



Factors affecting peasants' empowerment in West Halmahera District – a case study from Indonesia

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Abstract

Agricultural development has not yet created empowered farmers in Indonesia. Most farmers living in eastern Indonesia are peasants with low access to development resources. This condition causes most of the peasants to be classified as poor citizens. This research was meant to formulate improvement strategies for empowerment of the peasants. The data were collected between March – May 2012 using the following methods: observation, interview and focus group discussion. The data was analysed using descriptive statistic and structural equation modelling (SEM) and showed that: (1) the empowerment of peasants was within the lowest category for all variables, namely: the peasant characteristics, the role of the agents for development, program quality, the learning process and access to environmental support, (2) the determining factors affecting the empowerment of the peasants were: program implementation quality, the role of the agents of development, environmental access and support, the peasant characteristics, and the appropriateness of the learning process and (3) the strategy to improve empowerment of the peasants could be through corrective efforts towards program implementation quality, the role of facilitators, environmental access and support while considering the peasant characteristics and the learning process of the peasants.

Keywords: agricultural development, governmental support, Indonesia, peasant empowerment, policies

1 Introduction

The development of agriculture has not yet shown any effect to most farmer's welfare in eastern Indonesia. Most farmers are peasants with low income and are classified as poor. Of the 29.89 million (12.36%) poor citizens, 19.93 million are located in rural areas, and 13.5 million of them are peasants with bad health condition and malnutrition status, low education, huge familial burden, unproductive land, and small amount of land ownership (National Statistical Bureau – BPS, 2011; Saragih, 2011; Stamboel, 2012).

The weak governmental support towards Indonesia peasants can be identified through the decrease of input subsidy, the weak agrarian policies and market protection, the lack of provision of information and innovation, the low development of farming human resources, and the lack of agricultural infrastructure (Wahono, 2011; Machfoedz, 2011). As a result, Indonesian farmers have difficulties in accessing production input, information and innovation, market, capital, and infrastructure to support agricultural business. The current situation is threatening particularly for dry-land farmers as the development of agriculture focused on irrigated paddy fields, which are found mostly on Java Island, and has abandoned dry-land development and farmer productivity on producing food crops (Purwanto *et al.*,

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2012). In North Maluku (Maluku Islands), the inability of farmers to produce food crops causes high food prices due to the dependence of foodstuff supply from other regions. National Development Planning Agency (Bappenas) data (2011) showed that the number of food insecure households in North Maluku is very high (32%), being the second highest in Indonesia.

Empowerment program implementation often fails to succeed in building farming human resources due to the factors of: low participation; inappropriate programs because of inaccurate information; outside party intervention which causes farmers to be reluctant in being involved in the decision making process; irrelevant technology; lack of understanding and implementation of information and innovation by farmers due to incompatibility of language style, channel and media; the outside party feeling more well-informed hence ignoring local knowledge (Ascroft & Masilela, 2004; Anyaegbunam *et al.*, 2004). In addition, the application of the linear communication model in technology transfer towards farmers through counselling does not build the capacity of farmers (Lubis, 2007; Leeuwis & van den Ban, 2009).

This study began with the idea that peasants can be empowered to overcome poverty if the empowerment process is conducted with an appropriate strategy and approach, hence the objectives of this research were: (1) to describe the characteristic of peasants, while considering the condition of the peasants empowerment process that involved the agents of development's role, program implementation quality, the learning process of peasants as well as environmental access and support; (2) to analyse the determining factors which affect the ability of the peasants, and (3) to formulate a strategy to improve the empowerment of the peasants.

2 Conceptual framework

2.1 Empowerment of peasants

Wolf (1985) coined the term “peasant” for farmers who are classified as citizens involved in cultivation activities and who make autonomous decisions about the cultivation process. They live, cultivate and raise livestock in rural and suburban areas, have principal jobs in agriculture which are their main source of income. Most peasants are in the circle of poverty. According to Saragih (2011), 80 percent of severe poverty is found in rural areas and half of the world's starvation is felt by the peasants.

Empowerment has various meanings, but in this study it refers to the definition of empowerment according to Ife (1995), which is “providing people with the resource, opportunities, knowledge and skill to increase their capacity to determine their own future and participate in and affect the life of their community”. Referring to this definition of empowerment, the nature of the empowerment of peasants is the effort to improve the capacity of peasants so that they have more capabilities, strength, and access towards development resources to improve and develop their quality of life. Empowered farmers have knowledge and skills, participate in decision making and are able to manage and overcome agricultural business problems.

Freire's idea on the dialogue concept 1970 and adult education is the reference in analysing the involvement of farmers in the empowerment process. Ife & Tesoriero (2008) and Chitnis (2011) stated that Freire's pioneering work in *Favelas and Barrios* in adult literacy programs in Brazil became the source of inspiration for the involvement of people in the development process. According to Freire, people can be free of the oppression structure when given the chance to face problem posing and critical thinking. Empowerment is based on the principle that wisdom comes from below. Freire (1970) firmly rejected alienation of empowerment program beneficiaries because he believed that “Someone is not whole if she or he loses the ability to choose, if one's choice is someone else's choice, and if one's decision is made by others, not of oneself.” This means within the implementation of the empowerment program, farmers have the opportunity to influence the direction and implementation of the program by depending on the skills they have.

