Fiscal Decentralization: Reformulation of the General Allocation Funds (GAF) Policy for Archipelagic Provinces in Indonesia

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Abstract. After the 1998 reform, the fiscal decentralization adopted in Indonesia did not benefit the archipelagic regions. It is evident through the General Allocation Fund (GAF) policy, which employs the width, size of the mainland, and population as leading indicators. As a result, provincial archipelagos with little continent tend to be underfunded in terms of development funds. This study proposes a revised GAF scheme for equitable budget distribution in Indonesia's archipelago regions. It generates two models that capture archipelagic provincial regions' features in the GAF formula: first, the addition of the Distance between provincial capital to district capital in the form of coefficient variance index of Distance for the GAF formulation. Second, an additional percentage of the GAF baseline ceiling for the archipelagic provinces special fund, a particular scheme proposed by eight provincial archipelagos to the central government. Through these two schemes, we demonstrate that the development fund policy allotted to archipelagic regions, covering eight provinces and eighty-five districts/municipalities, will improve substantially more than in the past.

Keywords: Fiscal decentralization; reformulation; archipelagic regions

1 Introduction

The government administration process is generally carried out in two patterns: centralization and decentralization. These two patterns are not two opposites and can be separated just like that, but both are patterns that are integrated into a system of government. The administration of the Indonesian government uses both of these patterns. Decentralization has been implemented since the Old Order regime, but it has not gone well. In 1965 the Old Order regime fell and was replaced by the New Order regime. In this regime, the administration of government is centralized. In 1998 the New Order regime also failed, and Indonesia entered an era of reform. In the reform era, there was a fundamental change in the administration of the

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Indonesian government from centralization to decentralization. At this time, at the national level, we are grappling with the problem of choosing the form of government [1].

This paper focuses on fiscal decentralization, explicitly discussing the reformulation of fiscal decentralization for archipelagic regions in Indonesia. Conceptually, there are many views of experts about the form of devolution; Rondinelli divides the four dimensions of decentralization: political, administrative, fiscal, and economic [2]. a, eight areas decla. Article 25A of the 1945 Constitution of the Republic of Indonesia says unequivocally that Indonesia is an archipelagic state. However, in the context of budget allocation, it does not reflect the characteristics of the archipelagic region. This can be seen through the General Allocation Fund (GAF) scheme, which uses mainland area and population as the leading indicators. This condition has an impact on the small portion of the budget obtained by the island regions. This paper offers a formulation of the GAF distribution in Indonesia based on an archipelago. The writing is limited to the validity period of Law No. 33 of 2004 concerning Financial Balance between the Central Government and Regional Governments and PP No. 55 of 2005 concerning Balanced Funds.

In general, the process of government administration is conducted in two ways: centralization and decentralization. These two patterns are not opposites that are easily detachable but integrated within a governing structure. The administration of the Indonesian government utilizes both of these patterns. Since the dominance of the Old Order, decentralization has been adopted, albeit not without difficulty. Currently, at the national level, we face the challenge of choosing a form of government [1]. In 1965, the New Order regime replaced the Old Order dictatorship. This system centralizes government management. In 1998, the New Order dictatorship in Indonesia likewise fell, and a period of openness began. During the reform period, the Indonesian government administration transitioned from centralization to decentralization.

Rondinelli classifies decentralization's four components: political, administrative, fiscal, and economic. There are numerous conceptual perspectives on the form of devolution [2]. This article examines fiscal decentralization, specifically the reformulation of fiscal decentralization for the archipelagic regions of Indonesia. The Riau Islands Province, Maluku, North Maluku, East Nusa Tenggara, Bangka Belitung, North Sulawesi, Southeast Sulawesi, and West Nusa Tenggara are the eight archipelagic provinces in Indonesia.

Article 25A of the 1945 Constitution of the Republic of Indonesia defines Indonesia as an archipelagic state: "The Unitary State of the Republic of Indonesia is an archipelagic state characterized by an archipelago with regions whose borders and rights are governed by law." However, the budget allocation does not reflect the characteristics of the archipelagic region. This is demonstrated by the General Allocation Fund (GAF) scheme, which uses population and land area as its primary indicators. This scenario has a negligible impact on the number of funds granted to island regions.

