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Performance of Contract farming in Bankura district of West Bengal

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ABSTRACT

Contract farming is nothing new in India. It is an agreement between a farmer and a buyer that establishes conditions for the production and marketing of farm products. It involves pre agreed price, quality, quantity and time. But till now it is not so much popular among farmers in India. There are several reasons for this. There are very few cases in India where contract farming is successfully performed. Very few studies have done in India regarding contract farming in India. So we eager to see what the farmers of Bankura district think about contract farming because Bankura is a rainfed area. Besides rice, the major crops of Bankura district are potato, wheat, vegetables, mustard, summer til etc. Like rice, this district is also surplus in Potato and vegetables. This district is lagging behind in the production of pulses and oilseeds. In this paper we want to see whether the farmers of the Bankura district are willing to join in contract farming or not. Here we identify the variables or factors which play a crucial role in determining this decision. The study is based on primary data which are collected from the Bankura district by using a structured questionnaire. Here we use multi - stage sampling method to collect the data. Here we construct a probabilistic model (Logit model) to examine whether the farmers of Bankura district are willing to join in contract farming or not.

Keywords: *Contract farming, Minimum guaranteed price, Pre agreed price, Pre agreed quality, Pre agreed quantity and Pre agreed time, Contracted farmers, Contract farming companies.*

JEL Classification Q12, Q13, L14, L24

1. Introduction

Contract farming is an agreement between farmers and processing and marketing firms for the production and supply of agricultural products under certain agreement, frequently at predetermined prices. By contract farming we mean 'Farming with a Pre-agreement'. In the case of contract farming agreement held between farmers and the buyers of the products about the prices of the products. Sometimes both the quantity and quality of the product which will be produced have been fixed before production during the time of agreement. Generally, the buyers of the product or the firm owners provide some benefits like production inputs, technical advices, financial assistance (credit if needed), transportation and marketing facilities etc. Contract farming is a guaranteed farming process by which

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both buyers and sellers of the product get benefitted. Recently in India the process of contract farming is not limited in production of agricultural crops only, rather it has extended successfully in the production of medical plants (aloe vera, tulsi etc.), farming poultry, etc. In case of contract farming soil fertility, environmental issues, food security, seed problems, labour problems, contract disputes, middle man's influence should be taken into account. Till date some companies established contract farming in India. Notable among them – Hindustan Unilever Limited, ITC, Suguna Poultry, Venkateshwara Hatcheries, Pepsico, Rallis, Nestle etc.

Importance of contract farming

1. It reduces the load on the Central and State level procurement system. It provides better procurement services to the farmers
2. It creates more employment in the rural areas and reduce seasonal unemployment.
3. It increases private sector investment in agriculture.
4. It brings about a market focus in terms of crop selection by Indian farmers.
5. It generates a steady source of income at the individual farmer level.
6. It promotes processing and value addition.
7. It reduces migration from rural to urban areas.
8. It helps the rural poor people to become self-sufficient.

It is seen that the overall process of contract farming is highly biased towards large and medium educated farmers having improved irrigation facilities, political influence. Small and marginal farmers are neglected in most of the states. Sometimes the process of contract farming leads to some major problems due to lack of proper supervision or monitoring the whole system like low price fixation for higher quality products, language barrier during the time of contract, difficulty in meeting quality requirements of the product., lack of credit, poor technology assistance, delayed payments, water security, infrastructure problem of rural areas, lack of procurement of the product. Besides that, some economists argue that contract farming leads to the problem of environmental degradation in the long run. In order to remove all of these problems many economists in their papers suggest to come forward the govt. to take proper imitative and monitoring the implementation of whole process to make it more efficient and maximize social welfare. Besides that, govt. should encourage the private entrepreneurs to make the process of contract farming more successful and expand in different regions of India. It can be undoubtedly said that the process of contract farming has increased opportunities among the farmers, income level of the farmers, employment generation among the farmers, social status of the farmers. Moreover, it has great potentiality to act as sustainable agricultural development. However, some economists argued that whether contract farming will bring agricultural sustainability or not yet to be proved.

