

Agricultural Production and Access to In-kind Finance from Government: A Study of Banana Farms in Cianjur District, West Java

E Wulandari¹, Ernah¹ and D Supyandi¹

¹Faculty of Agriculture, Padjadjaran University (UNPAD)
Jl. Raya Bandung – Sumedang KM. 21, Jatinangor 45363, Indonesia

E-mail: eliana.wulandari@unpad.ac.id

Abstract. Finance can be accessed from many sources of finance, for instance from government. One of the forms of finance provided by government in Indonesia is in-kind finance such as seeds, fertilizer and harvesting tools. The objective of this study is to analyse the agricultural production related to access to in-kind finance from government. Survey method was used to collect data especially from fifty banana farmers in Cianjur District in 2017. The collected data were analysed using independent t-test. The results showed that access to in-kind finance from the government had helped farmers in growing bananas. Having access to in-kind finance from the government, farmers have higher production of bananas compared to the farmers who did not have access to similar in-kind financing. This study suggests the need to enhance access to in-kind finance from Indonesian government for farmers. To increase the opportunities for farmers to obtain the in-kind finance from the government, this study further suggests among others, to encourage farmers take part in the membership of farmers' group.

1. Introduction

In general, farmers financing has been provided from several financial sources such as from banks and cooperatives [1], micro finance institutions (MFIs) [2], and from government [3-6]. Finance from government has been distributed through farmers' association in the form of subsidy and in-kind finance such as seed, fertilizer and harvesting equipment [6].

Farmers can access sources of funds from different financial sources, including banana farmers. Banana has been determined by the agricultural ministry of Indonesia as one of the important products for the development of horticulture in Indonesia. Banana production in Indonesia from 2012 to 2016 is presented in **Table 1**.

Table 1. Banana production in Indonesia from 2012 to 2016

Province	Production (tonnes)					Average	Growth 2016 over 2012 (%)
	2012	2013	2014	2015	2016		
West Java	1192860	1095325	1237171	1306287	1204083	1207145	0.94
East Java	1362881	1527375	1336685	1629437	1865772	1544430	36.90



Central Java	617456	560985	519628	581782	591649	574300	-4.18
Lampung	817606	938280	1481692	1937348	1517004	1338386	85.54
North Sumatera	363061	342297	298910	139541	137886	256339	-62.02
Others	1835179	1815017	1988472	1704871	1690723	1806852	-7.87
Indonesia	6189043	6279279	6862558	7299266	7007117	6727453	13.22

Source: Indonesian statistics (2013, 2014, 2015, 2016, 2017).

Data from **Table 1** shows that banana production in Indonesia has a positive growth from 2012 to 2016 as much as 13.22%. On average, the production of banana in Indonesia has reached 6,727,453 tonnes during the last five years. West Java is one of the centre of banana production in Indonesia that also has a positive growth as much as 0.94%. The production of banana in West Java from 2012 to 2016 is presented in **Table 2**.

Table 2. The production of banana in West Java from 2012 to 2016

District	Production (tonnes)					Average
	2012	2013	2014	2015	2016	
Cianjur	341162	200238	201317	201317	191561	227119
Sukabumi	128818	78595	192639	192639	165319	151602
Tasikmalaya	107817	115589	91022	91022	121255	105341
Ciamis	102963	132405	204862	204862	213971	171813
Garut	96980	116761	110290	110290	120323	110929
Others	415120	451737	437041	506158	391654	440342
West Java	1192860	1095325	1237171	1306288	1204083	1207145

Source: Indonesian statistics (2013, 2014, 2015, 2016, 2017)

The **Table 2** shows an increase of banana production in West Java from 2012 to 2016. During the last five years, on average, Cianjur had the highest production of banana, which produced 227,119 tonnes. The average banana production in Cianjur contributed 19 percent of the total production of banana during the last five years.

Previous studies have found that finance from government had contributed to better innovation performances [5] and to an increase of agricultural production by motivating farmers in technology application [7]. Furthermore, finance provided by government has positively associated with productivity improvement [8] and horticultural technical efficiency [6].

Government has provided financial support for farmers distributed in different forms such as subsidised credit, agricultural equipments, agricultural inputs aid such as seed and fertilizer [3]. Existing literatures mostly explore the importance of subsidised credit from government. However, only few studies assessed the role of in-kind finance from government. Therefore, the objective of this study is to analyse the agricultural production related to farmers access to in-kind financing from government. Results of this study provide insights to the government about the importance of in-kind finance from the government to farmers in supporting the production of agriculture.

2. Materials and methods

The Indonesian Ministry of Agriculture has identified banana as one of the important crops for the development of horticulture in Indonesia [9]. Based on the identification, this study chose to focus on banana farming and financing. This study used survey technique to collect data from May to September 2017.

