

Chapter 7 - Participation aspects of contract farming

In this chapter, the various aspects of contracting from farmers' perspective are discussed. This chapter is divided into two subsections. The first sub-section focuses on various aspects of contracting such as why farmers participate in contract farming and what is the profile of early adopters and followers of the farmers participating in CFAs. Benefits, problems, and overall experience of contract farmers of both the crops are also discussed. In the second sub-section, the functioning of the non-contact mode of production and risks involved in it is discussed. The reasons for disadoption and non-participation in contracting is also discussed. Overall, this chapter highlights the key points which help determine success and failures of the contract farming schemes.

7.1. Different aspects of contract farming schemes

In this Section, different aspects of contracting from farmers' perspective are discussed. Firstly, the discussion on that, contracting induces new crop adoption, which is followed by a discussion on what kind of farmers are early adopters in contract farming. Awareness of terms of the contract and how does first contact of the farmer happen with the firm. Motivating factors of farmers that induce it to join contracting, benefits, problems, and overall experience of contract farmers of both the crops are also discussed.

7.1.1. Induces new crop adoption

It was observed during the field survey, that CF induces farmers to grow cash crops. In the case of CGP cultivation, all farmers started growing CGP after it was introduced by Pepsico (I) through CF. Moreover, 36% of CF and 16% of ACF had never grown any variety of potato ever before; they directly started growing CGP under contract. It was observed that Pepsico started CF in Pune and Satara districts, within few villages in 2001-02. In Satara, CFAs started expanding 2006 onwards. According to key stakeholders³⁹ in Satara district before 2007-2008, farmers did not have any other source or alternate cash crop in the villages nearby Mhasurane region of Khatav taluka, Satara district. Farmers used to grow mostly foodgrains due to the scarcity of water. But after Pepsico (I) introduced CGP cultivation in the region, the farmer had the option to grow a short duration cash crop of 70-89 days of potato. CGP cultivation did not require much

³⁹ viz. Banking staff, traders, and elderly farmers

water, and land here (sandy brown) was conducive to grow potato. Farmers shifted from growing bajri, corn to potato in Kharif. Now they grow CGP in Kharif and grow one more crop, mostly jowar in Rabi. Earlier, farmers had low crop due to the practise of cultivating food crops. Farmers did not have finance options to grow a cash crop. As orchards or cash crop may require irrigation. When company came, it initiated the loan process by entering into the tripartite agreement. Farmers got the loan; they started getting good returns in short duration i.e. within 3-4 months. Slowly their purchasing power started increasing; inducing agricultural investments such as digging wells, MIS, and farm equipment.

For onion survey, it was observed that most of the farmers used to grow table variety onion prior to JISL CFAs. However, 19% of CF and 16% of ACF had started growing onion with JISL contract farming.

CGP CF admitted that with the advent of CFAs they have been able to shift from growing traditional cereals to the cash crop. Many of the farmers in Khatav taluka (Satara district) started growing potato for the first time. As they were getting inputs on credit, with technical guidance and MGP, they had confidence. Similar observations were reported in the case of white onion growing regions in Jalgaon and Dhule districts. Thus, overall it seems contact farming has facilitated new crop adoption.

To know the importance of contracting in crop cultivation, farmers were asked about “if they were not contracting for CGP/onion crop with the firm this season, what would be the next best option?”. In reply, 71% of CGP CF they would have been grown CGP without contract while rest 29% mentioned that they would have grown some another crop. While 48% of CF would have grown table variety onion without a contract. Rest 52% would have taken another crop viz. wheat or groundnut and not onion. Thus, the many of the CF are growing onion in Rabi season primarily due to contract farming. Thus, it can be said that contracting facilitates crop adoption and helps diversify the farm portfolio.

7.1.2. Socio-economic profile of early adopters and followers of contract farming

From the firm’s and academic perspective this section discusses, what the profile of early adopters of contract farming is. Thus, firms who want to start CFAs in new areas

can focus on early adopters that would help them expand their contract farming operations.

It was observed that overall nearly one-third of sample farmers (CF and ACF both) had grown contract crops (both onion and CGP) under contract within the three years of the beginning of the contract farming within the respective villages. These farmers were termed as early adopters, while rest were termed as followers. It would be interesting to understand who were the earlier adopters and followers of contract farming.

Age and schooling profile of CGP and onion farmers based on CF adoption categories is presented in Tables 7.1 and 7.2. Tables 7.1 and 7.2 show there are not much differences in age, schooling profile of early adopters and followers for both crops. This fact is also supported by summary statistics presented in

Table 7.6. Similarly, farm experience of early adopters and followers was found to be similar for both the crops (Tables 7.3 and 7.4).

Table 7.1: Age and schooling profile of early adopters and followers, CGP CFAs

Particulars	Early adopters (n=41)	Followers (n=81)	Total (n=122)
Age (years)			
21-40	36.6	35.8	36.1
41-55	43.9	35.8	38.5
More than 55	19.5	28.4	25.4
Type of schooling attended			
No formal schooling	2.4	9.9	7.4
Primary (I- IV)	12.2	16.0	14.8
Upper primary - secondary (V-X)	56.1	50.6	52.5
Higher secondary (XI –XII) & above	29.3	23.5	25.4

Source: Computed from primary survey (2012-13)

Note. Units in percentage and have been calculated on column sums

Table 7.2: Age and schooling profile of early adopters and followers, onion CFAs

Particulars	Early adopters (n=56)	Followers (n=100)	Total (n=156)
Age (years)			
21-40	42.9	46.0	44.9
41-55	37.5	43.0	41.0
More than 55	19.6	11.0	14.1
Type of schooling attended			
No formal schooling	8.9	7.0	7.7
Primary (I- IV)	19.6	25.0	23.1
Upper primary - secondary (V-X)	42.9	36.0	38.5
Higher secondary (XI –XII) & above	28.6	32.0	30.8

Source: Computed from primary survey

Note. units in percentage and have been calculated on column sums

Table 7.3: Farm and crop experience profile of early adopters and followers, CGP CFAs

Particulars	Early Adopters (n=41)	Followers (n=81)	Total (n=122)
Farm experience (years)			
0 – 10	22.0	25.9	24.6
11 - 25	51.2	50.6	50.8
More than 25	26.8	23.5	24.6
Potato crop (including CGP) experience (years)			
0 – 8	19.5	48.1	38.5
9-16	31.7	33.3	32.8
More than 16	48.8	18.5	28.7

Source: Computed from primary survey (2012-13)

Note. Units in percentage and have been calculated on column sums

Table 7.4: Farm and crop experience profile of early adopters and followers, onion CFAs

Particulars	Early Adopters (n=56)	Followers (n=100)	Total (n=156)
Farm experience (years)			
0 – 10	30.4	27.0	28.2
11 – 25	39.3	49.0	45.5
More than 25	30.4	24.0	26.3
Onion crop experience (years)			
0 – 8	25.0	37.0	32.7
9-16	33.9	26.0	28.8
More than 16	41.1	37.0	38.5

Source: Computed from primary survey

Note. Units in percentage and have been calculated on column sums

Early adopters of both CGP and onion contract farming had been growing respective contract crop for greater number of years compared to followers. On an average, at the time of the survey, early CGP adopters had experience of nearly 18 years

compared to 12 years of followers (Table 7.6). Less than half (49%) of the CGP early adopters had been growing potato for more than 16 years compared to 19% of the followers. Whereas, less than half (48%) of the followers had been growing potato for less than eight years compared to 20% of the early adopters (Table 7.3). . In case of onion, early adopters had experience of 17.7 years compared to 13.3 years of followers (Table 7.4)

Average holdings of CGP early adopters (14 acres) was greater than that of followers (9 acres). Moreover, 63% of early adopters were large farmers (holding of 10 acres and more) compared to 43% of followers. While for onion, average holdings of early adopters (14.2 acres) were greater than that of followers (9.7 acres). Large farmers comprised 73% of early adopters and 40% of followers (Table 7.5).

