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Use of Contracts by Prairie Agricultural Producers

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Abstract
The objective of the research reported in this paper was to assess current trends in the use of contracts by agricultural producers in the Canadian Prairies and determine the factors affecting farmers' contracting behaviour. Two surveys – one a mailout and one online that yielded a combined 587 usable responses – were used to gather data pertaining to producers' use of marketing contracts, production contracts, and technology use agreements (TUAs). It was found that such contracts are used frequently by farmers and generally well-understood. Farmers also indicated they mostly believe they are fairly treated by contracts, but that contracting firms' rights are carefully protected by contract terms. Econometric analysis indicated that a farmer's decision to contract is affected by farm type, the mix of crops grown by the operation, net income including off-farm income, how long the respondent has been farming, and their level of risk aversion. A second econometric model discovered that a farmer's previous use of contracts, the amount of the contract that the respondent actually reads, the ease with which a contract can be understood, the fact that producers are not indifferent to the existence of enforcement mechanisms, the presence of a dispute settlement mechanism, whether the contracting firm determines inputs to be used, and the provision of a fieldman exert statistically significant effects on the types of contracts used.

Résumé

La présente recherche a pour but de caractériser les tendances dans l'utilisation de contrats par des agriculteurs des Prairies et de mesurer l'incidence des facteurs conditionnant l'utilisation de contrats de mise en marché, de production ou d'utilisation de technologie. Deux enquêtes, une postale, l'autre en ligne, ont généré un échantillon de 587 répondants. Les résultats indiquent que les contrats sont fréquemment utilisés et généralement bien compris. Les agriculteurs pensent être traités équitablement mais soulignent que les firmes sont généralement bien protégées par les termes et conditions des contrats. Une analyse économétrique a révélé que l'utilisation de contrats est influencée par le type de ferme, le choix de cultures, le revenu net incluant le revenu hors-ferme, le nombre d'années d'expérience de l'agriculteur et son attitude vis-à-vis le risque. Une deuxième analyse économétrique a révélé que le type de contrat choisi par l'agriculteur est influencé par l'utilisation passée de contrats, le montant du contrat, la familiarité de l'agriculteur avec les termes et conditions du contrat, l'attitude de l'agriculteur vis-à-vis les mécanismes proposés pour assurer l'application du contrat, le mécanisme de résolution de disputes, la partie qui choisit les intrants et le contrôle par des inspecteurs.

JEL codes : D23, Q12

Keywords : contracts, producer surveys, adoption

1.0 BACKGROUND

The use of contracts in agriculture has been increasing for some time due to market consolidation, changes in trade patterns, technological developments, evolving consumer demand, and other factors (Vavra 2009). Contracts can be beneficial to both producers and contractors by facilitating co-ordination and risk sharing (Hueth & Hennessey 2001). However, Harl (2000) notes that concerns exist regarding potential imbalances of bargaining power in contractual relationships between farmers and both input suppliers as well as downstream users of agricultural commodities. Miller (2003) identifies a dozen common problems afflicting agricultural contracts, ranging from lack of clarity and effective dispute resolution mechanisms to equitable allocation of risk and liability, including responsibility for adhering to environmental regulations. Young & Hobbs (2002) discuss similar concerns towards increasing vertical co-ordination as well as declining spot market and shifts in market power. In spite of this, Katchova (2010) asserts that in the absence of other contractors or spot market, firms will not exercise market power. MacDonald (2006) observes that even though contracts limit competition, they can improve market efficiency.

Discussions with farm leaders confirm that agricultural producers have misgivings about the fairness of many types of farm contracts. In particular, concerns relating in particular to onerous terms in Technology Use Agreements (TUAs), "leaky" (insufficiently precise) production/marketing contracts in the pulse industry, and one-sided/restrictive contracts for some inputs and/or commodities are common (Faller 2011). Wu (2006) identifies five aspects of contracting that create problems for producers: (1) contracts are too-often incomplete and leave too much room for discretion in interpretation by the firm offering the contract, (2) processors and others often hold market power and have other advantages in bargaining, (3) in many cases, contracts can be terminated early by the firm offering the contract if market conditions are not to the firm's advantage (4) in many contracts, dispute resolution unduly favours the firm offering the contract, and (5) tournament-based[1] performance is unfair. Other disadvantages identified by "Karnataka vegetable" (i.e. green chilies and baby corn) producers include delays in payments, delays in input delivery, and dissatisfaction with the efficiency of shipping of final goods as well as limited access to seed, manipulation of grade by buyers, and high costs of inputs (Nagaraj et al 2008). However, a few studies identified another possible for low participation in contracting: lack of opportunity and knowledge (Guo et al 2005; Wolf & Olynk Widmar 2014). Therefore, if policymakers want to encourage participation in contracting, it is important to minimize the fears of those most likely to adopt contracts (Wang et al 2014).

From the perspective of an agribusiness or other type of contracting firm, contracts are beneficial given they allow firms to control inputs and ensure quality at guaranteed delivery period (Guo et al 2005; Goodhue 1999). Understanding producer and agribusinesses motivations towards agricultural contracts and their concerns are important not only for future development of contracts but also for government regulations. In fact, Ma & Abdulai (2015) argue that promoting the use of written contracts may be beneficial to Chinese apple producers' welfare by contributing to higher net returns. MacDonald (2006) notes there are two critical trends in agricultural markets: first, there is a shift to larger family farms; and second, agricultural contracts are being used more and more to guide production and marketing of agricultural commodities. Ali & Kumar (2011) argue that it is common knowledge based on the literature that marketing and production decisions of larger producers are completely different from smaller ones.

[1] In such a performance scheme, a grower's compensation is based upon his/her relative ranking (according to, say, lowest cost) among growers, rather than on his/her actual performance.

As a result, it seems clear that there is a need to develop a better perception of why producers and agribusinesses choose to use contractual agreements.

Researchers have long been interested in understanding producer's motivations towards using different types of agricultural contracts. However, obtaining data on producer's usage and feelings about contracts is scarce, especially across the Canadian Prairies. While data are more readily available in the U.S. thanks in part to national and local surveys by the U.S. Department of Agriculture and university research extension programs, there are far fewer sources available in Canada aside from a few studies done by Prairie farm groups. One small Canadian study carried out by canvassing attendees at an agricultural trade show found that of the 73 Saskatchewan respondents, 61, 70, and 77 percent have signed marketing, production, and TUA contracts, respectively (Faller 2011). Although that study focused on a relatively small sample size, similar sample sizes have also been used in the U.S. and find that contractual agreements are on the rise, not only in North America but around the world.

The objectives of this research are therefore to determine the extent of contract usage by Prairie agricultural producers, to investigate farmers' perceptions of and attitudes toward contracts, and to determine the factors affecting contracting behaviour by producers. The overall goal of the research is to provide an enhanced understanding of current trends in contract use. Producers, agribusinesses, and government agencies can benefit from this research as its results may help improve contract design, thus encouraging more producers to contract their agricultural commodities. The study will also ascertain producer preferences for various contract features and determine the effects of farm and farmer attributes on contracting behavior as well as provide some insight regarding agribusinesses using contracts and motivations for entering agreements with producers. For this research, survey data were obtained from producers across the Prairies (including Manitoba, Saskatchewan, and Alberta) using two methods: a mailout survey and an online survey.

In the next section, a brief overview of agricultural contracts and review of the previous literature is provided that explores factors impacting producers' usage of contracts and preferences for contract attributes. Following that, producer data, obtained from mailout and online surveys as well as the firm level data, are described. Next, the results from the producer and agribusiness surveys, focusing on the usage of agricultural contracts, structure and terms, perspectives toward contract attributes, as well as producer and organizational characteristics are presented. In section 8, the the econometric methodogy employed to determine the factors that affect producers' usage of marketing, production, and TUA contracts is detailed. The next-to-last sections of the report provide data obtained from a survey of Prairie agribusinesses with respect to their use of and perspectives on contracts, as well as the structure and characteristics of those contracts, and the final section summarizes and draws conclusions from the research.

2.0 OVERVIEW OF AGRICULTURAL CONTRACTS AND LITERATURE REVIEW

Agricultural contracts are oral or written agreements made between a buyer or company (contractor) and producer (contractee) outlining the rules or conditions for marketing and production of agricultural commodities (Roy 1963; Vassalo 2015). These types of contractual agreements are generally used to manage risk, reduce transaction costs, and increase productivity (MacDonald 2015; Katchova 2013; Key & McBride 2008). Other types of contractual agreements in agriculture commonly researched are crop-share and cash-rent contracts, which are agreements for the use of farmland made between a producer and landowner.