The archipelago perceives inequity in terms of population and area size. Based on the 2020 census, Indonesia has a population of 270,203,917 people, of which the population of the archipelago provinces is 22,544,558 (8.34%), and the population of the mainland provinces is 247,659,357 (91.65%). The distribution of the GAF from the population indicator has not helped the archipelagic regions, given this population distribution. Indonesia's overall land area is 1,913,578.68 square kilometers, but the land area of the eight archipelago provinces is just 284,348.13 square kilometers or 12.97 percent of Indonesia's total land area. Consequently, the fund allocation mechanism has not proved favorable for all archipelago provinces.

This study provides an archipelago-based model of GAF distribution in Indonesia. Its scope is limited to the legal length of Law No. 33 of 2004 on Financial Balance between the Central

Government and Regional Governments and PP No. 55 of 2005 on Balanced Funds. After the 1998 reform, the fiscal decentralization adopted in Indonesia did not benefit the archipelagic areas. It is evident through the General Allocation Fund (GAF) policy, which employs the mainland's width, size, and population as leading indicators.

As a result, provincial archipelagos with little mainland tend to be underfunded in terms of development funds. Therefore, in this study, we seek to propose a reformulation scheme for the GAF distribution policy, especially in the Island's provinces. Two models in this study showed that if the reformulation offered were to be implemented, the entire archipelago regions would have a more substantial fund to support their complex and distinct conditions than those predominantly mainland provinces. In addition, this study intends to highlight that the legal imperative requiring a financial balance between the central and the local administrations, notably the acceleration for the administration of the archipelagic region, is addressed academically.

2 Literature Review

Numerous nations throughout the globe are implementing fiscal decentralization. China is one of them; budgetary decentralization in China began in 1980 as a result of tax reform. At the time, fiscal decentralization was implemented using a contract system, which relied on a central authority to provide policies and only delegated authority based on negotiations between the region and the center. China started developing a tax distribution system and tax reforms in 1994. Fiscal decentralization is achieved through the distribution of expenditure authority, revenue sharing, tax rebate system distribution, general transfer system (block grants), and unique transfer system (earmarked grants) [4], [5].

Japan's fiscal decentralization is based on two models: unconditional grants and monies whose use authority is given to the regions. These monies result from the central government's allocation of taxes received. The second pattern, conditional grants, consists of cash allocated to areas to carry out certain functions, such as postal and banking services [4]. Similar to Japan, fiscal decentralization in Thailand employs two patterns: general-purpose transfers, or general transfers in the form of transfers of subsidies to regions for matters governed by the central government and tax revenue sharing by the law and for specified purposes. Transfers, or transfers for special programs implemented by the government [4].

In Colombia, fiscal decentralization is carried out in two ways: based on population and considering the level of poverty, unmet basic needs, the budgetary contribution of own resources, administrative efficiency, and quality of life indicators when allocating resources from central sources to each province and city. The second pattern, the fiscal situation, is based partially on a per capita and inflation-based formula and partially on the same distribution for all provinces and cities [6]

In Chile, fiscal decentralization is accomplished by direct transfer to cities based on a per capita formula adjusted for rural and urban poverty levels. Second, horizontal equity: per capita-based transfer of local revenues from wealthier to poorer communities. The fiscal decentralization pattern in Australia is carried out with two types of budgetary transfers: general purpose payments (GPP), a fund disbursed by the central government to the states whose use is left to their respective states, and specific purpose payments (SPP), which are funds provided by the central government [6]

In contrast to a number of these nations, fiscal decentralization in Macedonia was conducted asymmetrically depending on the performance of each municipality throughout the assessment

period. The pattern is that each city has the same budgeting pattern, and if the city can perform this duty effectively, it will receive an additional budget. So there is a pattern of budget appraisal, and the additional funding is only allocated to regions that can manage the budget in the first stage [4].