Mann-Whitney test results showed that household size, crop experience, operational holdings, livestock and physical farm assets were higher in the case of early adopters compared to followers for both the crops (Tables 7.6 and 7.7). Summary statistics and Mann-Whitney test results indicate that farmers who are wealthier and are more experienced in growing respective contract crop were the first ones to join contract farming. This is in line with the literature on technology adoption (see Feder et al., 1985).

Table 7.5: Operational holding pattern of early adopters and followers of CFAs

CGP			
Holding categories (acres)	Early Adopters (n=41)	Followers (n=81)	Total (n=122)
Marginal and small (0.0 - 4.9)	7.3	19.8	15.6
Medium (5.0 - 9.9)	29.3	37.0	34.4
Large (10.0 and above)	63.4	43.2	50.0
Onion			
Holding categories (acres)	Early Adopters (n=56)	Followers (n=100)	Total (n=156)
Marginal and small (0.0 - 4.9)	8.9	22.0	17.3
Medium (5.0 - 9.9)	17.9	38.0	30.8
Large (10.0 and above)	73.2	40.2	51.9

Source: Primary survey (2012-13);

Note. Units in percentage and have been calculated on column sums

Table 7.6: Summary statistics of household characteristics of early adopters and followers of CGP CFAs

Particulars		Early Adopters	Followers	Total
Age (years)	Mean	47.7	47.1	47.3
	<i>SD</i>	11.1	12.0	11.6
	<i>U</i> = 1615; <i>p</i> = 0.80; <i>r</i> = -.02	Median	45.5	45.0
Schooling (years)	Mean	9.0	7.8	8.3
	<i>SD</i>	4.2	4.5	4.4
	<i>U</i> = 1433; <i>p</i> = .10; <i>r</i> = -.11	Median	10.0	9.0
Household size	Mean	6.1	5.3	5.6
	<i>SD</i>	2.5	2.3	2.4
	<i>U</i> = 1331; <i>p</i> = .07	Median	5.8	5.0
Farming experience (years)	Mean	24.4	23.6	23.9
	<i>SD</i>	12.8	12.1	12.3
	<i>U</i> = 1433; <i>p</i> = .49 <i>r</i> = -.00	Median	20.0	20.0
Contract crop experience (years)	Mean	17.6	11.9	13.8
	<i>SD</i>	10.7	10.0	10.6
	<i>U</i> = 1016; <i>p</i> = .00 <i>r</i> = -.31	Median	15.0	10.0
Farm to road distance (km)	Mean	0.8	0.8	0.8
	<i>SD</i>	.9	1.1	1.0
	<i>U</i> = 1642; <i>p</i> = .46 <i>r</i> = -.00	Median	0.5	0.5
Operational landholding (acres)	Mean	13.3	9.9	11.0
	<i>SD</i>	7.6	7.4	7.6
	<i>U</i> = 1122; <i>p</i> = .00 <i>r</i> = -.26	Median	13.0	8.0
Livestock (Rs.)	Mean	125,988	97,397	107,005
	<i>SD</i>	94,581	82,319	87,300
	<i>U</i> = 1242; <i>p</i> = .01 <i>r</i> = -.20	Median	108,300	80,000
Physical farm assets (Rs.)	Mean	249506	106972	154,873
	<i>SD</i>	298270	153,297	222,526
	<i>U</i> = 1086; <i>p</i> = .00 <i>r</i> = -.28	Median	104108	50,300

Source: Computed from primary survey (2012-13)

Note. *U*: Mann-Whitney test value; *p* values reported are (1-tail); *p* value <.05 is statistically significant and <.01 is highly statistically significant; *r*: effect size

Table 7.7: Summary statistics of household characteristics of early adopters and followers of onion CFAs

Particulars		Early Adopters	Followers	Total
Age (years)	Mean	44.9	43.7	44.1
	SD	12.5	10.4	11.2
	Median	44.0	41.0	42.0
<i>U</i> = 2630; <i>p</i> = 0.27; <i>r</i> = -.05				
Schooling (years)	Mean	8.3	8.0	8.1
	SD	4.6	4.5	4.5
	Median	10.0	9.0	9.0
<i>U</i> = 2725; <i>p</i> = .39; <i>r</i> = -.11				
Farming experience (years)	Mean	25.2	23.9	24.4
	SD	12.6	11.7	12.0
	Median	25.0	24.0	24.0
<i>U</i> = 2635; <i>p</i> = .27; <i>r</i> = -.05				
Contract crop experience (years)	Mean	17.7	13.3	14.9
	SD	11.1	9.3	10.2
	Median	15.0	10.0	12.0
<i>U</i> = 2144; <i>p</i> = .00; <i>r</i> = -.19				
Farm to road distance (km)	Mean	1.6	1.5	1.6
	SD	1.6	2.9	2.5
	Median	1.0	.0	1.0
<i>U</i> = 2483; <i>p</i> = .10; <i>r</i> = -.10				
Operational landholding (acres)	Mean	14.2	9.7	11.3
	SD	7.8	6.6	7.4
	Median	12.5	8.0	10.0
<i>U</i> = 1733; <i>p</i> = .00; <i>r</i> = -.32				
Livestock (Rs.)	Mean	171271	113018	133930
	SD	343365	253718	289373
	Median	75000	62000	70000
<i>U</i> = 2258; <i>p</i> = .02; <i>r</i> = -.20				
Physical farm assets (Rs.)	Mean	156420	75130	104311
	SD	236758	139359	183916
	Median	43350	26475	29113
<i>U</i> = 1086; <i>p</i> = .00; <i>r</i> = -.16				
Household size	Mean	6.6	5.3	5.7
	SD	2.4	2.2	2.3
	Median	6.0	5.0	5.4
<i>U</i> = 2049; <i>p</i> = .00; <i>r</i> = -.27				

Source: Computed from primary survey (2012-13)

Note. *U*: Mann-Whitney test value; *p* values reported are (1-tail); *p* value <.05 is statistically significant and <.01 is highly statistically significant; *r*: effect size

7.1.3. Awareness of terms of contract

In the case of CGP, the contract is written in Marathi (which is the local language) on the stamp paper of Rs. 20 or Rs. 100. It was found that most (53%) of the CF have read or were explained about the terms and conditions of contract in detail. While rest were neither aware of the detailed terms and conditions and nor were they bothered. They just knew that they were buying this much amount of seeds and would have to sell the harvested output to firm. The copy of the contract signed by the farmer is only with CF firm and not the farmer. The farmers felt that contract is just a mere formality and for records, which shall facilitate to get a crop loan through which they can pay for the material inputs. Most of CF were felt PepsiCo would not do anything even if they sell

outside the contract. For the PepsiCo, contract helps in protecting its interests in contingencies, i.e., if farmers go to legal authorities during disputes.

In the case of onion, there was no written agreement between farmer and JISL. The relationship was based on trust, where if the farmer has taken the seeds from the firm, he will let Jain sevak monitor the crop production and sell the harvest to the firm at the MGP or a higher price (in case, the price of onion is higher in APMC after adjusting the transportation and marketing costs, Section 1).

