city so that local governments also support efforts prevention of land function through regulation or policy as outlined through Local Regulation Padangsidempuan. 04 of 2014 on Spatial Planning of Padangsidempuan City Year 2013-2033. In the Regional Regulation as set forth in Article 41 on the Area of Allotment of Agriculture, it is stipulated that the plan of the designated area of agriculture shall consist of the area of food crop agriculture and the horticultural cultivation area. More areas of wetland farming are agriculture crops of approximately 1,618.87 Ha including:

- Southeast Padangsidempuan District covering an area of approximately 444.21 Ha
- Padangsidempuan Batunadua Subdistrict of approximately 185.75 Ha
- Padangsidempuan Angkola Sub-district of approximately 403.49 Ha
- District of Padangsidempuan Selatan covering approximately 13.69Ha

e) North Padangsidempuan Subdistrict of approximately 71.55 Ha

f) Padangsidempuan Hutaimbaru Sub-district of approximately 500.18 Ha

In addition to Local Regulation no. 41 Year 2014 is also reinforced by the Decree of Mayor of Padangsidempuan Number. 86 / KPTS / 2015 on Sustainable Agriculture Land In the City of Padangsidempuan. Extensive data on the standard of sustainable agriculture land in accordance with city regulation Padangsidempuan No. 4 of 2014 on Spatial Planning Padangsidempuan City Year 2013-2033 namely:

Table 9: Data of Rice Field Area of Sustainable Food Agriculture Based on Local Regulation of Padangsidempuan City No. 4 of 2014 on Spatial Planning of Territory City of Padangsidempuan Year 2013-2033

No	Districts	Total area ricefield in 2010 Year (Ha)	Total area ricefield in 2013 Year (Ha)	Total area ricefield until 2033 Year (Ha)
1	Ps. Tenggara	736	699	444,21
2	Ps. Selatan	173	173	13,69
3	Ps. Batunadua	1065	610	185,75
4	Ps. Utara	337	334	71,55
5	P Ps. Hutaimbaru	849	837	500,18
6	Ps Ps. Angkola Julu	885	513	403,49
	Total	4.045	3.166	1.618,87

Sources : Primer Data (2017)

Based on data from the Regional Agricultural Office of Padangsidempuan City 2017 yag based on Agricultural Statistics (SP) data that the area of rice fields in 2017 is experiencing a fairly high land reduction of about 100 ha, because the land area in 2016 of 3,166 Ha to 3,063, 72 Ha.

4 DISCUSSIONS

4.1 Respondent's Characteristic

Based on the characteristics of respondents as key informants can be concluded that the farmers of respondents in general are at the age of productive, have a job and educated. According to table 1 it is found that the farmers of respondents are generally still belong to the productive age (88.67). Productive conditions show that farmers physically are still able to do good farming and can still choose the activities

they consider most profitable, including choosing to convert land as it is considered more economically profitable. In general, respondents have narrow land (0,1 - 0,5 Ha) owned by 55,55% and 33, 33% have land 0,6 -1,0 Ha. Based on the ownership of this land can be concluded that the farming business can not be used as the main income in living the family because the results obtained are not able to meet the needs of the family.

The area of land owned by the farmers of the respondents is closely related to the level of production produced. Based on the research results, it is found that most farmers own their own land (55.77%) and 33, 77% are rent. But on the other hand the land owned by farmers is so narrow that it is unable to meet the needs of the family. According to research (Irnawati, 2006) that the income of paddy farmers in meeting the needs of life is very dependent on the success of rice crops in the effort. Land area as one of production factor which is agricultural factory which have big contribution to farming business, the size of production from farming is influenced by the narrow area of land used (Winarti, 2012).

According to Yayuk Yuliati, (2003: 32), that in an agrarian society where his life is still dependent on the production of land as a means of basic production and has a homogeneous style in the livelihood of farmers (Basrowi & Juariyah, 2010). To improve the welfare of the community will not be achieved if the peasant community does not have the keiginan to increase agricultural production (Yardi et al., 2012). This is in accordance with the essence of agricultural development, the Indonesian government seeks to change the application of technology in farming in the hope of increasing productivity, business efficiency and increasing farmer income (Welson et al., 2011).

In Mardikanto's opinion (2009) the educational level of a person will greatly affect the ability or mastery of the given material, the skills of choosing an extension method and effective communication techniques with (the community).

4.2 Factors Supporting Rice Land Conversion and Function in Padangsidempuan City

Broadly speaking, the factors causing land transfers in Kota Padangsidempuan are grouped into three external, internal and regulatory factors (policies), in which each grouping will be discussed in detail as follows:

a. External Factors

Land conversion is closely related to increasing population density. Rusli (1995) discloses that with increasing population, the ratio of human-land becomes larger, even though the utilization of every inch of land is strongly influenced by the level of cultural development of a society. Population growth causes a shrinking average of land stock per person. As the population grows, the unrestrained are expected to grow. In this situation the heavy population pressure provides an opportunity for the development of land tenure forms that are less favorable to the cultivators. Competition among fellow farmers increasingly fierce in getting job opportunities.

With the increase of population every year will cause the activity of the population also increased which require land for settlement while the availability of land is more limited. Rapid population growth will require increasing land, not only for residential use but also as an extension of economic activities to meet family needs. Therefore the problem that will arise is the occurrence of land conversion in the areas of rice

Farming. Many productive farms are switching to the need to continue family life.