The types of agricultural contracts considered in this research include marketing and production contracts along with TUAs. Contract details typically vary depending on the type of agricultural commodity and contract. Katchova (2013) and MacDonald (2006) define marketing contracts as an agreement indicating price or pricing mechanism, delivery outlet, and quantity delivered of a given commodity. The commodity is typically owned by the producers during production and switches ownership to buyer upon delivery. Production contracts are agreements establishing each party's responsibilities in terms of production inputs, practices, and fee payment (MacDonald 2015; MacDonald 2006; Katchova 2013). Generally the producer is paid for the service provided, compared to the commodity value in the case of marketing contracts. TUAs are contracts between a producer and a company and/or buyer that supply a product with an intellectual property license, such as Roundup Ready canola.

Studies from a number of countries have employed survey and/or interview techniques to obtain data on agricultural contracting practices. Bogetoft & Ballebye Olesen (2002) developed a list of ten rules-of-thumb for contracting in agriculture based on experiences with Danish producers. Dipleep et al (2002) investigate optimal contract design using data from tomato contract farming in India. Drescher (2000) use data from interviews with 300 German producers to test hypotheses within a conceptual model of co-ordination space, while Ma & Abdulai (2015) surveyed 422 apple producers in China to understand how different marketing contract choices (i.e. written, oral, and/or no contract) impact the net returns of the farm. Conversely, Katchova & Miranda (2004) employ a two-step econometric procedure using the U.S. Agricultural Resource Management Study (ARMS) data and conclude that farm/farmer characteristics influence contracting behavior in important ways. To the authors' knowledge, the vast majority of the literature concentrates on the factors affecting contract use by producers. More particularly, studies tend to focus on producers usage of production and/or marketing contracts.

One of the most commonly identified factors affecting producers contract usage is farm size. In general, research finds a positive relationship between farm size and producers use of contracts, suggesting that larger producers are more likely to use some form of contract (Franken et al 2009; Velandia et al 2009; Penning et al 2008; Key & McBride 2003; Sartwelle et al 2000; Musser et al 1996; Goodwin & Schroeder 1994; Shapiro & Brorsen 1988). For instance, Key & McBride (2003) found that hog producers surveyed during the 1998 ARMS and 1997 Agricultural Census were more likely to contract their production if they were a larger farm than to remain independent. Wolf & Olynk Widmar (2014) found similar results for U.S. dairy farmers in that larger herds were more likely to use forward pricing for milk sales. On the other hand, Musser et al (1996) found mixed results depending on the agricultural commodity in question. Using maximum-likelihood Tobit models and data collected from 74 participants that attended the 1993 Top Farmers Crop Workshop at Purdue University, Musser et al (1996) research revealed that the larger the soybean producers farm the more likely they were to use futures marketing, while corn producers farm size had a negative impact on use of forward contracts. Davis and Gillespie (2007) also found similar results to Musser et al (1996) using a multinomial logit model, in that farm size had a negative impact on contract usage by U.S. hog producers.

Age and experience are further factors that have been intensively investigated. The age of the producer making the decisions as to contract or not have revealed mixed results depending on type of commodity being produced. Numerous studies find that the older the producer the less likely they are to use risk management tools such as marketing or production contracts over the spot market (Tudor et al 2014; Franken et al 2009; Zheng et al 2008; Penning et al 2008; Davis & Gillespie 2007; Key 2005; Musser et al 1996). Although, Katchova & Miranda (2004) discovered that of the corn, soybean, and wheat producers surveyed using ARMS data, only age was statistically significant for soybeans producers and unlike

previously mentioned studies, the older the producer the more likely they were to adopt marketing contracts. As for experience, the vast majority of the research that found experience to be statistically significant suggests that more experienced producers are less likely to use marketing or production contracts (Franken et al 2009; Key 2005; Key & McBride 2003; Sartwelle et al 2000; Goodwin & Schroeder 1994; Sharpiro and Brorsen 1988), with the exception of Katchova & Miranda (2004). They found adoption of contract usage increased with experience for soybean producers.

Another farmer characteristic expressed in the literature affecting contract usage is education level. Again there are mixed results in terms of the impact education had on corn, soybean, dairy, and/or hog producers decisions. Franken et al (2012), Katchova & Miranda (2004), Musser et al (1996), and Goodwin & Schroeder (1994) found that for soybean and corn producers, the more educated they were the greater the likelihood of adopting a marketing or forward contract. Similarly, Zheng et al (2008) and Davis & Gillespie (2007) found that the more educated the hog producer, the more likely they were to choose a production contract or forward contract, respectively. Likewise, Wolf & Olynk Widmar (2014) study determined that the more educated the daily producer the more likely they were to have used forward pricing contracts. On the contrary to these findings, Key & McBride (2003) and Shapiro & Brorsen (1988) find the opposite to be true for corn, soybean, and hog producers, in that there is a negative relationship between education level and contract usage.

Studies that found leverage or the debt-to-asset ratio to be statistically significant factors impacting contract usage result in somewhat mixed outcomes as well. The most common findings suggest that higher leveraged farms are more likely to adopt forward and futures market contract for corn, soybean, and hog producers (Franken et al 2012; Zheng et al 2008; Katchova & Miranda 2004; Musser et al 1996; Goodwin & Shroeder 1994; Shapiro & Brorsen 1988). Research investigating the influence of leverage on hog producers' use of forward contracts versus remaining independent is somewhat mixed. Franken et al (2009) and Davis & Gillespie (2007) found the opposite to be true for more leveraged hog farms and instead suggest that higher leveraged farms are more likely not to use contracts.

A few studies also explored whether diversified or specialized farming operation affects the producers decision to use contracts. Katchova & Miranda (2004) suggest that for both corn and wheat producers surveyed the more specialized the operation in terms of larger gross incomes, the more likely they were to adopt a marketing contract. Similar results were also found by Pennings et al (2008) where if the operation was not diversified into livestock the more likely it was to adopt a forward contract. Using both a two-limit Tobit and multinomial logit model, Sartwelle et al (2000) discovered that the more diversified the operation the increased likelihood of using cash market. Alternatively, Davis & Gillespie (2007) found that when it comes to making decisions, the more diversified the farm the more likely the producer was to choose independent production over production contracts.

Another predominately used farmer characteristic found to impact contract usage is the producers risk attitude. In general, studies found that the more risk averse the producer the more likely they were to use marketing (i.e. forward or futures) and/or production contracts (Franken et al 2012; Franken et al 2009; Zheng et al 2008; Musser et al 1996; Goodwin & Schroeder 1994). However, Sartwelle et al (2000) found risk attitudes not to be a significant factor influencing Kansas, Iowa, and Texas grain producers' decisions to use contracts. Likewise, Tudor et al (2014) ascertain that self-reported risk attitude is not a significantly independent variable in terms of Illinois corn, soybean, and wheat producers' choice to use risk management tools.

Other characteristics considered in the literature that influence contract usage include geographical location, off-farm primary occupation, crop insurance purchase, value of autonomy, and type of farm operation. Sartwelle et al (2000) found that Iowa grain producers are more likely to use cash markets and forward contracts and less likely to use futures and options contracts than producers from Kansas or Texas. Meanwhile, Key (2005) and Key & McBride (2003) discovered that hog producers that are located in areas with more hog production are more likely to contract production than remain independent. Preliminary results from Elliott et al (2015) also reveal that site-specificity such as freight plus basis costs for multiple contract locations may be a significant factor in Midwestern corn and soybean producers' adoption of marketing contracts.

In the case of primary occupation being off-farm Velandia et al (2009), Key (2005), and Key & McBride (2003) find that there was a positive relationship between off-farm income and contract usage. In terms of the influence that purchasing crop insurance has on usage of contracts, Paulson et al (2010) and Sartwelle et al (2000) find that producers that indeed purchase crop insurance are more likely to enter into a contractual agreement. Davis & Gillespie (2007) note that producers that value autonomy less are more likely to adopt production contracts as opposed to independent production because they do not value having compete control over production. Lastly, Wolf & Olynk Widmar (2014) argue that if the structure of the farm business is not organized as a sole proprietorship producers are more likely to have used forward pricing strategies.

Besides understanding how personal and farm characteristics impact contract usage, it is also important to understand producer preferences for the structure and terms of contracts. Additionally, awareness of producer preferences for contract attributes may also aid in the development of emerging classes of contracts, including those within the agri-environmental realm (Peerlings & Polman 2009; Ruto & Garrod 2009; Wu & Babcock 1996). Increased use of contracts could also have implications for future farm structure. For example, Hueth and Melkonyan (2004) find that more specialized farms are likely to enter into contracts with performance incentives. Key (2005) found that in order for producers to enter into contractual agreements there needs to be substantial financial compensation to convince them to contract their production when they value autonomy. Ruto & Garrod (2009) found similar results of greater financial incentives being required if contracts are long or offer less flexibility or higher levels of paper work. Furthermore, Eswaran & Kotwal (1985) demonstrate formally that contribution of unmarketed factor inputs such as management and supervision play a role in determining contract structure.