7.1.4. First contact with the contracting firm

During the survey, farmers were asked about how did the farmers' first contact happen with the contracting firms. The results of which are presented in Table 7.8. Around 45% of CGP CF and 36% of onion CF replied that their first contact with the contract firm official happened when the firms were canvassing in the village about their CF scheme. Around 30% of CGP sample farmers (CF and ACF both), reported that they directly contacted the firm official, while around 12% each mentioned that firm/hundekari approached them directly and friend/relative introduced farmer to the contracting firm.

In the case of onion, a quarter of the sample (CF and ACF both), reported that JISL staff had approached them, and while 20% mentioned that friend introduced them to JISL staff. Around 17% mentioned that firm staff approached them to cultivate contract crop. Overall, canvassing within the village by organising the meeting of farmers through village leaders is an effective way of influencing farmers to join CF.

Table 7.8: First contact with the firm
(response in %)

Particulars	CGP (n=116)	Onion (n=151)
Firm canvassing in village	44.8	36.4
Farmer contacted firm/hundekari	30.2	17.9
Firm approached farmer	12.9	25.2
Friend introduced	12.1	19.9
Agriculture exhibition	0.0	0.7

Source: Primary survey; Note. For CGP and onion, six responses each were missing for this question

7.1.5 Motivation to start growing under contract

To understand the factors that motivate farmers to join contract farming, farmers (ACF and CF both) were asked the open ended question on the reasons that led them to join contract farming. The tabulation of multiple responses was done using SPSS.

In case of CGP, overall 371 responses were generated by 122 respondents (both CF and ACF), results of which are presented in Table 7.9. The majority (64%) of the respondents cited credit availability as one of the reasons for joining contract farming. The access to crop loan in CGP contract farming helped them cover the working capital requirement for the growing CGP. Thus, those farmers who did not have funds to undertake CGP cultivation were able to do so with crop loan. While 62% and 56% of CGP CF cited the success of co-farmers and MGP respectively as the reasons for joining CF. Less than one-third of CGP respondents mentioned access to quality inputs and high returns as one of the reasons for growing under contract farming. The other reasons mentioned were experiencing new crop/variety, good yields, no alternate cash crop, no marketing costs, relationship with hundekari, extension service, friends' suggestion, and trustworthiness of firm assured market and influence of firm staff. CGP, a new crop in the region required high working capital, therefore, availability of credit, the success of co-farmers and reduction of price and production risks in CFAs led them farmers to grow CGP under contract.

Table 7.9: Reasons for joining CGP Contract Farming

Particulars	% of responses (n = 371)	% of cases (n=122)
Credit availability	20.8	63.6
Success of co-farmer	20.2	62.0
Minimum guaranteed price	18.3	56.2
Quality seeds/inputs	10.0	30.6
High income/returns	7.8	24.0
Experience new crop/variety	5.9	18.2
Good yields	4.0	12.4
No alternate cash crop	3.5	10.7
No marketing costs	2.7	8.3
Relationship with Hundekari	2.4	7.4
Extension service	2.2	6.6
Others ^a	2.2	6.6
Total	100.0	

Source: Primary survey; *Note.* Cases includes both CF and ACF; multiple responses question

^a Friends suggestion, trustworthiness of firm, assured market, firm staff influence

In case of onion, overall 381 responses were generated by 156 respondents (both CF and ACF), results of which are presented in Table 7.10. Most of the respondents (90.5%) cited MGP as one of the reasons for joining onion contract farming. This is so because farmers face huge price volatility in table variety onion. While 50% and 30% of respondents cited the success of co-farmers and high returns respectively as the reasons for joining CF. The other reasons mentioned were good yields, higher price in contract, trustworthiness of firm, extension service, wanting to experience new crop/variety, friend suggestion, no marketing costs, assured market, quality seeds/inputs, no alternate cash crop, losses in competitive crop, and drip subsidy

Table 7.10: Reasons for joining onion contract farming

Particulars	% of responses (n = 381)	% of cases (n=157)
Minimum guaranteed price	37.4	90.5
success of co-farmer	20.4	49.4
High returns	12.3	29.7
good yields	5.8	13.9
High price	5.2	12.7
trustworthiness of firm	4.2	10.1
extension service	3.4	8.2
experience new crop/variety	2.6	6.3
friend suggestion	2.4	5.7
no marketing costs	2.4	5.7
Others ^a	3.9	9.5
Total	100.0	

Source: Computed from primary survey

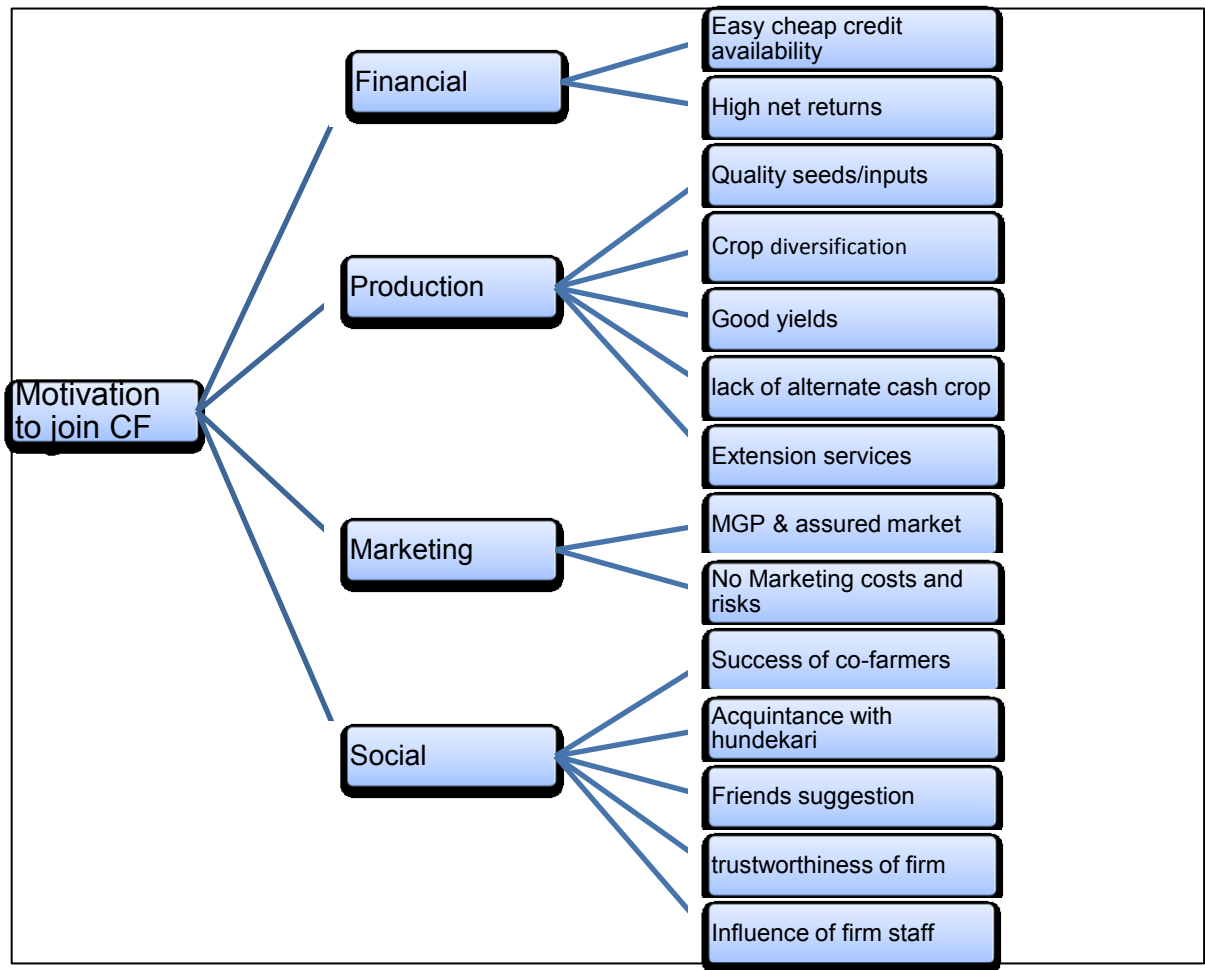
Note. Cases include both CF and ACF and it is a multiple response question

