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ANALYSIS OF REGENCY READINESS LEVEL IN IMPLEMENTING AUTONOMY OF MINERAL RESOURCES MANAGEMENT IN WEST PAPUA PROVINCE

ANALISIS TINGKAT KESIAPAN KABUPATEN DALAM MENGIMPLEMENTASIKAN OTONOMI PENGELOLAAN SUMBER DAYA MINERAL DI PROVINSI PAPUA BARAT

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ABSTRACT

Reformation in Indonesia has resulted in a new policy, which is widely known as regional autonomy. In implementing this decentralisation concept, provinces, regencies and cities as governmental units are being given huge authorities and wider opportunities in terms of managing and developing their areas. This policy, however, could not be interpreted that the central government is transferring an absolute authority. It has to be viewed and be functioned properly as an instrument to accelerate regional developments and to contribute comprehensively to national development as well. In West Papua, natural resources management including mining sector has been a crucial part affecting the implementation of decentralisation. Managerial aspects that consist of planning, organising, monitoring and evaluating seem to be more complicated in practical actions. Therefore, a question usually appearing to be answered is that has West Papua been prepared and capable to face this policy with considering that this long-term policy might have numerous external and internal factors constraining its success. To determine the level of regional capability in facing mining sector autonomy, data regarding mining resources, human resources and regional income of mining activities had been collected from four samples of regencies, namely Fak-Fak, Sorong, Raja Ampat and Teluk Bintuni. These date were then evaluated using factor analysis to be rated and interpreted. The results show that the capability level of Teluk Bintuni is low. Sorong and Fak-Fak have medium levels, and Raja Ampat is in high level.

Keywords: regional autonomy, regional capability, decentralisation, factor analysis

SARI

Otonomi daerah merupakan suatu konsekuensi reformasi yang harus dihadapi oleh setiap daerah di Indonesia, terutama kabupaten dan kota sebagai unit pelaksana otonomi daerah. Sejak diberlakukannya kebijakan desentralisasi, otonomi daerah telah memberikan kesempatan yang seluas-luasnya bagi Provinsi Papua Barat untuk membangun dan mengembangkan wilayahnya. Namun kewenangan otonomi daerah yang menuju pada kemandirian daerah di dalam bingkai Negara Kesatuan Republik Indonesia, tidak bisa diartikan sebagai kebebasan penuh secara absolut dari suatu daerah untuk menjalankan hak dan fungsi otonomi menurut kehendak daerah tersebut tanpa mempertimbangkan kepentingan nasional secara keseluruhan. Dalam hal ini, kewenangan yang menyangkut pengelolaan pertambangan sangatlah kompleks, meliputi perencanaan, pelaksanaan, pengawasan, pengendalian dan evaluasi, sehingga akan selalu muncul kekhawatiran apakah Pemerintah Provinsi Papua Barat siap dan mampu memikul kewenangan ini, karena dalam pelaksanaannya otonomi daerah membutuhkan proses yang panjang, dengan banyak kendala dan hambatan. Dari hasil analisis faktor variabel-variabel yang

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memengaruhi kesiapan daerah, terlihat bahwa Kabupaten Teluk Bintuni berada pada tingkat kesiapan daerah rendah, Kabupaten Fak-Fak dan Kabupaten Sorong berada pada tingkat kesiapan daerah sedang, sedangkan Kabupaten Raja Ampat berada pada tingkat kesiapan daerah tinggi.

Kata kunci: otonomi daerah, kesiapan daerah, desentralisasi, analisis faktor

INTRODUCTION

The change of governmental and political system in Indonesia from centralistic to decentralistic, which has legally and comprehensively begun since January 2001, has been a historical point of the beginning of a new era, widely called regional autonomy. Realisation of this policy is based on Regional Governance Act (UU 22/1999, replaced then to UU 32/2004) and Central and Regional Budgeting Act (UU 25/1999, replaced then to UU 33/2004).

Implementation of regional autonomy is basically encouraging local governments to be more creative and productive in managing every resource they have including natural resources, human resources, capitals and management systems (Kaloh, 2002; Mangiri, 2000). Therefore, it would be expected that provinces, regencies and cities governments as autonomy units can play more significant roles in empowering resources in order to create regional comparative advantages as well as to enhance people prosperities in their local territories (Kuncoro, 2004).

Mining, which is one of development sectors, has been a critical sector in the development frame of regional autonomy in Indonesia. However historically, managing mining activities often emerged a number of social conflicts on account of the fact that distribution of regional income, generated from taxes and retributions, between central and local governances seemed to be unbalanced. Moreover, gaps in job opportunities could also lead to detrimental social problems. Therefore, by implementing decentralisation properly, it is expected that domination of central government's roles might be slightly decreased, meanwhile rights of incomes and job chances for local authorities and local communities can be gradually enlarged.

In real practices, achievements of implementation of autonomy in mining sector are various between local authorities. There are numerous determinants that can influence the success of autonomy implementation such as differences of mineral resources, perception of local stakeholders, governmental management and organisation, and even local and regional economic conditions. This means that performance in achieving autonomy goals particularly in mining sector management would depend on how capable local governments anticipate and manage every single determinant.

West Papua, which has been effectively governed since 2003, is a new autonomy province that also has to apply decentralisation. In spite of having rich mineral potentials, the province still face lots of problems including different point of views of special autonomy for Papua, existences of operational regulations, overlapping authorities between provinces, regencies and cities, quality of human resources in dealing with establishing several new regencies.

According to the background explained above, it is needed to conduct a study to determine capability level of regencies in West Papua in terms of implementation of autonomy especially in managing mining sector.

METHODOLOGY

Method used in this study was factor analysis (Rummel, 1970; Widarjono, 2010) where its application and calculation utilizes program/software Statistical Package for Social Science (SPSS) version 17. This program is used to test data validity and reliability, and to estimate dominant factors, which then can be ranked to determine the level of capability. Data were collected by literatures review, interview and consultancy with stakeholders in both provincial and regencial levels in West Papua such as *Dinas Pertambangan dan Energi, Badan Pusat Statistik, BAPPEDA* and *Dinas Pendapatan Daerah*.

West Papua Province, where officially had its special autonomy status in 2008, consists of 11 regencies/cities. This study, however, included only four regencies as sample areas namely Fak-Fak, Teluk Bintuni, Sorong and Raja Ampat. Availability of

data and information regarding mineral resources management became the main consideration in determining sample areas (Table 1).