Therefore, empowerment has to include awareness improvement strategies, so that people (peasants) are supported to voice their needs and to develop actions fulfilling those needs (Ife & Tesoriero, 2008). Servaes (2002) stated that in empowerment programs, the grass-root dialogue form is needed to unite sources and agents to implement changes directly with the community during the process of decision making. The method used is conscientisation through dialogue to invite the community to formulate the problem and its solution.

2.2 The role of the agents of development in empowerment

The empowerment process needs the agents of developments to perform roles including facilitative, educative, research-related, and technical roles (Ife, 1995).

Leeuwis & van den Ban (2004, 2009) defined facilitators as agents in the empowerment process of farmers who have a role in building awareness, exploring ideas, providing information and conducting training. Nair & White (2004) stated that the role of facilitators in the cultural renewal model is as initiators and planners who understand the concept of management and trouble shooting, act as the group dynamic orchestra conductors, and act as communicators who are knowledgeable about access to information for clarification and synthesis, involved with the community, develop discussions, and facilitate participation. Ife & Tesoriero (2008) stated that although agents have certain skills and wisdom, in the empowerment process they have to appreciate locals who have better understanding of the knowledge, culture, process, and resources in their environment. Therefore, the empowerment effort of farmers requires the importance of the agents' role, both to enhance the dialogue process between stakeholders involved with the program and to disseminate knowledge and skills with the farmers so that all parties involved could learn from each other and cooperate.

2.3 *The participative learning process concept*

Freire (1970) criticised the unparticipative learning method for farmers. He believed that behind the practice of agriculture counselling there is a hierarchical ideology, vertical structure, social control, and one way relationship from the experts to farmers who are basically not participative. The goal of education is to “fill” farmers with technical know-how. Freire called it “The Banking Concept Education” which considers knowledge as a completed entity which will not confronted with a subject dialog; farmers as passive recipients of knowledge from outside parties. The Banking Concept Education does not develop critical reflection towards the truth of the knowledge. Freire (1970) also stated that farmers who really learn are those who approve of what they learned and implement what they have learned to a concrete existence. On the other hand, farmers who are just filled with “knowledge” which they are unaware of will be counterproductive since they do not “feel challenged” or “awakened”. Therefore, the farmers learning process should be initiated by awareness building through learning how to identify problems, to interpret the problem, to reflect upon the problem, and to see the cause and effect relation of the problem and the reality being faced, and to take actions to overcome the problem.

The supporters of Freire's concept, among them are Rhoades (1990) and Leeuwis & van den Ban (2009), proposed a new paradigm in the process of extension:

shifting from the linear top-down model to the communicative intervention which is characterised by participative communication through dialogs. This approach gives an active role for farmers together with the extension officers and researchers in identifying problems, planning, implementing, and evaluating various kinds of information and technology for farmers. Cummins & Conventry (2009) stated that the participative approach in sharing knowledge is a critical factor in developing and adapting new ideas and farming practices for farmers, because the technology and farming practices can be adapted according to their environmental characteristics.

2.4 *Access and environmental support in empowerment*

The empowerment of farmers means giving an opportunity to farmers to obtain and utilise access to and control over relevant resources. According to Lionberger & Gwin (1982), the social change process (empowerment) for farmers need variables in form of: the availability of input supplies, marketing, credit provision, information provision, and the availability of facilities (warehouses) and infrastructure. In accordance to this opinion, Mosher (1978) stated that if agriculture is to be developed, then farmers have to be supported by the provision of service facilities which are known as the main requirements of agricultural development, which consist of: produce market, ever-changing technology, locally available production infrastructure and equipment, production stimulus for farmers, and transportation. The mindframe to analyse the factors affecting empowerment of peasants is presented in Figure 1.

3 **Materials and methods**

This study employed the survey method to explain the empowerment condition and the factors that influenced peasant empowerment. The unit of analysis in this study was the heads of peasant families on dry land. The studied villages were located within the West Halmahera District, North Maluku Province, Indonesia. These villages were a part of the peasant livelihood program SOLID (Smallholder Livelihood Development Project in Maluku and North Maluku, IFAD) that was carried out from 2010 to 2012. The studied population was 538 heads of household of the peasants who had less than 2 hectares of land. They spread in four villages namely: Tuada, Todowongi, Bukumatiti and Taba Campaka. In order to have a homogenous population, simple random

