

Computing Actors Roles into CSR Programs of Agriculture and Economic Development; An Evidence from Tribal Community of Teluk Bintuni Regency, West Papua



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ABSTRACT: The program of Corporate Social Responsibility is the key programs and project delivered and responsible for private sector as a source of economic empowerment and social cares. However, this sector has many involved interest and interlinked actors. Inventory all resources and roles played by actors are utmost important. The objective of this research was to clearly and precisely map actors in CSR sectors for agriculture and economic development. As much as 27 institutions interviewed and asked the roles and resources of individuals working inside organizations formally and informally. Parameters collected were shapes of organizations, status of law, organization types, roles of stakeholders, effect, importance, turn-back effect. We collected data of resources sharing, duration of periods, continuity of resources, and power of resources. Data gathered related to intervention, which could play by organization per se, i.e. policy, financial, space, time, access, satisfaction, knowledge, skills, and power. Data were stored in Microsoft excel worksheet and export to Social Network Visualizer software version 2.5.. Identified key and strategic stakeholder in CSR determined by its power and interest. We found nine negative correlation relationships amongst actors. There are also 18 positive correlation relationship amongst actors. We identified 7th layers based on the rules of power centrality (PC). Quadrant 1 consisted of one actor, seven actors (quadrant 2), 10 actors (quadrant 3), and nine actors (quadrant 4). Actors shall move from quadrant 4 to quadrant 2, as well as actors in quadrant 1 and quadrant 3. Delivery of CSR will move on and run forward to achieve its final goals, i.e., community development for prosperity living.

KEYWORDS: CSR, power-interest actors, shared resources, shareholders stakeholders, social network analysis

I. INTRODUCTION

Stakeholder is defined as individuals, groups and institutions that have relations both direct and indirect effects in changing a certain process [1]. Many stakeholders play a role in determining a process of development [2], [3]. They shaped and formed officially by the laws both international and national levels, i.e. state/central and regional government, i.e. governor and regent [4]. However, there are stakeholders as well which are not formed and shaped in their interaction by the laws. They are real and play a strategic and prominent role in determining development. In developing programs and projects particularly on agriculture and economic development, many parties are interlinked and shaped the complex systems. The complex system of development including social, economic, and environment, has definition and known their roles. Without knowing the roles of systems, it is hard to drive the parties that play vital roles in shaping the dynamic of agriculture and economic development using program of community social responsibility (CSR) [5-6].

Every stage of the development has its process and related parties and/or stakeholders involved. An example comes from industrial and business of the agriculture sector, particularly using programs and/or project of the CSR. The industrial and business of the CSRs around the world, for instance, have been developed and it has been due to the involvement of many stakeholders and shareholders' interest and intervention [5]. Each stakeholder cares and desire to not limited to increase their business and market oriented, but it has vision also in providing feeds for the world. Stakeholders and shareholders have prominent roles in creating the impact demand of agricultural products, particularly by providing programs for community social responsibility which well known as CSR [7].

In many tropical and developed countries, the involvement of stakeholders [8-9] is undoubted real. Some play a vital role in controlling the powers [10-11], resources [12], and access [13] even controlling the threat [9]. Examples shared by CSR programs

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for farmers in Uganda [14]. They are playing vital roles and sharing important relationship. It seemed that inside and outside aspects of CSR programs on agriculture and economic development, stakeholder involvement should clearly be developed and mapped [12]. So far, the existing stakeholders do not count yet by farmers, government, stakeholders and shareholders. In many scientific areas, social networks [15] are important when we study the way problems, organization and the degree to which individuals succeed in achieving their goals.

Software are being developed and applied to explain the phenomena. Social Network Visualizer is one powerful social network analysis beside SmartPLS [16], Netmap [17] and Gephi [18]. By mapping the stakeholders, institutions, which have no power and interest, we will identify and, in turn, it will also become easy to promote their roles. It is therefore, the aims for conducting this research are to computing actors' roles into CSR programs of agriculture and economic development delivered by private company around Teluk Bintuni regency in West Papua province of Indonesia. In particular the research done to seek for mapping and providing clear involvement of stakeholders with related to what and how they contribute to CSR projects of agriculture and economic development.

