

Decentralization and Health Resource Allocation: A Case Study at the District Level in Indonesia

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Abstract

Health resource allocation has been an issue of political debate in many health systems. However, the debate has tended to concentrate on vertical allocation from the national to regional level. Allocation within regions or institutions has been largely ignored. This study was conducted to contribute analysis to this gap. The objective was to investigate health resource allocation within District Health Offices (DHOs) and to compare the trends and patterns of several budget categories before and after decentralization. The study was conducted in three districts in the Province of Nanggroe Aceh Darussalam. Six fiscal year budgets, two before decentralization and four after, were studied. Data was collected from the Local Government Planning Office and DHOs. Results indicated that in the first year of implementing a decentralization policy, the local government budget rose sharply, particularly in the wealthiest district. In contrast, in relatively poor districts the budget was only boosted slightly. Increasing total local government budgets had a positive impact on increasing the health budget. The absolute amount of health budgets increased significantly, but by percentage did not change very much. Budgets for several projects and budget items increased significantly, but others, such as health promotion, monitoring and evaluation, and public-goods-related activities, decreased. This study concluded that decentralization in Indonesia had made a positive impact on district government fiscal capacity and had affected DHO budgets positively. However, an imbalanced budget allocation between projects and budget items was obvious, and this needs serious attention from policy makers. Otherwise, decentralization will not significantly improve the health system in Indonesia.

Background

Two momentous decentralization laws (number 22/1999 on the regional administration and number 25/1999 on the financial equilibrium between the central government and the regional administration) have transformed Indonesia from one of the most centralized countries in the world into one of the more decentralized ones (World Bank 2003). Two years later, Indonesia formally entered the era of devolution. As a result, district governments now have more autonomy and discretion in a number of areas, including planning and resource allocation.

New methods of budget allocation, from central government to districts or local governments, have also been introduced. Three popular types of budget allocation, called “decentralization budgets” (block grants), “special budgets” and “deconcentration budgets,” have become fashionable. “Decentralization budgets” are transferred directly from the central government to autonomous regions both in districts and in provincial governments. The autonomous regions can then use the budgets according to their own priorities. “Deconcentration budgets” are transferred only to the governor as the representative of the central government at the provincial level. “Special budgets” are allocated by the central government to the district level for targeted programs with guidelines from the central government. The amount of these budgets is allocated according to a formula that is derived from a number of socio-economic variables.

Since then, the appropriateness of resource allocation between regions and districts has been an issue of political debate; however, as in other countries, the debate has focused overwhelmingly on vertical allocation from national to regional levels (World Bank 2003; Green et al. 2000; McIntyre et al. 2002; McIntyre and Gilson 2000; Hurley et al. 1995). Allocation of health resources within regions (Bell et al 2002; Green et al 2001), for instance among DHOs, has been virtually ignored.

Health policy makers at both the national and provincial level, and other stakeholders, need to know how local governments and DHOs allocated their budgets when they had more autonomy and discretion in planning and budgeting. However, as there is currently no information on horizontal budget allocation at the local level, we conducted this study. Its objective was to analyze health resource allocation within DHOs and compare the trends and patterns in several budget categories before and after decentralization. Study results would not only be useful to policy makers at the district level where the case studies took places, but also for policy makers in other parts of Indonesia and in similar countries.

Methods

The case studies were conducted in three districts in the Province of Nanggroe Aceh Darussalam: Aceh Utara, Banda Aceh and Sabang. The district of Aceh Utara represents a relatively wealthier district, particularly after decentralization; Banda Aceh represents municipalities and Sabang represents districts located in the islands. Sabang and Banda Aceh are both relatively poor districts compared with Aceh Utara. The category of poor or relatively wealthy districts was based on the fiscal capacity of the district government. Aceh Utara is a production zone of oil and natural gas in Indonesia. This district and other similar districts, under law number 25/1999, receive a certain percentage of profits from oil and gas production as revenue from the central government.

Six fiscal-year budgets from 1999 to 2004 were collected from the Local Government Planning Office (Bappeda) and from DHOs. Two fiscal years, 1999 and 2000, represent annual budgets in the period of centralization, and fiscal years from 2001 to 2004 represent annual budgets in the period of decentralization. In each fiscal year, the budgets are described in terms of “projects.” Budget items from each project were imported to Microsoft Excel. These items of expenditure were then labelled and coded using the common budget item descriptors.

