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Contract farming in vegetables: Status and role in Kushinagar District of Uttar Pradesh

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Abstract
Agricultural food systems have been impacted critically in this current era of climate change. It has significant implications to food and nutritional security, technological advancements and also socioeconomic impact. Overall, agriculture relies on the cooperation of 500 million farmers and provides an income source for nearly two billion people globally. Food and nutritional security of the developing nations is primarily based on smallholder agriculture. In the Indian scenario, small holder agriculture is the major source of livelihood for poor farm families. It is also the main source for sustained food consumption. Farmers generally lack information about advanced production technologies and market support opportunities. This is particularly true in case of high-value crops varieties with growing market demands. Farm families generally tend to rely on subsistence crops and perhaps a few cash crops that are traditionally grown in the region. Small holder farm families are generally reluctant to judiciously adopt expensive inputs as they usually do not have the necessary capital reserve. Farmers in India are usually prone to extremes of climate change variations for crop production and hence are not keen to gain capital access on credit subject to their meagre collateral. Uncertainty in market demand and supply usually forces the farmers to ensure minimum food supply for consumption before production on commercial basis. Contract farming is an efficient alternative to overcome these constraints. Hence, in view of interest of policymakers and researchers this study for assessment of contract farming in vegetables, was undertaken especially in this Tarai region of eastern Uttar Pradesh. Contract farming was undertaken with a view to gain sustainable agricultural production by judiciously adopting semi-commercial and commercial systems. Besides, this undertakings main objective was to provide reliable solutions to participating farmers to meet the standards as inked under the contract. Contract farming ensured safe high-quality food for distributors, food processors and consumers with stabilized income security at low risk. Structured collaboration with government and allied sectors, NGOs and other stakeholders helped to build trust and transparency mechanisms besides opening new vistas for processing at local level. Income generation and setting up investments in processing. This capital investment under processing was one of the primary sources for employment generation and further market capitalization of processed products. The major constraints identified under this investigation that posed a threat to adoption contractual farming include contract breach and power struggle between different stakeholders, side selling by farmers and delayed payments.

Keywords: Contract farming, food and nutritional security and subsistence agriculture

Introduction
In the Indian context, the majority of the small holder farm families rely on agriculture as their major livelihood source. Farmers regularly prone to climate, extremes and market fluctuations first ensure a minimum production of food for family sustenance before expanding production in view of uncertain markets. Small farmers primarily ensure the production of subsistence crops and only then foray into other prominent cash crop production they are familiar with. Limited access to marketing infrastructure and market opportunities, lack of awareness for scientifically approved POPs (Package of Practices) for in demand remunerative crop / varieties need to be critically addressed through contract farming. Roy, *et al.*, 1963 [9], defined contact farming as to be "Those contractual agreements between farmers and other firms, whether oral or written, specifying one or more conditions of production and / or marketing of an agricultural product". Minot *et al.*, 2016 [6] documented the significance of contractual farming for production of high-value crops on a global context. Contractual farming boosts market of perishable agro products, products with stringent transport and storage requirements besides maintaining quality standards.

Contract farming is a vertical collaboration between different parties (farmers and other stakeholders) that directly shapes production through terms specifying timely production and delivery of safe, valued qualitative/quantitative produce. The stakeholders primarily play the role of good quality input providers besides providing assured income to the farmers which otherwise was dependent on climatic and market fluctuations. Earlier studies on benefits of contract farming show that higher remunerative returns to farmers under contract, w.r.t their neighbours practicing traditional methods of production. (Glover 1984 [1], Minot 1986 [5] and Little *et al.*, 1994) [2]. With a view to gain sustainable agricultural production by judiciously adopting semi-commercial and commercial systems. The efficacious evolution of subsistence, semi-commercial and commercial systems of agricultural production have been assessed through this intervention to resolve several constraints at a time.

This paper attempts to identify the possible impediments for agricultural growth and to overcome such impediments through contract farming systems. Inappropriate technology and steep fluctuations in commodity prices together coupled with market uncertainties are the probable fundamentals to Indian agriculture. The practice of contract farming appears to hold promise as it provides solutions to many problems of the state's agriculture whose condition is nearly aligned to the national scenario. Certain constraints needing the attention of policymakers, government bodies and other state stakeholders still need to be taken care of before contractual farming prospects into reality within the state.

