



Budget Policy to Support Food Security Development in East Nusa Tenggara Province

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Abstract

Budgetary support from the government is one of its forms of seriousness in an effort to foster the food security. This study aims to analyze the regional financial capacity, as well as the budget allocation for the development of food security in the East Nusa Tenggara Province (NTT), South Central Timor Regency (TTS), and Rote Ndao Regency. The two analytical methods used are content analysis and descriptive statistics. NTT Province has a medium fiscal degree, a high level of regional financial dependency, and a low level of local financial independency. The local governments of both TTS Regency and Rote Ndao Regency have an extremely low degree of fiscal decentralization, a very high level of local financial dependency, and are not self-sufficient in terms of local financial independence. Local governments need to generate local revenues to reduce the dependency on the central government. The percentage of the budget for the development of food security amounted to only 7.04 percent for the province, 7.46 percent for TTS Regency, and 8.94 percent for Rote Ndao Regency. The subsystems of food availability are still the focus of the food security development in the province and regencies. The budget allocations for food security deserve an optimal portion and should be prioritized on the subsystems that have been the major issues in East Nusa Tenggara.

Keywords: budget policy; food insecurity; regional autonomy.

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1. Introduction

Regional autonomy policy, in accordance with Act No. 23 Year 2014, provides greater authority to the regions in solving their problems, including the problems of poverty, food insecurity, malnutrition and others. Under the Act No. 23 Year 2014, food issues become mandatory government affairs, as set out also in the Act No. 18 Year 2012 on Food which mandate the central government and local governments to carry out the food supply. However, the real situation suggests that the regional autonomy policy is still far from optimally executed [1]. As an embodiment of the regional autonomy, fiscal decentralization may lead to different outcomes; on one side it gives positive impacts to the economic growth [2, 3, 4, 5], it is negatively related to poverty [6], it lowers the regional inequality [6, 7], and it encourages employment opportunities [8, 9]. On the other side, however, it may as well hamper the economic growth [10, 11, 12]. Decentralization also brings good changes to democracy and empowerment at the local level, but not on the food security [13]. Decentralization and regional autonomy have led to uneven understandings, measures, efforts, and placement of development priorities of food security and nutrition, which can be seen from the fact that food security can be steadily fostered in some regions, while actually showing shortcomings in other regions [14].

The achievement of food security in the era of regional autonomy has faced challenges, such as differences in interpretation and implementation of the concept, coordination and consolidation of national and regional interests, differences in resource ownership and economic structures, as well as the implementation of food security programs [15]. The lack of sufficient understanding from the regional governments on the importance of food security has made food policy not a priority. Regional Governments are more concerned with the policies that would increase their Locally-Generated Revenue (*PAD*), while at the same time, the people are unwittingly exposed to the threat of malnutrition and famine that may take place any time. The implementation of regional autonomy has a logical consequence that causes fundamental changes to the regional financial management. Such changes are inclined towards budget reform, of which the local government holds the authority to carry out its activities and to undertake development, as well as a greater authority in obtaining financing sources, either the locally-generated fund or the one provided by the central government.

Budgetary support from the government is one of its forms of seriousness in the efforts to address food insecurity. Financial management system, that serves as the realization of the budget policy ensures the spirit of efficiency and effectiveness of budget, transparency and public accountability, as well as the achievement of optimum performance, is one of the important aspects in organizing governance and development [16, 17]. A good structure of regional revenue and expenditure will be able to ensure the ongoing development process in the region, including the development of food security. Although the development of food security has been established as obligatory in every region, other efforts related to the budgeting system is absolutely necessary nonetheless. The budgeting system that can support the ongoing process of food security needs to be studied and implemented on regional autonomy [14]. Especially with the issuance of Regulation of the Minister of Agriculture No. 65 Year 2010 on Minimum Service Standards in the Field of Food Security for Provinces and Regencies/Cities, local governments are required to achieve the target in basic services, and the indicators listed in the Minimum Service Standards (*SPM*) in the field of food security are used as the measure of success for the compulsory affairs of food security.

East Nusa Tenggara (NTT) is a province in Indonesia with a high susceptibility to food insecurity. An increasing number of Provincial Budgets was not accompanied by a decrease in the total number of food insecurity in East Nusa Tenggara (Figure 1). The number is still alarmingly high in East Nusa Tenggara for the population that is included in the category of highly susceptible to food insecurity or those with nutritional adequacy level that is less than 70 percent, with an average of 22.94 percent for the period of 2007-2014 [18]. The number of children under five suffering from stunting, underweight, and wasting in NTT is very high and is the highest in Indonesia, amounting to 51.7 percent, 33.1 percent, and 15.4 percent respectively [19]. There are 12 regencies (60 percent) in East Nusa Tenggara that are categorized as areas susceptible to food insecurity.

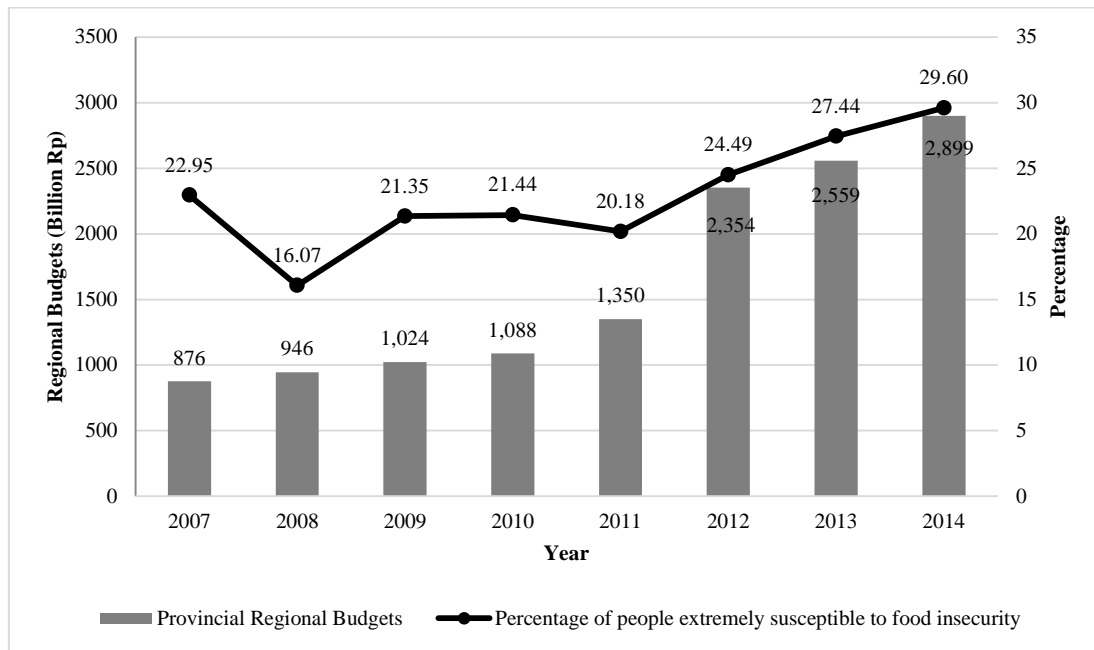


Figure 1: The development of Regional Budgets (APBD) and population with a very high food insecurity in East Nusa Tenggara in 2007-2014