Variables and Measurements

Descriptive approach was used to define variables affecting the level of capability of sample regencies in terms of implementing mining sector autonomy. Variables in this study consist of local regulations (X1), institution/organisation (X2), data and information availability (X3), estimated value of mining resources (X4), competency of human resources (X5), number of mining business permits (X6), and gross regional incomes (X7).

Local regulations (X1) can be defined as regulations regarding mining sector organizing aspects such as organisation, human resources, business and environmental management, community and regional development, empowerment and control, report and evaluation, and data and information management (Permana, 2010a; 2010b). Variable institution/organisation (X2) explains the existency of operational unit controlled by local government to be focused in handling and managing mining sector. Variable data and information availability (X3) defines characteristics and uses of equipment/software in supporting data and information particularly relating to mining sector management. Estimated value of mining resources (X4) is calculated by multiplying the number of mineral potentials in each sample area and its estimated prices. Measurement of human resources competency (X5) is based on the number of governmental officers whose academic background and competency is associated with mining and/or geologic aspects. Variable mining business legal permit (X6) is measured by the number of legal permission regarding operations of mining business certified by local government. Mining-based Gross Regional Incomes (X7) was measured by ratio between regional incomes generated by mining sector and the total regional income. In this study a constant price was used as the base for calculating.

In the next stage, variable X1 to X4 was scored based on high-to-low ranks and then matched them to the determined criteria. On the other hand, for measuring variable X5 to X7, actual data were used in analysis without scored (Table 2).

Descriptive analysis result can be seen in Table 3. Variable scores for X1–X7 of each sample area were derived from original data deducted from Appendices A-G respectively. Especially for variable X7, scores were ratio between regional income generated from querying and digging sub-sector and total regional income.

Table 1. Determination of sample areas

No	Regencies	Data Availability*				
		Operational units	Local regulations	Data management system	Mineral potentials	Human resources
1	Fak-Fak	√	√	√	√	√
2	Kaimana	X	X	X	X	X
3	Teluk Wondama	X	X	X	X	X
4	Teluk Bintuni	√	√	√	√	√
5	Manokwari	X	X	X	X	X
6	Sorong Selatan	√	X	X	X	√
7	Sorong	√	√	√	√	√
8	Raja Ampat	√	√	√	√	√
9	Tambrauw	X	X	X	X	X
10	Maybrat	X	X	X	X	X
11	Kota Sorong	X	X	X	X	X

* X = not available/not sufficient
√ = available/sufficient

Table 2. Variable and scoring

No	Variable	Criteria	Score
1	Local Regulations (X1)	Not exist	1
		Exist, but not applied	2
		Exist and applied	3
2	Institution/Organisation (X2)	Not exist	1
		Exist, but not used optimum	2
		Exist and used optimum	3
3	Data and Information Availability (X3)	Not support	1
		Support	2
		Strongly support	3
4	Estimated Value of Mining Resources (X4)	Low	1
		Medium	2
		High	3
5	Competency of Human Resources (X5)	Number of governmental officer with academic background in mining and/or geology	
6	Mining Business Legal Permission (X6)	Number of legal permission issued and certified by local authorities	
7	Mining-based Gross Regional Incomes (X7)	Ratio of mining-generated regional income and total regional income (counted based on constant price)	

Table 3. Variable's score for selected regencies

No	Regencies	Variable (unit)						
		X1	X2	X3	X4	X5	X6	X7
1	Fak-Fak	2,83	2,20	2,00	1,00	8	28	1,68
2	Sorong	2,52	2,00	2,00	1,00	9	25	0,36
3	Raja Ampat	2,00	1,73	2,33	3,00	10	34	0,23
4	Teluk Bintuni	1,04	1,67	2,00	1,00	7	63	0,60
	Average	2,10	1,90	2,08	1,50	8,50	37,50	0,72
	Standard deviation	0,78	0,25	0,17	1,00	1,29	17,41	0,66

From Table 3, it can be seen that variable's scores were still different because of different measurement unit. Therefore, before continuing to further analysis, these variable's scores need to be standardized by transforming X variables into Z variables (Table 4). Standardized data were then used into factor analysis with applying SPSS version 17 software.

RESULTS AND DISCUSSION

According to factor analysis calculation, there were two eigen values that were more than 1, meaning that all variables could be divided into two main factors (Table 5).

Furthermore, these two variables had obvious contributions to each variable, as depicted in Table 6, with the classification as follows:

1. Factor 1 (F1) includes data and information availability (X3), estimated value of mining resources (X4), and competency of human resources (X5).
2. Factor 2 (F2) includes local regulation (X1), institution/organisation (X2), mining business legal permission (X6) and gross regional incomes (X7).

Table 4. Standardized variables and unit of parameter

No	Regencies	Standardized Parameter (Unit)						
		Z1	Z2	Z3	Z4	Z5	Z6	Z7
1	Fak-Fak	0,93	1,22	-0,50	-0,50	-0,39	-0,55	1,46
2	Sorong	0,54	0,41	-0,50	-0,50	0,39	-0,72	-0,54
3	Raja Ampat	-0,13	-0,68	1,50	1,50	1,16	-0,20	-0,74
4	Teluk Bintuni	-1,35	-0,95	-0,50	-0,50	-1,16	1,46	-0,18
	Average	0	0	0	0	0	0	0
	Standard deviation	1	1	1	1	1	1	1

Table 5. Eigen value of variables

Variables	Initial Eigen Values		
	Total	% of Variance	Cumulative %
Z1	3,444	49,193	49,193
Z2	2,989	42,706	91,899
Z3	0,567	8,101	100,000
Z4	2,993x10-16	4,276x10-15	100,000
Z5	1,913x10-16	2,733x10-15	100,000
Z6	1,283x10-16	1,833x10-15	100,000
Z7	-2,174x10-16	-3,106x10-15	100,000

Table 6. Matrix components of variables

Variables	Factors	
	1	2
Z1	-0,003	0,999
Z2	-0,420	0,907
Z3	0,950	-0,072
Z4	0,950	-0,072
Z5	0,895	0,420
Z6	-0,269	-0,946
Z7	-0,665	0,485

Following stage of analysis was to determine scores of two main factors of each variable. Those scores would be ranked and then reflect characteristics of each sample unit which was represented by factor values. The higher score reached by samples, the stronger characteristic gained by samples affected by particular factor. Furthermore, ranked scores were used as indicators in determining levels of regional capability in implementing mining sector autonomy. The indicators and criteria may be described as follows:

1. Capability level is high if factor score is more than 1 (FS>1)
2. Capability level is medium if factor score is between -1 and 1 (-1≤ FS≤1), and
3. Capability level is low if factor score is less than -1 (FS<-1)

The total score of each regencies can be seen in Table 7.