II. MATERIALS AND METHODS

A. Location and involved actors

Research was done in Teluk Bintuni, West Papua. We have chosen several organizations, groups and individuals who represented institution. We approached them by collecting all relevant data and information concerning existing CSR farming business. Using focus group discussions and desk study from qualitative research [19], relevant data collected consisted of information and data from research reports, policy documents, articles, daily newspapers and magazines. We considered doing this by the reasons that bunches of information and data written out and available even each was easy accessed.

We are concerned about the roles of stakeholders and shareholders in shaping and determining the pattern of CSR business development in West Papua, particularly in Teluk Bintuni. Teluk Bintuni was setup and developed as one of the central developments of CSRs farming according to Netherlands Agriculture plans on 1960's and by local livestock provincial offices of West Papua province, Indonesia. All stakeholders grouped into local citizens, government, finance institutions (banks), markets, private transportation and university [20].

B. Data collection

During the research we collected information and data related to organizational function and characteristics of the CSR stakeholders, i.e. shape of organization, status of low, types of organization, roles, effect and importance of organization [2], [21], [22]. We also tried to collect data and information about threats and turn-back effect towards CSR programs and projects development. In knowing the roles and presence of the stakeholders, we also recorded the sharing resources of organization, duration of period, continuity of the resources, power of resources and intervention done so far by organization.

C. Method of analyses

In analyzing the power and flows of information amongst stakeholders, we used Social Network Visualizer (SocNetV). SocNetV [23] is a cross-platform, light and free of charged social-stakeholder related software in network analyses and visualization. To visualize those graphs, we used PCC matrix, similarity matrix (SM), and power centrality (PC). A key notion in SNA is that of structural equivalence.

The idea is to map the relationships in a graph by creating classes or groups of actors who are equivalent in some sense. One way to do that, to identify groups of actors who are structurally equivalent, is to examine the relationships between them for similarity patterns. There are many methods to measure the similarity or dissimilarity of actors in a network. SocNetV supports the following methods: Similarity by measure and Pearson Correlation Coefficients. By applying one of these methods, SocNetV creates a pair-wise actor similarity/dissimilarity matrix.

Table 1. Stakeholders and their responsibility and roles under CSR development sector.

No.	Actors	Roles/Function
1	BP Tangguh	Corporate which has responsibility in delivering social services for local community based on governmental regulation.
2	Agricultural Regency Officer	Office of government which has responsibility in developing agriculture sector including community services particularly in sector of agricultures.
3	Investments Regency Officer	Office of government which has responsibility in developing sector including particularly in sector of infestation.
4	Industry and Cooperation Reg. Offic	Office of government which has responsibility in developing industry and cooperation sector including community services.

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5	Environment Reg. Offic.	Office of government which has responsibility in developing environmental sector including community services.
6	Planning Reg. Offic.	Office of government which has responsibility in developing all sectors.
7	Public Woks Reg. Offic	Office of government which has responsibility in development of infrastructures and public facilities
8	Secretary Reg. Offic	Office of government which has responsibility in developing agriculture sector including community services particularly in sector of agricultures.
9	University researchers	Individual and group of researchers who work in the field of education, research and community development
10	Central Government	Office of government which has responsibility in developing agriculture sector including community services particularly in sector of agricultures.
11	Consumers	Individual and a group of community who obtain their needs throughout buying something
12	Paddy Farmers	Individual and/or group of farmers who are working frequently and intensively in the fields and/or ricefield to grow and produce paddy
13	Community Cooperation	A group and/or mass of people who have similar aims to work together in the field of business activities
14	Retailer	Individual and/or a group people who have similar aims to work by providing a services of business activities
15	Other farmers	Individual and/or group of farmers who are working frequently and intensively in the fields to grow and produce crops and livestock
16	Market officer	Individual and a group of people who have similar aims to work together in the field of business activities
17	Quarantine officer	The institution that is working to control the transportation of incoming and out-coming animals
18	Harbor inspector	The institution is working to control the transportation of incoming and out-coming animals in harbors.
19	village officer	Office of government which has responsibility in lowest stratum of community
20	Subdistrict officer	Office of government which has responsibility in lower stratum of community
21	Community security	A board of office developed and ruled by local government to play a significant work on community security
22	Retribution officers	Office of government which has responsibility in controlling retribution
23	Labor	A group of skilled labors who work to provide power and skills
24	Police	Security of country and delivery services together with government
25	Land Lord	A man who is mandated as leader of a certain community and plays a role to control its community
26	Head of Tribes	A man who is mandated as leader of a certain community and plays a role to control its community
27	Banks	Financial organization which has responsibility to play a rule in saving and loans of the cash and/or fresh money

This correlation measure of similarity is particularly useful when ties are valued/weighted denoting strength, cost or probability. The Power Centrality (PC) is a generalized degree centrality measure suggested by [24-25]. This index can be calculated in both graphs and digraphs but is usually best suited for undirected graphs. It can also be calculated in weighted graphs although the weight of each edge (u,v) in E is always considered to be 1 (therefore not considered).