Spain's decentralization is likewise unbalanced. Transfer of authority for policy formulation and implementation functions to each level of government, transfer of control of administrative units, including employees and assets by the new division of power, and calculation of regional financial resources as the basis for determining revenue authority [7]. In accordance with Law No. 33 of 2004, Indonesia has three fiscal decentralization programs. First, the General Allocation Fund (GAF) attempts to equalize financial capacity between regions and minimize inequality in economic power between areas, which the government must set by at least 26% of gross domestic product. GAF is defined as funds from APBN (national budget account) income distributed equitably among regions to finance regional needs in implementing decentralization. Second, the Special Allocation Fund (SAF) aims to finance special activities in certain areas that are regional affairs and by national priorities, in particular, to invest the needs of essential public service facilities and infrastructure that have not yet reached specific standards or to accelerate regional development. Third, Revenue Sharing Funds (DBH) are funds derived from APBN income and allocated to regions according to predefined percentages.

Based on the mapping results, Indonesia's pattern of fiscal decentralization is significantly more complete than that of numerous previously analyzed countries. This pattern can be considered to satisfy the needs of island regions that require a control span or Distance between islands to be factored into the GAF calculation. All of the ways in number 7 are also utilized in Indonesia. The deficiency in Indonesia's fiscal decentralization system is the lack of evaluation and negotiation, as in Macedonia and China, or administrative efficiency, as in Colombia. So that there are rewards and sanctions for regions with effective and ineffective financial management, China's contract-based negotiation procedure can reduce regional dissatisfaction if it follows this pattern.

Regarding the GAF allocation formula carried out by the government, several flaws were identified: the variables utilized in the GAF formula are proxy factors that do not reflect regional needs, the calculation formula is difficult to model, and there is no process for handling complaints [4]. In the case of archipelagic regions, they feel disadvantaged because the maritime area is not factored into the calculation for the distribution of the GAF; hence, they urge that the Distance between islands within the archipelagic province be included as a factor in the distribution of the GAF. In addition, archipelagic regions in Indonesia seek that 5% of the National GAF ceiling be allocated to eight archipelagic areas to affirm the decentralization policy.

3 Research Method

This study employs an exploratory sequential methodology. The sequential experimental strategy begins with gathering and analyzing qualitative data, followed by collecting and analyzing quantitative data depending on the outcomes of the first stage [3]. *First*, the collection and analysis of qualitative data to identify and characterize the premise upon which the government would calculate the GAF distribution formula. *Second*, a quantitative method simulates the GAF allocation formula using budget allocation factors representing the archipelagic region's peculiarities. In this simulation, the GAF reformulation is performed using two models: the model for adding the coefficient of variance index of the Distance between the

provincial capital and the district/city to the variable area of the GAF formula and the Special Archipelago Fund scheme. Based on these two simulations, the GAF allocation obtained by Indonesia's eight archipelagic provinces and eighty-five districts/municipalities will be depicted.

3 Result and Discussion

This study's reformulation of the General Allocation Fund aims to create an effective fiscal decentralization model for Indonesia's archipelagic provinces. Although the current GAF technique accounts for the requirements of the archipelagic zone by calculating and weighting the sea area by 100% in the GAF calculation, this is insufficient. However, the calculation of the sea area has no significant impact on the distribution of the GAF to the archipelagic regions of Indonesia. Indicators reflecting the characteristics of archipelagic areas of Indonesia have been incorporated into the design of the study. They are using two models, specifically the model for adding the coefficient of variance index for the Distance between the provincial capital and the district/city and the Special Archipelago Fund (SAF) model.

3.1 Model Addition of the Coefficient of Variety of Distances from Provincial Capitals to Regencies/Cities

The Coefficient of Variety Index is a metric that measures the difficulty of moving people and products within a province. This variable reflects the variation in Distance between the provincial capital and the district/city capital within an area. This access and mobilization aspect significantly impacts the execution of government activities and responsibilities in the archipelago. IKJR is the abbreviation for the Coefficient of Variety Index of the Distance between the Provincial Capital and Regency/City. Following are the steps in computing the IKJR: Distance calculation using ARCGIS application.

- The Distance between the midpoint of the district/city of the provincial capital and the center of the other districts/cities within each province is determined.
- The administrative area map has been drawn on Google Maps and Earth Maps to obtain a coordinated location.
- The midpoint of each district/city is found by converting district/city maps to pixels.
- Determine the coordinates of each midway.
- Compute the Distance between the coordinates of the district/city of the provincial capital and all districts/cities in each province.
- Distances are computed using geodetic measurements that follow the earth's curvature.