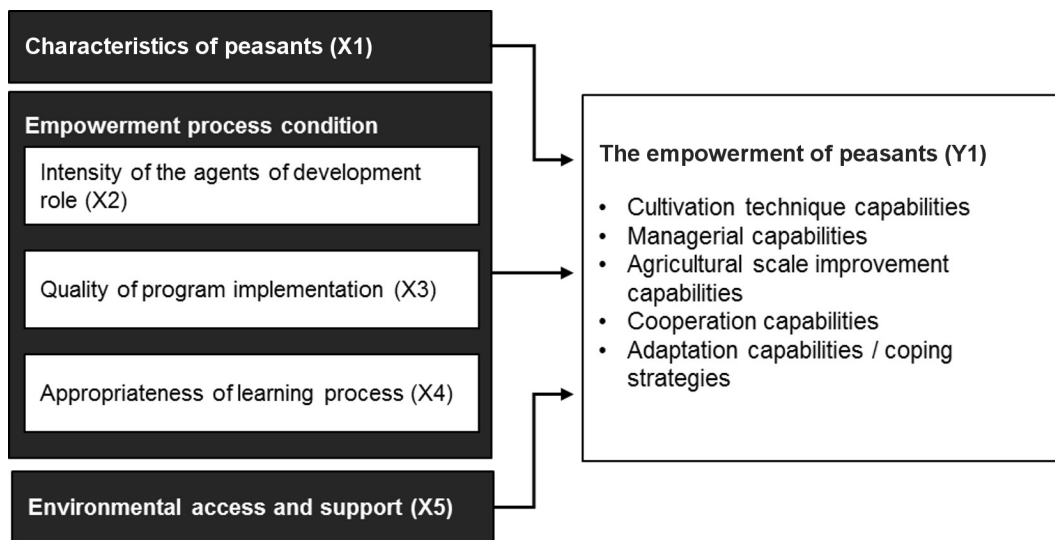


Fig. 1: The mindframe factors that influence peasants' empowerment in Indonesia

sampling technique was used to determine a total sample size of 162 peasant households that were studied (Table 1).

The data collection was conducted from March to May 2012. Primary data was collected directly from the peasants through interviews and questionnaires which fulfill validity and reliability requirements. Cronbach's Alpha formula, categorised within five classes, was used to test the reliability of specific variables of the questionnaires (Kountur, 2006). The first class consisted Cronbach's Alpha values between 0.00–0.20 and indicated less reliability. Further classes were determined using Cronbach's Alpha between 0.21–0.40 (rather reliable), between 0.42–0.60 (quite reliable), between 0.61–0.80 (reliable) and Cronbach's Alpha values between 0.81–1.00 was indicative for very reliable variables of our

Table 1: Population of the sampled villages in North Maluku, Indonesia with information on the number of interviewed households.

Study village	Population	Sampled households
Tuada	120	36
Todowongi	160	48
Bukumatiti	178	53
Taba Campaka	80	25
Total	538	162

questionnaires. These tests could prove a good reliability and validity of the used variables wherefore this method achieved the basic requirement for stable analyses.

Data from other sources (key informants) such as formal and informal leaders in the village and government officials were obtained through in-depth interviews, direct observations, and focus group discussions (FGDs) in order to collect qualitative data to support the quantitative data.

Data processing and analysis was done using descriptive statistics with SPSS and Structural Equation Models (SEM) with LISREL (Linear Structural Relationships) 8.70. Moreover, for statistical analysis, data transformation has been conducted. According to Sumardjo (1999) transformation is conducted to calculate the value of diversity that occurs in any study variables, especially from the ordinal scale changes to an interval or ratio that deserves tested for using parametric statistics. Hence, data were transformed using the Indicator Transformation Index $((\text{Total achieved scores} - \text{Total minimum expected score}) / (\text{Total maximum expected score} - \text{Minimum expected score})) \times 100$ as well as the Variable Transformation Index $((\text{Total achieved scores} - \text{Total minimum expected score}) / (\text{Total maximum expected score} - \text{Minimum expected score})) \times 100$. We used four categories, "very low" for ranges between 0–25, "low" for ranges between 26–50, "middle" for ranges between 51–75 and "high" for ranges 76–100.

Table 2: Results of reliability and validity test of the used variables of our questionnaire.

<i>Variable</i>	<i>Cronbach's Alpha (Ranges)</i>	<i>Validity (Ranges)</i>
Characteristics of peasants (X1)	0.373–0.845	0.693–0.808
Intensity of the agent's role (X2)	0.445–0.871	0.706–0.914
Quality of the agents' program (X3)	0.490–0.954	0.700–0.956
Learning process appropriateness (X4)	0.647–0.866	0.616–0.895
Environmental access (X5)	0.396–0.833	0.634–0.841
Peasants' empowerment (Y1)	0.427–0.973	0.797–0.846

4 Results and discussion

4.1 Peasant characteristics

The peasants of the study area were within the productive age of around 40 years with only a low formal education level (averaging 7–9 years) (Table 3). The land cultivated by the peasants was quite large, reaching on average 1.46 ha. Their experience in agriculture was with 14 years on average quite long. Their level of income amounted for EUR 1,338 (IDR 20,963,850) per annum, and if this amount was divided by four, as this was the average number of adult household members, the per capita income was EUR 335 (IDR 5,240,963) per annum or EUR 28 (IDR 436,747) per month. The peasants' social status, based on whether they had houses and the condition of their houses, whether they had motorised vehicles, and their position in the community, was classified as low (average score 42.81). The cosmopolitan level, which was the peasants' extra-village orientation and the use of mass media for finding information about agriculture was categorised as very low (average score 12.80). Gender perception, including men and women's roles, interests, and access in the running of the program was also categorised as low (average score 42.29), whereas their motivation for being involved in empowerment and personal development programs was categorised as high, with average scores of 63.24 and 55.90.

4.2 Conditions of the peasant empowerment process

The peasant empowerment process was categorised as low, reflected by the role of agents of development, program quality, and the compatibility of the learning process with scores of 38.25, 41.0 and 37.33, respectively.

First, the role of the agents for development was classified as low in the aspects of: peasant enlightening, participation and collaboration development, the facilitation of information access and collaboration with agricultural-business supporting institutions, the facilitation of dialogs with peasants, and credibility (Table 4). The agents (facilitators and program officials) were rarely found in the villages, and some of the peasants were not acquainted to the facilitators. The agents' motivation was low because of the low incentives that were provided.