In SNA context these clusters usually consist of network actors. This method takes the social network distance matrix as input and uses the Agglomerative "bottom up" approach where each actor starts in its own cluster (Level 0). In each subsequent Level, as we move up the clustering hierarchy, a pair of clusters are merged into a larger cluster, until all actors end up in the same cluster. To decide which clusters should be combined at each level, a measure of dissimilarity between sets of observations is required. In terms of graph theory, this notion is the same as a maximal complete subgraph of the equivalent graph of the social network. The word maximal means that for each clique the group of its members is expanded to include as many actors as possible; no other actors can

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be added to the clique. The steps in connecting and running interconnection done using SocNetV version 2.5 presented Figure 1.. All data collectively entered into a Microsoft Excel worksheet and tabled into manuscript.

III. RESULT AND DISCUSSION

A. Organizational function and characteristics

In the first section, we discussed the form of the organization performances such as law status, types, roles, effect, importance, threats, and turn-back effect. From 27 actors we eager to know actors which have concerned on CSR programs particularly in Teluk Bintuni, West Papua (Table 1). We counted 13 individual stakeholders that played alone the vital role in sharing dynamic of CSR farming systems. There are 17 stakeholders that played a vital role and two mass groups of stakeholders as well in assuring development of CSR production (Table 2). Individual actors work and act by themselves without using certain role and policy. No policy and orders that guide individual stakeholders to work legally according to law. This is how the face of CSR remains insolvency. In the meantime, group stakeholders tended to have legal operational business document and ruled in law of the government. In one hand, mass stakeholders tend to have no clear shapes. This is still causing problems due to no leadership and institutional problems. These types of organization so far have induced the social and cultural constraints. They are now having vast number and remaining helpless. They share men power as source of laborers.

We have indeed identified the rules of actors on determining CSR strengthening in Teluk Bintuni (Table 1). Several actors (Table 2) generally included playing positive roles (20 actors). Few numbers of stakeholders played slight negative roles (7 actors). Negative roles found on retailers, land lords, market officers, labors and banks. Therefore, perception is utmost important as experienced in the Netherlands and Denmark [26]. Banks have lack of concerns in providing loans for CSR as well as private credit business. Lack of loans from financial institutions caused CSR in agriculture field and farmers felt difficulties in advancing the business. This is how the BP-Indonesia intervenes to promote programs in agriculture.

Table 2. Characteristic of actors

No.	Actors	Total	Proportion (%)
1	Shape of Organization		
	Individual	3	11.11
	Groups	21	72.41
2	Mass	3	11.11
	Status of Law		
	Law	21	72.41
3	Unlaw	6	20.69
	Types		
	Private	10	34.48
4	State	17	58.62
	Roles		
	Stakeholder	14	48.28
5	Shareholder	13	44.83
	Effect (Benefit)		
	Positive	20	68.97
6	Negative	7	24.14
	Turn-Back Effect		
	Feedback	10	34.48
	Unfeedback	17	58.62

Roles of actors in CSR programs based on Teluk Bintuni evidence consist of stakeholders and shareholders as well. There are 14 (48.28%) actors played a role as stakeholders and 13 actors (44.83%) are as shareholders. During observing and collecting data, threat are exist both direct (11 actors, 37.93%) and indirect (16 actors, 55.17%). Effect of benefit in CSR programs and projects in Teluk Bintuni regency also classified into two folds, i.e. positive (20 actors, 68,97%) and negative effects (only 7 actors, 24.14%). From this figure, the government and related actors shall bring and open spaces for communication and discussion for gaining knowledge on actors with negative benefit. In one hand, identified as well that turn back effect meant to seek if the related actors have feedback effects and/or both sides turn back effect on CSR programs. It seemed that more or less 10 actors had similar roles in feedback effects (34.48%) and “unfeedback” effect are more dominant (17 actors, 58.62%). It means that, the success in developing CSR projects on agriculture has small feedback effects.