Table 7. Total score of regencies

No	Regencies	Factor Score		Total Score	Criteria
		F1	F2		
1	Fak-Fak	-0,74	0,96	0,22	Medium
2	Sorong	-0,04	0,50	0,46	Medium
3	Raja Ampat	1,42	-0,11	1,32	High
4	Teluk Bintuni	-0,65	-1,35	-2,00	Low

Table 7 shows that the total score of Raja Ampat is 1,32, means that its level of capability was high; followed by Sorong and Fak-Fak in the middle

level with total scores 0,46 and 0,22, respectively. On the contrary, total score of Teluk Bintuni is less than -1. This means that capability level in facing autonomy of mining sector was low. Nevertheless, this category may not be explicitly concluded that regencies included in high category are those with complete and advanced equipment and attributes because this ranking system is only based on available data when the survey was conducted. Therefore, this study emphasizes only on distinguishing regencies based on different level of capability especially in managing their mining sector in the perspective of decentralisation.

First implication deduced from the findings relates to aspects of local regulations. It seems that in general regencies in West Papua have not had specific rules regulating mining business comprehensively. Local governments pay more attentions to rules regarding structures of organisation. Therefore, some regencies cannot legalize operational permits which then means that opportunities to optimize tax-generating incomes would be lost.

Local rules associating with regulating competency of human resources include permission process, evaluation of technical reports of mining businesses, mining inspections, and data and information management. Based on the field observation in Teluk Bintuni, all those aspects have not been employed by competence person. This means that for further development, Teluk Bintuni's government should appropriately prepare and recruit more suitable governmental officers that comply with jobs and function of organisation. In Fak-Fak, local regulation regarding evaluation of technical report of mining should be paid more attentions, while in Sorong and Raja Ampat, local regulation which should be prepared was relating to mining inspector.

Relating to how to involve in mining businesses, Teluk Bintuni should be more focus on permission, administrative and technical requirements, and guidances of environment management. In addition, this regency should prepare regulations associating with roles of local government, private/business, and community.

In accordance with institution/organisation, operational units supervised by local authorities should reform organisation structures in which scopes of functions and tasks become more effective and understandable. Also, problems relating to eligibility and competency of human resources should be resolved because, according to the field observations, compatible officers with suitable academics background were not sufficiently available yet.

Unavailability of competence and professional human resources especially in exploration activities in all regencies have also created problems such as limitedly accurate basic data that actually needed by investors. Therefore, it is expected that in the future, local authorities should increase significance level of mining resources from hypothetical resources to proven reserve by providing and equipping governmental officers with advanced trainings.

Last implication is relating to data and information availability, which is very important to support operational tasks not only for governments but also for private investments. Findings showed that all four study areas have implicitly budgeted amount of fund in order to provide and to renew data and information system. However, it is sometimes difficult to realize these programs in time on account of ineffective bureaucracy practices.

An Outlook of Raja Ampat and Result Implication

Raja Ampat is one of regencies in West Papua, which is located in northwest of Papua island, and has four main islands, namely Waigeo, Batanta, Salawati, and Misool, and more than 600 small islands. The local government of Raja Ampat is based in Waisai, South Waigeo, approximately 36 miles from Sorong. Raja Ampat also has highly unique and rich biodiversity, where 1.104 fish species, 699 species of mollusk, and 537 coral species have been discovered living under Raja Ampat sea. Moreover, this regency has a range of seagrass and mangrove areas, beautiful coastal rocks, and high coral reefs diversity (75% of world coral reefs). This is why Raja Ampat is also called the heart of world coral reefs (coral triangle).

Based of the importance of natural resources, the vision of Raja Ampat Development Plan (2010-2015), set by local government, is to be an archipelago regency that supported by tourism, fishery and marine resources, and to reach a civil and welfare society.

Besides, there are also various mineral resources such as nickel, cobalt, limestone, slate, quartzite, manganese, and coal that can be potentials to be developed.

Therefore, if there would be many mineral potentials developments and changing in policies regulating about fishery and marine resources, it could render a high pressure of natural resources exploitation in this area.

Recently, the pressure on natural resources is generally low on account of the fact that population number is relatively low, and development is also not too accelerated yet. This means that the existence of clean governance is very important in order to manage professionally natural resources utilization in this area so that not only social conflicts might be avoided, but meanwhile development goals and targets could be achieved.

According to factor analysis result, Raja Ampat is categorized in the group with high capability level in managing mineral resources. However, this does not mean that Raja Ampat has been fully equipped with sufficiently appropriate human resources and attributes regarding mining resources utilization. There would be various aspects that need to be concerned, particularly regulation aspects, competency of human resources, and availability of data and information. Thus, this regency has to be prepared and includes environmentally friendly principles to gain its development visions and missions.

Therefore, because the majority of Raja Ampat area is surrounded by sea, recently, the development in this regency is still focused on marine and fishery as the leading sector. Fishery sector account for 55.46% of Raja Ampat economy structure (see Appendix G). This indicates that for the next few years, with protected natural biodiversity, fishery and marine would be a important driver to increase economy activities in Raja Ampat.

Besides marine and fishery, tourism is also one sector that has big opportunity to be developed. This is because Raja Ampat has various beautiful coastal scenery, endemically high biodiversity, and uniqueness and originality of cultural heritages that can be supporting factors regarding tourism development.

CONCLUSION AND SUGGESTION

Conclusion

According to total score derived from factor analysis, the level of capability intra-regencies in West Papua particularly in managing mining resources shows different achievements. Teluk Bintuni is categorised into low level. This is because local regulation, data and information management, and competency of human resources are not appropriately available. On the contrary, level of capability of Raja Ampat is high owing to supporting factor such as availability of local regulation, availability of data and information management, and human resources competency. The other two regencies Sorong and Fak-fak are included into medium level.