Materials and Methods

Kushinagar district in Uttar Pradesh was selected purposively since contract farming has been observed since the year 2000. This study is primarily based on data collection from 247 respondent farmers hailing from all the 14 blocks of the district. The primary data was collected through one random sampling technique. This study investigates production and supply chain management to better understand contract farming and traditional cultivation systems of vegetable from different blocks of the district through survey (2018-2021). The main focus under the survey was to investigate the probability of the approved contract be it oral, inked or notarized. The terms under the contract were the highlight of this investigation. Data obtained through structured questionnaire was subject to descriptive and multivariate statistical analysis using SPSS. The primary data was also collected through select market surveys from each block usually with frequent visits of vegetable farmers, retailers, wholesalers, processors and transporters. It also focused on collaboration and grading standards followed pertaining to quality and quantity among the different stakeholders, means of transport, steady availability of seasonal produce, etc. The questionnaire was structured into two categories, one common for farmers practicing contract and traditional farming both while schedule two was specifically for members practicing contract farming.

Results and Discussion

Different statistical tables have been presented on the basis of Agro practices followed, probable reason for entering into a contract, types/nature of contract, conflict/reasons for breach of contract, etc.

Table 1: Farming under contract

Items	Frequency	Percentage
Yes	59	23.8
No	188	76.2
Total	247	100.0

Table No. 1 denotes the frequency and percentage adoption of contract farming among select respondent farmers and farm women. Among 247 farmers only 59 farmers adopted contract farming practices in vegetables crops (23.8 %). The study shows a lack of awareness and willingness of the farmers to accept the new concept of contract farming.

Table 2: Type of contract

Type	Frequency	Percentage
Production	3	5.1
Marketing	56	94.9

Among the 59 contract farming respondents, only three farmers (5.1 %) were facilitated for production under the contract throughout the season while 94.9 % of the respondents only adopted for marketing issues in vegetables crops.

Table 3: Nature of contract

Type	Frequency	Percentage
Formal	12	20.3
Verbal	47	70.7

The contracts enforced were predominantly verbal in nature (70.7 %) with no documentary evidence in contrast to formal/ notarized contracts (20.3 %) among the different stakeholders.

Table 4: Reasons for readiness to embrace contract farming

Parameters	Yes		No	
	Number	%	Number	%
Market access	52	78.2	7	11.8
Price protection	32	54.3	27	45.7
Credit support	49	83.1	10	16.9
Technical and extension services	25	43.4	34	57.6
Guaranteed Markets	53	89.9	6	10.1
Guaranteed stable income	44	74.6	15	25.4
High quality produce	29	49.2	30	50.8

Table no. 4 indicates the reasons for readiness of farmers to adopt contract farming. According to feedback data major clause for participating in contract farming are guaranteed market / procurement (89.9 %) followed by credit support (83.1 %) etc. Hence it is clearly evident that guaranteed market absurdity, credit support availability, stable income and market access play a vital role in adoption of contract farming in contrast to price protection (54.3 %), available technical and extension services (43.4 %) and also somewhat indifferent to quality of produce (49. 2 %).

Table 5: Reasons for conflict

Reasons	Yes		No	
	N	%	N	%
Price terms	35	59.4	24	40.6
Quality terms	14	23.8	45	76.2
Quantity terms	41	69.5	18	30.5
Delivery time	32	54.3	27	45.7

The major reasons for conflict among farmers in contract farming are terms pertaining to assured good quality product in desired quantity and corresponding prices. According to feedback given by respondents shown in Table 5 out of 59 farmers 41 farmers voted for Quantity terms as a major reason for conflict which is 69.5 % and the least reason for conflict is adhering strictly to desired quality of the produce (23.8 %).