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B. Resources, Powers and intervened needs

The resources provided and shared by each stakeholder varied (Table 3). According to [20], a number of resources available will contribute in driving actors' performance, such as CSR. They are policy, financial, space, time, access, satisfaction, knowledge, skills, power, and feed material. Counting resources used and shared by stakeholders will figure out the strength and domination of its effect. Policy resources shared by 15 stakeholders (55.56%). The fresh money in terms of aids and loans shared by nine stakeholders (33.33%), meaning that less stakeholders do provide and use the money to support and link toward CSR. The 13th stakeholders (48.15%) provided spaces. The spaces in the shapes of areas that provided by stakeholders are in terms of programs by government, land by local community, and market officers. The 11th stakeholders (40.74%) allocated resources of time. The time provided in the shapes of services and guides. The 22 stakeholders (81.48%) shared access. Access needs by CSR farmers to obtain services and materials needed to establish CSR. The access is provided regularly and periodically by consumers and government with its related stakeholders.

Table 3. Resources shared by actors.

No.	Actors	Total	Proportion (%)
1	Shared resources		
	Policy	15	55.56
	Finance	9	33.33
	Space	13	48.15
	Time	11	40.74
	Access	22	81.48
	Satisfaction	13	48.15
	Knowledge	9	33.33
	Skills	8	29.63
	Power	13	48.15
	Feed materials	6	22.22
2	Duration of Period		
	Short term	2	7.41
	Long term	24	88.89
3	Continuity of Resources		
	Sustain	25	92.59
	Unsustain	1	3.70
4	Power of Resources		
	Strong	9	33.33
	Neutral	12	44.44
	Weak	5	18.52
5	Intervention		
	Need	19	70.37
	No Need	7	25.93

The satisfaction needed by CSR programs as non-physical resource. We counted thirteen stakeholders (48.15%) provide values of satisfaction. From this figure, the satisfaction shown the preferences and like-dislike perception in promoting development of CSR. It means that when the number of satisfactions belongs to the stakeholders increased, it will also enlarge acceptance and preferences in supporting CSR programs and projects.

The nine stakeholders (33.33%) provided resource of knowledge, while eight stakeholders (29.63%) provided resource of skills. The thirteen stakeholders (48.15%) provided resource of power. The six stakeholders (22.22%) provided resources of feed materials. The duration of period to measure resources availability and shared resources are grouped into short-term, which is only two actors (7.41%) and long-term period (24 actors, 88.89%). The continuity means sustain, i.e. 25 actors (92.59%) higher than that unsustain actors in shared resources (1 actor, 3.70%). Power of resources which is neutrally delivered belongs to 12 actors (44.44%), followed by strongly delivered actors (9 actors, 33.33%), and weakly delivered actors (5 actors, 18.52%). Intervention therefore needed by CSR programs and projects. Actors' needly intervention consisted of 19 actors (70.37%) and no needly intervention is 7 actors (25.93%).

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Table 3. PCC

Actors	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	
1	1	0.047	0.051	0.089	0.047	0.089	0.059	0.095	0.071	0.047	0.013	0.028	0.023	0.006	0.011	0.077	0.031	0.031	0.037	0.019	0.013	0.033	0.005	0.011	0.008	0.017	0.044	0.059
2	0.047	1	0.035	0.038	0.038	0.017	0.029	0.007	0.055	0.066	0.008	0.014	0.009	0.003	0.013	0.009	0.009	0.009	0.009	0.035	0.071	0.006	0.009	0.025	0.009	0.009	0.009	0.039
3	0.051	0.035	1	0.055	0.055	0.047	0.024	0.055	0.038	0.024	0.008	0.011	0.011	0.005	0.009	0.008	0.005	0.009	0.009	0.019	0.024	0.005	0.005	0.025	0.009	0.009	0.009	0.011
4	0.089	0.043	0.057	1	0.025	0.017	0.006	0.007	0.049	0.011	0.008	0.004	0.009	0.005	0.009	0.009	0.009	0.009	0.009	0.035	0.071	0.009	0.009	0.025	0.009	0.009	0.009	0.039
5	0.043	0.012	0.025	0.025	1	0.017	0.029	0.005	0.024	0.006	0.007	0.011	0.011	0.011	0.011	0.011	0.009	0.009	0.009	0.025	0.071	0.009	0.009	0.025	0.009	0.009	0.009	0.039
6	0.089	0.007	0.007	0.007	0.007	1	0.031	0.013	0.002	0.011	0.006	0.005	0.007	0.002	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.022
7	0.029	0.049	0.024	0.019	0.049	0.031	1	0.041	0.001	0.006	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.024	0.001	0.001	0.001	0.001	0.001	0.001	0.038
8	0.039	0.007	0.005	0.006	0.007	0.017	0.004	1	0.003	0.002	0.004	0.004	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.014
9	0.017	0.007	0.039	0.049	0.009	0.001	0.011	0.003	1	0.009	0.004	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
10	0.001	0.001	0.005	0.001	0.001	0.001	0.001	0.003	0.009	1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