The data were collected from 50 banana farmers in Cianjur District, West Java, Indonesia. Cianjur district was chosen for study area as it has contributed a significant number of banana production in Indonesia. The data needed for this study included the experiences from farmers in obtaining in-kind finance from the government, the production of banana produced by each farmers, the amount of in-kind financing from government in the region of Cianjur that farmers had received, and the number of farmers' group that received in-kind finance from government.

The collected data were analysed using descriptive statistics and independent t-test. The independent t-test was used to investigate the difference of banana production between two groups of farmers, i.e. farmers who had access to in-kind finance from government and those who did not have any access to in-kind financing from the government. The results of the analysis were interpreted and discussed involving relevant literatures that supports the findings of the study.

3. Results and discussion

Cianjur district is known to become the largest banana crop produces in West Java. The average production of banana in Cianjur has reached 227119 tonnes from 2012 to 2016. Among the subdistricts within Cianjur, Sukaresmi has the highest production of banana during the last five years, in which it contributed 35% of the whole banana production in Cianjur. Following Sukaresmi is Cibeber, that has the second highest production of banana crops during the years, in which Cibeber contributed 13% of banana production in Cianjur. The production of banana in Cianjur from 2012 to 2016 is presented in **Table 3**.

Table 3. The production of banana (tonnes) in Cianjur

Sub-districts	2012	2013	2014	2015	2016	Average
Agrabinta	1123	2105	1096	4104	2685	2223
Leles	2133	2097	2714	2876	3582	2680
Sindangbarang	15831	14294	7646	1929	1325	8205
Cidaun	17136	15187	10428	16817	23205	16555
Naringgul	4160	1661	2582	1679	1876	2392
Cibinong	480	683	486	594	1227	694
Cikadu	7998	14467	10351	10990	11196	11000
Tanggeung	12509	4835	5861	10115	7247	8113
Pasirkuda	268	349	182	84	86	194
Kadupandak	12	52	110	217	215	121
Cijati	22	55	45	64	40	45
Takokak	249	224	200	206	144	205
Sukanagara	246	3576	173	1805	453	1250
Pagelaran	191	213	2264	670	798	827
Campaka	8921	8934	8982	9053	9074	8993
Campaka mulya	115	214	120	68	71	117
Cibeber	28282	28243	33849	41018	31183	32515
Warungkondang	3025	90	89	29	66	660
Gekbrong	2439	3241	2842	1772	2115	2482
Cilaku	483	551	334	181	201	350
Sukaluyu	234	127	90	69	202	144
Bojongpicung	4999	6026	1875	937	2689	3305
Haurwangi	837	859	1909	6755	6278	3327

Sub-districts	2012	2013	2014	2015	2016	Average
Ciranjang	3533	4645	1099	3897	2573	3149
Mande	300	888	330	546	456	504
Karangtengah	7031	19880	24465	15618	13040	16007
Cianjur	29	48	97	401	135	142
Cugenang	5242	8019	3761	14199	11193	8483
Pacet	6	7	12	19	11	11
Cipanas	58	7	9	5	8	17
Sukaresmi	183961	54925	45206	50400	53634	77625
Cikalongkulon	29308	3737	3277	4200	4457	8996

Source: Agricultural Office of Cianjur

To support banana production in Cianjur, Indonesian government has provided finance for farmers. These agricultural finance subsidies by government, or other types of incentive are stimulants for farmers to improve their agricultural production [4]. Finance distributed for banana farmers in Cianjur was in form of in-kind finance including seed, fertilizer and harvesting equipment. The distribution of in-kind finance for Cianjur farmers in the period of 2015 and 2016 is presented in **Table 4**.

Table 4. In-kind finance distributed by Cianjur Government.

Description	2015	2016
Number of farmers' groups	5	6
Number of sub-districts	4	4

The **Table 4** shows that the government distributed in-kind finance through 5 farmers' groups in 2015 especially for banana farmers. The government increased the number of farmers' groups receiving in-kind financing to 6 farmers' groups in 2016. This implies that the government has paid more attention to farmers' group to improve farmers' performance in agricultural production. The study of Indraningsih [10] concluded that farmers' group has important role in improving the performance of farmers especially in communicating farming innovation. Zakaria [11] further showed the benefit of government aid, which would be more appropriate if distributed through farmers' association. The Cianjur Government distributed the in-kind finance to similar number of sub-districts in 2015 and 2016.

In distributing in-kind financial support, the government required farmers to join with a farmer group. This policy is congruent with previous studies that found the role of farmers' association in financial access [12]. Farmers' association has important role in farming development [13]. Joining farmers' association benefits to farmers. Through farmers' association, farmers can improve their attitude, knowledge and skills in farming [14]. Being a membership of farmers' association, farmers can share experiences and information in agriculture [15]. Furthermore, farmers who are members of farmers' association have positively associated with the technical efficiency of farm [16].