^a assured market, quality seeds/inputs, no alternate cash crop, loss in competitive crop, and drip subsidy

Based on results of Table 7.9 and 7.10 and discussions with farmers, the motivations to join CF are summarized in Figure 7.1. These motivations are broadly classified into financial, production, marketing, and social. On financial grounds, farmers were attracted to easy, cheap credit availability from banks and high expected income after seeing the success of co-farmers in contract crop cultivation. On the production aspect, contract crop cultivation was seen as an opportunity for crop diversification, access to quality seeds/inputs, and extension services. As farmers had mentioned from the Satara being drought prone region, farmers wanted to be sure that seeds are of good quality. On the marketing side, there were no marketing costs and price risks due to MGP and assured procurement by the firm. Also, the firm would make arrangements for

procurement. Moreover, farmers being risk averse and with the higher costs involved in CGP cultivation; farmers wanted an assured market for their produce at MGP. Within the social settings of the village, farmers were influenced by the feedback of their co-farmers and encouragement from firm staff and Hundekaris. Overall, farmers viewed contract crop cultivation, as means to overcome uncertainties and imperfections of input and output markets.

Figure 7.1: Motivation to join contract farming



Source: Primary survey

7.1.6. Benefits of contract farming

Multiple response analysis of the open ended question of benefits perceived by CGP and onion CF in contract farming is presented in Table 7.11 and Table 7.12 respectively. For the open ended question, regarding benefits perceived by sample CGP CF farmers, overall 284 responses were generated. MGP and easy credit availability were the major benefits of CGP contracting mentioned by 72% and 63% of CF

respectively. Less than half of CF mentioned that high yields/income and quality seeds/inputs respectively as benefits of growing under CFAs. Around 20% of CF perceived extension services, no marketing costs and risks and transport arrangements as other benefits of CF. Over 9% of farmers also felt the discounted price of chemical kit as beneficial. For e.g., during 2012-13 in Pune, the plant protection kit was available at 33% discount of the market price. Other benefits perceived by CGP CF include irrigation assistance, remunerative price, proper payment, and improvement in soil fertility (Table 7.11).

Table 7.11: Benefits perceived of PepsiCo CGP contract farming

Particulars	% of responses (n=284)	% of cases (n=89)
Minimum guaranteed price	22.2	71.6
Easy credit availability	19.4	62.5
High yields/income	14.8	47.7
Quality seeds/inputs	14.1	45.5
Technology transfer/extension service	6.7	21.6
No marketing costs	6.3	20.5
Transport arrangements	5.6	18.2
No market risk	5.3	17.0
Discount on inputs	2.8	9.1
Others*	2.8	9.1
Total	100.0	322.7

Source: Computed from primary survey (2012-13)

Note. Multiple responses question; *Irrigation assistance, remunerative price, improvement in soil fertility, and proper payment

In case of onion, for the open ended question, regarding benefits perceived by sample CF, overall 248 responses were generated, of which MGP received largest responses, i.e. 83% of CF, followed by high yields/returns mentioned by 50% of CF (Table 7.12). While one third of CF mentioned technology transfer and extension services as one of the benefit of onion CF. Improvement in soil fertility, quality inputs and no marketing costs were mentioned by nearly 15% of onion CF. CF also mentioned that they do not have tension to take the produce to APMC market and at what rate the produce would sell. As generally, for taking produce to market, they have to spend one or two days apart from transport and marketing costs. Other benefits perceived by onion CF were no market risk, high price, irrigation assistance, and easy credit availability.

Overall, in both the crop surveys, it was found that MGP, high yields/returns, quality inputs and technology transfer were the major benefits. These attributes point that contract farming help in overcoming input and output markets imperfections.

Table 7.12: Benefits perceived of JISL onion contract farming

Particulars	% of responses (n=248)	% of cases (n=108)
Minimum guaranteed price	35.9	82.4
High yields/returns	21.8	50.0
Technology transfer/extension service	14.1	32.4
Improvement in soil fertility	6.5	14.8
Quality seeds/inputs	5.6	13.0
No marketing costs	5.6	13.0
Transport arrangements	3.2	7.4
Others*	7.3	6.5
Total	100.0	

Source: Computed from primary survey (2012-13)

Note. Multiple responses question;

* no market risk, high price, irrigation assistance, and easy credit availability

7.1.7. Problems in CF

When asked to CF about any problems faced in growing contract crop under contract, only about 49.4% of CGP CF and 31.5% of onion CF mentioned they did face some problem on contract crop cultivation. This shows a majority of the CF were satisfied with contract farming. Multiple response analysis for the open-ended question on problems faced by CGP and onion CF is presented in Tables 7.13 and 7.14 respectively. One-fourth of CGP CF and eight per cent of onion CF stated delay in procurement by the firm as one of the problems. It was observed that with around hundreds of farmers growing contract crop in the region, mostly, the harvest period of contract crop is near about same for all the farmers. Therefore, many times, the firm staff is unable to find the transporters to procure the produce for all the farmers at the same time. Moreover, there were huge ques at its factory plant in Pune (for CGP) and Jalgaon (for onion), where truck have to wait for several hours to offload the produce. Therefore, some farmers have to wait for few (3-5) days for the produce to be procured due to unavailability of trucks. Many times due to delay, there are risks that CGP output may

get internal and external defects⁴⁰. As after the produce is transported, the sample of the produce from the truck is checked at PepsiCo factory plant. The firm accepts 5% of the produce which is extra small (less than 45 mm) or extra-large (greater than 85%) or damaged or green CGP, or soil. If the sample exceeds 5% of the permissible limits, the farmer is paid at the rate of Rs. 1.75 per kg for that proportion of produce. About 23% of CF said that strict quality norms followed by PepsiCo as another difficulty in CGP as this directly affects their net returns. Similarly, 17% of CGP CF mentioned about lack of transparency in final weighing, as a farmer comes to know about the final weight and price of the produce, after the output is weighed at the firm's plant, i.e., after 1-3 days of the produce is transported from the farm. Similar concerns were also raised by onion growers. Moreover, there were few CGP farmers even doubting the ethics of contracting firm about whether they report the true weight of seed tubers and output. As some farmers felt that on seeds tubers bag, weight is not mentioned. Thus, farmers feel contracting firm's quality norms is biased towards them. Some CGP farmers (12%) complained about the poor quality of seeds being given. Some of the other problems mentioned by few CGP farmers were low output price, delay in delivery of seeds, late payments, higher cost of inputs and not enough support from the firm.

Table 7.13: Problems faced by CGP CF

Particulars	% of CF (n=89)
None	49.4
Delay in procurement	24.7
Strict quality norms	22.5
Lack of transparency	16.9
Poor quality seeds	12.4
Low price	7.9
Others*	

Source: Computed from primary survey (2012-13)

Note. Multiple responses question; * Delay in delivery of seeds, late payments, higher cost of inputs, and not enough assistance from firm

Table 7.14: Problems faced by onion CF

Particulars	% of CF (n=108)
None	69.5

⁴⁰ External Defects include mechanical damage, greening, bruising, wet rot, dry rot, infestation (PTM), other external defects. Internal defects, hollow heart brown fleck, Black Heart, Black spot, other internal defects.