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	4 7	2 5		6 3	2 5	3 5	8 6	2 9		8 6	4 7	1 8	3 6	2 5	1 3		6 9	1 3		8 6	7 1	6 9	2 5	1 3	1 3	3 6
1 1	- 0. 1 3	0. 6 8 6	0. 2 4	0. 1 7 1	- 0. 0 8 6	- 0. 1 5 9	- 0. 0 4 3	- 0. 1 4 8	0. 4 8 6	- 0. 0 8 6	0. 1 2 6	- 0. 1 0 1	0. 6 2 8	0. 1 7 1	- 0. 0 7 7	- 0. 0 4 8	- 0. 0 7 9	- 0. 0 6 7	- 0. 0 5 9	- 0. 0 5 9	- 0. 0 4 8	- 0. 0 5 9	- 0. 0 8 6	- 0. 0 7 7	- 0. 0 7 7	- 0. 0 9 4
1 2	- 0. 0 9 8	0. 0 1 8	0. 0 8 1	0. 1 8 4	- 0. 1 4 7	- 0. 0 6 5	- 0. 1 0 1	- 0. 2 4 3	- 0. 1 4 7	0. 1 2 6	1	0. 2 6 6	0. 1 4 9	0. 8 4 8	- 0. 1 3 3	- 0. 0 3 3	- 0. 0 8 2	0. 0 4 7	- 0. 1 1 8	- 0. 1 0 1	- 0. 1 0 1	0. 1 9 4	- 0. 1 4 7	- 0. 1 3 3	0. 0 4 7	- 0. 1 6 1
1 3	- 0. 2 2 3	0. 1 4 7	0. 0 8 1	0. 1 4 7	- 0. 1 4 7	- 0. 0 7 1	- 0. 1 2 8	- 0. 1 3 3	0. 0 1 8	- 0. 1 0 1	0. 2 6 6	1	- 0. 0 0 6	0. 3 5 6	- 0. 1 3 3	- 0. 0 8 2	- 0. 1 3 3	- 0. 1 1 8	- 0. 1 0 1	- 0. 1 1 8	0. 1 2 6	0. 4 7	- 0. 1 4 7	- 0. 0 4 7	- 0. 1 3 3	- 0. 0 6
1 4	- 0. 2 0 6	0. 3 9	0. 1 0 1	0. 0 3 9	- 0. 1 3 6	- 0. 0 4 2	- 0. 0 9 8	- 0. 2 2 7	0. 2 5 3	- 0. 1 2 6	0. 6 2 8	0. 1 4 9	- 0. 0 0 6	1	0. 0 6 7	- 0. 1 2 3	- 0. 0 7 6	- 0. 1 2 3	- 0. 1 0 9	- 0. 1 0 4	0. 1 4 7	- 0. 0 7 6	- 0. 1 3 6	- 0. 1 2 3	- 0. 1 2 3	0. 0 1 5
1 5	- 0. 1 8 9	0. 0 6 3	0. 1 2 5	0. 2 5	- 0. 1 5	- 0. 0 6	- 0. 2 8	- 0. 1 9	- 0. 1 3	0. 1 7 1	0. 8 4 8	0. 3 5	0. 0 3 9	1	- 0. 1 1 3	- 0. 1 1 9	- 0. 0 6 3	- 0. 1 1 3	- 0. 0 8 6	- 0. 0 8 6	0. 2 4 3	- 0. 1 5	- 0. 1 1 3	- 0. 1 1 3	- 0. 1 1 3	- 0. 1 3 6
1 6	- 0. 1 7 1	0. 1 1 3	- 0. 0 9	0. 0 9	- 0. 1 3	- 0. 0 7	- 0. 1 9	- 0. 0 2	- 0. 1 3	- 0. 0 7	- 0. 1 3	0. 4 0 6	0. 0 6 7	- 0. 1 3	1	- 0. 0 2	- 0. 0 3	- 0. 0 2	- 0. 0 9	- 0. 0 7	0. 2 1	- 0. 1 3	- 0. 1 8	- 0. 1 2	- 0. 1 2	0. 0 2 3
1 7	0. 1 3 7	0. 0 9	0. 3 8	0. 2 4	0. 1 7	0. 4 8	0. 2 8	0. 3 9	0. 0 9	- 0. 0 7	- 0. 0 3	0. 1 3	0. 1 3	0. 1 2	0.	0. 2 6	- 0. 1 2	- 0. 1 4	- 0. 1 1	0. 2 1	- 0. 0 7	- 0. 0 6	0. 0 9	- 0. 1 2	- 0. 1 2	0. 4 7
1 8	0. 1 3 1	0. 0 6 9	0. 0 5 9	0. 0 6 9	0. 1 5 9	0. 0 4 8	0. 0 8	0. 0 3	0. 0 9	- 0. 0 8	- 0. 0 2	0. 0 8	0. 0 6	0. 0 9	0. 2 7 6	1	- 0. 0 6	- 0. 0 5	- 0. 0 4	- 0. 0 8	- 0. 0 8	0. 2 4 3	- 0. 0 6	- 0. 0 6	- 0. 0 6	0. 2 1 6
1 9	0. 1 3 7	0. 0 9	- 0. 0 9	0. 0 9	0. 2 4	0. 0 7	0. 1 3	0. 1 8	- 0. 1 3	- 0. 0 7	0. 0 4 7	- 0. 1 3	- 0. 1 3	- 0. 1 2	- 0. 0 2	- 0. 0 3	- 0. 0 6	0. 3 9 8	- 0. 0 7	- 0. 0 7	- 0. 0 7	0. 0 6	0. 0 9	0. 5 9	0. 5 9	- 0. 1 2 3
2 0	0. 0 1 9	0. 3 5	0. 1 9	0. 3 5	0. 5 7 5	0. 0 4 4	- 0. 0 6	0. 3 9 8	- 0. 0 1	- 0. 0 6 9	0. 0 1 8	0. 0 1 8	0. 0 1 9	- 0. 0 1	- 0. 0 9	0. 1 5 4	- 0. 0 5 8	0. 3 9 8	1	0. 2 4	- 0. 0 6 9	- 0. 0 5 5	0. 3 9 8	0. 3 9 8	0. 3 9 8	0. 1 0 1