Poverty is closely related to employment opportunities. Denser populations and with relatively fast growth rates require rapid rates of growth and employment growth as well. In the unemployment of non-agricultural employment opportunities, and the average supply of agricultural land per person has been limited, not only some of the labour force has been increasingly difficult to find employment, but also many who are engaged in underemployment seen from the number of hours worked as well as from the very low income levels received. It is this kind of situation that causes widespread poverty in certain areas. Not surprisingly, looking at this condition, people who own the smallest land are very likely to be converted or sold in order to survive (Rusli 1995).

Economic growth is marked by a shift in the role of inter-sectoral demands for the conversion of agricultural land that number is not small. The case of land transfers in Kota Padangsidempuan occurred in areas that are directly adjacent to the city, such as in Padangsidempuan Batunadua subdistrict, where 43% of the landfill occurred within 5 years (2012 - 2016), where the land area of 1,665 Ha in 2012 to 610 Ha in 2016 then followed by sub-district Padangsidempuan Angkola Julu also experienced a fairly high land conversion (42%) during the period of 5 years. This can be seen in 2012 the total land area of 885 Ha and in 2016 to 371%. Based on the facts in the field that

rice fields are converted widely used for activities supporting the economy such as building markets, workshops, hotels and other trading activities. The livelihoods of farmers who have been farmers are slowly turning jobs because the farmland managed has been reduced and the farmers or the wet land owners prefer to sell the land because it has a higher selling value and profitable when compared with agricultural products.

b. Internal factors

Influence Internal variable of 38% to the land conversion consisting of age factor, education, dependent number, land area and land dependence. Farmers respondents when viewed from the level of education can be said to be high. It can be seen from all respondents 46,67% have high school education and 11,11% college. According to Mardikanto (2009) the level of education will greatly affect the ability or mastery of the given material, skills selecting methods of counselling and communication techniques effective with (the community). Therefore, the higher the level of education owned by the farmers, the higher the ability of farmers to analyse the business to be run or managed, including to choose the work to be cultivated, including the farmers choose to transfer the land into a new business or by selling and switching jobs.

Padangsidempuan city experienced a fairly rapid development seen from the development of physical development undertaken by the government. In the increasingly modern era is not denied the younger generation prefer to work in the field of industry and office rather than working in agriculture. This causes rural areas that move in agriculture lack of productive energy, because left to the city. In addition, the increased operational costs of farmland cultivation also cause farmers to lose, so they prefer to switch professions and sell their farms.

4.3 Regulation Factor (policy)

According to Suhadi (2012) that the implementation of spatial planning is an important step to achieve the goal of city spatial planning, because its implementation in principle is a way for the policy to achieve its objectives. In the absence of implementation activities, the whole strategy of utilization and management of city space is only to be a planning document that is stored as an archive.

Legislation related to land conversion is Law No. 41 of 2009 on Sustainable Agriculture Land that was broken down by local government of Padangsidempuan city. 41 According to Widodo

(2011) argues that however clear and consistent are the provisions and rules and however accurate the delivery of those provisions, if the policy implementers responsible for implementing the policy lack the resources to implement the policy effectively then the implementation of the policy will not be effective.

According to data obtained in the field that there is not much prevention effort that can be done by the local government in Padangsidempuan City. As one form of preventive measures on the spreading of the landfill is poured through Mayor Regulation no. 86 of 2015 and No. 04 in 2014, but the implications of this regulation are poorly implemented. This can be seen from the lack of sanctions given to the actors of land conversion. This condition is caused by two of the most basic reasons of the lack of clarity of the rules and the lack of sanctions on the recruitment. The same is true of Isa (2014) that the system of legislation and law enforcement of the rules that are still weak. Therefore, it is necessary to coordinate between the government and the farmers or the community so that the transfer of land in Padangsidempuan can be prevented. land of function conversion is a dilemma because on the one hand the government must maintain irrigated rice fields for food security can be realized. On the other hand the need for land for development is inevitable.

land of function conversion agricultural land in general have a very big impact on the field of social and economy. This can be seen as one of the changes in land function conversion. The narrowness of agricultural land will cause many problems in the short term or long term. The implications of agricultural land conversion to socio-economic life are complex. At the start of the increasingly expensive food prices, the loss of employment for farmers to the high number of urbanization. In addition, the impact is the lack of interest of young people to work in the field of agriculture.

When viewed from the population of Padangsidempuan City based on 2016 BPS data of 212,917 people with production of 6 tons / ha. Land area in 2016 3.166 Ha, it will produce rice production as much as 18.996 tons / Ha, IP in Padangsidempuan city is 2.7 then total production is 51.298 tons per year. If the yield is converted to rice with an average yield of 60% then the amount of rice produced is 33.338 ton/year while the consumption of rice per capita/year, predicted is 98.5 kg then the need for rice is 209,723,245 kg/year or 209,723 tons. The results of this production up to the current condition is still

able to meet the needs of the population but for how in the future if no measures taken prevention of land land conversion this will be a threat to rice production intake in the city of Padangsidempuan.

5 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

Based on the results of the analysis carried out, then obtained conclusion:

1. The external variables X1, the internal (X2) and the regulation (X3) affect the rate of land transfer in the city of Padangsidempuan and the contribution of each variable in giving effect to the land transfer rate (Y) The external variable is more dominant (42,%%) , internal variables (38%) and regulatory variables (20.4%) and more dominant factors are external factors.
2. The rate of land transfer in Padangsidempuan city reaches 3% per year from 2012 until 2016 there is a drastic reduction of land so it is predicted that in 2033 the land area of Padangsidempuan will only be 1,618.87 Ha.

5.2 Recommendations

There are a number of possibilities that can be presented based on the results of this study:

1. To avoid problems of land transfer in Padangsidempuan City, it is necessary to have firmness and clarity of government rules related to land conversion
2. Need to improve coordination between government and community or farmers by conducting socialization and coordination in a sustainable manner

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