When it comes to producer preferences for contract attributes, Roe et al (2004) find that U.S. hog producers dislike contracts as the length and minimum delivery requirements increase, and that cooperative forms of contracts are often preferred if trust is stated as significant antecedent for contracting. Lajili et al (1997) find that central Illinois producer preferences for rates of cost sharing, price premiums, and financial arrangements are influenced by asset specificity and uncertainty. Although, a more recent study of corn and soybean producers surveyed from six Midwest states from 2003 through 2005 using ARMS data found that there is no evidence between producers or contractor characteristics influence on contract attributes such as pricing, quality or quantity (Paulson et al 2010).

3.0 DATA

Data for this study were obtained from two surveys: the first was a mailout survey of Prairie agricultural producers conducted during the spring of 2013, and the second was a slightly refined online version carried out in the summer and fall of 2013 (Appendix 1 and 2). Together, the two surveys yielded 587

usable responses. The questionnaire requested information on the extent to which the respondent used contracts, the specific types of contract utilized, respondents' preferences for contract terms, their perception of the benefits and shortcomings of contracts, and enforcement mechanisms. Respondents were also asked to provide information pertaining to their operation, as well as personal characteristics.

The survey focused on three aspects of contracting; marketing, production, and TUAs. Although the majority of literature reviewed previously centers around production and marketing contracts, a great deal of attention has been paid to the increased usage of TUAs for Prairie crop production. In some cases, the use of seed with such provisions attached is part of a highly integrated contractual relationship between input suppliers and producer that entails input purchases along with production contracts and often financing. Goodhue (1999) notes that increased input control by contractors has the potential to result in the redistribution of returns away from producers as well as the potential to reduce information rents if (as seems likely) innovations continue to reduce the importance of grower-held information.

Approximately 4,000 producers from the three Prairie Provinces were sent the mailout survey, which included a cover letter, the survey instrument, a one-dollar coin as a small token of appreciation. A reminder card was then sent a few weeks after the original survey. The list for the mailout recipients was obtained from a Canadian market research firm; reliable mailing lists for active farmers are difficult to obtain and the firm forewarned the researchers of this fact. Of the 4,000 surveys sent out 1,429 were undelivered, 194 were returned but not filled out, and 282 were partially and/or fully filled out. This low response rate indicated the clear need for a follow-up; an online survey was chosen for this purpose.

Data for the online version were collected using Survey Money, a company specializing in online data collection. Producers were referred to the site through newsletters and/or emails from agricultural producer groups, who agreed to help publicize the survey to their members. The online survey included a short introductory description of the research and respondents who completed the survey were given the choice to enter into a draw to win one of four iPads. In total, 305 respondents completed the online survey. One of the limitations that the authors could not account for was the chance some of the online respondents could have also filled out the mailout survey – however, the probability of this occurring was considered to be modest, and it is unlikely that this would influence the results in any significant way.

Both versions of the survey instrument were divided into five sections: the first section asked respondents to indicate their farm and production characteristics, the next three sections asked farmers about their usage of marketing, production, and TUA contracts, and the last section of the survey asked respondents to provide personal characteristics. There were slight refinements (detailed below) made to the online survey as a result of preliminary analysis of data obtained from the mailout; however, none of these refinements are expected to affect research results in a substantive way. The interested reader may consult Appendices 1 and 2 for a direct comparison of the instruments.

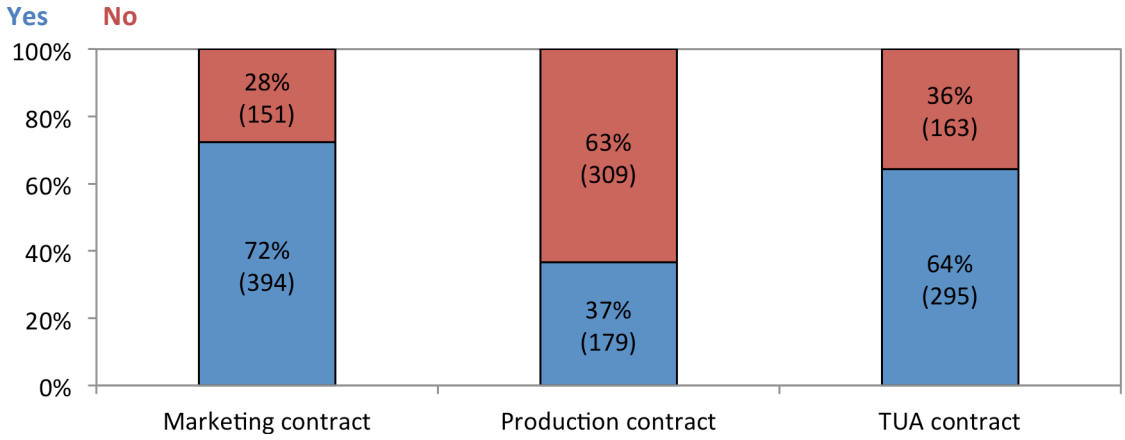
For the first section (farm and/or production characteristics) of the mailout there were a total of eight questions; however, the online version only included six of those original questions with the addition of one more question. In the next section (marketing contracts), there were two styles of questions– general and Likert-scale. The first style in the mailout included a total of 12 questions, 11 of which were also included in online survey with one additional question. For the Likert-style questions, there were 23 statements in the mailout and only 11 of the 22 statements included in the online version were the same as the mailout. A similar structure was also used in the production contracts section, of the 15

questions in the mailout, only 12 were the same online with the addition of two new questions. For the 25 Likert-style statements used in the mailout, 14 were the same online; again there were an additional 13 statements included online. In the fourth section (TUA contracts), the mailout was very short with a total of seven questions in first part and eight Likert-style statements. In addition to all the same questions from mailout being included in online version, with the exception of one statement, an extra four questions were included in the first part and 19 Likert-style statements added to the online version. Finally, in the last (demographic) section of the survey, there were 10 general questions and 10 Likert-style questions. For the online survey, only seven of the general questions and seven of the Likert-style statements were included.

4.0 PRODUCERS' USE OF MARKETING, PRODUCTION, AND TUA CONTRACTS

The first question to begin each of the contract sections asked respondents to indicate if they use marketing, production, and TUA contracts for commodities produced in a typical year. Of the 587 usable surveys, 545, 488, and 458 responded to the question for marketing, production, and TUA contracts, respectively. As Figure 1 shows, the majority that responded to the question use marketing contracts. Similarly, a large number of survey respondents also use TUA contracts. However, only 37 percent of respondents use production contracts.

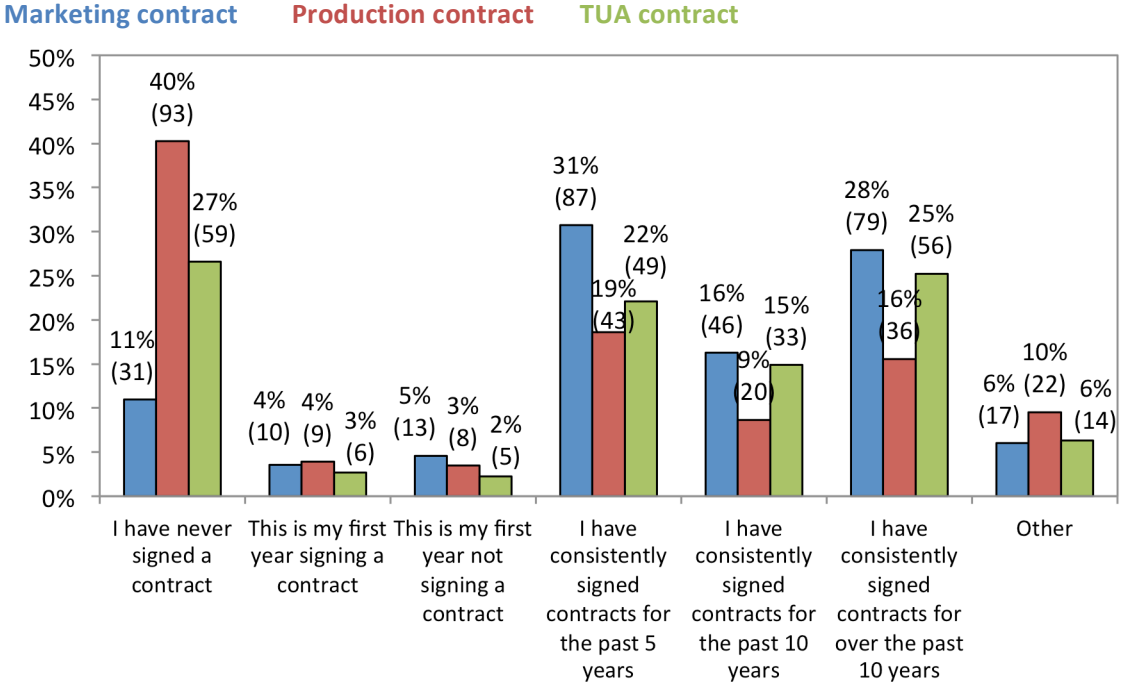
Figure 1. Respondents' use of marketing, production and TUA contracts