Delay in procurement	8.3
Pest attack	8.3
Fertility loss	8.3
Low price	5.6
Others*	

Source: Computed from primary survey

Note. Multiple responses question; *poor quality seeds, higher costs of inputs, late payments, inflexibility, strict quality norms, and water scarcity

As per the survey data, CGP CF have been growing CGP continuously since the year they started CGP cultivation. To understand whether farmers are facing declining yields or deterioration of land due to the regular growing of CGP, farmers were asked about it. Sixteen percent of CGP CF growers felt that yields have been declining. Of which more than two-thirds stated mono-cropping as the reason for the decline, while rest felt a decline in yields was mainly due to adverse climatic conditions.

In the case of onion, only 43 responses were generated from 34 onion CF respondents. Apart from delay in procurement, pest attack, and fertility loss were the other major problems faced by onion growers (Table 7.14). Fertility loss is a perception, and there is no scientific basis of it. One of the reasons for the loss of fertility is a mono-cropping pattern followed by farmers. It was observed in the survey, that contracting firms encourage the farmer to grow on different parcels of land every year and not follow mono-cropping. Some onion CF also complained about the lower price in the contract. Few farmers raised other concerns such as poor quality seeds, higher costs of inputs, late payments, inflexibility, strict quality norms, and water scarcity.

7.1.8. Overall Experience

To understand the overall experience of contracting, CF were asked about whether they were satisfied, dissatisfied, or neither satisfied nor dissatisfied (i.e. average). More than three-fourth of the CGP CF (i.e., 79%) stated that they were satisfied, while 18% were neither satisfied nor dissatisfied and only 3% were dissatisfied with growing CGP under contract. Similarly, in case of onion, 70% of CF stated they were satisfied, while 28% stated they were neither satisfied nor dissatisfied, and only 2% were dissatisfied in onion contract crop cultivation. Thus, majority of the CGP and onion CF were satisfied to grow under contract. This is also reflected in the fact that only 5.6% of CGP CF have so far had taken a break from CF, i.e., there was a year or more, where they did not grow CGP within the contract. Thus farmers are consistently growing CGP under CF. While

23% of onion CF have so far had taken a break from CF for at least a year, where they did not grow onion within the contract.

Overall, farmers of both the crops have said that the experience of contract farming have been good. They are more informed about the technical know-how of farming, i.e., good agricultural practices regarding planting and maintaining fields to get a good harvest. Before, the company, there was no one who would visit the farms and guide farmers. The extension services by the Government agency is virtually absent in the region. Also, through mobile phones, they are easily connected to other APMC markets. Farmers incomes have increased from contract crop cultivation, and they feel more empowered.

7.1.9. Suggestions by CF

On asking about any suggestions and improvements in contract farming, nearly half of CGP CF responded, which generated 73 responses (Table 7.15). The percentage of non-response was high because many farmers were unable to give concrete suggestions. About 24% of CF suggested timely procurement by CF firm. The Higher price of output and good quality CGP seed tuber was suggested by 12% and 10% of CF respectively. Nine percent of CF suggested that there should be direct dealing with firm staff, with no intermediary, i.e., hundekaris in this case. As currently, in the CGP CF by PepsiCo, the major operations like distribution of seed tubers, chemical kit, and procurement of output are carried mainly by hundekaris. As many did not have faith in them, some are also alleging that they may be corrupt. Seven percent of CF suggested relaxing strict quality norms of output while procuring.

Both the crops survey results (Table 7.15Table 7.16) show that timely procurement and higher price were the major suggestions of the CF farmers. It seems many of the suggestions like timely procurement, good quality seeds, quicker payment are linked to efficiency and diligent behavior of firm staff.

Table 7.15: Suggestions of CGP CF

Particulars	% of responses (n=73)	% of CF responded (n=48)
Timely procurement	28.8	23.6
Higher price of output	15.1	12.4
Good quality seeds/tuber	12.3	10.1
Direct dealing with firm	11.0	9.0
Relaxing quality norms	6.8	5.6
Crop insurance	4.1	3.4
Farmer association	4.1	3.4
Weighting of output at farm	4.1	3.4
Others*	13.6	
Total	73	100.0

Source: Computed from primary survey (2012-13)

Note. Multiple responses question; * Lower seed price, immediate receipt of output, seed bags be properly weighed and packaged, seeds on time, quicker payment, availability of cold storage facility

Table 7.16: Suggestions for onion CF

Particulars	responses (n=20)
Higher price of output	11
Quicker payment	3
Timely procurement	3
Crop insurance	1
Weighting of output at farm	1
Bank loan assistance	1
Total	20

Source: primary survey

Note. Multiple responses question

7.2. Non-participation aspects of contract farming

In this section, non-participation aspects of contracting of CGP and onion crops is discussed. Firstly, some aspects of contract crop cultivation without a contract is discussed. Factors influencing ACF to disadopt from contracting and NNCF not to grow in the contract is discussed in a later subsection.

7.2.1. Functioning of non-contract mode of production

In case of CGP, the NCF grow CGP either with the seed tubers bought in credit or on payment from non-contract hundekaris or they go to Punjab. It was observed that in many villages in Pune, there were a group of people (farmer or fertilizer dealers) go together to Punjab in the month of February-March. There they buy the CGP seeds tubers (FL-1533 and ATL) from an agent or a large farmer in Punjab. After the purchase,

the seed tubers are kept in cold-storage in Indore or Punjab. The delivery of which is received in June in their respective village. These farmers groups also called as non-contract hundekaris sell these seeds to farmers either on partial or full credit. For some, there is an oral understanding, where they buy the seed on 50% credit. This credit is paid back after the harvest is sold. In most of the cases, it is this non-contract hundekari which provides a chemical kit, fertilizers, etc. on credit or provide advances for labour payments also arranges the sale of the output. There seems to be interlocking of factor markets in Pune districts. Since the non-contract hundekari has provided the seeds to them, the farmer is bound to sell the produce to him. This non-contract hundekaris is linked to many potato chips firms' staff and agents.

In case of onion, NCF grow table variety onion viz. white onion and rangda onion in Rabi season. The crop duration is not very different between V12 and white onion or rangda onion. However, some farmers claim that white onion or rangda onion reaches maturity in 105-110 days compared to 120 days of V12 onion. Rest crop attributes and water requirements are similar. However, V12 may need one or two additional irrigation due to greater maturity duration. Unlike CGP seed tubers which are not easily available in market, the seeds of table variety onion are easily available in market. The harvested produce can be easily sold in APMC markets or there are many traders visiting farms, who directly procure from the field.

7.2.2. Risks in non-contract production

In case of CGP, NCF revealed that they face input and market risk. Firstly, the NCF are not sure about the quality of the seed tubers supplied by non-contract hundekaris. Similarly, few farmers also felt a risk whether output would sold and at what price. However, most of the farmer are not worried about the market risk. As they had seen the rising demand for CGP tubers. As each year they are wooed by many traders to sell the produce to them as one of the Pepsico hundekari from Satara district says,

“Nearby villagers of Pusegaon (Khatav taluka), know traders in Pusegaon as they have been producing potato for many years. Hence, they can trust them. In case, they get bad seeds. They can contact them and do not pay back the money. Moreover the business also works on full or partly credit. However, those farmers who are new to potato cultivation, do not have contacts with potato traders and are not keen to try cultivation without contract. As in contract, most of their risks are taken care of. Those regions which are farther from traditional potato market of Pusegaon, shall look to stick to contract.”

In case of onion, the price risk is the important concern for NNCF, as many times they are not sure about the price what they would get. The price volatility is very high. As sometimes prices goes down to Rs. 2 per kg and sometimes to Rs. 6 per kg. Thus, onion cultivation is risky, but returns could be very high as well.