It is necessary that we conduct studies that are related to support programs, activities, and budgeting from the local governments in order to support the food security so as to ensure that all inputs for the improvement of food security budgeting can be conveyed to the local governments. This study focuses on the three most important issues, namely: 1) how the local financial capacity works at provincial and district levels in East Nusa Tenggara; 2) how the structure of the regional expenditure is arranged; and 3) how the programs and activities and budget allocations in order to support the food security in East Nusa Tenggara are executed.

2. Materials and methods

2.1. Research site

The study was conducted in East Nusa Tenggara. The selection of site was done purposively with the following considerations: (1) a high number of impoverished population (2014 = 19.82 per cent), (2) the number of food insecure population is still very high (2014 = 29.60 per cent), (3) the number of malnourished children under five is still high (51.7 percent of toddlers suffering from stunting in 2013), and (4) 60 percent of the regencies in

East Nusa Tenggara are food vulnerable areas.

Two regencies have been selected purposively as the sample locations; South Central Timor (TTS) and Rote Ndao, with the following considerations: (1) each represents the district that is food insecure (TTS) and that is food secure (Rote Ndao); (2) the high number of impoverished people (TTS = 126,000 inhabitants; Rote Ndao = 39,100 inhabitants), (3) the high number of food-insecure population (TTS = 124,331 inhabitants; Rote Ndao = 51,819 inhabitants), (4) the poor infant nutritional status (in 2013 there was 70.43 per cent of children under five suffering from stunting in TTS, and 55.38 percent in Rote Ndao), and (5) the typology of territory, which are the waterfront and not the waterfront (TTS = 91 percent of its area is not waterfront; Rote Ndao = 70 percent is waterfront area).

2.2. Types and sources of data

The analysis was performed utilizing secondary data obtained from the following sources: Food Security Agency (*BKP*), National Development Planning Agency (*Bappenas*), The Ministry of Health, Regional Development Planning Agency (*Bappeda*), Food Security and Counseling Agency (*BKPP*), Public Health Service, Agricultural Service, Livestock Service, Social Services, and Financial and Asset Management Office (*DPKAD*).

Data and information used are the following:

- General Policies on Food Security (*KUKP*) Year 2010-2014
- National Action Plan for Food and Nutrition (*RANPG*) Year 2015-2019
- Regional Medium-Term Development Plan (*RPJMD*) for East Nusa Tenggara Year 2013-2018
- Regional Action Plan to Accelerate Fulfillment of Food and Nutrition (*RADPG*) for East Nusa Tenggara Year 2012-2016
- Local Regulations related to East Nusa Tenggara Provincial Budget for the Year 2013-2016
- The Office's Strategic Plans in relation to the food security for East Nusa Tenggara
- Local Regulations related to the Regional Budget for TTS and Rote Ndao for the Year 2013-2016
- The Office's Strategic Plans in relation to the food security for TTS and Rote Ndao.

2.3. Analytical method

2.3.1. The analysis of local financial capacity

The local government's ability and independence to perform the autonomy, is measured by its performance/local financial capacity. The indicators used to assess the regional financial performance are as follow: the degree of fiscal decentralization, regional financial dependency ratio, and the ratio of local financial independence [21].

2.3.1.1. Degree of fiscal decentralization

The degree of fiscal decentralization illustrates the contribution of Locally-Generated Revenue (*PAD*) compared

to the Total Regional Revenue (*TPD*). The higher the contribution of its Locally-Generated Revenue, the greater the ability of the region in implementing decentralization. The formula to measure such degree is as follows:

$$DDF = \frac{PAD}{TPD} \times 100\% \quad (1)$$

Where:

DDF : degree of fiscal decentralization

PAD : locally-generated revenue

TPD : total regional revenue

The criteria for determining the degree of fiscal decentralization is shown in Table 1 below;

Table 1: Criteria for assessing the degree of fiscal decentralization

DDF	DDF Categories
0.00 – 10.00	Very Low
10.01 – 20.00	Low
20.01 – 30.00	Average
30.01 – 40.00	Fair
40.01 – 50.00	High
> 50.00	Very High

Source: [22, 23]

2.3.1.2. *The level of regional financial dependency*

The level of regional financial dependency is calculated by comparing the amount of transfer revenue received by the region with the total regional revenues. The higher the ratio, the greater the level of dependency of local government is on the central government and/or provincial governments.

The ratio of regional financial dependency is formulated below:

$$TKtD = \frac{PT}{TPD} \times 100\% \quad (2)$$

Where:

TKtD : the level of regional financial dependency

PT : transfer revenue

TPD : total regional revenues

The criteria to define regional financial dependency is shown in Table 2.

Table 2: The assessment criteria for regional financial dependency

<i>TKtD</i>	<i>TKtD</i> Categories
≤ 25	Very Low
25 - 50	Low
51 - 75	High
76 - 100	Very High

2.3.1.3. The level of regional financial independence

The Level of Regional Financial Independence is a measure that indicates the ability of the local government to self-finance its activities in the governance, the development, and the public services. The level of Regional Financial Independence is calculated by comparing the amount of Locally-Generated Revenue, divided by the amount of transfer revenue received from the central and provincial governments, as well as the regional financial loan. The higher the ratio number, the higher the level of the local government independency. The formula to measure the level Regional Financial Independence is as follows:

$$TKD = \frac{PAD}{TPT} \times 100\% \tag{3}$$

Where:

TKD : regional independency level

PAD : locally-generated revenue

TPT : transfers from central + province + loans

The pattern of relationships and the level of regional financial independency is described in Table 3.

Table 3: regional independency level and its relationship patterns

<i>TKD</i>	<i>TKD</i> Categories	Financial Capacity	Relationship Pattern
≤ 25	Not Independent	Very Low	Instructive
25 - 50	Less Independent	Low	Consultative
51 - 75	Fairly Independent	Average	Participative
76 - 100	Already Independent	High	Delegative

Sources: [24, 25]

2.3.2. The analysis of regional expenditure

The analysis of regional expenditure was conducted by analyzing the direct and indirect expenditures. The analysis for the proportion of direct and indirect expenditures may be beneficial for the internal management of local government, and can serve as the Cost and Budgetary Control [21].