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21	-0.113	0.171	0.241	0.171	0.171	0.092	0.224	-0.013	0.201	-0.086	-0.059	-0.011	-0.011	-0.044	-0.067	0.201	-0.048	-0.077	0.241	1	-0.059	-0.048	0.429	-0.077	-0.077	0.147	
22	-0.113	-0.086	0.241	0.171	-0.086	-0.011	0.041	-0.011	0.077	-0.059	-0.011	0.124	0.047	-0.086	0.201	-0.048	-0.077	-0.069	0.059	1	-0.048	-0.086	-0.077	-0.077	-0.077	0.094	
23	0.105	0.069	0.059	0.069	0.069	0.043	0.066	0.066	0.044	0.066	0.098	0.147	0.023	0.226	0.038	0.038	0.065	0.065	0.044	0.044	1	-0.069	0.226	0.066	0.066	0.036	
24	0.189	0.225	0.125	0.225	0.235	0.171	0.066	0.294	0.056	-0.077	-0.077	-0.066	-0.053	0.009	0.243	0.009	0.035	0.049	0.429	0.069	1	0.009	0.009	0.099	0.099	0.214	
25	0.017	0.009	-0.009	0.009	0.049	0.009	0.077	0.011	0.011	0.011	0.033	0.033	0.033	0.011	0.011	0.059	0.038	0.038	0.009	0.009	0.009	1	0.033	0.033	0.033	0.011	
26	0.444	0.009	-0.009	0.009	0.009	0.077	0.248	0.011	0.011	0.044	0.033	0.033	0.033	0.009	0.009	0.059	0.038	0.009	0.009	0.009	0.009	0.009	1	0.033	0.033	0.011	
27	0.059	0.039	0.009	0.039	0.039	0.088	0.049	0.066	0.039	0.066	0.011	0.011	0.011	0.044	0.044	0.011	0.011	0.011	0.049	0.049	0.049	0.049	0.049	0.049	0.011	0.011	1