7.2.3. Disadoption from contracting

In this section, why do the farmer leaving contracting is discussed. To understand, why ACF disadopted from contracting, they were asked the open-ended question about the reasons for exiting contracting. The results for the above multiple-response question for CGP and onion are presented in Table 7.17 and 7.18.

Table 7.17: Reasons for exiting CF, CGP

Reasons for exiting CF	% of responses (n=66)	% of ACF (n=33)
Inflexibility	25.8	51.5
Lower Price	22.7	45.5
No need for loan	10.6	21.2
Loss in contracting	7.6	15.2
Higher cost of cultivation	6.1	12.1
Corruption by firm's agent	6.1	12.1
CGP seeds available outside	6.1	12.1
Got late in seed booking	4.5	9.1
Delay in procurement	4.5	9.1
Others*	5.9	12.1
Total	100.0	-

Source: Field survey (2012-13)

Note. Multiple-response question

*Strict quality norms, Late Payment, agent lost the firms' agency

In case of CGP, 66 responses were generated from 33 ACF respondents. The majority of ACF (51.5%) said the inflexibility in contracting as the reason for exiting CF. By inflexibility they meant single buyer, i.e. they cannot sell to any other buyer and they have to agree to the price offered by the contracting firm. Similarly, about 45.5% mentioned lower price in the contract while more than one-fifth (21.2%) of them did not felt the need of credit or to take crop loan for growing CGP as the reasons for exiting CF. About 15% of CF farmers also mentioned that after having faced loss in CGP cultivation under contract, hence they left growing under contract. What farmers mean, is that the other traders were offering higher prices. Thus they had forgone profits by selling to

PepsiCo. Nearly 12.1% of ACF mentioned that higher cost of cultivation under contract, easy availability of CGP seed tubers outside, and corruption by the firm agent as the reasons for exiting CF. thus, it seems that if a farmer is uncomfortable with hundekari and if the seed tubers are available outside, then he would grow CGP without a contract. This emphasizes that conduct of hundekari and the firm staff is crucial in the continuance of farmer growing CGP under contract.

In case of onion, 130 responses were generated from 56 ACF respondents. More than one-third of ACF had exited CF, due to higher costs and losses in contract cultivation. The next important reason is the water scarcity and longer duration of maturity of V12 Crop, mentioned by more than quarter of ACF (Table 7.18). The table variety onion has the maturity of around 100-110 days, whereas V12 crop requires on an average 120 days for maturity (primary survey). Another reason for its greater number of days of maturity is that V12 takes bigger size compared to table variety onion. Greater duration of maturity leads to an additional couple of irrigation, i.e. increased water requirement. Therefore, those farmers, who have less water on their field due to poor rainfall in that agriculture may opt out of contracting for that season. The other reasons mentioned were a lower price, soil deterioration, strict quality norms, lack of transparency, low yields, and delay in procurement. Another point mentioned by few of the farmers is that if the Jain Sevak is not in the same village, their access to him may be limited. Thus, as in case of CGP, the efficient functioning of the JISL staff in onion CFAs also plays an important role in arresting the attrition from CFAs. If the firm staff are not diligent and are not able to provide efficient service to farmers, then farmers may leave to grow the crop with the contracting firm.

Table 7.18: Reasons for exiting CF, Onion

Reasons for exiting CF	% of responses (n=130)	% of ACF (n=48)
Higher cost of cultivation	13.8	36.7
Loss in contracting	13.1	34.7
Long duration crop	12.3	32.7
Water scarcity	9.2	24.5
Lower price	6.9	18.4
Soil deterioration	5.4	14.3
Strict quality norms	4.6	12.2
Lack of transparency	4.6	12.2
Firm staff not in village	4.6	12.2

Low yield	3.8	10.2
Others*	21.5	
Total	100.0	-

Source: Field survey

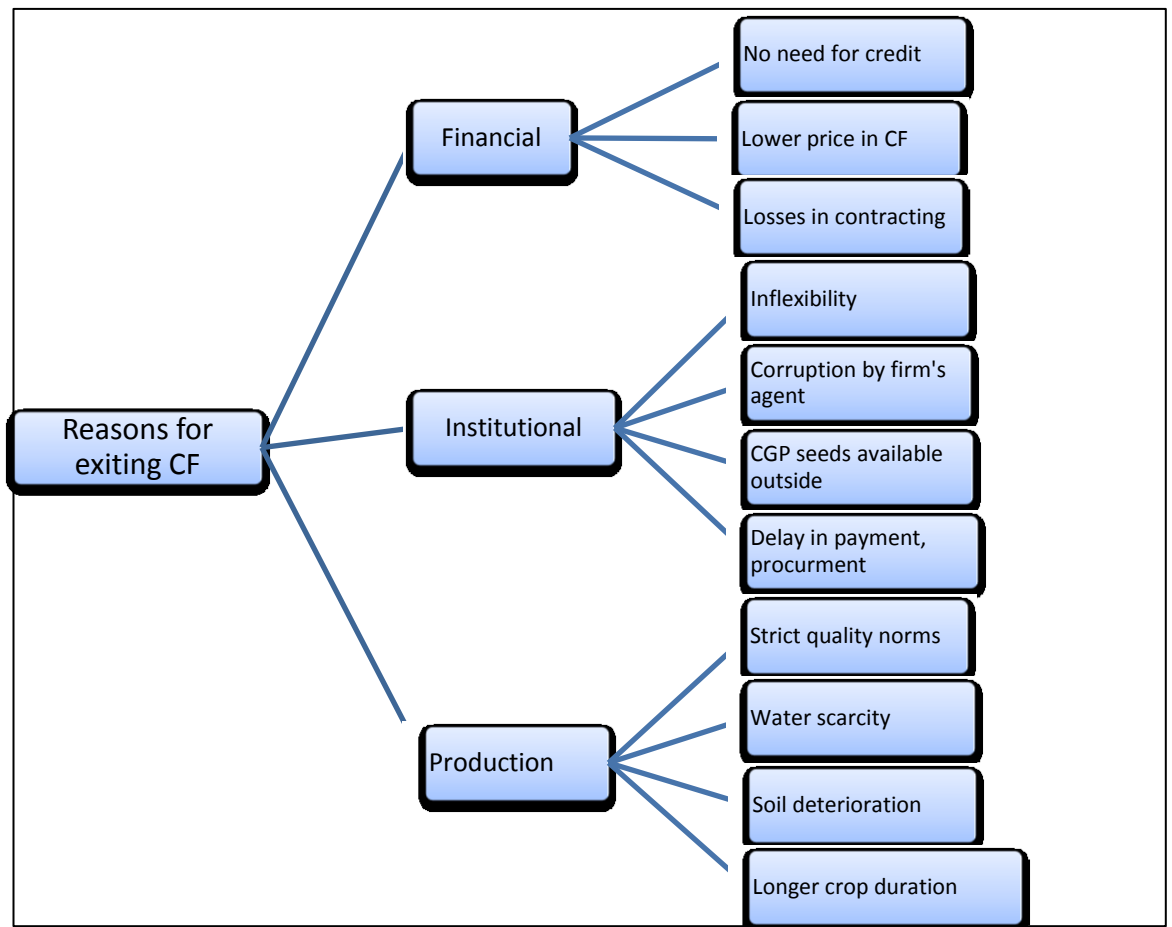
Note. Multiple-response question

*nursery failure, firm did not offer contract, late and improper payment, compulsory MIS, poor seed quality, personal reason, delayed procurement, crop rotation, pest issue, lot of attention needed for company's crop.