The ratio of direct expenditure is formulated below:

$$RBL = \frac{TBL}{TBD} \times 100\% \quad (4)$$

Where:

RBL : ratio of direct expenditures

TBL : total of direct expenditures

TBD : total of regional expenditures

While the formula for the ratio of indirect expenditure is as follows:

$$RBTL = \frac{TBTL}{TBD} \times 100\% \quad (5)$$

Where:

RBTL : ratio of indirect expenditures

TBTL : total of indirect expenditures

TBD : total of regional expenditures

2.3.3. The analysis of programs and activities, as well as the budget allocation for food security

The determination of the scope of programs and activities and budgets in dealing with food insecurity was conducted using content analysis. Content analysis is a research with an in-depth discussion on the content of a written information. Content analysis is a technique to draw conclusions by identifying the characteristics of a particular message both in objective and systematic ways [26]. Content analysis is a research technique in drawing conclusions from its context data [27]. Content analysis in this study begins with creating a form of coding as the material for analyzing the documents required.

The coding technique used was referring to direct content analysis. On the direct content analysis, the study is based on the theory that the coding is described prior to and when the data analysis is performed [28]. Once the categories were created (coding) and completed in accordance with the programs and activities of the handling of food insecurity, the following two steps were then taken: (1) identification of programs/handling of food

insecurity and related regional programs/activities, based on the data contained in Regional Regulation concerning Local Budgets, (2) interpretation of the acquired data related to the programs/activities, the amount and the allocation of the budget.

Food security budget analysis is done by comparing the ratio of food security expenditures to total public expenditures, as shown in the following equation:

$$RKP = \frac{RAKP}{TBD} \times 100\% \quad (6)$$

Where:

RKP : ratio of food security budgets

RAKP : realization of food security budgets

TBD : total regional expenditures

Meanwhile, the analysis of the sub-system budget for food security is done by comparing the sub-system budget of food security with a total budget of food security.

The equation for said ratio is as follows:

$$RSKP = \frac{RASKP}{RAKP} \times 100\% \quad (7)$$

Where:

RSKP : ratio of budgets for food security sub-system

RASKP : realization of budgets for food security sub-system

RAKP : realization of budgets for food security

This study does not consider the efficiency and effectiveness levels of budget utilization for food security development. Since its only cover the food security budget ratio from total budget.

3. Results and discussion

3.1. Degree of fiscal decentralization

The ability of a region to finance their spending can be assessed by looking at the ratio between their Locally-Generated Revenue and the total revenues. Generally speaking, the total revenue of East Nusa Tenggara has improved during the period of 2013-2016. In 2013 the total revenue of East Nusa Tenggara has reached Rp 2.55 trillion, which then improved to Rp 3.89 trillion in 2016, meaning there has been an increase of 52.37 percent.

The increase in a total of such local revenues is due to the increased value of the Locally-Generated Revenue, and the Fiscal Balance Funding from the central government. As one of the sources of revenue, Locally-Generated Revenue serves to illustrate the ability of the provincial government to generate revenues utilizing the existing factor endowment, which showed an increasing growth.

The Local Revenue in 2013 stood at Rp 476.68 billion, which then increased to Rp 966.86 billion or more than double in 2016. However, even though the Locally-Generated Revenue has experienced significant increases, its share against Total Regional Revenue of East Nusa Tenggara that serves as an indication of the degree of fiscal decentralization was still much lower, when compared to the share of fiscal balance funding against total regional revenue. Data from 2013 showed that the degree of fiscal decentralization of East Nusa Tenggara was categorized as unfavorable with a mere share of 18.63 percent, however during the period of 2013-2016 it has made an improvement to moderate status as shown in Table 4.

Table 4: Degree of fiscal decentralization in East Nusa Tenggara, TTS Regency, and Rote Ndao Regency, 2013-2016

Regional Govt.	Year	<i>PAD</i> (Billion Rp)	<i>TPD</i> (Billion Rp)	<i>DDF</i> (%)	<i>DDF</i> Category
East Nusa Tenggara	2013	476.68	2,558.60	18.63	Low
	2014	730.73	2,898.90	25.21	Fair
	2015	872.55	3,523.98	24.76	Fair
	2016	966.86	3,898.59	24.80	Fair
TTS Regency	2013	42.39	985.27	4.30	Very Low
	2014	48.45	1,071.62	4.52	Very Low
	2015	65.02	1,296.31	5.02	Very Low
	2016	71.93	1,422.40	5.06	Very Low
Rote Ndao Regency	2013	19.99	488.93	4.09	Very Low
	2014	22.25	513.34	4.33	Very Low
	2015	26.58	576.70	4.61	Very Low
	2016	28.57	728.18	3.92	Very Low

When viewed in particular, the condition of local revenue in TTS and Rote Ndao has increased over a period of 2013-2016. Table 4 illustrates that the total regional income of TTS Regency is higher than that of Rote Ndao Regency. As the source of local revenue closely related to the management of economic potential in both districts, even though it has increased, Locally-Generated Revenue in total is still relatively low. There was only an average of 4.72 per cent of contribution generated by the Local Revenue for the total regional income of TTS Regency during the period 2013-2016, while a mere average of 4.24 per cent of such contribution was generated for the total regional revenue in Rote Ndao Regency during the same period. This indicates that the

degrees of fiscal decentralization for both TTS and Rote Ndao are still very poor.

The low share of local revenue to total regional income in TTS and Rote Ndao indicate the high rate of fiscal dependency on the central government, as well as the limited sources of local revenue that can be explored by the two regencies. The internal problems in managing local revenues and the human resource capacity in managing regional potentials were what caused the low amount of Regional Revenue [29, 30]. Extensification and intensification efforts in optimizing the potential of the region need to be done as an attempt of improving and reorganizing the local revenue management. All efforts to increase Locally-Generated Revenue through taxes and levies will succeed if local government can demonstrate sincere goodwill to improve public services, which is reflected by an increased proportion of development expenditure [31]. Here are the specific efforts in various aspects, which are essential to be implemented in order to increase Locally-Generated Revenue: (1) improving the quality of human resources; (2) preparing all basic facilities/infrastructure, as well as the supporting ones; (3) formulating rules and regulations that focus on the aspects of economic, efficiency and neutrality; (4) revitalizing the relevant institutions, including decentralizing the investment licensing authority; (5) preparing more attractive policies in providing investment incentives facility; and (6) optimizing the potential of the local economy, making it beneficial to the region [32].