Data from Microsoft Excel then was converted to SPSS Version 10.0 software for analysis. First, analysis was conducted for each fiscal year and for each project to ensure that the total amount of each budget had been entered. Analysis was then performed on each project, by budget item for each fiscal year. Projects were grouped into eight similar project categories. Similar budget items within projects were grouped into 19 categories. For example, items related to activities of collecting,

processing, analysis and publishing data from different projects were grouped into the category “data and information.” Items related to development, renovation, refurbishment and maintenance of offices, buildings, building community health centres, hospitals and other health infrastructure were grouped into the category “physical infrastructures.” A similar approach was applied to create another 17 budget item categories: health and medical equipment; office equipment, environmental and sanitation facilities; scholarship; training; health planning; administration; operational; meeting; monitoring and evaluation; survey and research; accreditation; vaccine and drugs; basic health services; referral health services; targeted health services; health promotion and community empowerment; and ambulance and vehicles. These 19 budget item categories were further regrouped into eight final categories: equipment and vehicles, civil works, education and training, management cost, monitoring and evaluation, drugs, direct health services and health promotion. For example, categories for health planning, administration and operational costs were regrouped into a category of management costs. This method was also used in Uganda (Akin et al. 2001). In addition, budget item categories were grouped into several other categories such as public and private goods (Schwartz et al. 2002) and investment, operational or maintenance (IOM). Then, we analyzed patterns, compositions and trends for each category. For more information on how the 19 budget item categories were regrouped, please refer to Appendix I.

Results

Study results are described under three headings. First is resource allocation at the district government level, followed by district government budget allocations to “projects” in the health sector. Finally, we focus on how the DHO allocated the budget between budget item categories, between IOM and between private–public goods.

District Government Budget

Since decentralization, the central government has allocated budgets directly to districts based on a socio-economic formula. In general, decentralization has increased the fiscal capacity of district governments, particularly in some rich in natural resources (oil and natural gas). In the first year of implementing decentralization, the district of Aceh Utara received a significant budget increase from only US\$ 18.9 million in 2000 to US\$ 77.5 million in 2001. In contrast, in Banda Aceh and Sabang, the budget increased slightly from just below US\$ 9.6 million to just over US\$ 20 million. Trends and comparisons can be seen in Figure 1.

Figure 1. Trends in district government budgets before and after decentralization