Table 6: Disadvantages of contract farming

Parameters	Yes		No	
	N	%	N	%
Delay in payment	19	32.3	40	67.7
High requirement	20	33.9	39	66.1
Unhappy with price	28	47.5	31	52.5
Quality parameters	23	38.9	36	61.1

Disadvantages of contract farming have been shown in Table 6 i.e:- Delay in payment, high requirement, and dissatisfaction w.r.t quality parameters. According to feedback given by respondents as shown in Table 6 out of 59 farmers 28 farmers accepted to not be satisfied with prices for the crop as a major reason for conflict which is 47.5 %. The probable reason is steep variations in market prices of agricultural products.

Table 7: Formal and Verbal specifications in contract farming

Parameters	Yes		No	
	N	%	N	%
Desired produce quantity	25	42.38	34	57.62
Quality of produce	6	10.17	53	89.83
Delivery date	27	45.77	32	54.23
Amount of Fertilizer used	7	11.87	52	88.13
Amount of Pesticide used	12	20.33	47	79.66
Method of payment	20	33.90	39	66.10
Duration of contract	35	59.33	24	40.67
Quality standards	38	64.41	21	35.59
Pricing arrangements	54	91.53	5	8.47
Cultivation practices	21	35.60	38	64.40
Insurance arrangements	1	1.70	58	98.30

Table no.7 shows that the respondent feedback for both formal and verbal contracts. Respondents show high interest in pricing arrangements (91.53 %) followed by quality standard (64.41) with least significance on crop insurance (01.70).

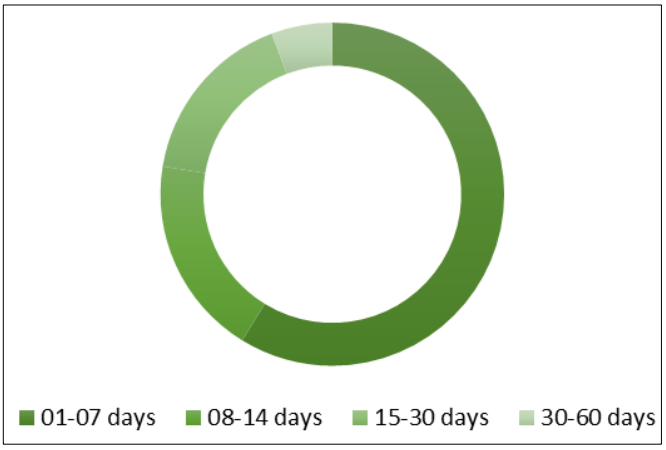

Fig 1: Duration of produce payments

Respondents (58.78%) usually got their monetary value of product in the first week after harvest and subsequent sale. Collectors and wholesalers were identified as primary sponsors.

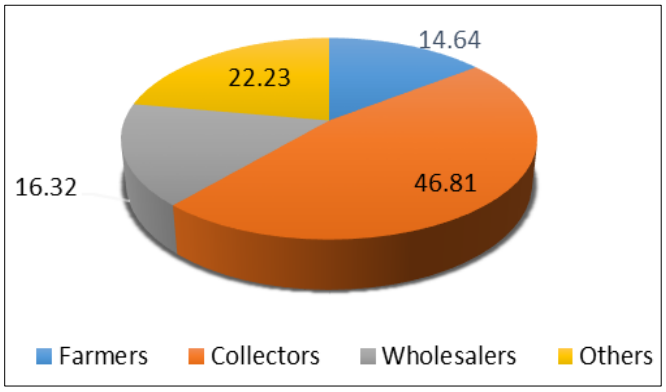

Fig 2: Sponsors of contract farming

Collectors and wholesalers were identified as primary sponsors 46.81 % in contrast to wholesalers and others.

Conclusion

The ever increasing population drives the demand for food production and processing measures need to be implemented to ensure supply in these challenging times. Demand and supply are usually not fulfilled in the Indian conditions due to lack of technical approach. Poor financial backing of the farmers is one of the major constraints hindering commercial cultivation and ultimately achieve higher income. So, Contract farming ensures availability of quality inputs, suitable farm machinery and helps in promotion of advanced technologies and package of practices i.e. HYVs etc. through different associated stakeholders. Coordinating agencies need to ponder over and ease out justifiable approach to crop insurance, focus on branding of the product, and further strengthening technical and extension services setup for the well-being of the farmers.

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