3.2. The level regional financial dependency

Over the period of 2013-2016, the regional dependency level of East Nusa Tenggara was 71.77 per cent on average, putting it in the category of regions with high level of regional financial dependency (Table 5). The provincial government has not been able to fully finance their spending. The transfer revenue received from the central through fiscal balance funding that is included in the Regional Budget is still the dominant part. The fiscal balance funding, which was Rp 1.17 trillion in 2013, has increased to the amount of Rp 2.86 trillion. The General Allocation Grant (*DAU*), which is a grant from the central government, has accounted for the biggest share of the fiscal balance funding. The contribution from the General Allocation Grant (*DAU*) to the total fiscal balance funding reached 86.68 percent during the period of 2013-2015, but has since dropped to 46.68 percent by 2016. Specific Allocation Fund (*DAK*), which is a grant from the central government to local governments to finance the programs that contribute to national development priorities, had a share of 6.89 percent over the course of 2013-2015, which then rose significantly to 50.44 percent in 2016. Such extreme increase took place due to the relocation of *DAU* to *DAK*. The low rate of *PAD* contribution in TTS Regency and Rote Ndao Regency has made the development financing in both regions highly dependent on the transfer revenue from the central government. The level of regional financial dependency of TTS Regency and Rote Ndao Regency has averaged to 82.28 percent and 94.83 percent respectively during the period of 2013-2016. This indicates that both regions have a very high dependency on the transfer revenue from the central government. This financial dependency has implications on the local government's flexibility in allocating the budget for development activities. The local government is required to seek a bigger receiving income, particularly through the Locally-Generated Revenue and its components. Intensifying the tax revenue, the investment, and the efficiency are some of the actions that need to be done in order to increase locally-generated revenue. In addition, the limited ability of local financing has required local government to manage the regional expenditures efficiently and effectively [33].

Table 5: The level of regional financial dependency in East Nusa Tenggara Province, TTS Regency and Rote Ndao Regency, 2013-2016

Regional Govt.	Year	<i>PT</i>	<i>TPD</i>	<i>TKtD</i>	<i>TKtD</i>
		(Billion Rp)	(Billion Rp)	(%)	Category
East Nusa Tenggara Province	2013	1,890.25	2,558.60	73.88	High
	2014	1,995.20	2,898.90	68.83	High
	2015	2,467.46	3,523.98	70.02	High
	2016	2,898.50	3,898.59	74.35	High
TTS Regency	2013	806.61	985.27	81.87	Very High
	2014	874.49	1,071.62	81.60	Very High
	2015	1,028.56	1,296.31	79.35	Very High
	2016	1,227.49	1,422.40	86.30	Very High
Rote Ndao Regency	2013	468.94	488.93	95.91	Very High
	2014	484.86	513.34	94.45	Very High
	2015	535,62	576,70	92,88	Very High
	2016	699,60	728,18	96,08	Very High

3.3. The level of regional independency

East Nusa Tenggara had an extremely low level of local financial independence (not self-sufficient) in 2013 with an instructive pattern of relationship. However, the number showed a slight increase during 2014-2016, even though it was still in the category of less independent with consultative relationship patterns (Table 6).

Consultative relationship pattern, which calls for the intervention from the central government, has started to decrease and given more focus on the role of consultancy, since the local government is considered to have been a little more capable in running the regional autonomy. Meanwhile, both TTS and Rote Ndao regencies had an extremely low level of local financial independency (not self-sufficient), with an instructive pattern of relationship. Instructive relationship patterns is a pattern where the central government's role is more dominant than the autonomy of local governments. Both TTS and Rote Ndao Regencies still have a very low capability when it comes to providing the financing needs to execute governmental tasks, the community development, and community social services.

3.4. Regional expenditures on provincial and district levels

Regional expenditures are a reflection of the budget policy, which is set to achieve the development goals as stated in the planning document. Hence, by examining the realization of regional expenditure, it can be seen to what extent is budgeting consistent with development plans [29]. Both the provincial and the local governments have been practicing the principle of balanced financial management. In this context, any spending plan specified in the Regional Budgets shall be tailored to the expected revenues, in other words the amount of spending should be equal to the amount of income received.

The expenditures included in the structure of Regional Budget are divided into two main components, i.e. indirect expenditures and direct expenditure. Regional expenditures of East Nusa Tenggara that are sourced from the Regional Budget show a significant increase every year. Regional expenditure that reached Rp 2.55 trillion in 2013, has increased to Rp 3.89 trillion in 2016. In the structure of expenditure contained within the Regional Budgets of East Nusa Tenggara during the period 2013-2016, the components for indirect expenditure were larger than those of the direct one (Table 7). Over the past four years, the average indirect expenditure was 62.26 percent of total expenditures. In general, indirect expenditures at the provincial level for the years 2013-2016 were dominated by the grant purposes, which was an average of 56.64 percent; while personnel expenditure reached an average of 25.45 percent.

Table 6: The level of regional independency of East Nusa Tenggara Province, TTS Regency, and Rote Ndao Regency, 2013-2016

Regional Govt.	Year	<i>PAD</i> (Billion Rp)	<i>TPT</i> (Billion Rp)	<i>TKD</i> (%)	<i>TKD</i> Category	Relation-ship Pattern
East Nusa Tenggara	2013	476.68	2,074.93	22.97	Not Independent	Instructive
	2014	730.73	2,149.86	33.99	Less Independent	Consultative
	2015	872.55	2,638.27	33.07	Less Independent	Consultative
	2016	966.86	2,921.07	33.10	Less Independent	Consultative
TTS Regency	2013	42.39	942.88	4.50	Not Independent	Instructive
	2014	48.45	1,023.17	4.74	Not Independent	Instructive
	2015	65.02	1,231.29	5.28	Not Independent	Instructive
	2016	71.93	1,350.46	5.33	Not Independent	Instructive
Rote Ndao Regency	2013	19.99	468.94	4.26	Not Independent	Instructive
	2014	22.25	491.10	4.53	Not Independent	Instructive
	2015	26.58	550.12	4.83	Not Independent	Instructive
	2016	28.57	699.60	4.08	Not Independent	Instructive

A significant increase in expenditure have also occurred at the regency level. Total expenditure of TTS Regency has increased from Rp 985.27 billion in 2013 to Rp 1.42 trillion in 2016. Total expenditure of Rote Ndao Regency has also increased from Rp 487.93 billion in 2013 to Rp 723.27 billion in 2016. The components of indirect expenditure for the period of 2013-2016 have dominated the total expenditures, reaching 59.00 percent. Meanwhile the indirect expenditure of Rote Ndao Regency scored 50.14 percent. This indirect expenditure was largely allocated for personnel expenditure, which reached 82.40 percent for TTS Regency and 79.84 percent for Rote Ndao Regency. The dominating proportion of personnel expenditure has been an indication that the structure of expenditures at the district level is still very bureaucratic oriented. The relatively large components of indirect expenditure should rather be viewed as a form of warning against the expenditure structure of a region, because according to the regulation, an indirect expenditure is identically defined as the one that will be

fully spent within a year. When an indirect expenditure is greater than the direct one, it would be an indication of a low quality of both regional expenditure and Regional Budgets [34]. The allocation of types of expenditure will affect the targets of food security development. Therefore, regional expenditure must be carefully managed by adhering to the principle of expenditure management, which includes the following criteria; the selection of programs, the amount of expenditure, the purpose of the budget expenditure, the implications of the program, the integration of the expenditure allocation, and the institutions involved [35].