Second, the quality of the empowerment program implementation was categorised as low based on the low program communication to peasants; the lack of interest convergence due to intervention by the program executors in determining the peasants' needs and interests (for example, peasants were directed to build wells and harvest-drying floors while what they really need was production facilities and transportation to the marketplace and their fields); most peasant empowerment programs were temporary and non-continual; and the empowerment process did not have enough local resource involvement (village elders or opinion leaders and village institutions) (Table 5).

Third, the peasant learning process was categorised as low. Intensity of agricultural information dissemination coming from personal extension was low (Table 6). The facilitators and government officials were unable to build an equal relationship with the peasants, causing the peasants to be reluctant to approach officials when they encountered agricultural problems. Besides that, personal extension rarely visited the peasants and conducted dialogs in the village or in the peasants' fields so they do not have a good understanding of the problems faced by the peasants and their needs. The information received by the peasants from formal sources is very limited so the majority of the peasants rely on bro-

Table 3: Characteristics of 162 peasant households in North Maluku, Indonesia in the year 2012.

<i>Peasants characteristics</i>	<i>Range</i>	<i>Categories</i>	<i>Peasants (in %) n=162</i>	<i>Mean</i>	<i>Level</i>
Age (in years)	20–34	Low	28	40.42	Middle
	35–47	Middle	44		
	48–61	Old	23		
	62–74	Very old	5		
Education level (in years)	0–6	Elementary school	47	7.8	Low
	7–9	Secondary school	32		
	10–12	High school	18		
	> 12	College	3		
Land size (in hectare)	< 0.5	Very low	12	1.53	Middle
	0.5–0.99	Low	48		
	1–2	Middle	40		
	> 2	High	0		
Cultivation Experience (in years)	< 5	Very low	21	14.71	Middle
	5–10	Low	24		
	10–20	Middle	24		
	> 20	High	31		
Income Level (in million IDR/year)	1.8–53.85	Very low	99	20 106 666	Very low
	> 53.85–105.9	Low	1		
	> 105.9–157.95	Middle	0		
	> 157.95–210	High	0		
Familial responsibilities (people)	1	Very low	6	49	Middle
	2–3	Low	28		
	4–5	Middle	59		
	≥ 6	High	7		
Social status (score)	< 25	Very low	25	37.53	Low
	26–50	Low	27		
	51–75	Middle	46		
	76–100	High	2		
Cosmopolitan level (score)	< 25	very low	82	12.25	Very low
	26–50	Low	17		
	51–75	middle	1		
	76–100	high	0		
Gender perspective (score)	< 25	very low	0	43.31	Low
	26–50	Low	73		
	51–75	middle	27		
	76–100	high	0		
Motivation (score)	< 25	very low	0	65.1	Middle
	26–50	Low	7		
	51–75	middle	73		
	76–100	high	20		
Soft skill (score)	< 25	very low	1	56.69	Middle
	26–50	Low	51		
	51–75	middle	33		
	76–100	high	14		

Table 4: Intensity of agents' role in empowerment process of Indonesian peasants in North Maluku, Indonesia in the year 2012.

Agents' role	Range	Categories	Peasants (in %) n=162	Mean	Level
Awareness-building intensity (score)	< 25	Very low	45	35.73	Low
	26–50	Low	27		
	51–75	Middle	13		
	76–100	High	15		
Participation & collaboration development (score)	< 25	Very low	39	41.94	Low
	26–50	Low	20		
	51–75	Middle	25		
	76–100	High	16		
Information access & learning facilitation (score)	< 25	Very low	50	33.31	Low
	26–50	Low	25		
	51–75	Middle	12		
	76–100	High	13		
Dialogic communication development (score)	< 25	Very low	57	25.28	Very low
	26–50	Low	19		
	51–75	Middle	10		
	76–100	High	14		
Facilitator credibility (score)	< 25	Very low	9	42.89	Low
	26–50	Low	41		
	51–75	Middle	20		
	76–100	High	30		

Table 5: Program quality in peasants' empowerment process in North Maluku, Indonesia in the year 2012.

Program implementation quality	Range	Categories	Peasants (in %) n=162	Mean	Level
Communication appropriateness (score)	< 25	Very low	0	49.57	Low
	26–50	Low	35		
	51–75	Middle	64		
	76–100	High	1		
Convergence of interests (score)	< 25	Very low	6	43.86	Low
	26–50	Low	61		
	51–75	Middle	33		
	76–100	High	1		
Continuity of empowerment process (score)	< 25	Very low	9	46.90	Low
	26–50	Low	46		
	51–75	Middle	44		
	76–100	High	1		
Social environment support (score)	< 25	Very low	37	31.19	Very low
	26–50	Low	54		
	51–75	Middle	9		
	76–100	High	0		

Table 6: Appropriateness of the learning process of Indonesian peasants in North Maluku, Indonesia in the year 2012.