Some successful stories of contract farming in India

1. Pepsi Foods Ltd. (at Zahura in Hoshianpur district of Punjab, 1989) for the crops tomato, chillies, potato, basmati production.
2. Appachi cotton company (ACC), (at Coimbatore district of Tamil Nadu, May'2002) for cotton production.
3. Ugar Sugar Works Ltd. (at northern Karnataka, 1997) for Barley production for it malt unit.
4. Rallis India Limited (in Uttar Pradesh, Madhya Pradesh, Karnataka, Maharashtra) for wheat, basmati, fruits and vegetables production.
5. McDonald's (in Gujrat) for potato production.

Literature Review

Contract farming is nothing new in India. But till now we get very few success stories of contract farming in India. Very few economists have studied on contract farming in India. Notable among them are Braja Bandhu Swain (2011), B.K.Pattanaik et al (2009), Promod Kumar (2007), Sharanjit S.Dhillon and Navchetan Singh (2006), Vishal Sharma et al (2017) etc. For our study we have studied these articles.

Objective of the study

In this study we want to construct a probabilistic model i.e logistic regression model regarding the decision of the farmer regarding whether he will go for contract farming or not in the Bankura district of West Bengal. In this paper we want to identify the factors which affect this decision of the farmer. Then we want to examine the likely impact of these factors on this decision. Moreover, we want to examine whether these variables have significant impact on their decisions.

Research methodology

In this study we want to see whether the farmers of Bankura district are willing to join in the contract farming or not. We also want to identify which factors influence his decision. So, we collect primary data by using a structured questionnaire. In this study multistage sampling method is used to collect the data. In the first stage we select Bishnupur subdivision. In the second stage two blocks are selected randomly Joypur and Kotulpur from this subdivision. In the third stage 3 Gram panchayets (GP) are selected randomly from each block. From Joypur block Gelia, Hetia and Rautkhand Gram Panchayats are selected and from Kotulpur block Gopinathpur, Sihar and Lego Gram Panchayats are selected. Then from each gram panchayet we select two villages randomly. Name of villages from joypur block are Ramchandrapur (Gelia GP), Vandargarh (Gelia GP), Vagaldighi (Hetia GP), Kantagora (Hetia GP), Rauthkhand (Ruthkhand GP), Jamdigri (Rautkhand GP), Lego (Lego GP), Panua (Lego GP), Puniajol (Gopinathpur GP), Chanua (Gopinathpur GP), Konarpur (Sihar GP), Masinapur (Sihar GP) were selecteds. In the final stage from each village, we select 12 farmers randomly. Therefore from 12 villages we have selected 144 no of total famers. Out of 144 farmers 98 farmers are both contract and non-contract farmers, 27 farmers are only contract farmers & 19 farmers are non-contract farmers.