Table 7: Regional expenditures of East Nusa Tenggara, TTS Regency, and Rote Ndao Regency, 2013-2016

Regional Govt.	Year	Direct Spending (Billion Rp)	Indirect Spending (Billion Rp)	Total Spending (Billion Rp)	RBL (%)	RBTL (%)
East Nusa Tenggara	2013	889.05	1,669.55	2,558.60	34.75	65.25
	2014	1,089.28	1,809.61	2,898.90	37.58	62.42
	2015	1,452.63	2,071.35	3,523.98	41.22	58.78
	2016	1,459.00	2,439.59	3,898.59	37.42	62.58
TTS Regency	2013	442.52	542.75	985.27	44.91	55.09
	2014	431.95	639.67	1,071.62	40.31	59.69
	2015	522.32	773.99	1,296.31	40.29	59.71
	2016	547.46	874.94	1,422.40	38.49	61.51
Rote Ndao Regency	2013	234.47	253.46	487.93	48.05	51.95
	2014	257.65	255.70	513.34	50.19	49.81
	2015	291.75	284.95	576.69	50.59	49.41
	2016	366.06	357.21	723.27	50.61	49.39

3.5. Programs and activities of food security

Based on the results of content analysis of documents related to food security, here are five sub-systems associated with the food security programs and activities: 1) sub-system of food availability; 2) sub-system of food access; 3) sub-system of food utilization; 4) food and nutrition status, and 5) conducive food security support system. Moreover, there are 17 policies which are then translated into 136 programs and activities related to food security. From a total of 136 programs and activities that have been identified, there are only an average of 39 food security programs and activities (28.68 percent) in the Regional Budgets of East Nusa Tenggara for the period 2013-2016. Meanwhile, the average numbers of programs and activities that were listed in the Regional Budgets of TTS Regency and Rote Ndao Regency for the period of 2013-2016 were 35 events (25.73 percent) and 37 events (27.20 percent) respectively.

The subsystem of food availability is still the key focus in the development of food security at the provincial and regency levels. The average number of programs and activities of the food availability subsystem at provincial level is 12 events or 30.13 percent of the total programs and activities related to food security in East Nusa

Tenggara. While TTS and Rote Ndao each has 14 events (39.29 percent) and 13 events (34.90 percent).

3.6. The budget for food security

Lowering the level of food insecurity is a huge challenge for those planners and policy makers, as food security problem is a multi-effects problem, not a one-sector issue, but rather involving both the upstream and the downstream aspects [36, 37]. Therefore, addressing the issue of food insecurity cannot be carried out by just one institution, but needs to involve various agencies under the coordination of regional leaders, i.e. the Governors and Regents, as the Chairman of Food Security Council (*DKP*). Activities and Budgetary for the development of food security were evenly distributed to several Regional Working Units (*SKPD*) which are the members of the *DKP*. Such *SKPDs* are including the followings: 1) Food Security and Counseling Agency; 2) Agriculture and Plantation Office; 3) Animal Husbandry Service; 4) Maritime and Fisheries Office; 5) Forestry Service; 6) Department of Health; 7) Public Works Office; 8) Social Services Office; 9) The Office of Cooperatives and Small and Medium Enterprises (SMEs); and 10) Regional Board for Disaster Management (*BPBD*). These agencies are both directly or indirectly related through programs and activities that are carried out annually.

The increasing number of regional expenditure in East Nusa Tenggara was not followed by an increase in the proportion of expenditure related to food security. Based on the analysis, the proportion of food security budget in the Regional Budget of East Nusa Tenggara for the period of 2013-2017 fluctuate with a declining tendency (Figure 2). The average budget for food security per year during the period of 2013 – 2016 was Rp 229.89 billion, or 7.04 percent of the total Regional Budgets of East Nusa Tenggara.

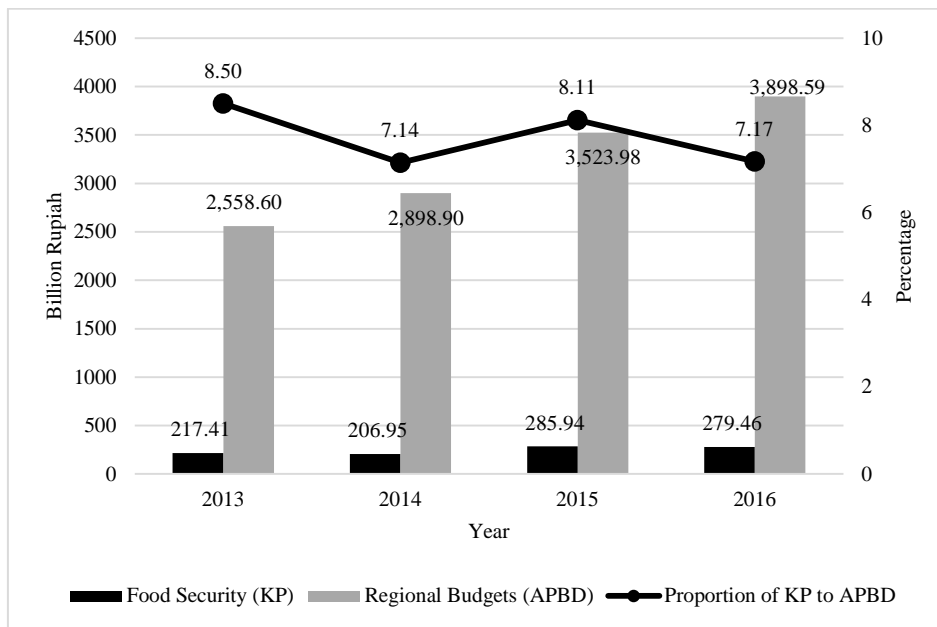


Figure 2: Regional Budget and budgets related to food security in East Nusa Tenggara, 2013-2016

Copenhagen Consensus in 2012 declared that the fight against malnutrition should be the top priority for policy makers, especially for East Nusa Tenggara that has a high level of food insecurity. The obligation to carry out

development of food security is also stipulated in Act No. 23 Year 2014 and No. 18 Year 2012, wherein the food problems become mandatory government affairs. Therefore, the budget for food security development needs to be given the appropriate portion. Overcoming the problem of children malnutrition requires a budget of \$100 per toddler [38]. There are as many as 319,286 children under five suffering from malnutrition in East Nusa Tenggara, thus with that assumption, it takes as much of a budget as Rp 415 billion just to deal with this particular issue. The limited budget for food security has demanded the government to prioritize their interventions on the causes of food insecurity, and focus on areas that are more vulnerable to food and nutrition insecurity.