<i>Learning process</i>	<i>Range</i>	<i>Categories</i>	<i>Peasants (in %) n=162</i>	<i>Mean</i>	<i>Level</i>
Communication appropriateness (score)	< 25	very low	70	27.83	low
	26–50	Low	24		
	51–75	middle	6		
	76–100	High	0		
Equality of sources (score)	< 25	very low	29	36.20	low
	26–50	low	49		
	51–75	middle	20		
	76–100	high	2		
Dialogic model implementation level (score)	< 25	very low	2	46.04	low
	26–50	low	40		
	51–75	middle	58		
	76–100	high	0		
Appropriateness of the materials (score)	< 25	very low	6	37.00	low
	26–50	Low	74		
	51–75	middle	20		
	76–100	high	0		
Appropriateness of the method (score)	< 25	very low	5	54.97	middle
	26–50	Low	18		
	51–75	middle	71		
	76–100	high	6		

kers or middlemen, merchants, and other peasants for agricultural business information. The learning materials are difficult to understand because of the incompatible training format, the methods employed, and the media used to present the materials. The cultivation methods were still traditional because new cultivation techniques and agricultural business management materials that were taught in advance were not applied by the peasants.

4.3 Access and environmental support

The peasants' ability to access production input, credit, marketing, and information and innovation were within the low category with an average score of 24.30, 33.93, 39.29 and 16.04, respectively (Table 7). The peasants' access to production input, such as seeds, fertilisers, pesticides, and farming machinery was low. In order to develop farming, the peasants obtained more easily a credit by brokers/middlemen and informal financial institution rather than banks. Moreover, because of the high transportation cost, peasants had difficulties in marketing their crops, wherefore they sold their crops

to brokers or collectors in the village, which also led to income loss. Agricultural information and technology transfer from formal sources such as from facilitators, personal extension or officials, and researchers were very limited whereas information from brokers, group leaders, other farmers, neighbours, or family was easily accessed. However, this inaccurate information led to difficulties for the peasants to determine the adequate price of their crops. They also had difficulties in obtaining drinking water and water for their crops during long dry seasons.

4.4 The peasants' empowerment level

The peasants' empowerment level was categorised as low based on the aspects of their capabilities to new cultivation techniques, management, improving business, internal and external collaborations, and adaptation and coping strategies (Table 8). The cultivation technique capabilities, the knowledge and skill in crop cultivation, including fertilising, pest and disease control, and post-harvest processing techniques, was also considered as low (the scores are 27.42 and 35.19).

Table 7: Access and logistic support for Indonesian peasants in North Maluku, Indonesia in the year 2012.

<i>Access & support</i>	<i>Range</i>	<i>Categories</i>	<i>Peasants (in %) n=162</i>	<i>Mean</i>	<i>Level</i>
Agricultural input & equipment availability level (score)	< 25	Very Low	68	24.3	Very Low
	26–50	Low	31		
	51–75	Middle	1		
	76–100	High	0		
Credit ease level (score)	< 25	Very Low	23	33.93	Low
	26–50	Low	72		
	51–75	Middle	5		
	76–100	High	0		
Market accessibility level (score)	< 25	Very Low	6	39.22	Low
	26–50	Low	60		
	51–75	Middle	34		
	76–100	High	0		
Information & innovation access level (score)	< 25	Very Low	82.7	15.69	Very Low
	26–50	Low	17.3		
	51–75	Middle	0.0		
	76–100	High	0.0		

Table 8: Peasants' empowerment level in North Maluku, Indonesia in the year 2012.

<i>Level of empowerment</i>	<i>Range</i>	<i>Categories</i>	<i>Peasants (in %) n=162</i>	<i>Mean</i>	<i>Level</i>
Cultivation technique ability (score)	< 25	Very low	4	42.52	Low
	26–50	Low	70		
	51–75	Middle	26		
	76–100	High	0		
Managerial ability (score)	< 25	Very low	0.6	45.10	Low
	26–50	Low	69		
	51–75	Middle	31		
	76–100	High	0		
Ability to improve business (score)	< 25	Very low	66	19.81	Low
	26–50	Low	27		
	51–75	Middle	7		
	76–100	High	0		
Ability to collaborate (score)	< 25	Very low	22	28.40	Low
	26–50	Low	78		
	51–75	Middle	0		
	76–100	High	0		
Adaptability (score)	< 25	Very low	0	56.53	Middle
	26–50	Low	8		
	51–75	Middle	92		
	76–100	High	0		

The peasants have participated in various extensions and trainings, but almost none of the cultivation techniques were applied. However, their attitude to increase knowledge and skills about food crops cultivation was categorised as high (scoring 60.48). The low dry-field cultivation technique forced them to retain the habit of slashing and burning the forest which in turn causes environmental degradation and forest resource depletion.

The peasants' managerial skills, including their knowledge, attitude, and skills, were categorised as low (scoring 44.69, 53.46, and 35.93), and were observed based on their low ability to: (i) plan and estimate commodities, production costs, and planting schedule and (ii) evaluate and identify overcoming problems and taking risks of planting new commodities which could be more profitable for the peasant.

The peasants' ability to improve their agricultural business was in the very low category (the average score is 19.81) based on the lack of increase in: income, capital savings, marketing reach, input use, and post-harvest value increase. This condition shows that the implementation of various empowerment programs have not increased the peasants' income yet. In contrast, the majority of peasants still rely on the loans they are receiving from brokers in fulfilling their needs in processing copra or their daily needs. This makes it very difficult for the peasants to release themselves from the brokers' clutches.