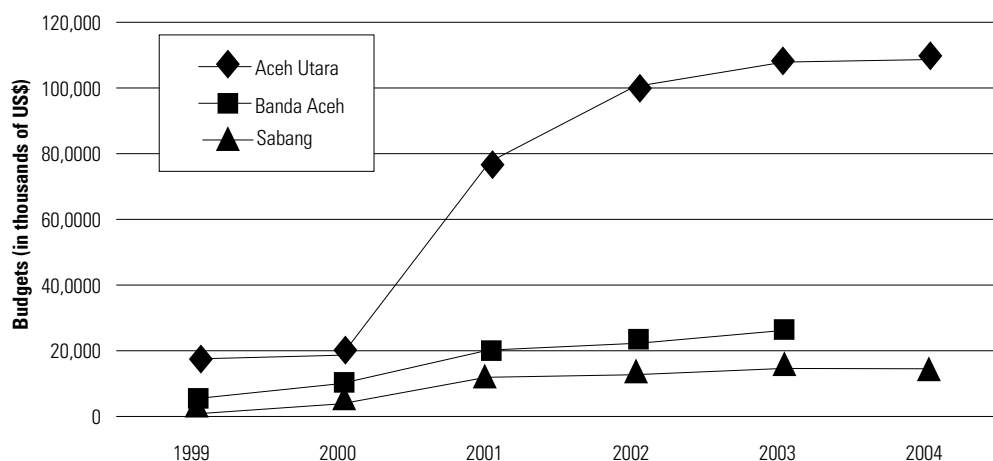


Figure 2. Trends in district health budgets before and after decentralization

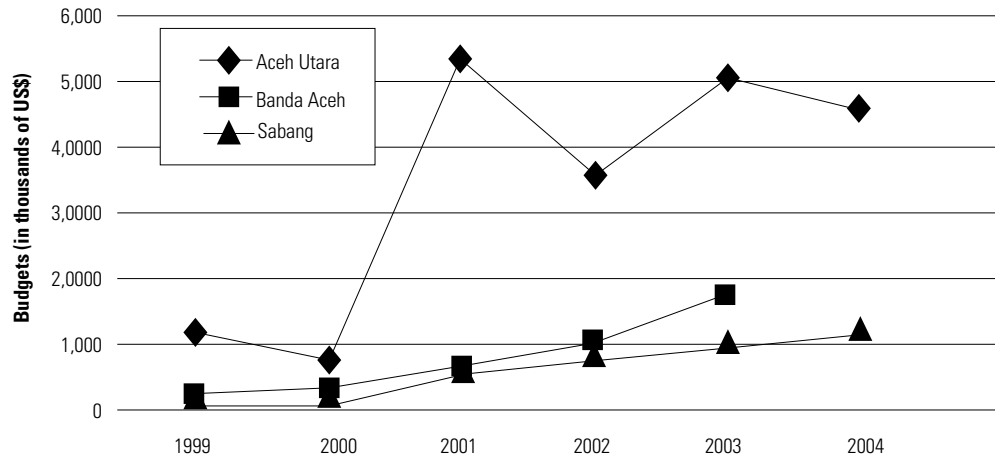
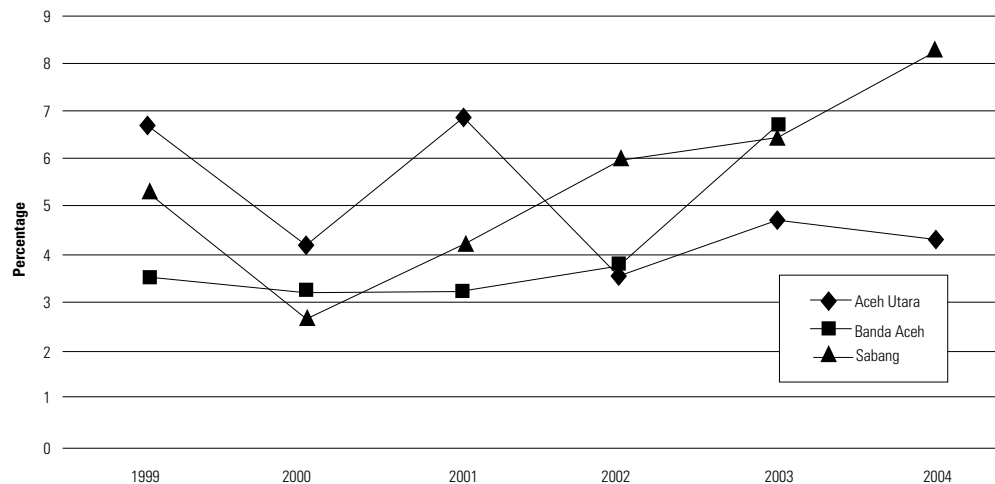


Figure 3. Proportion of district health budget compared with total district government budget from 1999 to 2004



District Health Budget

Increased district government fiscal capacity increased the absolute amount of the district health budget. A significant increase can be clearly seen in the wealthier district of Aceh Utara, where the health budget rose sharply from only US\$ 0.8 million in 2000 to US\$ 5.3 million in 2001. However, the budget fluctuated in the following years. It dropped to US\$ 3.5 million in 2002, rose to US\$ 5 million in 2003 and then fell again to US\$ 4.6 million in 2004. In contrast, in the relatively poor districts of Banda Aceh and Sabang, the budgets increased only slightly in the first year of decentralization, but in the following years increased consistently. Trends and comparisons between districts can be seen in Figure 2.