The proportion of the funding for food security programs and activities in TTS Regency is not much different from that at the provincial level. The average proportion of its food security budget is Rp 86,41 billion, or 7.46 percent of total Regional Budgets of TTS Regency. The budget allocated for food security has shown an increase from 2013 until 2015, both in the amount and in the proportion, but then dropped as much as 2.69 percent in 2016 (Figure 3). The 2015 Map of Food Security and Insecurity of East Nusa Tenggara has pointed out that TTS Regency was the area with the worst level of food insecurity. As much as 97.00 percent of the entire sub-districts in TTS Regency was considered food insecure [39]. The number of infants suffering from stunting and underweight is the highest and the worst in East Nusa Tenggara, amounting to 70.43 percent and 46.48 percent respectively. Moreover, the numbers of poor and food insecure people are relatively high in TTS, which each reached 126,000 inhabitants and 124,331 inhabitants in 2013. Such condition requires attention and great support from all levels of government, be it central, provincial, or regency levels. One form of such supports is through providing budget allocation that favors the efforts to handle food insecurity in TTS Regency.

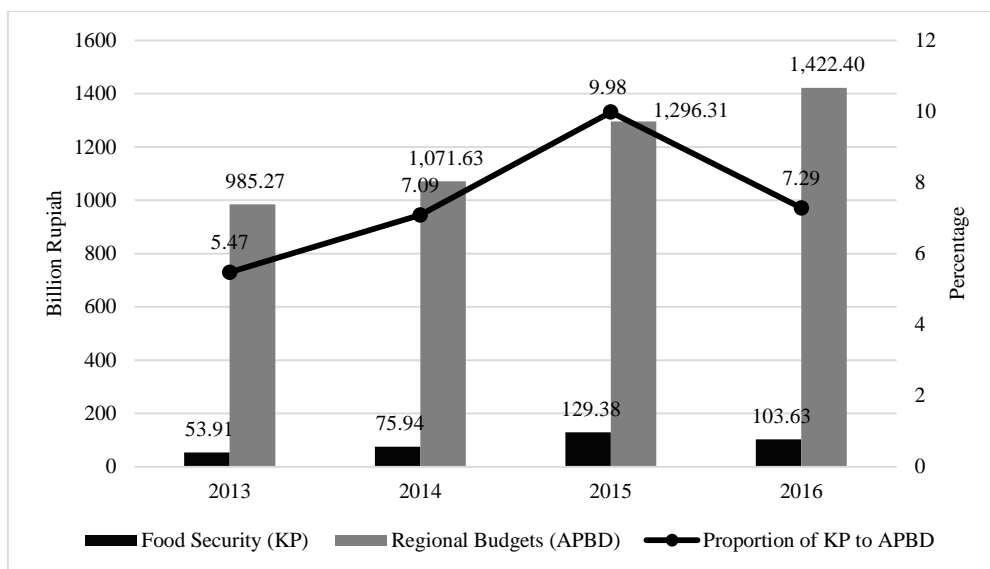


Figure 3: Regional Budgets and food security budget in TTS Regency, 2013-2016

The budget allocation for food security in Rote Ndao is not as much as that in TTS. The average budget allocation for the development of food security in Rote Ndao is Rp 51.42 billion per year. Although smaller in number, when viewed in proportion, the food security budget of Rote Ndao is higher compared to that of TTS or

even the Province. The proportions of food security budgets in 2013, 2014, and 2016 were above 9.20 percent, only in 2015 that it was a mere 7.66 percent (Figure 4). The Food Security and Insecurity Map of East Nusa Tenggara has shown significant changes in the status of food security in Rote Ndao Regency, particularly when compared to the unfavorable condition in 2010.

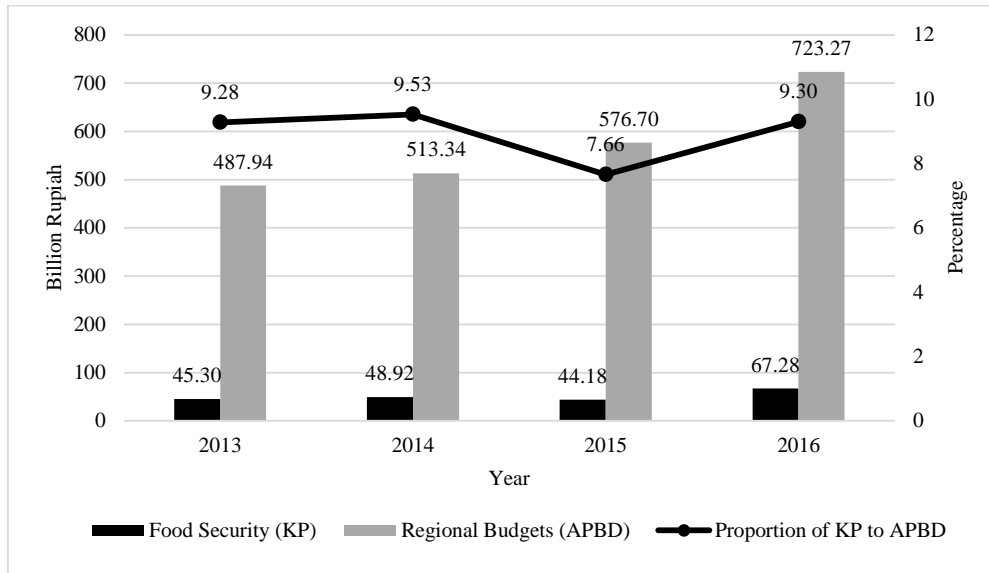


Figure 4: Regional Budget and food security budget in Rote Ndao Regency, 2013-2016

By 2015, all sub-districts in Rote Ndao have already been considered food secure [39]. This certainly would not be possible without the support of local government in addressing food insecurity with a variety of programs, one of which was through the "Anan Lakamola Sio" Movement, which is a movement that urges local people to return to growing crops in their own garden to achieve food security. This particular movement was promoted in order to accelerate poverty eradication, economic development, community empowerment, and community-based food security [40].