The next question in each of the contract sections of the survey asked producers to indicate if they have previously used marketing, production, and TUA contracts. However, the way in which the question was setup in the mailout and online surveys were slightly different. In the mailout individuals were asked to indicate yes or no to whether they previously signed a contract, while online asked respondents to choose between seven options: "I have never signed a contract", "This is my first year signing a contract", "This is my first year not signing a contract", "I have consistently signed contracts for the past five years", "I have consistently signed contracts for the past 10 years", "I have consistently signed contracts for over the past 10 years", and "Other". The results of the mailout were almost identical to the responses given in Figure 1, suggesting that majority of producer responding to the mailout survey have signed marketing and TUA contracts previously. As Figure 2 illustrates, the bulk of producers that responded to the similar question in the online survey have consistently used marketing contracts for the past five years (31 and 22 percent, respectively). This was closely followed by 28 and 25 percent indicating for over 10 years they have signing marketing and TUA contracts, respectively. As for

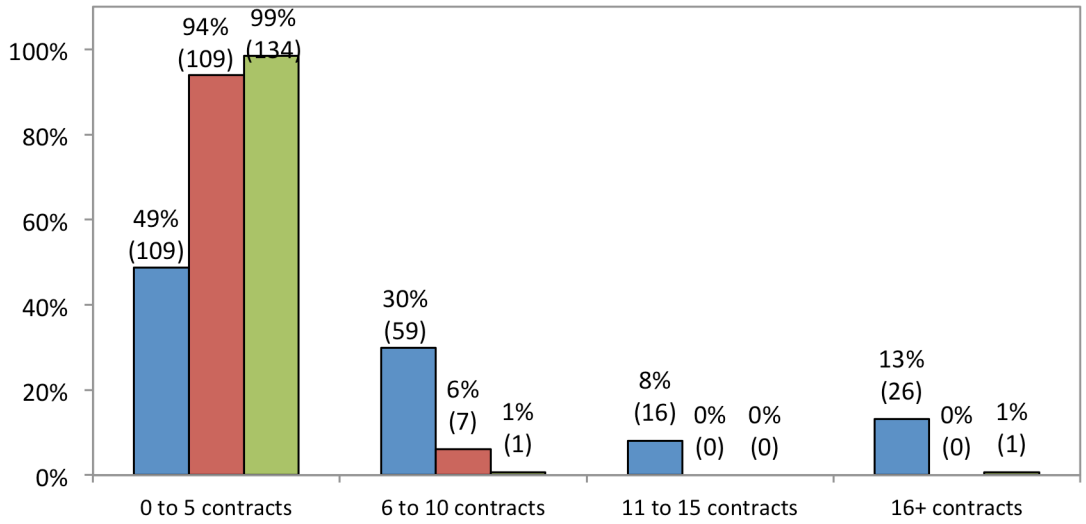
production contracts, 40 percent of respondents that answered the question have never signed a production contract.

Figure 2. Online respondents' historical usage of marketing, production, and TUA contracts



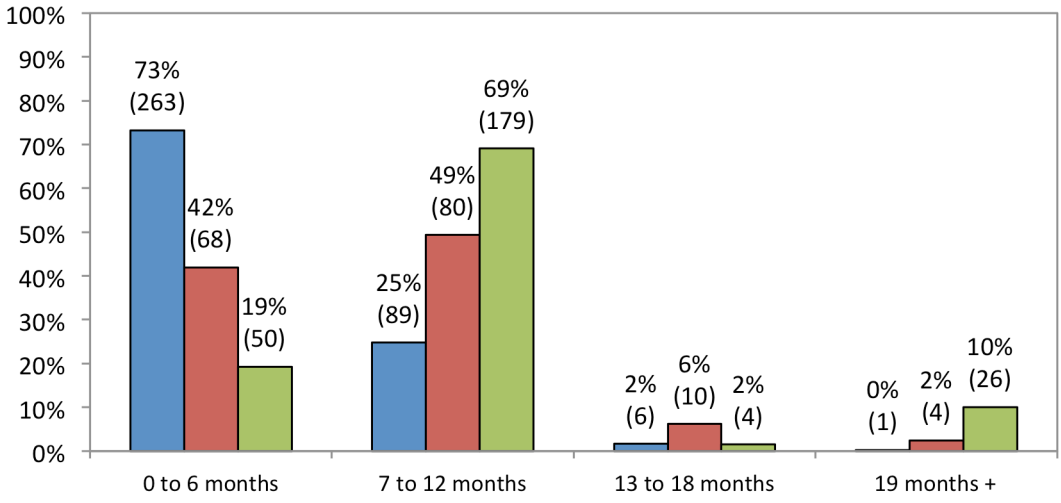
Another aspect of understanding the extent of producers' usage of contracts was to identify the number of contracts producers sign in a year. As Figure 3 shows, 94 and 99 percent of respondents for production and TUA contracts respectively sign anywhere from zero to five contracts per year, respectively. Conversely, the number of marketing contracts used in a typical year by producers varies, with 49 percent of the 197 respondents indicating they use zero to five contracts per year, 30 percent six to 10 contracts per year, eight percent use 11 to 15 contracts per year, and 13 percent indicated they used over 16 marketing contracts per year.

Figure 3. Number of marketing, production, and TUA contracts respondents' sign per year



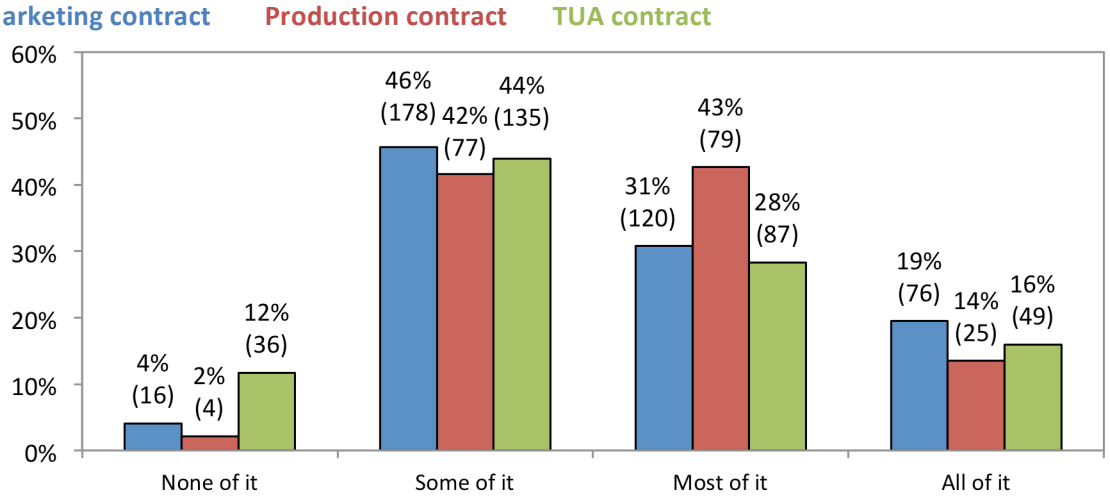
As Figure 4 illustrates, of the 359, 162, and 259 individuals who responded to the question regarding the typical length of marketing, production, and TUA contracts, respectively, the majority of marketing contracts signed are for six months or less, as opposed to TUA contracts were the majority of contracts are seven to 12 months long. As for production contracts the results are split between 40 to 50 percent indicating zero to six month and seven to 12 months, respectively.

Figure 4. Length of typical marketing, production, and TUA contracts signed by respondents'



As for Figure 5, the question was asked of those using marketing, production, and TUA contracts to indicate to what extent they read the contract before signing: "None of it", "Some of it", "Most of it", or "All of it". An overwhelming percent indicated that they only read "Some of the contract" before signing for all three contracts examined in the study, suggesting they may not pay close attention to all contract details.