The coefficient of variety index of the Distance between the provincial capital and the districts/municipalities for each province is calculated by the formula:

$$\textbf{Coefficient of Variety} = \frac{\sigma}{\mu} \textbf{ x 100\%}$$

Information

- $\boldsymbol{\sigma}$ is the standard deviation of the Distance from the provincial capital to the district/city, with the formula:

$$\sqrt{\sum_{i=1}^{N} \frac{(Xi - \mu)^2}{N}}$$

Where:

- N = Number of districts/cities
- Xi = Distance of provincial capital district/city to district/city
- = Average Distance of the district/city of the provincial capital to the district/city
- The coefficient of variance index is calculated by dividing the coefficient of variance for each province by the average coefficient of friction for all provinces

Based on this formula, the Coefficient of Variety Index of the Distance between the Provincial Capitals and Districts/Municipalities throughout Indonesia is as follows:

Table 1. Coefficient variance index of Distance between the provincial capitals and districts/municipalities throughout Indonesia

No	Provinces	The variance coefficient index of Distance from Provincial Capitals to District/Municipality Capitals (%)	Variance Coefficient Index
1	Aceh	56.06	0.8617
2	North Sumatera	59.08	0.9082
3	West Sumatera	55.71	0.8563
4	Riau	48.65	0.7479
5	Jambi	67.79	1.0420
6	South Sumatera	49.87	0.7666
7	Bengkulu	67.26	1.0339
8	Lampung	60.29	0.9267
9	Bangka Belitung	87.53	1.3455
10	Riau Islands	107.34	1.6500
11	Jakarta	111.42	1.7126
12	West Java	44.86	0.6896
13	Central Java	47.69	0.7331
14	Yogyakarta	75.09	1.1542
15	East Java	49.85	0.7663
16	Banten	66.32	1.0194
17	Bali	61.65	0.9476
18	West Nusa Tenggara	93.68	1.4400
19	East Nusa Tenggara	53.93	0.8289
20	West Kalimantan	67.89	1.0435
21	Central Kalimantan	53.16	0.8171
22	South Kalimantan	61.15	0.9399
23	East Kalimantan	60.78	0.9342
24	North Kalimantan	52.78	0.8113
25	North Sulawesi	87.81	1.3498
26	Central Sulawesi	61.58	0.9466
27	South Sulawesi	68.91	1.0592
28	Southeast Sulawesi	47.28	0.7267
29	Gorontalo	79.73	1.2255
30	West Sulawesi	55.93	0.8598
31	Maluku	70.94	1.0904
32	North Maluku	79.05	1.2151

No	Provinces	The variance coefficient index of Distance from Provincial Capitals to District/Municipality Capitals (%)	Variance Coefficient Index
33	West Papua	55.81	0.8579
34	Papua	45.04	0.6924

Source: Processed 2021

The present GAF methodology does not consider the Distance between the provincial capital and the district/city, as the more expansive the province, the greater the average Distance between the provincial capital and the district/city. The Distance between the center of the local government and the district/city varies throughout each province. Due to the elongated shape of the area and the location of the provincial capital or district/city inside the region, the Distance between the provincial capital and a larger district/city in a smaller province is more significant than in a larger area. Divided by a big ocean, On the other hand, the relationship between provincial capitals and land-connected regencies/cities differs from that of sea-connected territories, which have less mobility and are more restricted than land areas. This study provides a supplementary method for the distribution of GAF to archipelagic regions by using a distance indicator between provincial capitals and districts/cities. This metric is referred to as the Coefficient of Variety Index of the Distance between the provincial capital and the district/city. Consequently, the GAF allocation formula for archipelagic regions is as follows:

GAF	**=**	**AD**	**+**	**CF**		
GAF	**=**	Dana Alokasi Umum* *(*General Allocation Fund*)				
AD	=	Alokasi Dasar* *(*Basic Allocation*), by calculating local public servants' expenses for salaries.				
CF	=	Kbf – KpF				
CF	=	Celah Fiskal* *(fiscal discrepancy)				
Kbf	=	Fiscal Need				
Kpf	=	Fiscal Capacity				
Kbf	**=**	**TBR(α1IP + α2IW+α3IPM+α4IKK + α5IPDRB/kap)**				
		Available Variables		**Additional Indicators for Archipelagic Provinces**		
		Indicators	**Weight ***	**Indicators**	**Weight**	
TBR	=	Total Belanja Rata-Rata APBD* *(Total Average Expense out of the Local Revenues and Expenses Budget)*				
IP	=	Indeks Jumlah Penduduk* *(*Population Size Index*)	28-36%			
IW	=	Indeks Luas Wilayah* *(*Area Widht Size Index*)	10-20%	**IKRJ****	10-15%	
	=	Darat* *(mainland)	100%			
	=	Laut * *(sea)	15-25%			
IPM	=	Indeks Pembangunan Manusia*	17-29%			

		*(Human Development Index)			
IKK	=	Indeks Kemahalan Konstruksi* *(Cost Construction Index)	7-17%		
IPDBR/kap	=	Indeks Produk Domestik Regional Bruto perkapita* *(Gross Regional Domestic Product Index)	28-36%		
KpF	=	PAD+DBH Pajak+DBH SDA* *(Local Genuine Income+ Return Sharing Fund Tax + Return Sharing Fund on Natural Resources)			
PAD	=	Pendapatan Asli Daerah* *(local genuine fund)	60-100%		
DBH Pajak	=	Dana Bagi Hasil Pajak* *(Tax-Return sharing fund)	80-100%		
DBH SDA	=	Dana Bagi Hasil SDA* *(Natural Resources T Return Sharing Fund)	80-100%		

Remarks : * Book II of Financial Notes and RAPBN for Fiscal Year 2021
** IKRJ : Coefficient of Variety Index of the distance between the Provincial Capital and Regency/City

Inputting and calculating the Coefficient of Variety Index of the Distance between provincial capitals and districts/cities is the next stage in determining the GAF for Indonesia's eight archipelagic provinces. The data utilized in this simulation is the Ministry of Finance's baseline data for calculating the 2021 GAF allocation. The simulation results of the computation of GAF allocation for eight Archipelago Provinces utilizing the Coefficient of Variety Index of the Distance between the Provincial Capital and the Regency/City are as follows:

Table 2. Recapitulation of the Increased GAF for the Archipelago Provinces

No	Provinces	GAF Allocations 2021	Reformulated Schemes					
			Weight 10%	Rise Amount	% Rise	Weight 15%	Rise Amount	% Rise
1	Kepulauan Riau	1,129,091,346,000	1,250,829,838,836	121,738,492,836	10.78	1,311,699,085,254	182,607,739,254	16.17
2	Bangka Belitung	970,636,972,000	1,090,533,859,934	119,896,887,934	12.35	1,150,482,303,900	179,845,331,900	18.53
3	West Nusa Tenggara	1,524,501,604,000	1,710,329,660,296	185,828,056,296	12.19	1,803,243,688,444	278,742,084,444	18.28
4	East Nusa Tenggara	1,783,843,886,000	1,833,694,483,125	49,850,597,125	2.79	1,858,619,781,688	74,775,895,688	4.19
5	Nort Sulawesi	1,374,484,768,000	1,486,062,175,881	111,577,407,881	8.12	1,541,850,879,822	167,366,111,822	12.18
6	Southeast Sulawesi	1,504,815,729,000	1,562,161,343,881	57,345,614,881	3.81	1,590,834,151,321	86,018,422,321	5.72
7	Maluku	1,574,799,396,000	1,606,132,294,208	31,332,898,208	1.99	1,621,798,743,312	46,999,347,312	2.98
8	North Maluka	1,262,976,766,000	1,306,929,531,579	43,952,765,579	3.48	1,328,905,914,368	65,929,148,368	5.22
	Total	**11,125,150,467,000**	**11,846,673,187,739**	**721,522,720,739**	**6.49**	**12,207,434,548,109**	**1,082,284,081,109**	**9.73**

Source: Processed 2021

Based on the preceding simulation, adding the Coefficient of Variety of Distances Index from Provincial Capitals to Regency/City (IKJR) to the GAF formula for eight archipelagic regions results in a considerable increase in GAF. With a 10% IKJR weight, the Archipelago Province will get an additional IDR 721,522,720,739 in GAF funding, a 6.49 percent increase over its 2021 GAF allocation. Simulating the Coefficient of the Variety of Distances from Provincial to Regency/City Capitals (IKJR) in the GAF formula for eight archipelagic regions, with an IKJR weight of 15%, the Archipelago Province will receive an additional GAF of IDR. 1,082,284,081,109, a 9.73% increase over its 2021 GAF allocation.