Figure 3 shows the proportion of the district health budget compared with the total district government budget. In the first year of decentralization, Aceh Utara district's health budget reached almost 7%, but it dropped to 3.5% in 2002 and then increased slightly again in the following years. In contrast, in the relatively poorer local governments of Banda Aceh and Sabang, in the first year of decentralization the proportion of the district health budget increased only slightly, by less than 5%. However, in the following years percentages rose significantly in both districts, reaching 6.7% and 8.3%, respectively. Budget allocation per capita has increased in all districts since decentralization,

but most markedly in Sabang, from only US\$ 5.9 in 2000 to almost US\$ 50 per capita per year in 2004. More details on per-capita budget allocation can be seen in Table 1.

Table 1. District government budget spending on health per capita before and after decentralization (in US\$)

Districts	Fiscal Years					
	Before		After Decentralization			
	1999	2000	2001	2002	2003	2004
Aceh Utara	1.2	1.2	10.4	6.9	9.7	8.8
Banda Aceh	1.0	1.7	3.6	6.0	9.8	n.a.
Sabang	5.4	5.9	23.7	33.6	40.2	48.5

The district hospital received about 30% of the total district health budget. More than 50% of the budget of both the DHO and the hospital was spent on staff salaries. The rest was allocated to budget item categories described in the following sections. Sabang was excluded from further analysis due to incomplete data.

District Resource Allocations Based on Project Categories

Projects recorded in the budgets were grouped into eight project categories, as shown in Table 2. In general, after decentralization, several categories such as equipment and physical infrastructure, drugs and pharmacies, and direct health services increased significantly. In contrast, health promotion, environmental health and sanitation, and communicable diseases control had a reduced proportion of the budget.

In Aceh Utara, in the first year of decentralization, 83% of the budget was allocated to two project categories: equipment and physical infrastructure, and direct health services, particularly to provide health services to the poor. In the following years these categories, together with drug procurement and pharmacies, received a quarter of the total DHO budget. In contrast, in the first years of decentralization, categories with more intangible outputs such as health promotion, communicable diseases, environmental health and sanitation, nutrition, maternal & child health (NM&CH), and communicable diseases control-related projects each received less than 3% of the total allocation. In 2002 and 2003, nothing was allocated to environmental health and sanitation. Similarly, nothing was allocated to NM&CH in 2004. Budgets were also allocated to health-planning-related projects, a new category that started after decentralization.

Table 2. Percentages of district health office budget allocation per project category

Project Categories	Aceh Utara					
	Before		After Decentralization			
	1999	2000	2001	2002	2003	2004
1. Nutrition, maternal & child health	16%	15%	2%	12%	19%	0%
2. Environmental health and sanitation	7%	8%	3%	0%	0%	1%
3. Drugs and pharmacies	55%	0%	9%	26%	43%	13%

Table 2. Continued

Project Categories	Aceh Utara					
	Before		After Decentralization			
	1999	2000	2001	2002	2003	2004
4. Communicable diseases	16%	13%	2%	8%	10%	7%
5. Health planning–related projects	0%	0%	0%	2%	3%	2%
6. Health promotion	6%	49%	1%	3%	5%	7%
7. Direct health services	0%	0%	32%	23%	13%	14%
8. Equipment & physical infrastructures	0%	15%	51%	26%	7%	56%

Project Categories	Banda Aceh				
	Before		After Decentralization		
	1999	2000	2001	2002	2003
1. Nutrition, maternal & child health	7%	5%	16%	9%	6%
2. Environmental health and sanitation	12%	3%	2%	1%	2%
3. Drugs and pharmacies	0%	0%	32%	30%	16%
4. Communicable diseases	15%	5%	2%	3%	3%
5. Health planning–related projects	0%	0%	0%	1%	2%
6. Health promotion	0%	2%	0%	1%	1%
7. Direct health services	38%	83%	38%	55%	65%
8. Equipment & physical infrastructures	28%	2%	10%	0%	5%

In Banda Aceh, in the first year of decentralization, 70% of the budget was allocated to two project categories: basic health services to serve the poor, and drug procurement and pharmacies. This pattern was similar until 2004. As in Aceh Utara, the budget allocation for project categories related to health promotion, communicable diseases, and environmental health and sanitation was less than 4%. In fact, in the year following decentralization, nothing was allocated to health promotion and in subsequent years the budget allocated for health promotion was only 1–2%.