Suggestion

Regarding autonomy perception, mining resources management governed by local authorities need to pay more attention to key components such as regulation, legality, empowerment, control, report, and evaluation. In addition, local governments within West Papua province need to strengthen their operational institutions as leading unit in managing their mining resources, as well as to reinforce local rules and regulations as controlling instruments. Meantime, improving human resources capacity and renewing data and information system also need to be taken into account because of having link to capital investment. Furthermore, in condition that all existing components were applied well, it would be expected that local authorities can reach their autonomy goals in managing mining resources, in particular to enhance local community prosperity.

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Appendix A. Assessment result of local regulations regarding mining sector in four sample areas in West Papua

No	Indicators	Regency*			
		Fak-Fak	Sorong	Raja Ampat	Teluk Bintuni
1.	Regulating organisation: Functions of rules, permission, supervision, controlling, and management of data/information	3	3	2	2
2.	Regulating competency of human resources:				
	a. Permit process	3	3	2	1
	b. Evaluation of technical mining reports	1	2	2	1
	c. Mining inspectors	3	1	1	1
	d. Management of mining data/information	3	2	3	1
3.	Regulating business guidance:				
	a. Permit guidance	3	3	2	1
	b. Administrative requirements	3	3	2	1
	c. Technical requirements	3	3	2	1
	d. Technical guidance of environment control	3	3	2	1
4.	Regulating environment management:				
	a. Rights and responsibilities of local government	3	3	2	1
	b. Rights and responsibilities of business/corporate	3	2	2	1
	c. Technical guidance of environment management	3	3	2	1
5.	Regulating regional and community development:				
	a. Rights and responsibilities of local government	3	3	2	1
	b. Rights and responsibilities of business/corporate	3	2	2	1
	c. Technical guidance of regional and community development	3	2	2	1
6.	Regulating supervision and control:				
	a. Rights and responsibilities of local government	3	3	2	1
	b. Rights and responsibilities of business/corporate	3	2	2	1
7.	Regulating evaluation and report:				
	a. Rights and responsibilities of local government	3	3	2	1
	b. Rights and responsibilities of business/corporate	2	2	2	1
	c. Technical guidance of evaluation and reporting	2	3	2	1
8.	Regulating data/information management:				
	a. Rights and responsibilities of local government	3	3	2	1
	b. Rights and responsibilities of business/corporate	3	2	2	1
	c. Technical guidance of data/information management	3	2	2	1
	Average	2.83	2.52	2.00	1.04

* 1) not available,
2) available but not implemented,
3) available and implemented

Source: Dinas Pertambangan dan Energi Fak-Fak, Sorong, Raja Ampat, Teluk Bintuni, 2012.

Appendix B. Assessment result of governmental organisation structures regarding mining development in four sample areas in West Papua

No	Indicators	Regency			
		Fak-Fak	Sorong	Raja Ampat	Teluk Bintuni
1.	Regulating*:				
	a. Implementation of regulation function	3	3	2	2
	b. Implementation of permission function	3	3	2	2
	c. Implementation of supervision and control function	3	2	2	2
	d. Implementation of data/information management function	3	2	2	2
2.	Scopes of tasks and functions**:				
	a. Geology:				
	1. Competency of underground water process	2	2	1	1
	2. Competency of technical evaluation of underground water	1 1	1 1	1 1	1 1
	3. Competency of underground inspectors controls	1	2	2	2
	4. Competency of data collection geology exploration and mining resources	1	1	2	1
	5. Competency of evaluation/inspection of mining resources exploration	1	2	2	2
	6. Competency of geological and mineral data/information human resources				
	b. General mining:				
	1. Competency of general mining permission process	3	3	2	2
	2. Competency of mining technical report evaluation	2	2	2	2
	3. Competency of technical control and general mining business	3	3	2	1
	4. Competency of mining inspector	3	1	1	1
	5. Competency of mining data/information management	3	2	2	3
	Average	2.20	2.00	1.73	1.67

* 1) not available,
2) available, not implemented optimally,
3) Available, optimally implemented

** 1) not available,
2) Available, not suitable in tasks,
3) available, suitable in tasks

Source: Dinas Pertambangan dan Energi Fak-Fak, Sorong, Raja Ampat, Teluk Bintuni, 2012.

Appendix C. Assessment result of availability of mining data/information management in four sample areas in West Papua

No	Indicators	Regency			
		Fak-Fak	Sorong	Raja Ampat	Teluk Bintuni
1.	Data/information management*:				
	a. Data/information supporting equipment/tools	1	1	2	1
	b. Data/information system	1	1	2	1
2.	Availability of geological and mining resources data**:				
	a. General geology data	2	2	2	2
	b. Mining resources data	2	2	2	2
3.	Availability of general mining resources data**:				
	a. List of mining businesses	3	3	3	3
	b. Profile of existing mining businesses (administrative and technical data)	3	3	3	3
Average		2.00	2.00	2.33	2.00

* 1) not supporting, 2) supporting, 3) very supporting
** 1) not available, 2) in process, 3) available

Source: Dinas Pertambangan dan Energi Fak-Fak, Sorong, Raja Ampat, Teluk Bintuni, 2012.

Appendix D. Assessment result of hypothetical mineral and coal resources values in four sample areas in West Papua

Regency	Mineral and coal	Potential (ton)*	Price (Rp/ton)	Value of resources (Rp)	Score**	Average
Fak-Fak	Limestone	92.200.000	10,500	968,100,000,000	1	
	Quartz Sand	1.100.000	25,000	27,500,000,000	1	
	Clay	3.486.000	18,000	62,748,000,000	1	1
	Sand Stone	2.290.000	15,000	34,350,000,000	1	
	Onix	262.500	30,000	7,875,000,000	1	
Sorong	Limestone	2.974.416.564	10,500	31,231,373,922,000	1	
	Sand Stone	1.848.964.914	15,000	27,734,473,710,000	1	
	Quartzite	65.000.000	25,000	1,625,000,000,000	1	
	Ultramafic	490.000.000	15,000	7,350,000,000,000	1	1
	Clay	30.735.517	18,000	553,239,306,000	1	
	Iron Sand	3.600	100,000	360,000,000	1	
	Coal	13.000.000	588,000	7,644,000,000	1	
Raja Ampat	Limestone	9.453.000.000	10,500	99,256,500,000,000	3	3
	Ultramafic	9.044.000.000	15,000	135,660,000,000,000	3	
Teluk Bintuni	Sand Stone	2.130.000	15,000	31,950,000,000	1	
	Clay	870.000	18,000	15,660,000,000	1	
	Quartz Sand	24.000	25,000	600,000,000	1	1
	Kaolin	35.000	18,000	630,000,000	1	
	Mica	150.100.000	24,000	3,602,400,000,000	1	
	Coal	59.950.000	588,000	25,721,648,400,000	1	

* Hypothetical resource
** 1) low, 2) medium, 3) high

Source: Dinas Pertambangan dan Energi Provinsi Papua Barat, 2012.