Figure 5. Before signing marketing, production, and TUA contracts, respondents' typically read



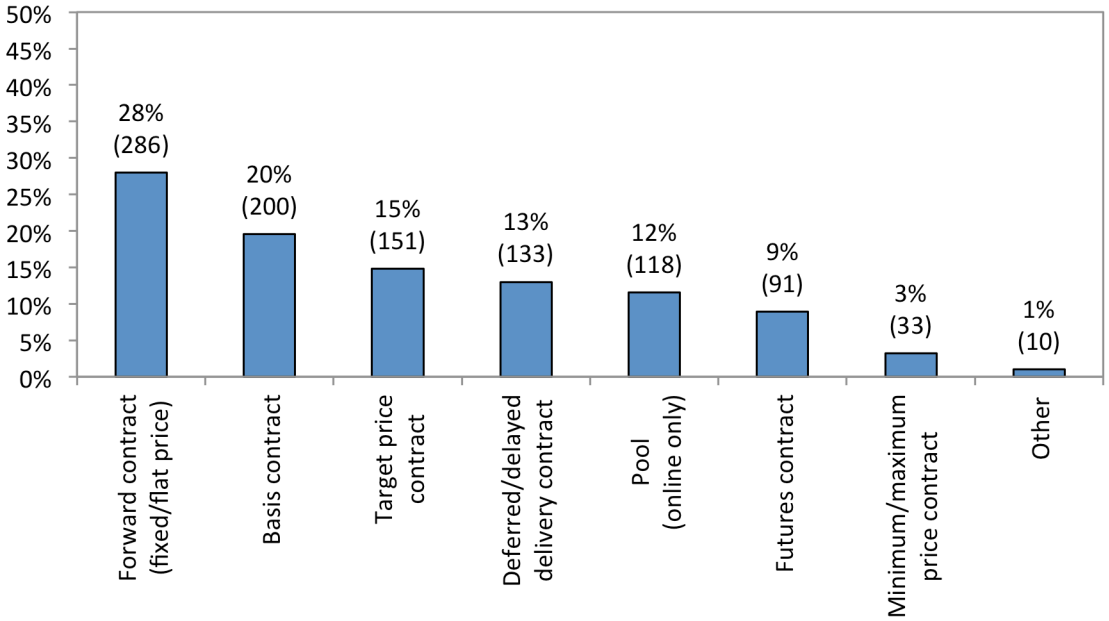
Lastly, to provide some perspective on the type of commodities respondents use marketing, production, and TUA contracts for, the majority sell their wheat (including durum) and canola with marketing contracts at 32 and 31 percent, respectively. As for production and TUA contracts, 43 and 78 percent of respondents, respectively, indicated canola as the typical commodity produced under the two contracts. Looking at all commodities combined, the average respondent sells almost 70 percent of their production using marketing contracts, produces 40 percent with production contracts and 50 percent with TUA contracts.

5.0 STRUCTURE AND TERMS OF MARKETING, PRODUCTION, AND TUA CONTRACTS

In this section, the general structure and terms of respondents marketing, production, and TUA contracts are assessed. Figures 6 and 7 illustrate findings for marketing contracts, Figures 8 through 10 for production contracts, and Figures 11 and 12 for TUA contracts.

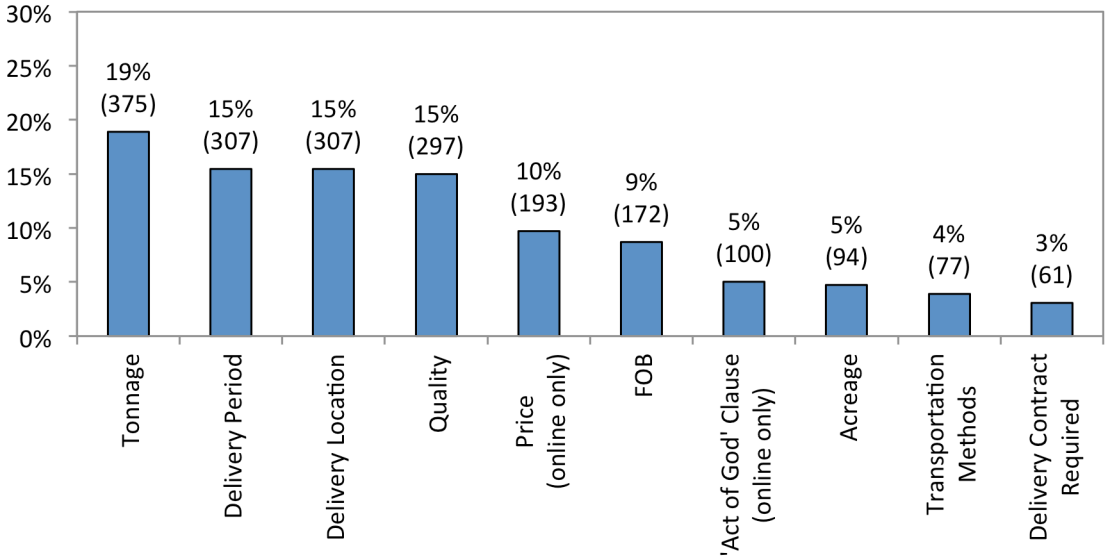
When respondents were asked to select the type of marketing contract typically used to price grain from the following options: forward, basis, futures, deferred/delayed, minimum/maximum, target, pool, or other, those that responded tended to use forward contracts the most followed by basis contracts at 28 and 20 percent, respectively, as shown in Figure 6. However, the three contracts that were indicated as being used the least by respondents were futures, minimum/maximum price contracts, and other at nine, three, and one percent, respectively. The option for pricing with "pool" was only available to those answering the online survey.

Figure 6. Typical marketing contracts used by respondents' to price grain



Respondents were then asked to identify the typical attributes of their marketing contracts. Specifically to select if the contract indicated any of the following: tonnage, acreage, delivery location, quality, delivery period, delivery location, FOB, transportation methods, delivery contract required, 'Act of God' clause, and price. Similar to the questions previously, the last two options were also only available to respondents of the online survey. Of the respondents that answered, the results were somewhat mixed, with no one attribute standing out over the others. Instead, as illustrated in Figure 7, 15 to 19 percent of respondents indicated that their contract specifies attributes such as tonnage, delivery period, delivery location, and quality.

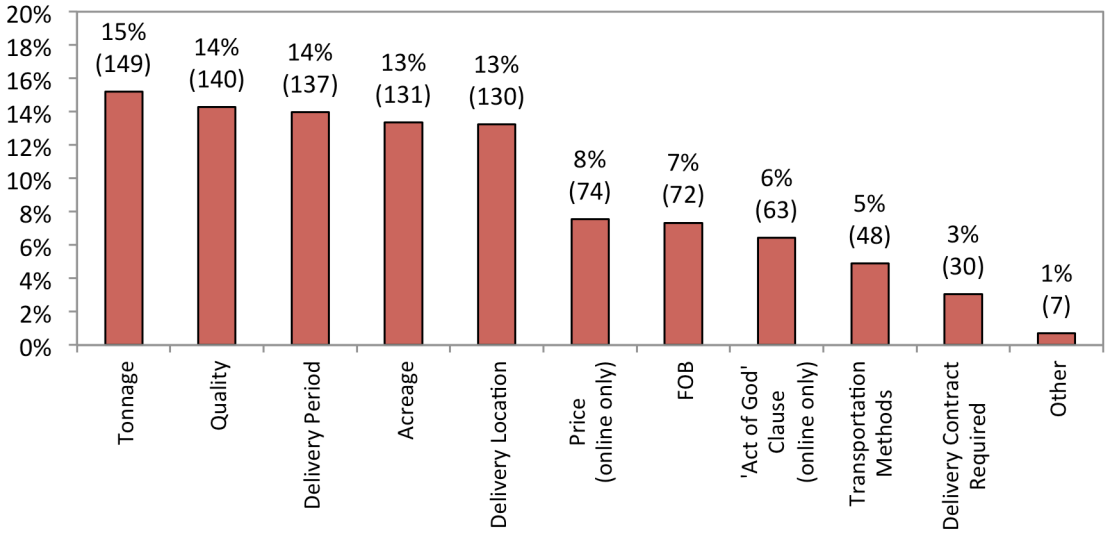
Figure 7. Attributes of respondents' typical marketing contracts



Some other questions asked in both surveys, had respondents identify whether their typical marketing contract pays premiums and/or discounts (or incentives as worded in mailout) for certain qualities delivered. The results from individuals that responded indicate that 61 percent of respondents marketing contracts indeed paid premiums and/or discounts. On the other hand, 39 percent of respondents said their typical contract does not pay premiums and/or discounts. In total 388 individuals responded to this question. Respondents were also asked to indicate if their marketing contracts included a clause for dispute resolution. Of the 388 individuals' that responded, 54 percent identified that their typical contract did included a clause for dispute resolution, while 46 percent said their contracts did not.