Figure 3. Pearson Coefficient Correlation (PCC) matrix explained several actors had thig positive correlation with PCC=1. The PCC has Max value: 1 and Min value: -0.017. Several actors had value of PCC = 0 meaning that there is no correlation at all. The value of PCC > 0 when there is positive correlation, i.e. +1 meant actors with same patterns of ties/distances consisted of 1 , 2, 4, 6, 7, 8, 10, 12, 14, 16, 17, 18, 19, 20, 22, 24, 26 and 27. The PCC < 0 when there is negative correlation, i.e. -1 for actors with exactly opposite patterns of ties. The rest were negatively correlated, such as actor number 3, 5, 9, 11, 13, 15, 21, 23, and 25 (These numbers referred to Table 1).

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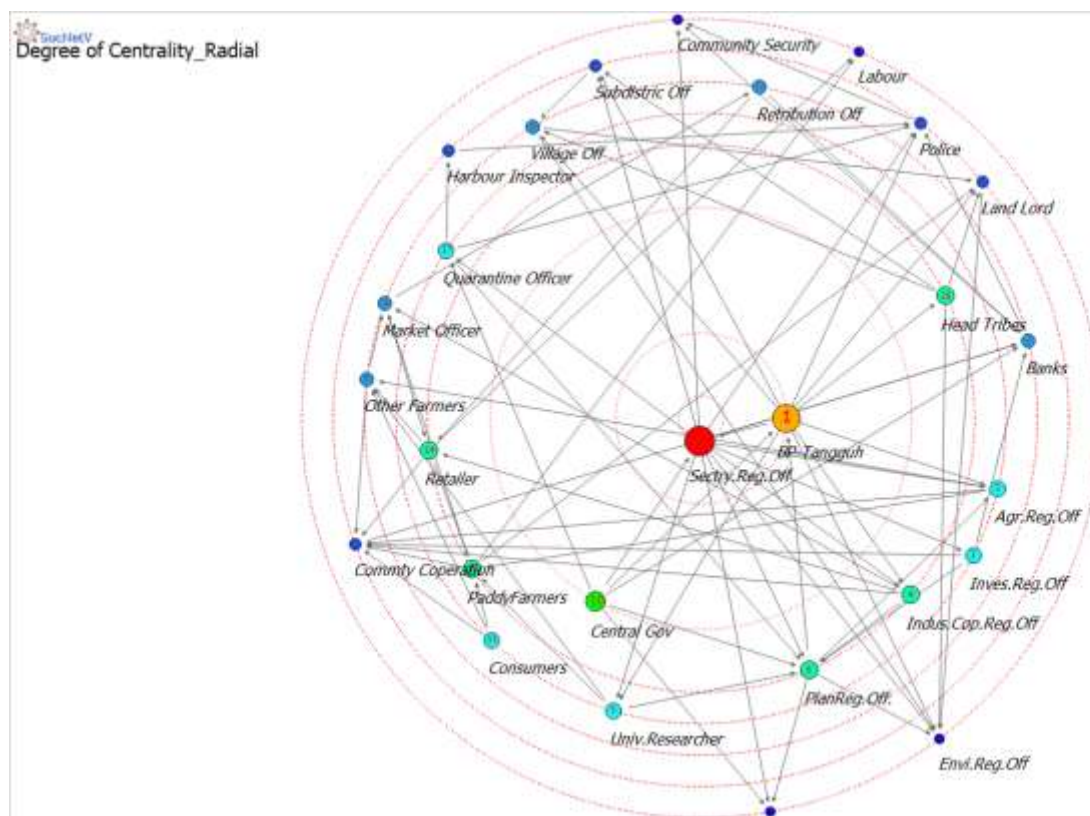


Figure 1. Stakeholder relationships analyzed based on power centrality. Small and big cycles determined the power. Changed red to green and blue colors meant the importance and strategic of actors from high power to sub-dominant actors.