Lampiran E. Competency of human resources regarding mining sector in four sample areas in West Papua

No	Level of education	Regency			
		Fak-Fak	Sorong	Raja Ampat	Teluk Bintuni
1.	High school	12	4	18	15
2.	Diploma Certficate:				
	a. Mining	3	-	4	3
	b. Geology	-	-	-	-
	c. Others	4	-	3	2
3.	Undergraduate:				
	a. Mining	3	6	4	1
	b. Geology	2	2	2	1
	c. Others	14	25	11	10
4.	Postgraduate:				
	a. Mining	-	1	-	1
	b. Geology	-	-	-	1
	c. Others	4	2	1	1
	Total	42	40	43	35
	Geology and Mining	8	9	10	7

Source: Dinas Pertambangan dan Energi Fak-Fak, Sorong, Raja Ampat, Teluk Bintuni, 2012.

Appendix F.1. Mining business legal permission in Fak-Fak

No	Firm/corporate	Legality number	Area (Ha)	Kind of mineral	Activity	Duration of contract	
						Start	End
1	PT. Wagom Sari Indah	005 Th 2006	0.34	Industrial Minerals	Exploitation	09/03/2006	09/03/2008
2	Yance Jitmau	017 Th 2007	0.09	Industrial Minerals	Exploitation	01/03/2007	01/03/2009
3	PT. Sari Wagom Indah	042 Th 2007	0.33	Industrial Minerals	Exploitation	07/05/2007	07/05/2009
4	PT. Bomberay Indah	094 Th 2007	0.15	Industrial Minerals	Exploitation	14/08/2007	14/08/2009
5	Hi Mustakim Made	121 Th 2007	0.10	Industrial Minerals	Exploitation	03/10/2007	03/10/2009
6	PT. Sari Wagom Indah	153 Th 2007	0.50	Industrial Minerals	Exploitation	29/12/2007	29/12/2009
7	PT. Sari Wagom Indah	004 Th 2008	0.30	Industrial Minerals	Exploitation	25/02/2008	25/02/2010
8	PT. Vita Samudera	005 Th 2008	0.40	Industrial Minerals	Exploitation	18/02/2008	18/02/2010
9	PT. Sanggaria Persada	006 Th 2008	0.40	Industrial Minerals	Exploitation	03/03/2008	03/03/2010
10	PT. Bomberay Indah	007 Th 2008	0.15	Industrial Minerals	Exploitation	07/04/2008	07/04/2010
11	PT. Bomberay Indah	008 Th 2008	0.20	Industrial Minerals	Exploitation	07/04/2008	07/04/2010
12	Fredy Sekaru	014 Th 2008	0.01	Industrial Minerals	Exploitation	23/06/2008	23/06/2010
13	PT. Semarak Karunia	015 Th 2008	0.20	Industrial Minerals	Exploitation	30/06/2008	30/06/2010
14	PT. Vita Samudera	033 Th 2008	0.50	Industrial Minerals	Exploitation	01/12/2008	01/12/2010
15	PT. Cipta Papua Utama	036 Th 2008	0.01	Industrial Minerals	Exploitation	02/12/2008	02/12/2010
16	PT. Bening Cipta Sejahtera	118 Th 2008	4,000	Industrial Minerals	General mining	12/12/2008	12/12/2009
17	PT. Karsa Alam Sentosa	119 Th 2008	5,000	Industrial Minerals	General mining	12/12/2008	12/12/2009
18	PT. Multi Bukit Jaya	120 Th 2008	700	Industrial Minerals	General mining	12/12/2008	12/12/2009
19	CV. Sinar Sidrap	001 Th 2009		Industrial Minerals	Exploitation	08/01/2009	08/01/2011
20	PT. Bomberay Indah	022 Th 2009	0.15	Industrial Minerals	Exploitation	27/02/2009	27/02/2011
21	PT. Sinar Sama Sejati	025 Th 2009	0.13	Industrial Minerals	Exploitation	11/05/2009	11/05/2011
22	PT. Sari Wagom Indah	026 Th 2009	0.45	Industrial Minerals	Exploitation	11/05/2009	11/05/2011
23	PT. Sinar Sama Sejati	027 Th 2009	0.10	Industrial Minerals	Exploitation	11/05/2009	11/05/2011
24	CV. Instia Utama	030 Th 2009	0.03	Industrial Minerals	Exploitation	04/08/2009	04/08/2011
25	PT. Sinar Sama Sejati	035 Th 2009	0.71	Industrial Minerals	Exploitation	28/09/2009	28/09/2011
26	PT. Bening Cipta Sejahtera	131 Th 2009	4,000	Industrial Minerals	Exploration	16/12/2009	16/12/2011
27	PT. Karsa Alam Sentosa	132 Th 2009	5,000	Industrial Minerals	Exploration	16/12/2009	16/12/2011
28	PT. Multi Bukit Jaya	133 Th 2009	700	Industrial Minerals	Exploration	16/12/2009	16/12/2011

Source: Dinas Pertambangan dan Energi Provinsi Papua Barat, 2012.