Based on results of Table 7.17 and 7.18 and discussions with ACF, the reasons of exiting CF are summarized in Figure 7.2. The reasons are broadly classified into three categories, viz., financial, institutional, and production. On financial grounds, no need for credit and lower price in contract cultivation led ACF to grow CGP without a contract. Similarly, loss in contract crop cultivation led onion ACF to exit CF, as they thought they were better off without it. Most of the ACF (both CGP and onion) are financially well-off (Sections 6.1.4 and 6.2.2).

In case of CGP, after few years of joining CF, when demand for CGP crop started rising and competition increased. The other traders started offering higher prices compared to CF price. ACF did not want to have a single buyer, whereby they are dependent on its terms and conditions. They would like to be open to selling to whom so ever, i.e., wherever they find it more profitable. Moreover, CGP seeds were easily available with other traders. Then there were other institutional factors which are about the contracting firm, which led to the dissatisfaction among ACF. ACF was unhappy about the strict quality norms, delay in procurement, and conduct of the hundekari. Overall in the case of CGP, financial aspect collectively gathered 48% responses, followed by 45% about institutional aspects. Similarly, in the case of onion, financial, production and institutional aspects plays an important role in decision making of farmers. Therefore, the contracting firm needs to focus on these aspects, to reduce the attrition from contracting.

Figure 7.2: Reasons for exiting contract farming



Source: Field survey (2012-13)

During the survey, it was observed that farmers take a break from contracting, i.e. there would be a season, when they do not contract. For e.g., 23% of onion CF had taken a break for a season or more from contracting. The majority of farmers, who had taken a break from CF in one of the season, had mentioned losses in the previous season as one of the reasons for taking a break. i.e., if the farmer faces losses in CF, it is likely to shift to growing table variety onion, similarly, if it NCF faces losses in one of the season than it is likely to contract in next season. Overall, if farmers feel that they would be better off without being in a contract, then they would not grow under contract. Similarly, if they perceive that being in the contract they would have a better pay off. Then, they would not hesitate to join back CF. For e.g., 82% of CGP ACF and 91% of onion ACF reported they might join contract crop cultivation with the present firm again in future again. Such churning in and out of CF was also reported by Narayanan (2011).

Another reason for the break in contracting was of side-selling the contracted produce. As those farmers who had sold the produce outside contract had not approached firm for the next season. Few farmers also cited the reason of water scarcity for not taking up onion contract cultivation in one of the seasons. Thus, farmers decision making whether to contract or not is also dependent on its resource conditions. Also, availability of alternative crop production opportunities also plays an important role in farmers' decision-making process, whether to grow in the contract and without a contract. For e.g., farmers in Satara do not have alternative cash crop opportunities on their land, moreover growing CGP without a contract is highly risky (See section 7.2.2). Therefore, attrition of CGP is lower in Satara compared to Pune. Cai et al. (2008) also observed in their study that attrition in remote areas is low.

7.2.4. Non-participation in contract farming of never contracted farmers

To understand, why NNCF never grew contract crop under contract, they were asked the open ended question about the reasons for non-participation. The results for the above multiple-response question for CGP and onion are presented in Table 7.19 and 7.20. In case of CGP, 144 responses were generated from 56 NNCF. Similar to the reasons for ACF exiting CF, the top three responses generated were inflexibility (31.6%), lower price in CF (17.4%), and do not want to take a loan (11.4%). Some of the farmers also cited they had trust and support of the other non-contract hundekari. Many of NNCF were acquainted with these non-contract hundekari, who was from the village itself. He provided seeds and other inputs on credit. Thus, these NNCF no longer felt the need to align with Pepsico. Also, there were few farmers who did not trust the PepsiCo hundekari. Thus, the relationship between the farmer and the hundekari or first staff, do play a role in farmers choice whether to contract or not. This point was also emphasized in Section 7.2. Hundekari and firm staff have to work on working efficiently to minimise the constraints faced by the farmer. Hundekari and the firm staff needs to focus on minimising delay in payments and procurement and also explain them the need for quality norms. They need to work on so as to avoid any grapevine (negative rumour) spreading among farmers.

Table 7.19: Why did CGP NNCF never grew under contract

Particulars	% of responses (n=144)	% of NNCF (n=56)
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Inflexibility	31.6	64.3
Lower price in CF	17.5	35.7
Did not want to take loan	11.4	23.2
Trust/support of agent	8.8	17.9
Less land and resources	7.9	16.1
Lack of information on CF	6.1	12.5
Personal reasons	4.4	8.9
Earlier booking	4.4	8.9
Strict quality norms	2.6	5.4
Lack of trust	2.6	5.4
Others*	2.6	5.4
Total	100.0	203.6

Source: Primary survey

Note. Multiple response question; * High costs, delay in procurement and payment

In the case of onion, 66 responses were generated from 44 NNCF. The majority of the NNCF (46%) cited water scarcity as one of the reasons for not growing V12 onion. This was followed by the higher cost of cultivation. Another reason which deterred NNCF from growing company V12 onion was the rumour that it leads to loss of fertility of the soil. Long duration crop, inflexibility, and not wanting to try new onion variety were the other reason mention by more than 10% of ACF (**Error! Not a valid bookmark self-reference.**)

Table 7.20: Why did onion NNCF never grew under contract

Particulars	% of responses (n=63)	% of NNCF (n=44)
Water scarcity	30.2	46.3
Higher cost of cultivation	14.3	22.0
Fertility loss rumour	12.7	19.5
Long duration crop	9.5	14.6
Inflexibility	7.9	12.2
Not wanting to try new variety	6.3	9.8
Lack of information on CF	4.8	7.3
Less land	3.2	4.9
Low yield	3.2	4.9
Others*	7.9	
Total	100.0	

Source: Primary survey

Note. Multiple response question;

* Personal reasons lack of trust, high-quality standards, lack of trust, earlier booking, and nursery risks