3.2 The Archipelago Special Fund (ASF) Model

The Archipelago Special Money (ASF) is a fund from the State Revenue and Expenditure Budget to encourage the growth of the Archipelago Region. The Archipelago Special Fund (ASF) is a budgeting pattern proposed by eight Provinces in the 2017 Archipelago Regions Bill Academic Paper. A minimum of 5% of the General Transfer Fund (GAF + DBH) ceiling or 6% of the General Allocation Fund ceiling is proposed for the Archipelago Special Fund (ASF) pattern. Thirty percent of the Special Archipelago Fund will be allocated to eight archipelagic provinces, and 70 percent will be given to about 85 archipelagic regencies/cities. In this approach, archipelagic areas in Indonesia seek at least 5% of the General Transfer Fund ceiling for the Special Archipelago Fund. The General Transfer Fund comprises the General Allocation Fund and the Revenue Sharing Fund.

Model 1: Minimum 5% of the General Transfer Fund Ceiling

In this approach, archipelagic areas in Indonesia seek at least 5% of the General Transfer Fund ceiling for the Archipelago Special Fund. The General Transfer Fund comprises the General Allocation Fund and the Revenue Sharing Fund. A minimum of 5% of the General Transfer Fund Ceiling in the 2021 budget allocation will replicate the Islands Special Fund under model 1.

Table 3. Islands Special Fund (5%)

Description	Amount
GAF 2021	390,291,390,288,000
Return Sharing Fund 2021	81,961,620,991,000
Total General Transfer Fund 2021	472,253,011,279,000
5% ASF	23,612,650,563,950
30 % Archipelagic Provinces	7,083,795,169,185
Average for Eight Archipelagic Provinces	885,474,396,148
70 % Archipelagic Districts/Municipalities	16,528,855,394,765
Average for Eighty Five Archipelagic Districts/Municipalities	194,457,122,291

Source: Processed 2021

Total General Transfer Funds. 2021 amounting to IDR. 472,253,011,279,000, with a simulation of the Special Archipelago Fund (ASF) of 5%, the archipelagic region will receive an allocation of IDR .23,612,650,563,950, with a 30% pattern for the Archipelago Province, it will receive an ASF of IDR.7,083,795,169,185 or a 65.1% increase, for Each island province will receive IDR. 885,474,396,148 in additional funding. 70% of the ASF, totaling IDR.16,528,855,394,765, was awarded to 85 archipelagic regencies/cities, with each receiving an additional IDR.194,457,122,291. The rise in GAF with an additional ASF of 5% of the total DTU can be observed in the following table for the 2021 simulation.

Table 4. Additional GAF from the Special Archipelago Fund for Archipelagic Provinces (5%)

No	Provinces	GAF	Additional GAF out of ASF	Total GAF	% Rise
1	Riau Islands	1,129,091,346,000	885,474,396,148	2,014,565,742,148	78.42
2	Bangka Belitung	970,636,972,000	885,474,396,148	1,856,111,368,148	91.23
3	West Nusa Tenggara	1,524,501,604,000	885,474,396,148	2,409,976,000,148	58.08
4	East Nusa Tenggara	1,783,843,886,000	885,474,396,148	2,669,318,282,148	49.64
5	Nort Sulawesi	1,114,975,109,000	885,474,396,148	2,000,449,505,148	79.42
6	Southeast Sulawesi	1,504,815,729,000	885,474,396,148	2,390,290,125,148	58.84
7	Maluku	1,574,799,396,000	885,474,396,148	2,460,273,792,148	56.23
8	North Maluka	1,262,976,766,000	885,474,396,148	2,148,451,162,148	70.11
	Total	**10,865,640,808,000**	**7,083,795,169,185**	**17,949,435,977,185**	**65.19**

Source: Processed 2021

Model 2: Minimum 6% of the General Allocation Fund Ceiling.