Districts Resource Allocations Based on Budget Items Categories

Resource allocation by budget item category indicated that a large proportion of DHO budgets were spent on civil works, drugs and health services delivery. Other items received only a small portion of the budget. Budget share for education and training–related activities dropped after decentralization in both Aceh Utara and Banda Aceh.

In Aceh Utara, in the first year of decentralization more than 50% of the DHO budget was allocated to civil works activities, followed by direct health services and procurement of drugs. In the following years of 2002 and 2003, the budget share for civil works dropped significantly to about 0.5% but increased again to 26.2% in 2004. The budget share for drugs and management costs increased considerably, altogether by about 30% to 75%. In contrast, in the first year of decentralization activities related to health promotion, monitoring and evaluation, and education and

training received a very small share, less than 2%. In the following years, the budget allocation for health promotion activities was 0.1– 1.9%. In 2003 and 2004, nothing was allocated to education and training activities.

In contrast, in Banda Aceh, in the first year of decentralization almost 50% of the DHO budget was allocated to procure drugs, followed by direct health service activities, purchase of equipment and vehicles, and civil works. The budget for management costs, monitoring and evaluation activities, education and training, and health promotion was no more than 6%. Indeed, in the first year of decentralization, nothing was allocated to health promotion. In the following years the budget for education and training dropped from 1.7% in 2001 to 0.6% in 2003. Similarly, activities related to the purchase of equipment and vehicles, drugs and providing direct health services fell in the years 2002 and 2003. Monitoring and evaluation remained constant at about 5%. In contrast, budgets for civil works increased from 12.4% in 2001 to 32% in 2003. Management-cost-related activities also increased, from 5.6% in 2001 to 10.5% in 2003. The budget for health promotion also increased, but only slightly, from 0% in 2001 to 0.4% in 2003.

Table 3. Percentages of District Health Office budget allocation per budget item categories

Budget Item Categories	Aceh Utara					
	Before		After Decentralization			
	1999	2000	2001	2002	2003	2004
1. Equipment and vehicles	46.4%	4.2%	8.9%	2.6%	8.5%	19.2%
2. Civil works	6%	20.7%	52.4%	0.5%	0%	26.2%
3. Education and training	6.1%	5.1%	1.4%	6.6%	0%	0%
4. Management costs	6.3%	7.9%	6.8%	29.2%	33.9%	14.8%
5. Monitoring and evaluations	6.4%	15.5%	2%	7.5%	3.9%	2.3%
6. Drugs	22.8%	31.2%	11.5%	32.9%	42.7%	12.5%
7. Direct health services	6%	13.9%	13.9%	14.7%	4.5%	12.9%
8. Health promotions	0%	1.5%	0.5%	0.1%	0.2%	1.9%

Budget Item Categories	Banda Aceh				
	Before		After Decentralization		
	1999	2000	2001	2002	2003
1. Equipment and vehicles	10.6%	21.5%	15.4%	23.7%	3.3%
2. Civil works	36.6%	27.6%	12.4%	25.5%	32.7%
3. Education and training	1.1%	2.9%	1.7%	1.8%	0.6%
4. Management costs	13.1%	29.8%	5.6%	5.7%	10.5%
5. Monitoring and evaluations	11.8%	7.5%	3.7%	5.2%	4.5%
6. Drugs	14.5%	2.4%	41.1%	28.8%	13.7%
7. Direct health services	9.6%	2.6%	19.6%	7.4%	6.1%
8. Health promotions	2.3%	1.7%	0%	0.1%	0.4%

Investment, Maintenance and Operational

The percentages of budget allocated for investment and operational activities fluctuated from year to year. In the first year of decentralization in Aceh Utara, the percentage of budgets for the investment and operational categories was 64% and 35%, with only 1% for maintenance. In the following years, 2002 and 2003, about 85% of the budget was allocated to operational activities. Conversely, in Banda Aceh in the first year of decentralization, only 27% of the budget was allocated for investment, but the allocation increased to 49% in 2002 and to 62% by 2003. For maintenance-related activities, it remained stable, between 1% and 9%.