Appendix F.2. Mining business legal permission in Sorong

No	Firm/corporate	Legality number	Area (Ha)	Kind of mineral	Activity	Duration of contract	
						Start	End
1	PT. Lumbung Resources	06/kpts/bsrg/2007	9,930	Industrial Minerals	General mining	20/04/2007	20/04/2008
2	PT. Megapura Prima	07/kpts/bsrg/2007	9,938	Coal	Exploitation	19/04/2007	19/04/2009
3	PT. Kawasan Mamberamo	08/kpts/bsrg/2007	7,539	Coal	Exploration	19/04/2007	19/04/2009
4	PT. Megapura Prima	09/kpts/bsrg/2007	9,908	Coal	General mining	20/04/2007	20/04/2008
5	PT. Bumi Papua Mineral	10/kpts/bsrg/2007	9,986	Industrial Minerals	General mining	20/04/2007	20/04/2008
6	PT. Megapura Prima	165 Th 2008	9,908	Coal	General mining	07/05/2008	07/05/2009
7	PT. Sorong Manunggal	166 Th 2008	23,620	Iron ore	General mining	07/05/2008	07/05/2009
8	PT. Sorong Mega Sumber	167 Th 2008	21,540	Iron ore	General mining	07/05/2008	07/05/2009
9	PT. Sorong Sansopor Jaya	168 Th 2008	16,820	Iron ore	General mining	07/05/2008	07/05/2009
10	PT. Bumi Papua Mineral	213 Th 2008	9,986	Nickel	Exploration	11/07/2008	11/07/2009
11	CV. Malatali	503/333	1	Industrial Minerals	Exploitation	30/04/2008	30/04/2009
12	CV. Malatali	503/334	1	Industrial Minerals	Exploitation	31/03/2008	31/03/2009
13	P. Wasiri kuasa PT. Akam	503/335	1	Industrial Minerals	Exploitation	31/03/2008	31/03/2009
14	CV. Bumi Artha	503/336	1	Industrial Minerals	Exploitation	31/03/2008	31/03/2009
15	PT. Megapura Prima	203 Th 2009	9,143	Coal	Exploration	04/06/2009	04/06/2014
16	PT. Bagus Jaya Abadi	223 Th 2009	7,843	Coal	Exploration	07/07/2009	07/07/2014
17	PT. Papua Lestari Abadi	224 Th 2009	9,707.60	Coal	Exploration	07/07/2009	07/07/2014
18	PT. East Side Mining	272.A Th 2009	6,704.9	Coal	Exploration	25/09/2009	25/09/2014
19	PT. Bumi Papua Mineral	299.A Th 2009	5,003.7	Nickel	Exploration	19/11/2009	19/11/2012
20	Nansy P. Karundeng	545/292	2.5	Industrial Minerals	Exploitation	27/02/2009	27/02/2010
21	Eddy Soeharto	545/402	1	Industrial Minerals	Exploitation	23/12/2009	23/12/2010
22	CV. Malatali	545/915	1	Industrial Minerals	Exploitation	29/06/2009	29/06/2010
23	CV. Malatali	545/916	1	Industrial Minerals	Exploitation	29/06/2009	29/06/2010
24	Rahmali Panjaitan, SE	545/119	5	Industrial Minerals	Exploitation	11/02/2010	11/02/2011
25	Nansy P. Karundeng	545/243	2.5	Industrial Minerals	Exploitation	17/03/2010	17/03/2011

Source: Dinas Pertambangan dan Energi Provinsi Papua Barat, 2012.

Appendix F.3. Mining business legal permission in Raja Ampat

No	Firm/corporate	Legality number	Area (Ha)	Kind of mineral	Activity	Duration of contract	
						Start	End
1	PT. Anugerah Surya	19 Th 2007					
2	PT. Anugerah Surya	20 Th 2007					
3	PT. Anugerah Pertiwi	21 Th 2007	8,850	Nickel	Exploration	07/02/2007	
4	PT. Pacific Nickel	22 Th 2007					
5	PT. Kawei Sejahtera	31 Th 2007	5,922	Nickel	Exploitation	27/02/2007	26/02/2032
6	PT. Kawei Sejahtera	32 Th 2007	5,922	Nickel	Transport and sell	27/02/2007	26/02/2032
7	PT. Karunia Alam	47 Th 2007	1,079	Nickel	Exploitation	16/07/2007	
8	PT. Karunia Alam	48 Th 2007	1,079	Nickel	Transport and sell	16/07/2007	
9	PT. Pacific Nickel	56 Th 2007	5,292	Nickel	Exploration	22/05/2007	22/05/2008
10	PT. Waegeo Mineral	57 Th 2007	5,534	Nickel	Exploration	22/05/2007	22/05/2009
11	PT. Waegeo Mineral	58 Th 2007	1,692	Nickel	Exploration	22/05/2007	
12	PT. Anugerah Surya	9 Th 2008	9,700	Nickel	Exploration	06/02/2008	
13	PT. Anugerah Surya	27 Th 20008	11,730	Nickel		25/01/2008	
14	PT. Waegeo Mineral	54 Th 2008	5,534	Nickel	Exploitation	24/05/2008	24/05/2023
15	PT. Waegeo Mineral	55 Th 2008	5,534	Nickel	Transport and sell	24/05/2008	
16	CV. Bangun Persada	53 Th 2008	1	Gol. C	Exploitation	26/05/2008	
17	PT. Anugerah Surya	s.565/menhut-vii/pkh/2009	4,518	Nickel	Exploration	13/08/2009	22/06/2010
18	PT. Gag Nikel	s.701/menhut-vii/pkh/2009	6,060	Nickel	Exploration	22/10/2009	17/02/2010
19	PT. Gag Nikel	379.k/30/djb/2009	13,136	Nickel		18/02/2009	17/02/2010
20	PT. Alam Bumi	111 Th 2009	10,000	Nickel	Exploration	01/10/2009	
21	PT. Berkat Bumi	12 Th 2009	9,800	Coal	Exploration	04/02/2009	
22	PT. Duta Karya	11 Th 2009	10,340	Nickel	Exploration	04/02/2009	
23	PT. Giri Delta	9 Th 2009	10,000	Nickel	Exploration	04/02/2009	
24	PT. Harita Mukti	10 Th 2009	5,280	Nickel	Exploration	04/02/2009	
25	PT. Pacific Nickel	5.a Th 2009	5,292	Nickel	Exploration	19/01/2009	
26	PT. Anugerah Surya	06 Th 2010	9,500	Nickel	Exploration and production	06/01/2010	
27	PT. Anugerah Surya	07 Th 2010	9,700	Nickel	Exploration	06/02/2010	

Appendix F.3. Continues..