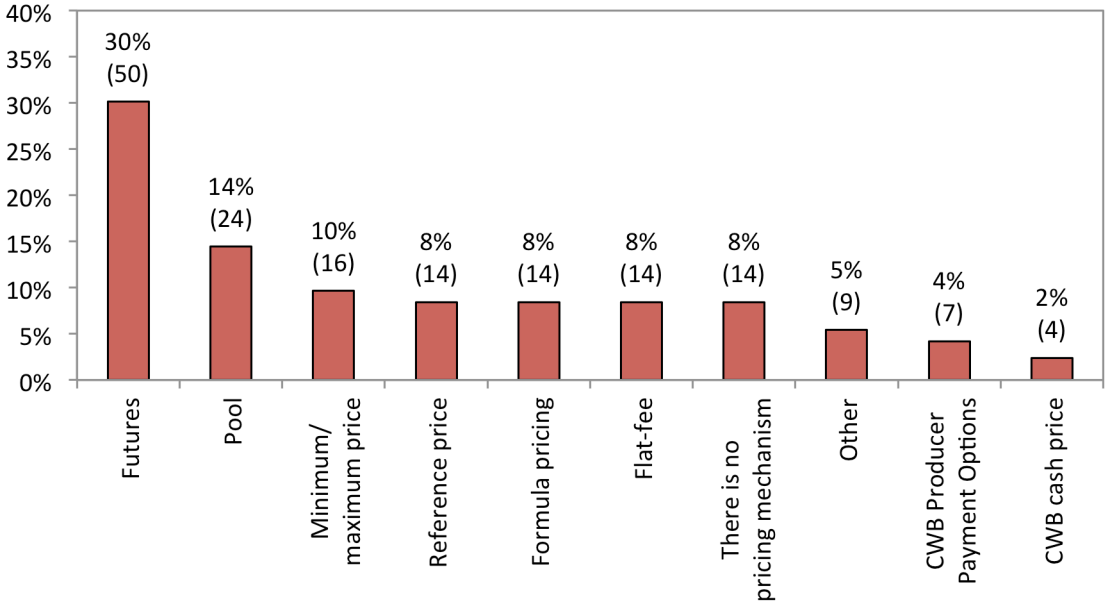
In terms of the structure and terms of production contracts, respondents were also asked similar questions as those in the marketing contracts section. The first question asked respondents to identify the attributes of the contract (identical options as for marketing contracts). As Figure 8 illustrates, approximately 14 to 15 percent of respondents indicated their typical production contacts specify tonnage, quality, delivery period, acreage, and delivery location.

Figure 8. Attributes of respondents' typical production contracts



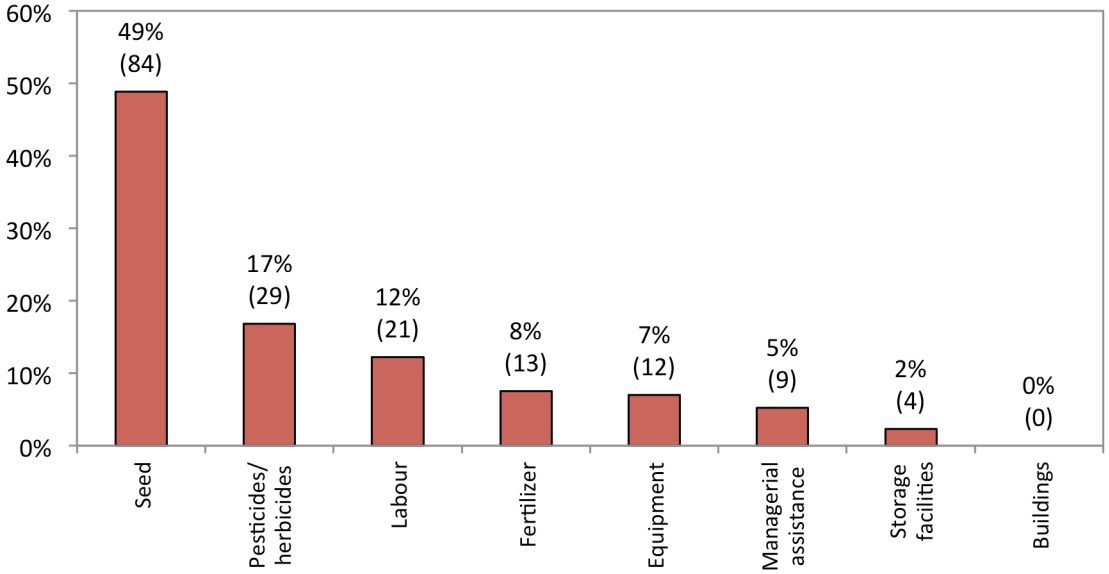
The next question asked respondents to select the type of pricing mechanism used in their typical production contract. Figure 9 shows that, of those responding, 30 percent used contracts with futures as the primary pricing mechanism, followed by pool price at 14 percent.

Figure 9. Typical pricing mechanisms of respondents' production contracts



Another component of the structure and terms of respondents' typical production contracts asked whether production inputs, such as seed, fertilizer, chemicals, etc., were supplied by the contractor. From the 213 individuals that responded to this question, 57 percent said the contractor did not supply any inputs. As for the 43 percent that indicated yes, they were also asked to specify the type of inputs supplied. As Figure 10 shows, the majority of respondents indicated seed as the most common input supplied by the contractor at 49 percent. Caution is given to reliability of the results in the second question as total observations given were greater than those indicating inputs being supplied by the contractor.

Figure 10. Inputs supplied by contractor of production contract as indicated by respondents'

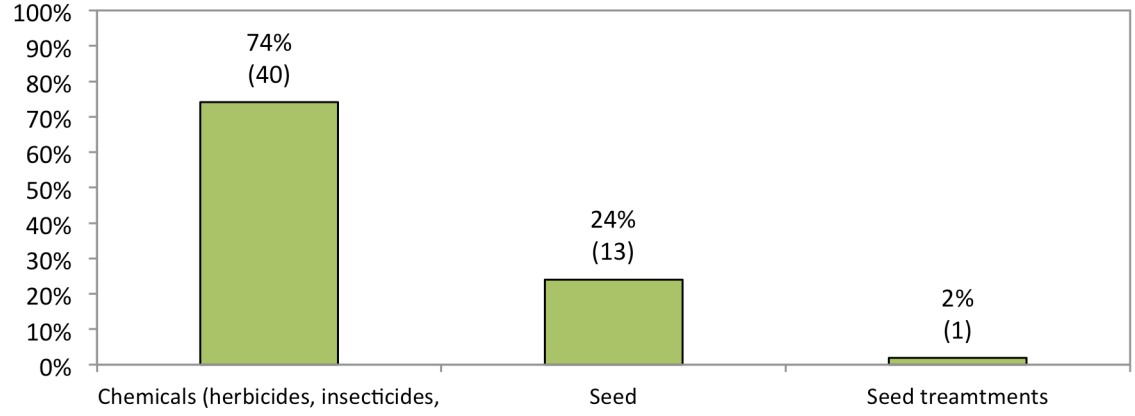


The next three questions asked respondents to indicate yes or no to whether their typical production contract involved identity preserved grain (online only), paid premiums and/or discounts for certain qualities delivered, and have a clause for dispute resolution. Regarding the first question, 62 percent of the 116 respondents indicated that their contract involves identity preserved grain. For the second question, just over 60 percent of 207 respondents said their production contracts paid either premiums and/or discounts for certain qualities delivered. Similar to marketing contracts, 63 percent of 200 respondents' production contracts identified that their contract included a clause for dispute resolution.

Moving to the structure and terms of TUA contracts, four questions stand out from the surveys to help understand attributes of respondents' typical TUA contract. The first question asked whether the producer was required to sell production back to the provider. For those that responded, only 30 per cent indicated they were required to sell their entire production output back to the provider. The next question asked individuals whether their TUA contract included a clause for dispute resolution. Of the 264 individuals that responded, 53 percent said their TUA contact does include a clause for dispute resolution.

The survey next asked respondents whether the use of bundling and/or tying of specific products were required by the TUA contract. The majority (69 percent) of the 294 respondents indicated that their typical TUA contract does not require any form of bunding and/or typing of any products. However, those that indicated their contracts did include bundling and/or tying, were also asked to specify the types of products that are typically bundled and/or tied with the commodity involved in TUA contract (online only). As shown in Figure 11, 74 percent of commodities under TUA contracts are bundled with chemicals, including herbicides, pesticides, glyphosates, and inoculants.