The peasants' ability to collaborate with village institutions and agricultural support institutions was categorised as low (the average score is 49.53). On village level, the peasants were not yet involved in discussions and decision making for annual planning even though they were given a chance to express their aspirations. The peasants' collaboration rate with outsiders was very low; the peasants nearly never conducted copra sales transactions with merchants from out of their region or had contact with formal financial institutions.

Their adaptive or coping ability in overcoming the problem of low income and the food shortage was categorised as high (the average score is 56.53). They tried to overcome these obstacles by: moonlighting as catch fishermen or raising goats and cattle. Some peasants raised cattle and goats using the livestock loan, in which the cattle or goats were lent by the owner to be cared for and bred, and after the animals produced offspring, the firstborn was given back to the owner and the next belonged to the caretaker and so forth. If there was a sudden financial need (for example to pay for medical bills or school tuition), they relied on the saving and lending group in turns. Their coping strategy for overcoming

food shortage was planting roots and consuming alternative staple foods besides rice, such as sago and plantains, reducing the budget for food purchase, searching for alternative foods, and supporting each other between neighbours.

4.5 Factors determining peasants' empowerment

Based on the SEM analysis, the determining factors which affect peasants' empowerment (Y), respectively from the highest coefficient of effect, were: the program quality (X3, Influence coefficient (IC) = 0.57; $t = 6.44$ at $\alpha = 0.05$), the agent of development's role (X2) (IC = 0.53; $t = 2.22$ at $\alpha = 0.05$), access and environmental support (X5) (IC = 0.27; $t = 2.33$ at $\alpha = 0.05$), the peasants' characteristics (X1) (IC = 0.23; $t = 2.29$ at $\alpha = 0.05$) and the appropriateness of the learning process (X4) (IC = 0.21; $t = 2.02$ at $\alpha = 0.05$) (Figure 2).

The correlation coefficient of $R^2 = 0.84$ indicated that considered variables X1, X2, X3, X4 and X5 explained 84 percent of the specific characteristics of peasants' empowerment development.

The structural model (standardised) with RMSEA (Root Mean Square Residual) = 0.052, CFI (Comparative Fit Index) = 0.92, GFI (Goodness of Fit) = 0.95, RFI (Relative Fit Index) = 0.90, NFI (Normed Fit Index) = 0.91 (Table 9).

The quality of the program had a strong effect on the peasants' empowerment in which the program's continuity, was followed by the involvement of their social environment and the program communication. The empowerment programs were discontinued because they were often managed as the bequest of aids (financial aid, agricultural input and equipment aids) without effective capacity building and supervision. For example, in the study location, the program offered capital to the peasants to develop vegetable farming, chicken raising, trading, and cake baking but they were not accompanied by supervision and marketing access development, hindering the group efforts and in turn there was no increase in the peasants' income. The program's supervision was only temporary; when the program ended, the supervision was discontinued even though there have been no positive changes in the peasants' behaviour. Our results support the opinion by Winarto (2011) stating that the frequent discontinuance of the empowerment programs are the cause of the lack of improvements in the peasants' behaviour. The social environment involvement factor (informal leaders and institutions) was categorised as low, while according to Ife & Tesoriero (2008), the involvement of opinion leaders and community institutions is very important in supporting the