No	Firm/corporate	Legality number	Area (Ha)	Kind of mineral	Activity	Duration of contract	
						Start	End
28	PT. Anugerah Pertiwi	08 Th 2010	8,850	Nickel	Exploration	07/01/2010	
29	PT. Bumi Waigeo	10 Th 2010	2,011	Nickel	Exploration	08/01/2010	
30	PT. Eka Kurnia Baru	47 Th 2010	2,257	Nickel	Exploration	25/05/2010	
31	PT. Raja Ampat	11 Th 2010	1,712	Nickel	Exploration	11/01/2010	
32	PT. Anugerah Hasta	132 Th 2011	4,825	Nickel	Exploration		
33	PT. Nurham		3,543	Nickel	Exploration		
34	PT. Nariki Mitra		10,000	Coal	Exploration		

Source: Dinas Pertambangan dan Energi Provinsi Papua Barat, 2012.

Appendix F.4. Mining business legal permission in Teluk Bintuni

No	Firm/corporate	Legality number	Area (Ha)	Kind of mineral	Activity	Dyration of contract	
						Strat	End
1	PT. Twonines	…. Th 2007	37,735	Coal	General mining		
2	PT. Muturi Indah	69 Th 2007	7,500	Coal	Exploration	31/05/2007	
3	PT. Sinar Menci	86 Th 2007	9,998.4	Coal	Exploration	06/09/2007	05/09/2008
4	PT. Bintuni Coalindo	87 Th 2007	9,956	Coal	Exploration	06/09/2007	05/09/2008
5	PT. Garuda Mas	87 Th 2007	9,342	Coal	Exploration	01/10/2007	
6	PT. Horna Inti	20 Th 2008	6,321	Coal	Exploration	10/03/2008	
7	PT. Alam Setiatama	28 Th 2008	12,964	Coal	General mining	21/04/2008	21/04/2009
8	PT. Mitra Unggul	29 Th 2008	10,676	Coal	General mining	22/04/2008	22/04/2009
9	PT. Steenkoll	34 Th 2008	9,220	Coal	Exploration	05/05/2008	05/05/2009
10	PT. Bintuni Batubara	35 Th 2008	9,993	Coal	Exploration	05/05/2008	05/05/2009
11	PT. Sumber Daya	36 Th 2008	24,414	Coal	General mining	05/05/2008	04/05/2009
12	PT. Trimaroi Putra	38 Th 2008	9,404	Coal	Exploration	15/05/2008	15/05/2009
13	PT. Patongsom	40 Th 2008	9,331	Coal	Exploration	11/06/2008	10/06/2009
14	PT. Berkat Bukit	41 Th 2008	9,601	Coal	Exploration	11/06/2008	10/06/2009

Appendix F.4. Continues

No	Firm/corporate	Legality number	Area (Ha)	Kind of mineral	Activity	Dyration of contract	
						Strat	End
15	PT. Sunny Goldmark	42 Th 2008	9,671	Coal	Exploration	11/06/2008	10/06/2009
16	PT. Muturi Indah	46 Th 2008	7,500	Coal	Exploration	16/07/2008	16/07/2009
17	PT. Delapan Inti	47 Th 2008	22,907	Coal	General mining	16/07/2008	15/07/2009
18	PT. Lion Power	48 Th 2008	19,997	Coal	General mining	16/07/2008	15/07/2009
19	PT. Global	54 Th 2008	24,410	Coal	General mining	01/08/2008	31/07/2009
20	PT. Sumber Alam	65 Th 2008	24,482	Coal	General mining	15/09/2008	14/09/2009
21	PT. Prima Darma	66 Th 2008	24,869	Coal	General mining	19/09/2008	18/09/2009
22	PT. Duta Karya	67 Th 2008	24,702	Coal	General mining	19/09/2008	18/09/2009
23	PT. Multitrans Pilar	68 Th 2008	12,944	Coal	General mining	19/09/2008	18/09/2009
24	PT. Bhakti Nanggala	69 Th 2008	18,524	Coal	General mining	19/09/2008	18/09/2009
25	PT.Sinar Mitra	75 Th 2008	17,154	Coal	General mining	04/11/2008	03/11/2009
26	PT. Grand Prima	76 Th 2008	17,154	Coal	General mining	04/11/2008	03/11/2009
27	PT. Babo Mandiri jaya	78 Th 2008	18,623	Coal	General mining	04/11/2008	03/11/2009
28	PT. Warga Nusa mulia	79 Th 2008	23,990	Coal	General mining	04/11/2008	03/11/2009
29	PT. Garis Emas	87 Th 2008	12,553	Coal	General mining	19/12/2008	18/12/2009
30	PT. Lumika Griya	88 Th 2008	16,325	Coal	General mining	18/12/2008	18/12/2009
31	PT. Sinar Graha	89 Th 2008	18,171	Coal	General mining	22/12/2008	21/12/2009
32	PT. Kencana Cita	90 Th 2008	8,356	Coal	General mining	22/12/2008	21/12/2009
33	PT. Bumi Bara	15 Th 2009	9,045	Coal	Exploration	29/04/2010	29/04/2015
34	PT. Horna Inti	19 Th 2009	6,321	Coal	Exploration	10/03/2009	09/03/2010
35	PT. Bintuni Stannkol	24 Th 2009	9,238	Coal	Exploration	27/04/2009	27/04/2010
36	PT. Tugu Rama	25 Th 2009	10,000	Coal	Exploration	27/04/2009	27/04/2010
37	PT. Alam Papua	36 Th 2009	9,507	Gold	Exploration	03/06/2009	02/06/2010
38	PT. Bara Bumi	48 Th 2009	9,045	Coal	Exploration	06/08/2009	05/08/2010
39	PT. Muturi Bara	49 Th 2009	9,656	Coal	Exploration	06/08/2009	05/08/2010
40	PT. Bintuni Barindo	50 Th 2009	8,972	Coal	Exploration	06/08/2009	05/08/2010
41	PT. Lancarjaya Bara	51 Th 2009	8,723	Coal	Exploration	06/08/2009	05/08/2010