Figure 11. Products bundled and/or tied with commodities under TUA contract

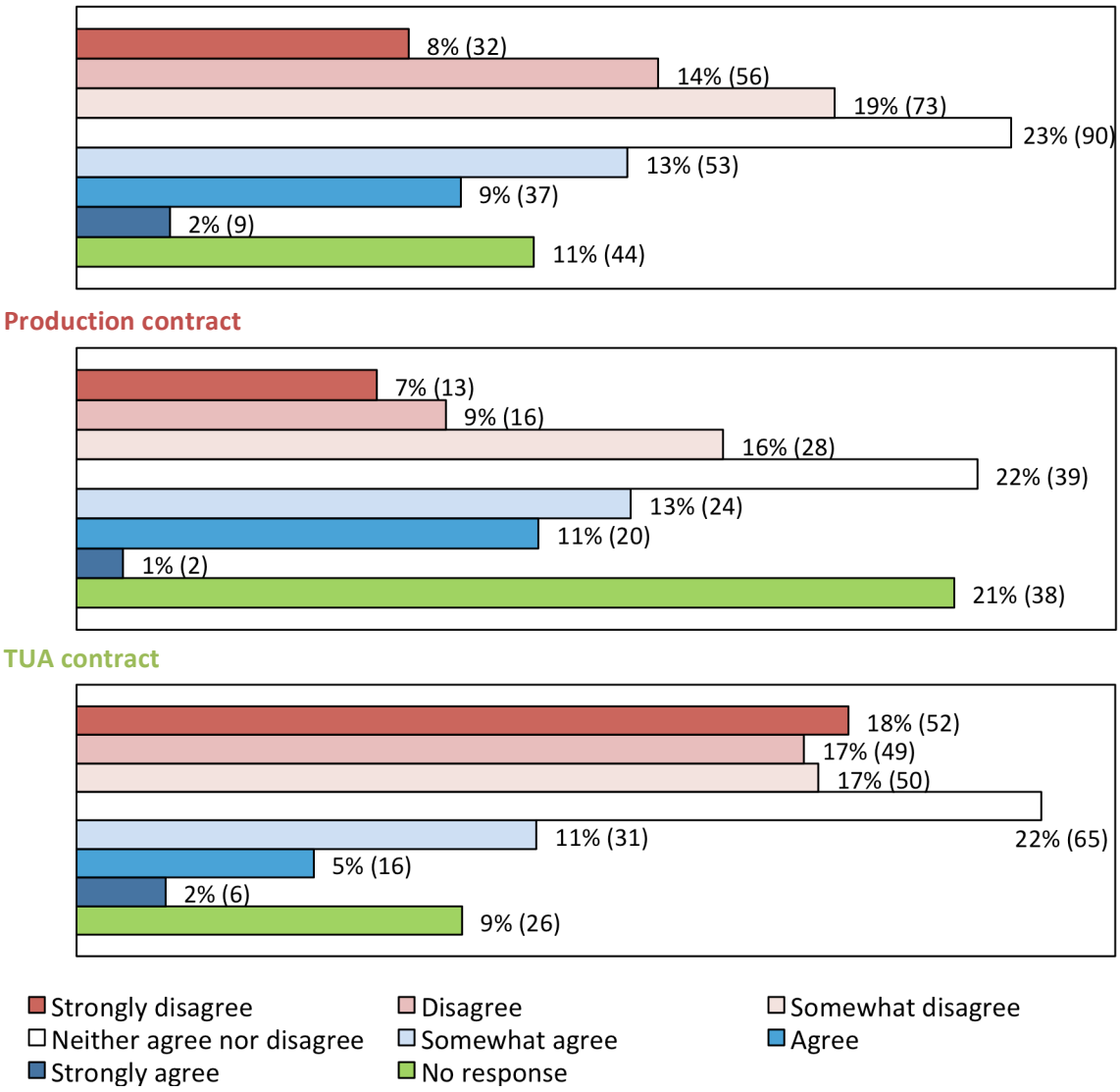


6.0 PRODUCER PERSPECTIVES ON MARKETING, PRODUCTION, AND TUA CONTRACTS

One of the key components of this research was to understand producer perspectives towards marketing, production, and TUA contracts. Using a ranking technique, respondents were asked to indicate their level of agreement with specific statements pertaining to contracts, with options reported on a seven-point Likert scale where 1 = "Strongly disagree" and 7 = "Strongly agree" with the statement. Respondents were also given a middle option in the scale of "Neither agree nor disagree" with the statement. Eight statements are presented in this section from the producer survey and were given as statements in marketing, production, and TUA contract sections.

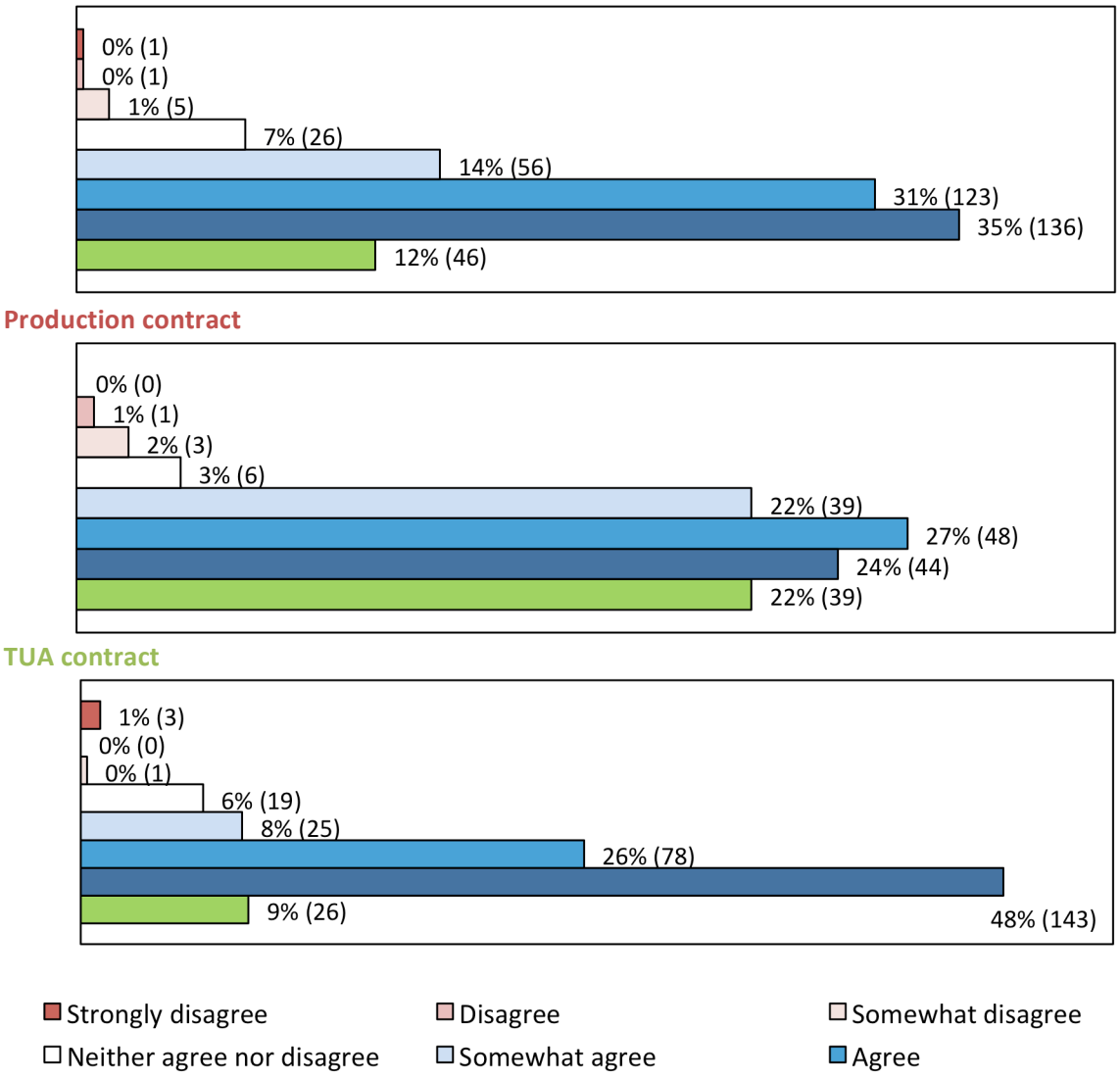
The first question asked producers whether they believe their rights are protected by the contract (Figure 12). Of the 394 individuals that use marketing contracts and responded to the question, less than a quarter indicated they "Somewhat agree" to "Strongly agree" that their rights are protected. By contrast, just over 40 percent indicated they "Somewhat disagree" to "Strongly disagree" that their rights are protected. When it comes to production contracts, similar results as those of marketing contracts are found. On the other hand, of the 295 individuals that use TUA contracts, fewer than 20 percent indicated they "Somewhat agree" to "Strongly agree" that their rights are protected, while 50 percent "Somewhat disagree" to "Strongly disagree" that their rights are protected. For all three contracts, almost a quarter of those that responded said they "Neither agree nor disagree" that their rights are protected, while 11, 22, and nine percent of those that used marketing, production, and TUA contracts, respectively chose not to respond to the statement.