Archipelagic regions in Indonesia receive a Special Archipelago Fund of at least 6% of the General Allocation Fund cap under this arrangement. With model 1, the following will mimic the Islands Special Fund: a minimum of six percent of the General Allocation Fund Ceiling in the 2021 budget allocation. Based on the request of the archipelagic region and the 2021 GAF Allocation of IDR. 390,291,390,288,000, with a 6% simulation of the Archipelago Special Fund (ASF), the archipelagic region will receive an allocation of IDR.23,417,483,417,280. With a 30% pattern for the Archipelago Province, it will receive an ASF of IDR. 7,025,245,02 70% of the ASF, or IDR. 16,392,238,392,096, was awarded to 85 archipelagic regencies/cities, with each receiving an additional IDR. 204,902,979 per regency/city.

Table 5. Additional GAF for the Archipelago Province from the Special Archipelago Fund (6%)

Descriptions	Amount
GAF	390,291,390,288,000
6% ASF	23,417,483,417,280
30 % Archipelagic Provinces	7,025,245,025,184
8 Archipelago Provinces on average	878,155,628,148
70% archipelagic districts/municipalities	16,392,238,392,096
80% archipelagic districts/municipalities on average	204,902,979,901

Source: Processed 2021

By this pattern, eight archipelagic provinces will receive a substantial budget increase, such as the Riau Islands Province in 2021, which will receive a GAF allocation of IDR. 1,129,091,346,000 and an additional ASF of IDR. 878,155,628,148, resulting in a GAF allocation of IDR. 2,002,246,974,148, an increase of 77.78%. The increase in GAF with an additional ASF of 5% of the total GAF in the simulation for 2021 is depicted in the table below.

Table 6. Additional GAF for Islands Province from the Special Archipelago Fund (6%)

No	Province	GAF	Additional GAF out of ASF	Total GAF	% Rise
1	Kepulauan Riau	1,129,091,346,000	878,155,628,148	2,007,246,974,148	77.78
2	Bangka Belitung	970,636,972,000	885,474,396,148	1,856,111,368,148	90.47
3	West Nusa Tenggara	1,524,501,604,000	885,474,396,148	2,409,976,000,148	57.60
4	East Nusa Tenggara	1,783,843,886,000	885,474,396,148	2,669,318,282,148	49.23
5	Nort Sulawesi	1,114,975,109,000	885,474,396,148	2,000,449,505,148	78.76
6	Southeast Sulawesi	1,504,815,729,000	885,474,396,148	2,390,290,125,148	58.36
7	Maluku	1,574,799,396,000	885,474,396,148	2,460,273,792,148	55.76
8	North Maluka	1,262,976,766,000	885,474,396,148	2,148,451,162,148	69.53
	Total	**10,865,640,808,000**	**7,025,245,025,184**	**17,890,885,833,184**	**64.66**

Source: Processed 2021

4 Conclusion

Based on the above discussion, the following conclusions can be drawn: Two models can be employed to facilitate the reformulation of the GAF to represent the peculiarities of the archipelagic region. The first model is the addition of the Distance between the provincial capital and the district/variance city's index coefficient to the area variable in the GAF formula. *Second*, the Special Archipelago Fund (ASF) model is a minimum of five percent of the general transfer fund limit, and second, model 2 is a minimum of six percent of the available allocation fund ceiling. Based on a simulation of the 2021 GAF allocation using the model of adding the coefficient of variance index of the Distance between the provincial capital and the district/city, with an index weight of 10%, the overall archipelagic region will receive an additional IDR. 721,522,720,739 in GAF funding, an increase of 6.49 percent. Then, with a 15% index weighting, the archipelago will receive an additional GAF of IDR. 1,082,284,081,109, a 9.73% rise. Based on the 2021 GAF allocation simulation using the Archipelago Special Fund (ASF) model in model 1: a minimum of 5% of the available transfer fund maximum, island areas will receive an additional IDR 7,083,795,169,185 in GAF funding, an increase of 65.1%. The second model stipulates that the archipelago will receive an additional GAF of IDR. 7,025,245,025,184, representing an increase of 64.66 percent.

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