Table 4. Percentages of District Health Office budget allocation per IOM categories

IOM Categories	Aceh Utara					
	Before		After Decentralization			
	1999	2000	2001	2002	2003	2004
Investment	51%	25%	64%	11%	6%	2%
Maintenance	7%	5%	1%	5%	9%	36%
Operational	42%	70%	35%	84%	85%	0%

IOM Categories	Banda Aceh				
	Before		After Decentralization		
	1999	2000	2001	2002	2003
Investment	47%	49%	27%	49%	55%
Maintenance	2%	7%	2%	4%	1%
Operational	51%	44%	70%	47%	44%

Table 5. Percentages of District Health Office budget allocation per private–public goods categories

Public–Private Goods Categories	Aceh Utara					
	Before		After Decentralization			
	1999	2000	2001	2002	2003	2004
Private goods	46%	7%	64%	10%	15%	29%
Public goods	35%	65%	26%	47%	47%	27%
Support system	19%	28%	10%	43%	38%	44%

Table 5. Continued

Public-Private Goods Categories	Banda Aceh				
	Before		After Decentralization		
	1999	2000	2001	2002	2003
Private goods	46%	53%	28%	51%	63%
Public goods	28%	7%	61%	37%	21%
Support system	26%	40%	11%	13%	16%

Private and Public Goods

Since decentralization, the pattern of budget allocation in both Aceh Utara and Banda Aceh shifted significantly to private goods. In Aceh Utara, the budget for private and public goods was 64% and 26%, respectively. Similar patterns occurred in Banda Aceh with decentralization, and budget allocation for private goods was significantly higher than for public goods.

Discussion

In recent years, there has been an increasing interest in resource allocation within healthcare organizations, particularly in devolving health systems. Policy makers both at the national and provincial levels have lacked information on how DHOs allocate budgets to different projects and budget items. Information on the trends and patterns of budget allocation at the district level will help decision makers at all levels in allocating and shifting their budgets to certain projects or activities, particularly budgets that operate at the district level.

This study has shown that the size of health budgets at the district level is closely related to government fiscal capacity. In some districts in Indonesia, such as Aceh Utara, decentralization has significantly increased the fiscal capacity of the district government, and this has resulted in a positive effect on the district health budget. In relatively poorer districts, decentralization has also brought an increase in budget allocation for the health sector. However, the proportion of the health budget compared with the total district government budget has remained between 3% and 8%, a percentage still far from the district government's espoused commitment of 15% from the total government budget. In addition, the budget increase fluctuated, and in certain fiscal years nothing was allocated for certain project categories. For example, in Aceh Utara in 2004 there was no budget allocation for nutrition, maternal and child health (NM&CH), a project category that might be highly associated with infant and maternal child health. This can result in demotivation of staff in the division of NM&CH and compromise its sustainability.

The annual fluctuation of district health budgets may be influenced by the ability of DHOs to absorb or to spend their budgets as related to their institutional capacity (Pavignani and Colombo 2006). In the first year of implementing decentralization, Aceh Utara DHO had about US\$ 4.5 million per year. Its capacity to manage the budget in the previous year was only US\$ 487,000. Not surprisingly, the DHO's inability to spend the budget in the first year led the local government to reduce the budget to US\$ 2.4 million in the following year and increase it slightly to US\$ 3.2 million in 2003, reaching a stable budget by 2004.

Increasing the DHO's budget following decentralization did not mean that this was automatically followed by a proportional increase in the budgets of all projects or budget items. The budget increased significantly for some projects or budget items, particularly for those with physical and tangible outputs. This may be related to the perception of policy makers about the scarcity of resources, the effectiveness of programs/services and the health needs of people (Corrigan and Watson 2003), by both internal stakeholders (head office and planners) and external DHO organization (local government) stakeholders. Some budget item categories such as physical infrastructure may be perceived as highly important by health policy makers compared to categories with less tangible outputs and public-goods-related activities. Even if an amount of the budget increased significantly, as

in Aceh Utara, the budgets for project categories such as environmental health and sanitation did not increase significantly. In fact, nothing was allocated for these categories in fiscal years 2002 and 2003. Similarly, nothing was allocated for nutrition, maternal and child health in 2004. This phenomenon had also been experienced in other similar countries. Studies conducted in Colombia (Bossert et al. 2003a), the Philippines (Schwartz et al. 2002), Uganda (Akin et al. 2001), Paraguay (Angeles 2001), Brazil (Atkinson et al. 2005) and Kerala, India (Varatharajan et al. 2004) have reported that decentralized health systems have a relative negative impact on public-goods activities. In Kerala, for example, after decentralization the budget allocation for primary healthcare (PHC) was only about 0.7%–2.7% of the total district government budget (Varatharajan et al. 2004).