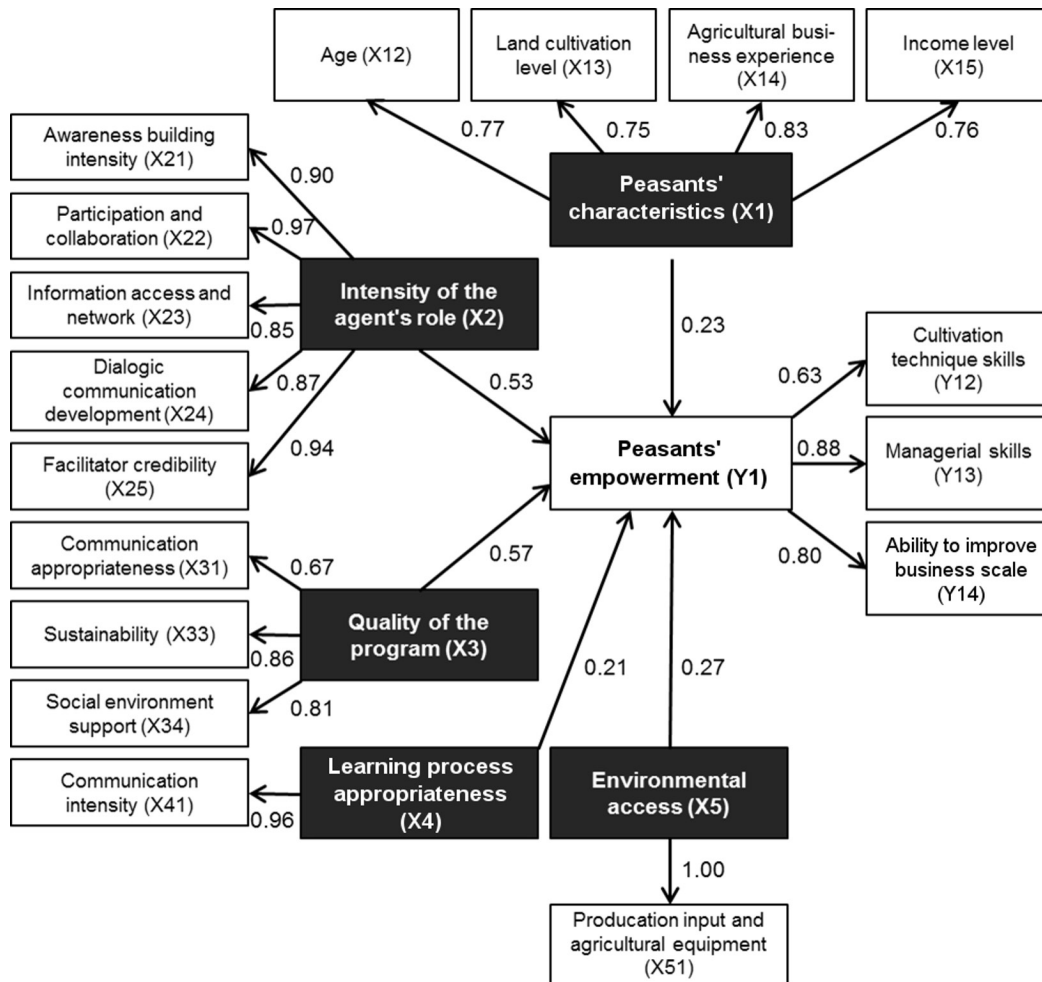


Fig. 2: The determining factors which influence peasants' empowerment in West Halmahera District, North Maluku Province, Indonesia.

Table 9: Results summary of feasibility analyses in structural models (companion Chi-Square)

Model	RMSEA	CFI	NFI	NNFI	RFI	IFI	GFI
Structural Model	0.052	0.92	0.91	0.91	0.90	0.92	0.95
Feasibility criteria of goodness of fit test	< 0.08	≥ 0.80	≥ 0.80	≥ 0.80	≥ 0.80	≥ 0.80	0.8–0.9
Evaluation modelling	Very Fit	Very Fit	Very Fit	Very Fit	Very Fit	Very Fit	Very Fit

att: RMSEA (Root Mean Square Residual); CFI (Comparative Fit Index); GFI (Goodness of Fit); NFI (Normed Fit Index); NNFI (Non Normed Fit Index); RFI (Relative Fit Index); IFI (Incremental Fit Index); GFI (Goodness of Fit); AGFI (Adjusted Goodness of Fit Index)

success of an empowerment program. Rogers & Shoemaker (1986) also stated that village leaders as opinion leader have the social status, charisma, and insight that can influence the community's involvement in the program. The program's low communication through socialisation and the low information availability have caused the peasants' lack of the program's vision, goals, and activity management and it also makes it prone to conflict as a result of the community members' misunderstanding of the program, judging it to be unjust because of the wrong information they received.

The second factor which determined the peasants' empowerment was the role of the agents of development. Its role was categorised as low in the following aspects: (i) The lack of participation development caused the peasants' motivation and involvement in the implementation of innovations to be low. (ii) The agents' low credibility in cultivation technique, communication skills, familiarity, and understanding of the community's culture caused the low rate of peasant learning and the aloofness of the agent-peasant relationship. (iii) The lack in peasant awareness building efforts made the peasants unable to recognise potentials and opportunities to develop the resources found in their village, to define problems and alternative solutions, and to voice their interests in program meeting forums. (iv) The fourth aspect included the lack of dialogs between peasants and agents that made it difficult to solve the problems faced by the groups. For example, the lack of frequency in meetings and dialogs between facilitators and peasants who raised chickens made it difficult for the peasants to overcome high mortality rates due to disease outbreaks. (v) The fifth and last aspect considered the low availability of information and networking between peasants and agricultural business support institutions that in turn made it difficult for the peasants to obtain support and to build collaborations in providing input, capital, markets, and information. These findings are relevant with the opinions of Nair & White (2004), Ife & Tesoriero (2008), and Leeuwis & van den Ban (2009) who claimed that agents play an important role in empowerment through collaboration and dialogs with the peasants; therefore, if the agents' role is weak, it will result in a low peasant empowerment. These findings are also in line with the observations made by Li (2012) in the implementation of an Asian Development Bank project in Central Sulawesi. The facilitators' role which was weak had contributed in the failure of this project. In a different case, Sukesu (2009) stated that the active role of agents (Yayasan Mitra Tani Mandiri) in supervising peasants in the Agropastoral Program in East Nusa Tenggara had increased the peasants' empowerment.

Access and environmental support was the third factor that determined peasants' empowerment, especially the availability of agricultural input and equipment (the coefficient of effect was 0.27). The majority of peasants were subsistent farmers who did not have a stable production system. They cultivated in a natural way, without the use of fertilisers or pesticides because of their difficulties to access production input and agricultural equipment (the high costs, the distances they must travel to purchase them, the shortages, and the limited government aids). As a result, peasants only produced a small amount of crops that were not even enough for their own consumption. Only very few peasants used fertilisers and pesticides because they relied on their income from their horticultural crops such as vegetables and peanuts.