Chart - 1- Gopinathpur Gram Panchayat

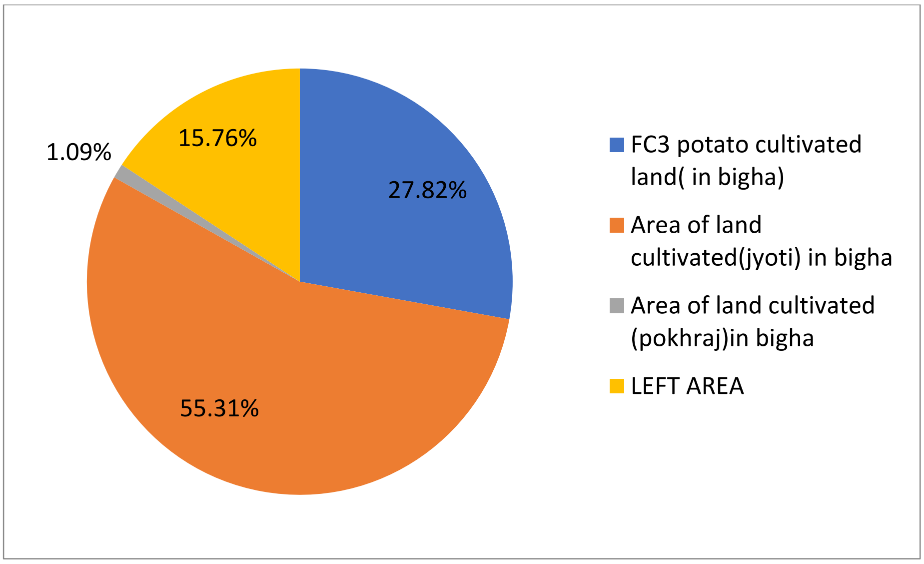


Chart - 2- Lego Gram Panchayat

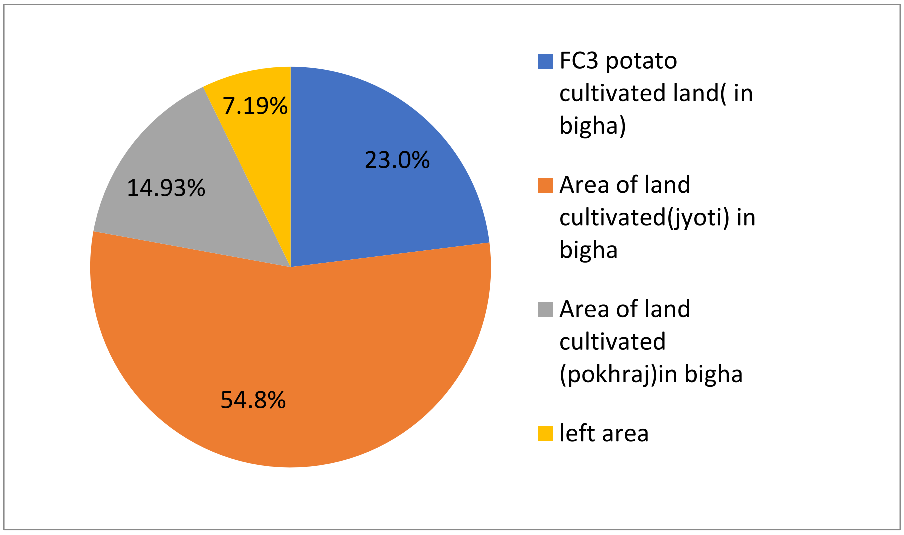


Chart - 3- Rauthkhand Gram Panchayat

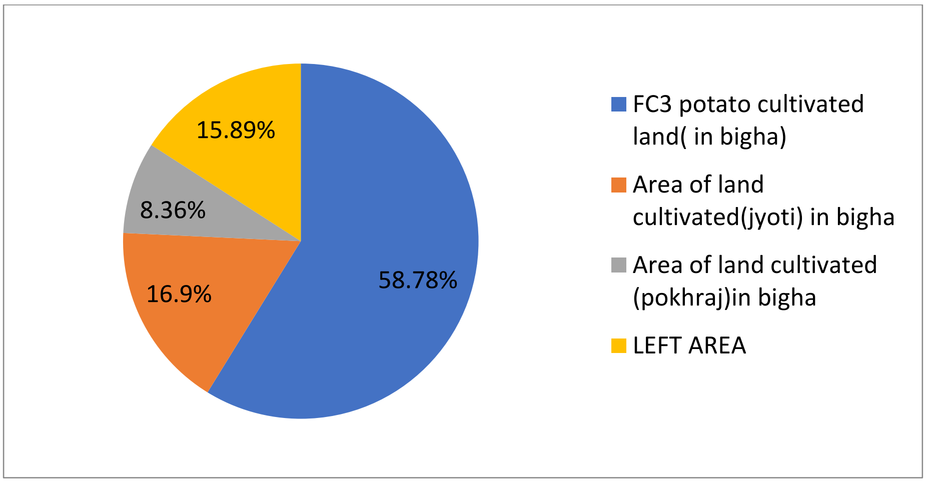