In-kind finance program provided by government implies that the government supports farmers to develop their crop production to increase their income [11]. The descriptive statistics of banana produced by the respondents in 2016 is presented in **Table 5**. The **Table 5** shows that, overall, banana was produced by the respondents as much as 3.27 tonnes in 2016. **Table 5** further shows that the banana production of the respondents who obtained in-kind finance from the government is about twice higher than the banana produced by the respondents who didnot obtain in-kind finance from the government.

Table 5. Descriptive statistics of banana (tonnes) produced by the respondents in 2016

Description	Access to in-kind finance from government		Overall
	Have access	No access	
Mean	4.39	1.99	3.27
Minimum	0.60	0.10	0.10
Maximum	18.00	12.00	18.00
Variance	18.21	7.67	14.17
Std. deviation	4.27	2.77	3.77

The mean of banana production in Cianjur from two groups of farmer, i.e. farmers with and without in-kind finance from the government is presented in Table 6. Based on the results of the different test, the test shows that there is a significant difference of banana production between the two groups of farmers implying that the farmers who obtained in-kind finance from the government had a higher banana production compared to the farmers who did not receive in-kind finance from the government. This may happen because the government has distributed high quality of banana seeds, which lead to higher banana production. Muchtar et al. [7] revealed that in-kind finance from government increased the production of agriculture.

Table 6. The mean banana production for the different test

Access to in-kind finance from government	Banana production (tonnes)
Have access	4.36*
No access	1.99*

* significantly different at 5% level

4. Conclusion

The results showed that access to in-kind finance from the government had helped farmers in increasing their banana crop production, compared to the farmers who did not have access to the in-kind finance. This study suggests the need to enhance access to in-kind finance from Indonesian government for farmers. To increase the opportunity of farmers to obtain the in-kind finance from the government, therefore, this study also suggests farmers to be member of farmers' group.

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5. References

- [1] Armendariz B and Labie M 2011 *The Handbook of Microfinance* ISBN 139789814295659 World Scientific Publishing Co. Pte. Ltd, Singapore
- [2] Bastin A and Matteucci N 2007 Financing coffee farmers in Ethiopia: Challenges and opportunities *Savings and Development* **31**(3) 251-282
- [3] Swastika DK 2012 Harvest and post-harvest technologies: Adoption constraints and development strategy *Analisis Kebijakan Pertanian* **10**(4) 331-346
- [4] Elizabeth R 2017 The restructuritation of implementation and effectivity of financial program to the improvemnent of rice capacity and productivity *UNES Journal of Agricultural Scienties* **1**(1) 88-104

- [5] Szczygielskia K, Grabowskib W, Pamukcuc MT and Tandogan V S 2017 Does government support for private innovation matter? Firm-level evidence from two catching-up countries *Research Policy* **46** 219–237
- [6] Wulandari E, Meuwissen M, Karmana MH and Oude Lansink A 2017 Performance and access to finance in Indonesian horticulture *British Food Journal* **119**(3) 625-638
- [7] Muchtar K, Susanto D and Purnaningsih N 2015 Adoption of innovation of technology by farmer in field school of comprehensive agriculture land-use management (SL-PTT) *Jurnal Penyuluhan* **11**(2)176-185
- [8] Dorward A and Chirwa E 2011 The Malawi agricultural input subsidy programme: 2005/06 to 2008/09 *International Journal of Agricultural Sustainability* **9**(1) 232-24
- [9] Agricultural Ministry of Indonesia 2011 Technical guidelines for operationalization of horticultural development 2012 Directorate General of Horticulture Agricultural Ministry of Indonesia Jakarta
- [10] Indraningsih KS 2011 The influence of extension on farmer's decision in innovation adopting of integrated farming technology *Jurnal Agro Ekonomi* **29**(1) 1-24
- [11] Zakaria AK 2011 Anticipatory policy and farmers consolidating strategy toward national corn self-sufficiency *Analisis Kebijakan Pertanian* **9**(3) 261-274
- [12] Machethe, CL 2004 Landbouw en armoede in Zuid-Afrika: Can agriculture reduce poverty. In *Paper presented at the Overcoming Underdevelopment Conference held in Pretoria*, 28, 29
- [13] Wahyuni S 2003 The performance of farmers' group in paddy farming system and its empowerment methods *Jurnal Litbang Pertanian* **22**(1) 1-8
- [14] Novia R A 2011 The response of farmers on the field school of integrated farming in Ajibarang Sub-district, Banyumas District *Mediagro* **7**(2) 48-60
- [15] Moobi MN and Oladele OI 2012 Factors influencing small-scale farmers' participation in informal financial markets in Mafikeng Municipality *Journal of Food, Agriculture & Environment* **10**(2) 1133-1137
- [16] Waryanto B, Chozin MA, Dadang and Putri EIK 2014 Environmental efficiency analysis of shallot farming: A stochastic frontier translog regression approach *Journal of Biology, Agriculture and Healthcare* **4**(19) 87-100