Appendix F.4. Continues

No	Firm/corporate	Legality number	Area (Ha)	Kind of mineral	Activity	Dyration of contract	
						Strat	End
42	PT. Lumika Griya	97 Th 2009	16,325	Coal	General mining, Exploration	17/12/2009	18/12/2015
43	PT. Sinar Graha	98 Th 2009	18,171	Coal	General mining, Exploration	17/12/2009	21/12/2015
44	PT. Kencana Cita	99 Th 2009	8,356	Coal	General mining, Exploration	17/12/2009	21/12/2015
45	PT. Garis Emas	100 Th 2009	12,553	Coal	General mining , Exploration	17/12/2009	18/12/2015
46	PT. Muturi Indah	101 Th 2009	8,299	Coal	Exploration	21/12/2009	30/05/2014
47	PT. Sumber Daya	102 Th 2009	24,268	Coal	Exploration	23/12/2009	04/05/2015
48	PT. Alam Setiatama	103 Th 2009	9,755	Coal	Exploration	21/04/2008	20/04/2015
49	PT. Lancarjaya Bara	13 Th 2010	8,723	Coal	Exploration	20/04/2010	05/08/2015
50	PT. Bintuni Barindo	13a Th 2010	8,972	Coal	Exploration	20/04/2010	05/08/2015
51	PT. Bara Bumi	15 Th 2010	9,045	Coal	Exploration	06/08/2008	05/08/2015
52	PT. Muturi Bara	15a Th 2010	9,656	Coal	Exploration	29/04/2010	05/08/2015
53	PT. Horna Inti	17a Th 2010	6,321	Coal	Exploration	21/05/2010	10/12/2013
54	PT. Citra Sekawan	42 Th 2010	30,754	Coal	Exploration	28/09/2010	27/09/2017
55	PT. Lintas Wiguna	43 Th 2010	23,818	Coal	Exploration	28/09/2010	27/09/2017
56	PT. Dua Sekawan jaya	44 Th 2010	47,801	Coal	General mining, Exploration	29/09/2010	28/09/2017
57	PT. Inti citra mandiri	45 Th 2010	49,158	Coal	Exploration	29/09/2010	28/09/2017
58	PT. Tomafed Karya	50 Th 2010	50,000	Coal	Exploration	11/10/2010	10/10/2017
59	PT. Titan Ventures	51 Th 2010	22,763	Coal	Exploration	11/10/2010	10/10/2017
60	PT. Mualraja Arfa	52 Th 2010	49,491	Coal	Exploration	12/10/2010	11/10/2017
61	PT. Papua Kyrjake	53 Th 2010	9,167	Coal	General mining, Exploration	12/10/2010	11/10/2017
62	PT. Wiryamusira	61 Th 2010	25,364	Coal	General mining, Exploration	20/12/2010	19/12/2017
63	PT. Bintuni Batubara	62 Th 2010	50,000	Coal	General mining, Exploration	21/12/2010	21/12/2017

Source: Dinas Pertambangan dan Energi Provinsi Papua Barat, 2012.

Appendix G. Gross Regional Product among four sample area in West Papua in the year of 2008, based on 2000 constant price (in million Rupiahs)

No	Sector	Fak-Fak	Sorong	Raja Ampat	Teluk Bintuni
1	AGRICULTURE	161.832,07	245.197,32	173.642,67	301.910,43
	1.1. Horticulture	27.592,08	65.307,16	13.804,90	21.882,58
	1.2. Plantation	41.255,28	9.525,63	6.144,95	6.240,25
	1.3. Livestock	6.662,44	24.912,40	2.449,04	3.632,11
	1.4. Forestry	47.419,36	81.278,40	21.667,38	164.583,45
	1.5. Fishery	38.902,90	64.173,73	129.576,40	105.572,04
2	MINING	9.298,84	757.162,49	288.495,16	12.145,33
	2.1. Oil and Gases	0,00	750.916,59	287.305,95	8.964,88
	2.2. General Mining	0,00	0,00	0,00	0,00
	2.3. Others	9.289,84	6.245,90	1.189,21	3.180,45
3	MANUFACTURE/INDUSTRY	31.987,71	474.897,10	1.087,83	52.314,80
	3.1. Large sized industry	28.411,08	108.826,08	0,00	49.210,05
	3.2. Small and medium industry	3.576,63	2.181,02	1.087,83	3.104,75
	3.3. Oil and gases industry	0,00	363.890,00	0,00	0,00
	a. Oil exploration industry				
	b. Liquid gases industry				
4	ELECTRICITY AND WATER	3.910,37	1.427,99	169,93	509,73
	4.1. Electricity	2.586,56	1.294,82	169,93	317,24
	4.2. Water	1.323,81	133,16	0,00	192,49
5	CONSTRUCTION	90.093,02	43.124,96	15.484,93	64.805,24
6	TRADING, HOTEL DAN RESTAURANT	79.586,05	37.943,57	12.609,71	20.788,88
	6.1. Trading	72.527,22	36.558,30	11.994,89	20.279,47
	6.2. Hotel	1.154,73	0,00	174,39	165,34
	6.3. Restaurant	5.904,11	1.385,27	440,44	344,07
7	TRANSPORTATION AND COMMUNICATION	51.573,97	18.013,76	6.124,13	7.064,71
	7.1. Road transport	19.989,06	9.287,28	345,51	1.262,35
	7.2. Sea transport	9.507,34	2.621,31	4.264,03	2.332,81
	7.3. River transport	625,10	2.017,01	351,23	85,99
	7.4. Air transport	2.080,99	0,00	0,00	1.896,69
	7.5. Supporting service in transport	1.108,63	507,86	519,99	196,24
	7.6. Communication	18.262,86	3.580,31	643,36	1.290,63
8	FINANCE AND CORPORATE SERVICES	16.410,73	3.856,97	760,12	6.067,33
	8.1. Bank	3.585,91	1.903,65	209,53	3.137,43
	8.2. Non-bank financial institutions	640,44	458,20	80,35	145,71
	8.3. Renting building	11.652,86	886,31	410,12	2.665,66
	8.4. Corporate services	531,51	608,81	60,13	118,53
9	PUBLIC SERVICES	110.297,94	135.479,97	22.572,99	66.885,47
	9.1. Government services	102.296,01	129.768,86	21.985,09	66.025,58
	9.2. Social and community services	4.368,20	4.300,34	425,07	579,78
	9.3. Recreation and entertainment services	2.277,44	651,79	104,40	72,70
	9.4. Individual and household services	1.356,28	758,99	58,43	207,42
	Total	554.990,71	1.717.104,14	520.947,48	532.491,94

Source: BPS Fak-Fak, BPS Sorong, BPS Raja Ampat, BPS Teluk Bintuni, 2012.