Chart - 4 - Hetia Gram Panchayat

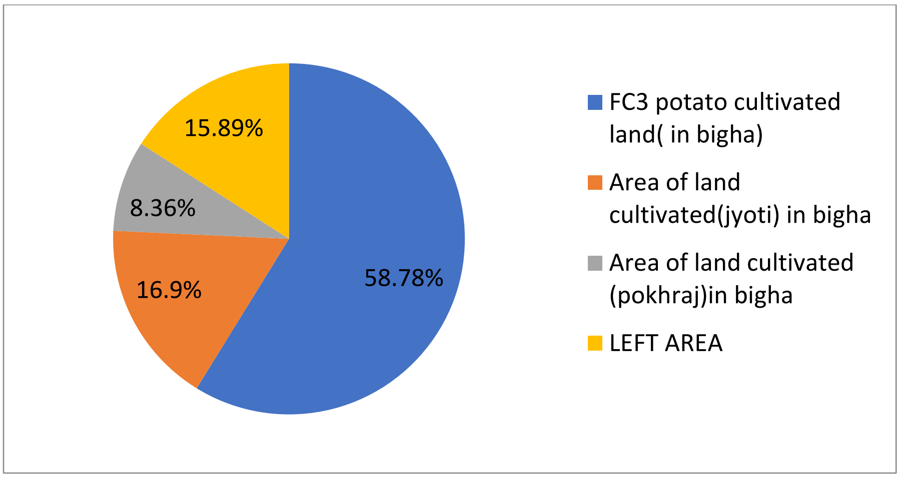


Chart - 5 - Gelia Gram Panchayat

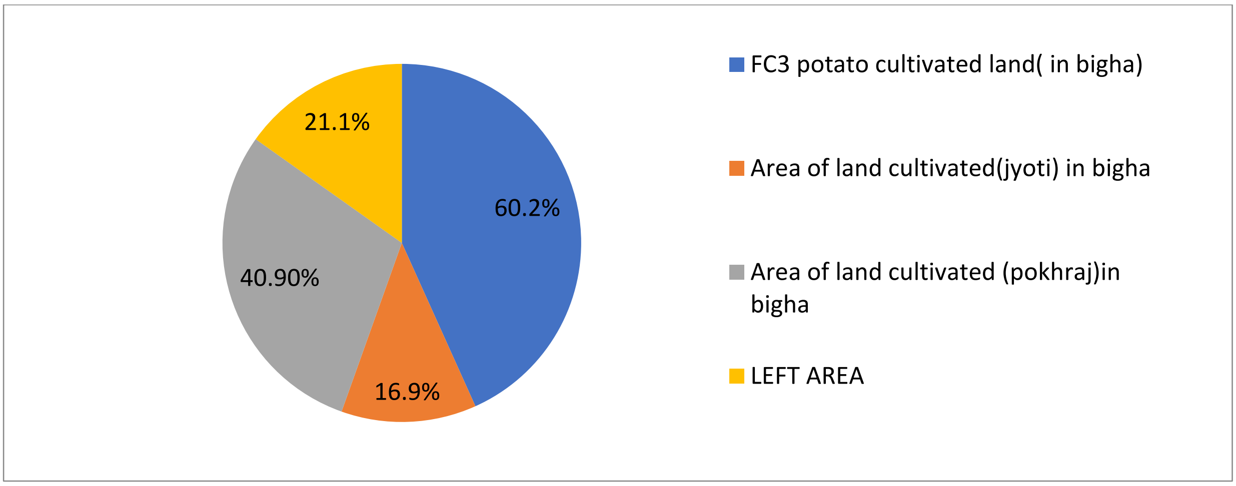
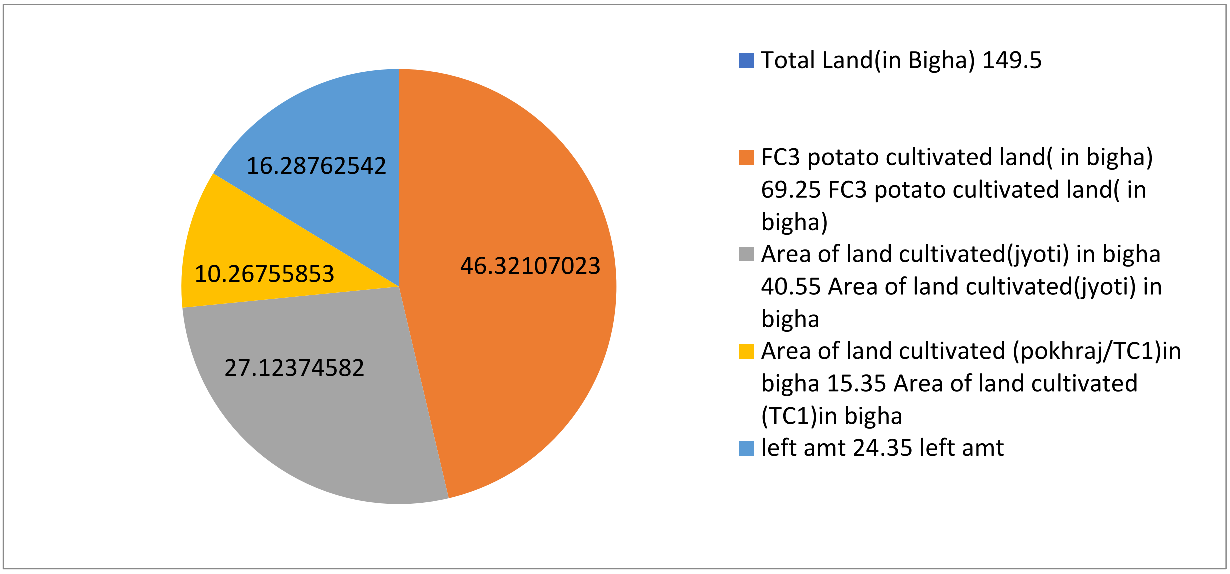
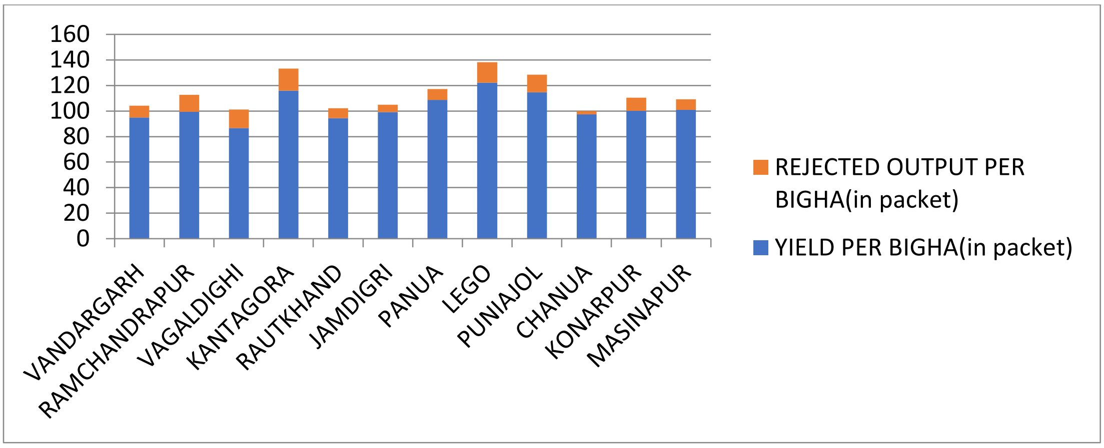