There was a significant increase in the budget for investment activities, but this was not followed by an increasing budget for maintenance-related activities. The proportion of budget for IOM did not change following decentralization. Experience in the Philippines (Schwartz et al. 2002) and Uganda (Akin et al. 2001) has also indicated that decentralization was not able to find a balance in budget allocation between IOM activities.

The first author's own observation after almost 10 years in the Provincial Health Office in Indonesia is that lack of budgets for certain projects or activities was also highly determined by internal priority setting within the DHO itself, rather than by external organizational influences. Historical planning using the previous year's patterns and adjusting for the inflation rate, unwritten priority, "sudden instruction policy," lack of initiative and risk avoidance was the typical culture in many local health institutions. Until 2004, many DHOs did not have a formal long-term strategic planning document that could guide them to do better annual planning and better priority setting. In a number of districts, strategic planning was prepared only to comply with government regulation, not for the purpose of local planning and resource allocation. As a result, decentralization has brought positive effects on a number of projects or activities, but serious attention needs to be given to budget allocation for public goods programs.

Conclusion

This study suggests that decentralization has increased district government fiscal capacity, resulting in a positive impact on the amount of the health budget at a district level. However, the percentage of health budgets compared with the total district government budgets has not changed significantly, and there was an imbalance in resource allocation between projects or between budget item categories. Budget allocation for more tangible outputs, such as physical infrastructure, drug and "personal curative services," and private goods rose dramatically. In contrast, budgets for less tangible outputs such as health promotion, education and training, and public goods activities dropped significantly. Indeed, in certain fiscal years there was no budget for certain public goods. Inconsistencies and a lack of budgets for a number of projects or budget item categories might demotivate staff and compromise the sustainability of programs. This indicates that horizontal budget allocation within DHOs needs serious attention from health policy makers. Without any correction of these patterns, decentralized health systems may not bring much improvement in health system performance.

Limitation and Recommendations

This study has demonstrated that there was a significant change in the pattern of budget allocation after decentralization. The study also indicated a serious imbalance in resource allocation between projects or activity categories. However, the study was not able to explore the underlying factors of this phenomenon or show correlation between resource allocation and performance of the health system. Further study, particularly using qualitative methods to explore the attitude and behaviour of planners in allocating health resources, both within the DHO organization and at the district government level, is essential. Theories such as principle agent theory (Smith and Bertozzi 1998), the rational choice model of bureaucratic behaviour (Cope 2000) and decision space theory (Bossert et al. 2003a, 2003b) might help to understand these patterns.

Conflict of Interest

We declare that there is no conflict of interest that might influence the results of this study.

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Appendix I. Budget Item Categories and Other Common Budgets Categories

	Item Categories	Investment, Operational, Maintenance	Private Goods Public Goods
1	Health and medical equipments	Investment	Private goods
2	Office equipments	Investment	Private goods
3	Physical infrastructures	Investment	Private goods
4	Environmental and sanitation facilities	Investment	Public goods
5	Scholarship	Investment	Support activities
6	Training	Maintenance	Support activities
7	Health planning	Operational	Support activities
8	Administration	Operational	Support activities
9	Operational	Operational	Support activities
10	Meeting, monitoring and evaluation	Operational	Support activities
11	Survey and research	Operational	Support activities
12	Data and information	Operational	Support activities
13	Accreditation	Operational	Support activities
14	Vaccine and drugs	Operational	Public goods
15	Basic health services	Operational	Public goods
16	Referral health services	Operational	Private goods
17	Targeted health Services	Operational	Private goods
18	Health promotion and community empowerment	Operational	Public goods
19	Ambulance and Vehicles	Operational	Private goods

Note: Support activities are activities that cannot directly be categorized solely into one category – private or public goods. In fact support activity has contributed to both private or public goods.