We found that Secretary of regency has vital roles in managing programs of CSR in Teluk Bintuni regency. From that point, Figure 1 pointed out that the first layer of the interconnection consisted of BP-Indonesia (LNG) as central of CSR delivery programs. In the second layer, we found the roles of central government (Actor 10). The third layer consisted of actors 26, 4, 6, 12, and 4. Followed by the fourth layer actors, i.e. number 2, 3, 9, 11, and 17. The fifth layer positioned by actor number 27, 15, 16, 19, and 22. In the sixth layer followed by actor number 25, 13, 18, 20, and 24. And the last layer is consisted of actor number 23, 7 and 23 (Labor).

C. Dynamic performance of stakeholders

All stakeholders grouped into local community affairs, governmental affairs, financial affairs, marketing affairs, private transportation and university [27]. The 1st group is local community actors consisted of land lords, head of tribes, paddy farmers, other farmers, and labor (n=5). Government actors' group as 2nd consisted of 15 actors, i.e. investment officers, industry officer, environment officer, regency planning officer, public works officer, secretary of regency, quarantine officer, central government, village officer, subdistrict officer, community security, retribution officer, and police officer. In the 3rd group, sector of finance consisted of banks (n=1). Followed by 4th group, i.e. market group which consisted of retailers, community cooperation and market officer (n=3). The 5th group is transportation sector, i.e. harbor inspector (n=1). The 6th group is university group, i.e. university researcher (n=1) and the last one is private sector, i.e. BP-Indonesia (LNG). These stakeholders can be grouped based on working activities, i.e. production up to business process.

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Figure 2. Stakeholders' mapping on CSR farming systems in West Papua.

Coming to the stakeholder's mapping on development of CSR sectors of agriculture and economic development in West Papua (Figure 2), we classified stakeholders into groups of stakeholders having power and interests (1st quadrant up to 4th quadrant). The 1st quadrant with low-power and high-interest is one actor identified as police actor. The 1st quadrant categorized into subdominant actor involvement. In the 2nd quadrant with high power and high interest, we found dominant actors, i.e. seven actors consisted of BP-Tanggung, Agriculture Regency Officers, Investment regency officers, secretary of government officer, industry and cooperation officer, planning regency officer, and farmers. It meant that the government and crops farmers are the two fold actors that play vital roles in supporting direct development of formal value chain [12] of CSR sectors in Teluk Bintuni regency, West Papua. The finding of actors' distribution on stakeholder map shown that in the 3rd quadrant and 4th quadrant, actors with related to development of CSR sector existed and dominantly shown. The 3rd quadrant is designed to measure actors that have power with lack of interest. It was found 10th actors existed, while in the 4th quadrant, we found 9 actors with low power and low interest.

In general, it could conclude that the development of CSR sector in West Papua will run slowly due to low power and low interest actors with whom CSR sectors counted on. It exists with actors in 3rd quadrant. Therefore, the roles and responsibility of 19 actors in the 3rd and 4th quadrant shall be improved. Access, services and resources should be provided by all related stakeholders. Actor in 2nd quadrant, i.e. government should play vital and strategic roles in promoting local resources.

IV. CONCLUSIONS

Performance of actors determines how smooth and fast the program of CSR run in the community. Several key stakeholders identified from government both national and local levels. Some stakeholders are working interlinked and multi-disciplinary actors in developing corporate social responsibility systems. Slightly few actors contribute in effects of benefits and have turn-back effect and unturn-back effect. Shared resources consist of five big resources, i.e. access, policy, spaces, power, and satisfaction. While small four shared resources that can be delivered are finance, knowledge, skills, and feed materials. We found nine negative correlation relationships amongst actors. There are also 18 positive correlation relationship amongst actors. In the SNA graph (Figure 1.) we identified 7th layers based on the rules of power centrality (PC). In Figure 2 we identified actors grouped based on power-interest relationship. Quadrant 1 consisted of one actor, seven actors (quadrant 2), 10 actors (quadrant 3), and nine actors (quadrant 4). Actors shall move from quadrant 4 to quadrant 2, as well as actors in quadrant 1 and quadrant 3. By doing that, delivery of CSR will move and run forward to achieve its final goals, i.e. community development for prosperity living.

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CONFLICT OF INTEREST

We stated and clarified that there is no conflict of interest with any financial, personal, or other relationships with other people or organizations related to this research and manuscript.

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