Chart - 6 - Sihar Gram Panchayat



We can see village-wise FC3 yield and rejection of output-



Specification of the variables

Here the variables which affect the decisions of the farmers whether they will go for contract farming or not are listed below. These variables are categorized in different factors.

Sl No.	Factors	Variables	Notations
1.	Economic Factors	(a) Minimum guaranteed price	M_i
		(b) Profitable business	PR_i
		(c) Loan facilities from vendor	Li
		(d) Fixed price of seeds	FP_i
		(e) Fixed rate of produce both for over production & under production	FR_i
		(f) Full payment at a time	P_i
2.	Psychological factors	(a) Seeing success of co-farmers	S_i
		(b) Advice of friends and relatives	AF_i
		(c) Trustworthiness of the company	Ti

		(d) very co-operative and good behavior of vendor	V_i
3.	Geographical Factors	(a) Assured market for the produce	AS_i
4.	Socio - cultural and demographic factors	(a) Age	A_i
		(b) Family income	F_i
		(c) Family size	FF_i
5.	Other Factors	(a) Quality seeds	Q_i
		(b) Extension services and technical advices	E_i
		(c) Low risk	R_i
		(d) Getting seeds and pesticides in loan before production	G_i

Specification of the Model

$$Y_i = \beta_1 + \beta_2 M_i + \beta_3 PR_i + \beta_4 L_i + \beta_5 FP_i + \beta_6 FR_i + \beta_7 P_i + \beta_8 S_i + \beta_9 AFi + \beta_{10} T_i + \beta_{11} V_i + \beta_{12} AS_i + \beta_{13} A_i + \beta_{14} F_i + \beta_{15} FF_i + \beta_{16} Q_i + \beta_{17} E_i + \beta_{18} R_i + \beta_{19} G_i + U_i$$

Here Y_i = Decision of the farmer whether he will go for contract farming or not.