The fourth empowerment-determining factor was peasant characteristics. Their experience and age were the most influential aspects in determining their empowerment. Peasants with more experience and of older age had improved agricultural business skills (cultivation techniques, managerial skills, and business scale improvement skills). The income aspect effected the peasants' empowerment; where the peasants with lower income tended to have lower production, managerial, and business scale improvement skills due to limited access to information, capital, markets, and agricultural production input. Land tenure also had an effect on peasants' empowerment. Peasants with more land produced more estate crops such as coconut, clove, nutmeg, cocoa and crops which in turn gave them a higher income level and direct access to food such as rice, roots, and vegetables.

The fifth factor that affected peasants' empowerment was the suitability of the peasants' learning process, especially in the communication intensity aspect. The intensity of information dissemination and exchange were considered to be low between the peasants and the facilitators, officials, experts, and successful farmers, not only in extension activities, but also in trainings, informal meetings, and the utilisation of interactive media such as the radio and television. Consequently, ability of the peasants is low especially in managerial skills, improving business scale and cultivation technique skills.

4.6 Strategies to empower dry-land peasants

This study examined the factors that influenced the empowerment of peasants in agricultural villages in West Halmahera, North Maluku Province, Indonesia in 2012. Peasants' empowerment level is considered low in the following aspect: managerial capabilities, ability

to improve business scale and cultivation technique capabilities which in turn resulted in low productivity and a meagre income. Using SEM analyses, determined factors that influence peasants' empowerment were: (i) the low quality of the program, (ii) the weak agents' role, (iii) the low access and environment support, (iv) the peasants' characteristics, and (v) inappropriateness the peasants learning process.

It is therefore important for the Indonesian government to design policy strategy to enhance peasants' empowerment nationwide. To increase the peasants' empowerment, appropriate empowerment strategies are needed in the aspects of: the quality of program implementation, the role of the agents of development, and the learning process. Peasant empowerment programs should be implemented in the form of projects continuously, not temporarily. The programs should not merely dole out financial and agricultural equipment aids to peasants but they should be accompanied by capacity building and supervision so that peasants can show a positive behavioural change (attitude, knowledge, and skills) in cultivation technique which is appropriate with the peasants' condition. The utilisation of a participative approach in program implementation should place the peasants as active participants in decision making from the planning stage to the result utilisation stage. Regular group meetings must not limit their discussions to the program implementation aspect but should also become a medium for dialogs, where insiders (peasants, formal and informal leaders) can share their knowledge, experience, and skills with outsiders (facilitators, program executors, extension officers and experts). During the dialogs, the peasants should have the opportunity to convey their problems and obstacles and then find solutions while the outsiders could obtain accurate information about the peasants' needs and problems in order to improve policies and programs. The involvement of village leaders as opinion leaders is very important in supporting the transformation process which is proffered by various empowerment programs. The village elders' active participation is in building participation, in mediating needs and in resolving conflicts which might arise during the program without inhibiting the people's (peasants') aspirations or dominating the decision-making process.

Furthermore, the agents of development (facilitators and facilitators) have a vital role in peasant empowerment within the study area, i.e. as communicators, facilitators, and advocates. As communicators, the agents are able to build awareness, to build familiarity with the peasants so that peasants are willing to communicate their problems and to collaborate with other peas-

ants. As facilitators, the agents position themselves as partners, not teachers, facilitating dialogs as a medium for sharing knowledge and skills with the peasants and conducting trainings concerning cultivation techniques and business management that are needed by the peasants. As advocates, the agents communicate the problems faced by the peasants to the related parties (financing, marketing, and input supplying institutions). Therefore, the agents must be prepared through recruitment/selection which is followed by training to fortify their community development materials.

A supply of production input and agricultural equipment plays an important role in increasing agricultural production. High prices for fertilisers and pesticides should call for a government intervention; a fertiliser and pesticide subsidy should be considered in order to re-activate agricultural cooperatives so that peasants have easy access to production facilities, credit, and markets. The peasants also need to be prepared to develop sustainable agricultural techniques through the utilisation of local resources in supplying seed and green fertilisers, and applying an integrated pest control. The implementation of the "Low External Input Sustainable Agriculture" (LEISA) cultivation technique combined with "Participative Technology Development" in order to integrate external knowledge with the peasants' local knowledge should follow to increase the dry-land peasants' production in a stable and sustainable way.

Lastly, a transformation of communication patterns from linear communication to dialogic communication is of great importance for peasants learning process. Dialogic communication creates a chance for information exchange between the peasants' local knowledge and the new cultivation techniques introduced by the agricultural facilitators, researchers, and other peasants. New techniques and practices will be easily accepted by the peasants if they are relevant to the peasants' needs and local environmental characteristics. The development of dialogic communication in the peasants' learning process can be done through: (i) the involvement of the peasants, facilitators and researchers in defining their problems and needs as the foundation for developing the extension and research agenda, searching for solutions, adapting simple technology and cultivation practices, and evaluating those adaptations and practices, (ii) the utilisation of peasants' groups as a medium for peasants in order to interact and to share information in identifying issues and problems, and to find mutual solutions, with the help of facilitators, (iii) an increase in meeting intensity and dialogs between peasants' groups and successful peasants' groups followed by visits (benchmarking) to other areas where

certain commodities have been successfully developed, and (iv) through more possibilities for peasants to study at field schools, where peasants could learn new techniques to overcome agricultural business problems. Besides that, the implementation of the direct hands-on practices through plant/livestock cultivation demonstration plots is expected to accelerate the peasants' learning of new cultivation/livestock raising techniques.

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