3.7. The budget for food security that is based on the subsystem

The budget allocation for food security for each subsystem in East Nusa Tenggara is illustrated in Figure 5. The subsystem for food availability is still the focus of the food security development in East Nusa Tenggara. During the period of 2013-2016, food supply subsystem has obtained the highest average allocation, which amounted to 55.92 percent of the total budget for food security. The biggest part of the budget allocation on food security subsystem is used for programs and activities aimed at increasing domestic production (85.64 percent of the budget for food security subsystem). The subsystem of distribution or access to food is a subsystem that received the second largest budget allocation, which is an average of 18.01 percent of the total budget for food security in East Nusa Tenggara. Meanwhile, the subsystem of food and nutritional status, which is one of the important factors in achieving food security in East Nusa Tenggara, received a budget allocation averaging to only 7.90 percent.

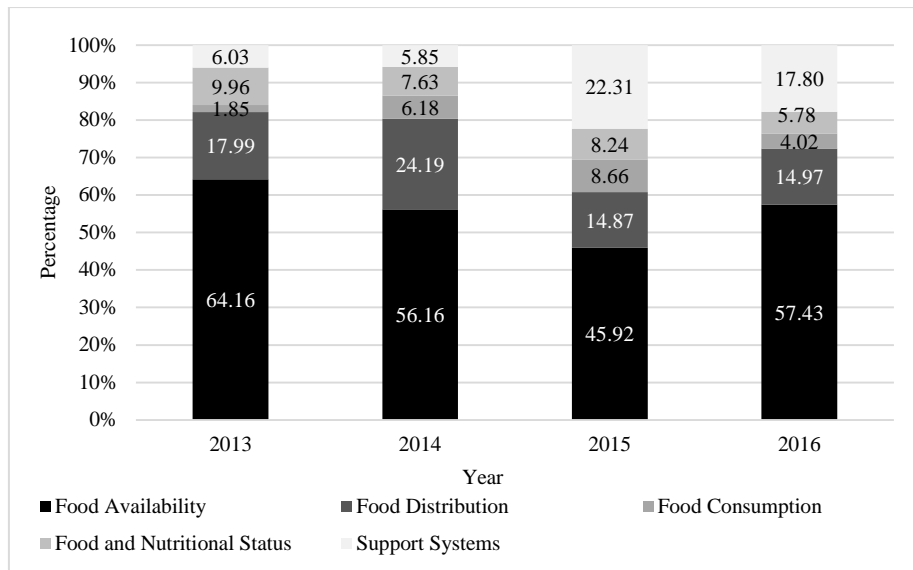


Figure 5: Budget allocation for each subsystem of food security in East Nusa Tenggara, 2013-2016

As is the case at the provincial level, the subsystem of food availability is also still the focus of food security development in TTS Regency. Over the past four years, the subsystem of food availability, has obtained a budget allocation of 41.05 per cent on average of total budget for food security. A total of 84.44 percent of the budget allocation for food availability subsystem was used for programs and activities aimed at increasing domestic production. Support subsystem is a subsystem with the second largest budget allocation, averaging on 32.97 percent of total budget for food security in TTS Regency, with the increasing tendency every year. The majority of budget allocation in support subsystem (90.71 per cent) was used for institutional empowerment and coordination among regions. Meanwhile, the subsystem of food and nutritional status and the subsystem of food distribution received budget allocation of 20.37 percent and 4.91 percent respectively during the period of 2013-2016 (Figure 6).

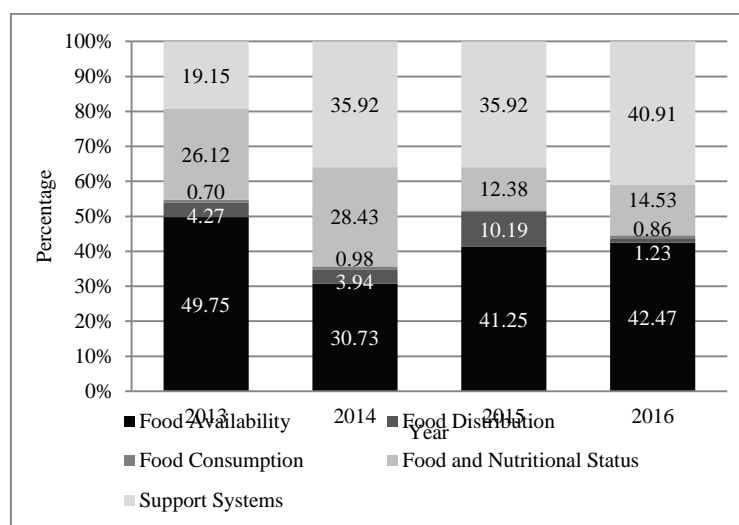


Figure 6: Budget allocation for each subsystem of food security in TTS Regency, 2013-2016

The subsystem of food availability has also become the focus of development of food security in Rote Ndao (Figure 7). The budget for food availability subsystem takes up the largest portion in the framework of the food insecurity handling. Over the past four years, the budget allocation for food availability subsystem has averaged on 65.88 percent of total budget for food security. The biggest portion of budget allocation on food availability subsystem is used for programs and activities that aim to increase domestic production, amounted to 62.14 percent of the whole budget for food availability subsystem.

Support subsystems are the subsystems with the second largest budget allocation, each averaging on 15.67 percent. Subsystem of food and nutritional status and subsystem of food distribution, each has been allocated a budget of 10.59 percent and 7.10 percent during the period of 2013-2016. The budget allocation in the subsystem of food and nutritional status has been on an upward trend; amounted to only 6.01 percent in 2013, and then rose to 12.66 percent in 2016. The support subsystem, on the other hand, has experienced quite the contrary; as it tended to be declining.