If $Y_i = 1$, then the farmer will go for contract farming

$Y_i = 0$, then the farmer will not go for contract farming

U_i = Random disturbance term

It is a multiple regression model.

Here we have 18 exogenous variables. Among them very few are quantitative variables and most of them are qualitative variables.

Here Logit model is used to examine the decision of the farmers in joining contract farming.

Analysis of the result

From the Table – 1 we see that there are many variables (both quantitative variables and qualitative variables) which affect the decisions of the farmers regarding whether they will go for contract farming or not. Among these variables there are some important variables which are statistically significant either at 1% level or at 5% level. These significant variables are minimum guaranteed price (M_i), trustworthiness of the company (T_i), co-operative behaviour of the vendor (V_i), age of the farmers (A_i), family income of the farmer (Fi), family size of the farmer (FF_i), quality of seeds (Q_i), low risk of the farmers (R_i) etc. If the farmers get minimum guaranteed price from the company, co-operative behaviour from the vendor, quality of seeds from the company then the farmers may join in the contract farming. So, trustworthiness of the company is very important. Moreover, if they see that the contracted farmers earn more income, then the other farmers also willing to join in this programme to earn more money. In this case total family income of the farmer will rise and the standard of living of the farmers may be upheld. By joining contract farming the risk of the farmer may reduce if they get minimum guaranteed price in case of crop failure. But age may act as the negative impact in this regard. If the farmer is aged, then he may not agree to join in contract farming because he may not be ready to give extra effort in the new job. There are some other variables also which affect this decision of the farmers. But the roles of these variables are not statistically significant. Here goodness of fit is quite satisfactory.

Table – 1

Decision of the farmers regarding the joining in Contract farming

Logit Maximum Likelihood Estimation

Number of observations = 144

Goodness of fit (R^2) = 0.764

Pseudo R Squared = 0.526

Regressor	Coefficient	Standard error	Z statistics	P value
Constant	-2.037062	0.6138924	- 3.31837	0.001
M_i	- 0.1603906	1.219909	- 0.1315	0.039
PR_i	- 0.1967672	0.8637025	- 0.2278	0.820
L_i	0.8330885	0.9001096	0.9255	0.355
FP_i	0.9384412	1.307747	0.7176	0.473

FR_i	19.98004	45.46817	0.4394	0.892
P_i	1.343808	1.370006	0.9809	0.327
S_i	1.383808	1.390004	0.9955	0.033
AF_i	0.6507612	1.275488	0.5102	0.610
T_i	19.98004	78.75319	0.2537	0.032
V_i	2.036547	0.8813988	2.311	0.021
AS_i	0.6507512	1.275488	0.5102	0.024
A_i	-15.26813	40.48183	- 0.3772	0.047
F_i	19.98004	55.68691	0.3588	0.932
FF_i	15.26213	48.48185	0.3148	0.042
Q_i	1.631363	1.100107	1.4829	0.003
E_i	-15.26813	57.24995	- 0.2666	0.947
R_i	-2.837062	0.6438924	- 4.4061	0.014
G_i	0.84556	0.46923	1.8021	0.982

Source – Author's own calculation based on primary sample data

Conclusion and policy prescription

We know that till now contract farming is not so much popular in India. There are very success stories of contract farming in India. In India very few studies have done regarding contract farming. But it has a huge prospect. From the above analysis we can prescribe some suggestions to make contract farming more popular to the farmers: -

(a) Minimum guaranteed price should be provided to the farmers for their products. If the farmers believe that their risk will be minimized after joining the contract farming then they will join in this programmer.

(b) Quality seeds should be provided to the farmers so that they can produce quality products.

(c) Payment process should be easy and transparent. Compensation should be given to the contracted farmers in case of over production or crop failure.

(d) Trustworthiness and goodwill of the company is very crucial in the eyes of the farmers.

(e) Many farmers apart from farming in his own land, may engage in contract farming to earn more money. Many farmers may engage only in contract farming. To uplift the standard of living by earning more income, farmers should engage in contract farming. But food security of the poor should not be hampered due to contract farming.

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