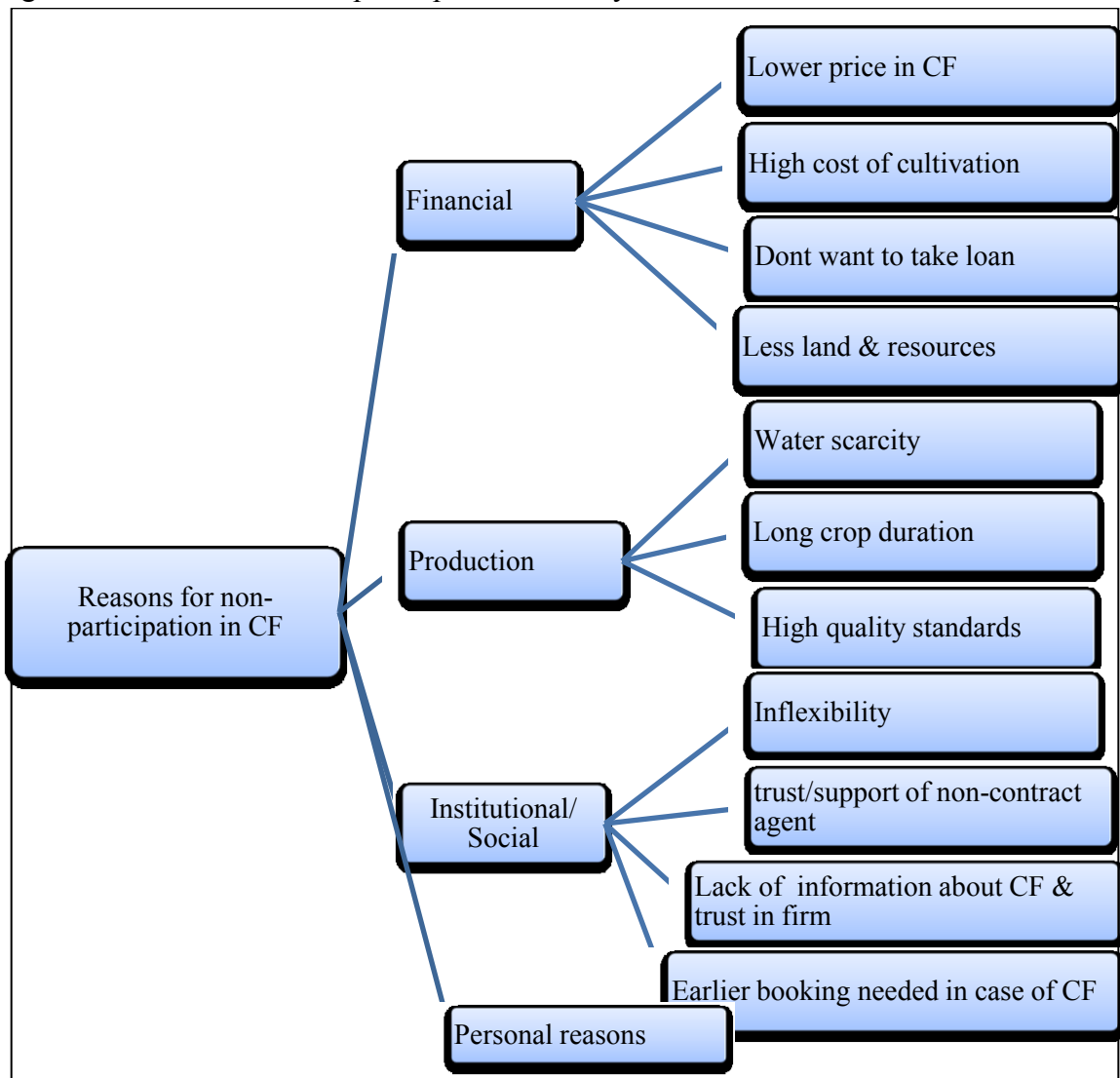
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Table 7.20, and discussions with NNCF of CGP and onion, the reasons for non-participation in contracting are summarized in Figure 7.3. From the financial front, lower price in CF, the high cost of cultivation, no need for credit and limited land and resources were reasons not to participate in CF. There is a mentality among some CGP farmers that they do not want to show they have taken some bank loan, as it would affect their status within the village. Also, some of the farmers wanted to avoid the documentation related to taking crop loan and going to banks. Moreover, by taking a crop loan, it would reflect on the Government's land revenue records. Farmers felt that in the case due to some reason if they are not able to pay back the loan, they would be termed a defaulter in the banking records, which they do not want. Presently, the trader is giving them seed tubers, fertilizers, and chemicals on credit (either half of the amount or the whole). Thus, they no longer felt the need to take crop loan from the bank. About 16% of CGP NNCF and 5% of onion NNCF also mentioned that they have less land and resources; As discussed in previous chapter average holding as well as acreage under contract crop cultivation (both CGP and onion) is lower among NNCF compared to CF (See section 6.2.6).

About production aspects, whether to grow CGP/onion or not depends on climatic factors like rain, as some of them do not have access to irrigation sources. There were few farmers, who felt their land was not suitable to get a good quality crop. As contract crop production, it is important that they get good quality crops. Thus, these farmers shy away from contracting. Similarly, water scarcity issue is another constraint which discourages to undertake contract crop cultivation. Field observations also revealed there were many farmers who due to climatic and resource constraints could not cultivate

contract crop. Also, some farmers decide to grow CGP/onion and how much to grow at the last instance. As in CGP/onion contracting. Usually, farmers have to inform hundekari/Jain Sevak one-two weeks in advance, which is not the case in NNCF. However, here NNCF CGP also run the risk of not getting CGP seed tubers. While this is not the case for onion, as onion seeds and even nurseries are available.

Figure 7.3: Reasons for non-participation in CF by NNCF



Source: Field survey (2012-13)

Institutional reasons refer to the problems related to contracting firm and contracting system. Less-than two-third of the NNCF felt inflexibility as the reason by non-participation. Inflexibility refers to a single buyer and adhering to its terms and conditions, i.e. when will it procure and at what rate and farmers do not have much say in it. About 12.5% of CGP NNCF and 7.3% of onion CF were not aware of in details about the contract farming scheme of the company. Therefore, firm staff and hundekari

need to make efforts to create awareness of the contract farming to all the farmers. Also as mentioned in section 7.2.3, firm staff needs to avoid delays in procurement, as it leads to the risk of quality deterioration of the crops, which in turn affects their returns.

Overall, CGP firms should have a more participatory approach with stakeholders regarding fixing terms and conditions of the contract. As of now the system seems to be more biased towards PepsiCo which create distrust among farmers towards firm. Which could be detrimental for the continuance of the contracting system in that area.

As in case of ACF, NNCF were open to joining contracting, as and when they would feel so. In the case of onion. More than two-third were non-committal but told they might join CF in future, while 28% were likely to join onion under contract in future. Similarly, 93% of NNCF reported they might grow CGP in the contract in future, and they are not averse to it. The discussions with farmers revealed that decision to participate in contract farming depends on their financial condition, market expectations and environment prevailing during that time. If they had a bad experience in growing CGP without contract or problems in seed tuber or marketing issues, then they may switch to CFA.

7.3. Concluding remarks

In this chapter, it was found that those farmers were experienced and better resource endowments were the early adopters. Operational holdings, livestock and physical farm assets were higher in case of early adopters compared to followers. MGP and success of co-farmers were the major influencing factors to join contract farming. Also, credit availability in case of CGP was very important, as CGP cultivation required high working capital. Therefore, contracting firms needs to keep up trust in a relationship through its actions. Positive feedback and image of CFAs attract farmers to CFAs, while negative feedback discourages farmer to join CFAs. Also, contract crop acreage is low in NNCF compared to CF. Therefore, those having higher acreage, want to reduce risks by growing crop under contract. Thus, overall, it seems, contracting is a kind of risk mitigation strategy of farmers.

Delay in procurement was the major problem faced by CF. Such problem was also reported by Singh, S. (2002) in their study of tomatoes in Punjab. Overall, farmers of

both the crops have said that the experience of contract farming have been good and satisfactory.

The discussions with farmers revealed that their decision to participate in CFAs depends on their experience, financial condition, and environment also their future expectations prevailing during that time. If they had a bad experience in growing the respective crop without a contract, then they may switch to CFA. Thus, participation and non-participation in CFAs is not a permanent feature; farmer can grow under contract as and when they feel.

Churning in and out of the contracts was observed in both the crops. Whenever, the market price of output is higher than that of the price offered by the contracting firm, farmers feel they are losing on the gain. Also after growing contract crops for some years, they understand the technicalities of it and get financially better off. Thus they no longer felt the need for contract and thus, inflexibility, i.e. single buyer a constraint, which led them not to participate in contract farming. Market dimensions also play an important role in decision making of farmer. Villages, which have inputs and output markets close by, there farmers may prefer to grow CGP/onion without contract. Also, the villages in which CGP hundekaris are more, there also. However, those villages which are far away from input and output markets, their farmers prefer to grow in the contract. Thus, where there are imperfections in input and output markets, there farmer feel the need for support and are more likely to stay in contract.

Firms need to keep the focus on how could they retain their farmers and be their preferred buyers. For this, it is essential that their staff functions in an efficient and diligent way. As any inappropriate action leads to negative reputation, which may have an adverse impact on the functioning of CFAs. In next chapter, the economics of contract crop cultivation vis-à-vis non-contract crop cultivation is discussed.