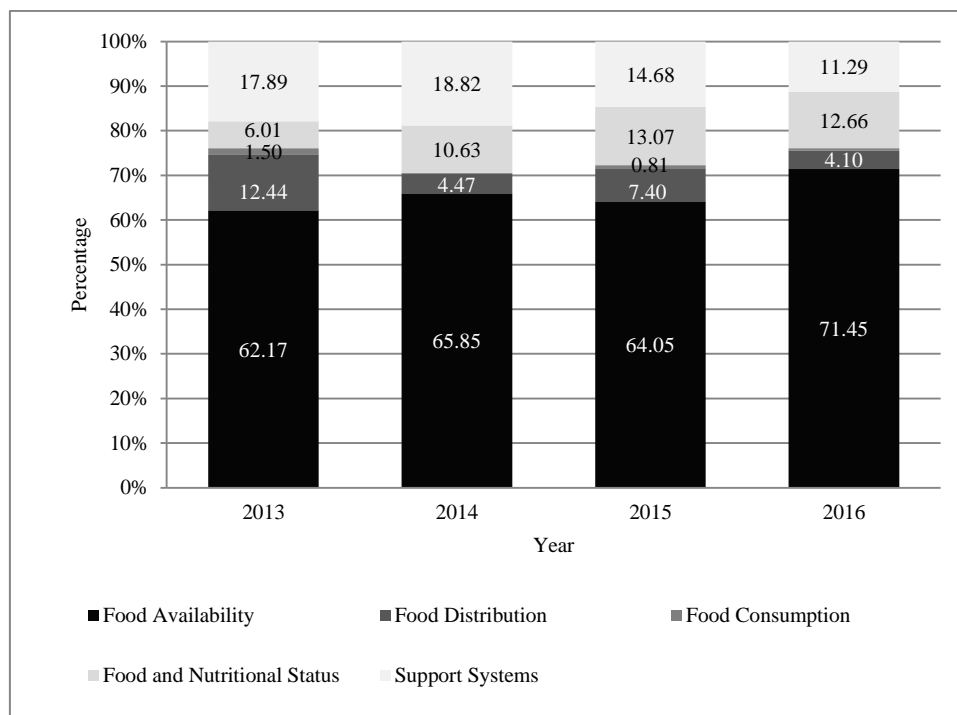


Figure 7: Budget allocation for each subsystem in Rote Ndao Regency, 2013-2016

The fact that food insecurity and malnutrition are still common, and have a fairly high degree of probability, is an indication that not all parties are aware that self-sufficiency does not mean it is automatically eliminating food insecurity and malnutrition. Occurrence in other countries and reports from many areas including East Nusa Tenggara point out that the incidence of food insecurity is not caused by a shortage of food at local and regional levels. This confirms that food availability is not the sole objectives of household fulfillment. Based on the Food Security and Insecurity Map of East Nusa Tenggara in 2015, in terms of overall food availability, food production in East Nusa Tenggara has exceeded the normative consumption of the population. Only 50 sub-districts (16.70 percent) that experienced a deficit in the supply of cereals and roots & tubers [39]. On the other

hand, chronic malnutrition indicated by stunting is still a major issue in East Nusa Tenggara. The prevalence of children under five suffering from stunting at the provincial level has increased from 46.70 percent in 2007 to 51.73 percent in 2013. East Nusa Tenggara is the only province in Indonesia with stunting rate of over 50.00 percent. According to the classification issued by the World Health Organization (WHO), 17 regencies in East Nusa Tenggara, or 77.27 percent of the total number, have a prevalence of stunting at a very alarming level (≥ 40.00 percent).

Food security and food self-sufficiency are two different things. Some regions have been able to attain food self-sufficiency, but experiencing food insecurity. This condition is an indication that the macro-level of self-sufficiency does not necessarily answer the problem of food distribution and food access in a fair and equitable manner [41]. Strategies for the food self-sufficiency, which are based on the paradigm of food availability, will not be able to guarantee access to food for all families or individuals, which should be the core point in food security [42]. In the case that occurred in Bolivia, the agricultural budget allocation was driven by a high level of food insecurity, but the budget had little effect on the reduction of said food insecurity [43].

There Is Not Any Approach That Is Suitable For All – No One Size Fits All. The complexity of the factors affecting food security has led to the absence of a common approach that is suitable for all circumstances with different socio-economic conditions. Similarly, food security can not be homogenized only through one approach, it must be in accordance with the socio-economic circumstances and the different environment of each region. Differences in vulnerability are the result a complex interaction between social norms, political institutions, ownership of resources, technology, and inequality [44]. The ecosystem zone differences have resulted in the different factors that cause food insecurity [45]. The main characteristics that lead to a high susceptibility to food insecurity in East Nusa Tenggara are as follow: (1) subsystem of nutritional status, i.e. the high rate of stunting among children under five; (2) sub-system of food access, consisting of the high number of people living below the poverty line; and the high number of households without access to electricity; (3) subsystem of the utilization of food, consisting of the high number of households without access to clean and potable water, and the high number of illiterate women [39].

Taking into account the factors that cause and the characteristics of the existing food insecurity, the development of food security in East Nusa Tenggara cannot simply focus on the aspect of availability alone. Food security programs and activities should also be directed to the following matters: (1) subsystem of nutritional status, through the acceleration of interventions for the prevention of malnutrition, especially the chronic one (stunting); (2) subsystem of food access, through: (a) improving the economic access or financial access to get food through poverty alleviation programs, especially for poor households; as well as improving the food distribution system, especially for people living in small islands, where food distribution is often a problem during certain seasons; (b) developing the electricity in East Nusa Tenggara using renewable energy, such as hydro, geothermal, wind, and solar energy; (3) subsystem of food utilization, through: (a) improving access to clean water and adequate sanitation facilities, which will later be able to improve the nutritional outcomes; (b) improving women's education and knowledge related to food consumption, that should be varied, nutritious, and balanced. These factors need to get bigger attention and support from stakeholders, be it at the central, provincial, regency, or community level.

4. Conclusions and recommendations

Regional financial capacity of East Nusa Tenggara is still relatively low, as demonstrated by the high level of regional financial dependency, as well as the low level of regional financial independency. Meanwhile, both regional governments of TTS and Rote Ndao have displayed an extremely low local financial capacity, which is indicated by a serious lack of the degree of fiscal decentralization, the very high level of regional financial dependency on transfers from central, and the low level of regional financial independency. Such condition has demanded the regional governments to seek even bigger income, particularly through the Locally-Generated Revenue and its components. Intensification of the tax revenue, investment, and efficiency also needs to be done in order to increase locally-generated revenues (*PAD*). In addition, the limited capacity of local financing requires local government to manage the regional expenditures efficiently and effectively. Regional expenditure also needs to be aimed at direct expenditures for development activities.

The severe condition of food insecurity has urged local governments on provincial level as well as regency level to give priority and support for the development of food security in East Nusa Tenggara. The average percentage of Regional Budget for the development of food security at the provincial level is 7.04 percent, while TTS recorded as much as 7.46 per cent, and Rote Ndao amounted to 8.94 percent. The budget for food security needs to be optimized more in term of portion. The development for food security both at provincial and regency levels still keep food availability aspect as the main focus. In dealing with limited budget, allocation for said budget needs to be prioritized on the subsystems that are the major issues in food insecurity in East Nusa Tenggara, one of which is the subsystem of food and nutritional status. However, the programs and activities for the food supply subsystem are not the only focus in the food security development.

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