Figure 12. Respondents' perspective of "When using the contract, my rights are protected"



When respondents were asked if they believe the company's rights are protected by the contract, as shown in Figure 13, 80 percent of those using marketing contracts indicated they "Somewhat agree" to "Strongly agree" that the company's right are protected, while one percent "Somewhat disagree" with the statements. Again similar results are found for production and TUA contracts where 73 and 82 percent, respectively "Somewhat agree" to "Strongly agree" with the statement.

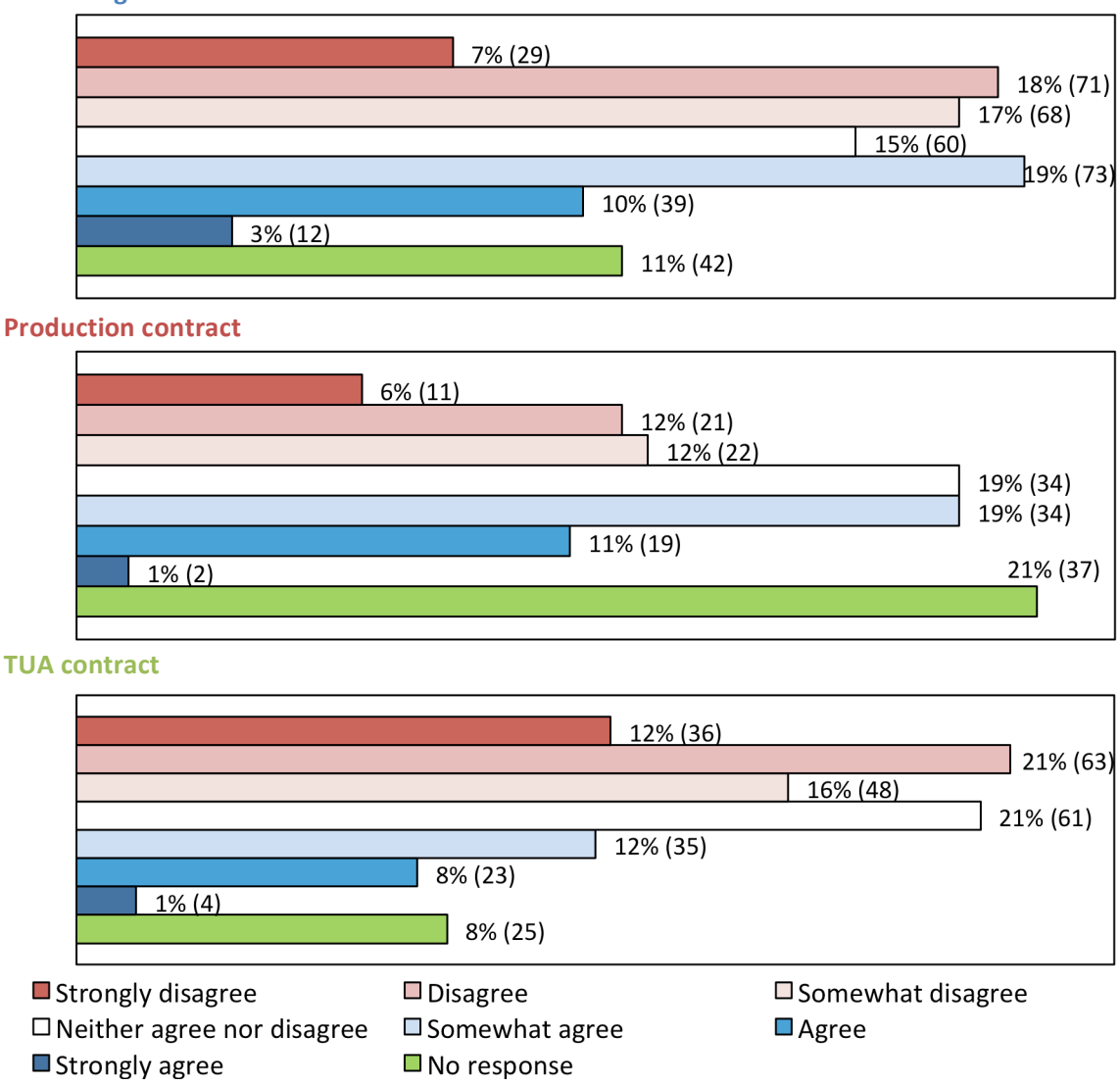
Figure 13. Respondents' perspective of "The company's rights are protected by the contract"



As Figure 14 shows, of those who responded to the question of whether they believe contract are easy to understand, 42 percent of respondents using marketing contracts indicated "Somewhat disagree" to "Strongly disagree" with the statement than 32 percent that "Somewhat agree" to "Strongly agree" with the statement. For those using production contracts, the difference between the percentage that agree compared to those that disagree with the statement was almost identical at roughly 30 percent. On the other hand, when considering the same statement but for TUA contracts, it was found that almost 50

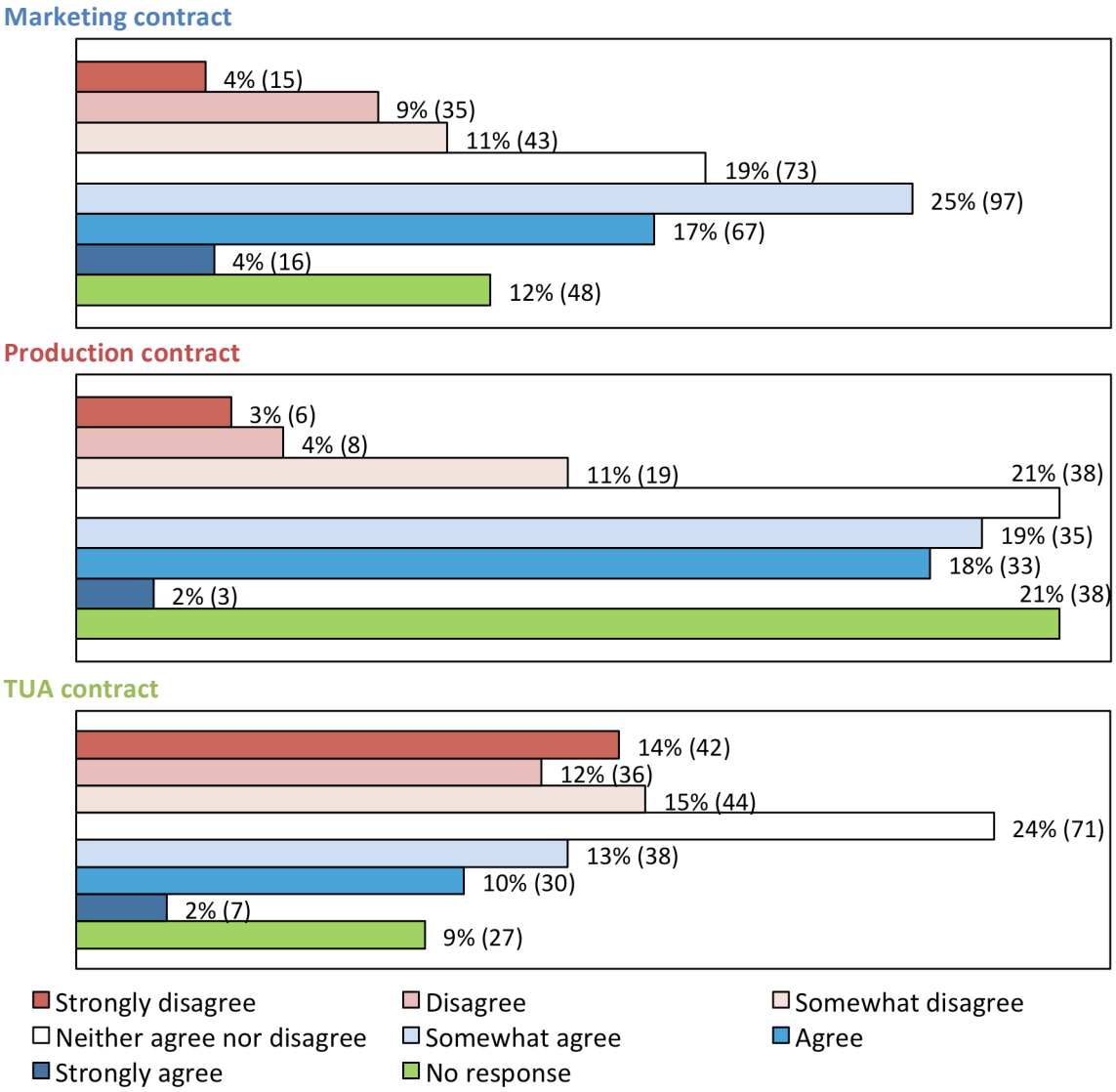
percent of respondents “Somewhat disagree” to “Strongly disagree” contracts are easy to understand, while just over 20 percent “Somewhat agree” to “Strongly agree” with the statement.

Figure 14. Respondents’ perspective of “When I read the contract, it is easy to understand”



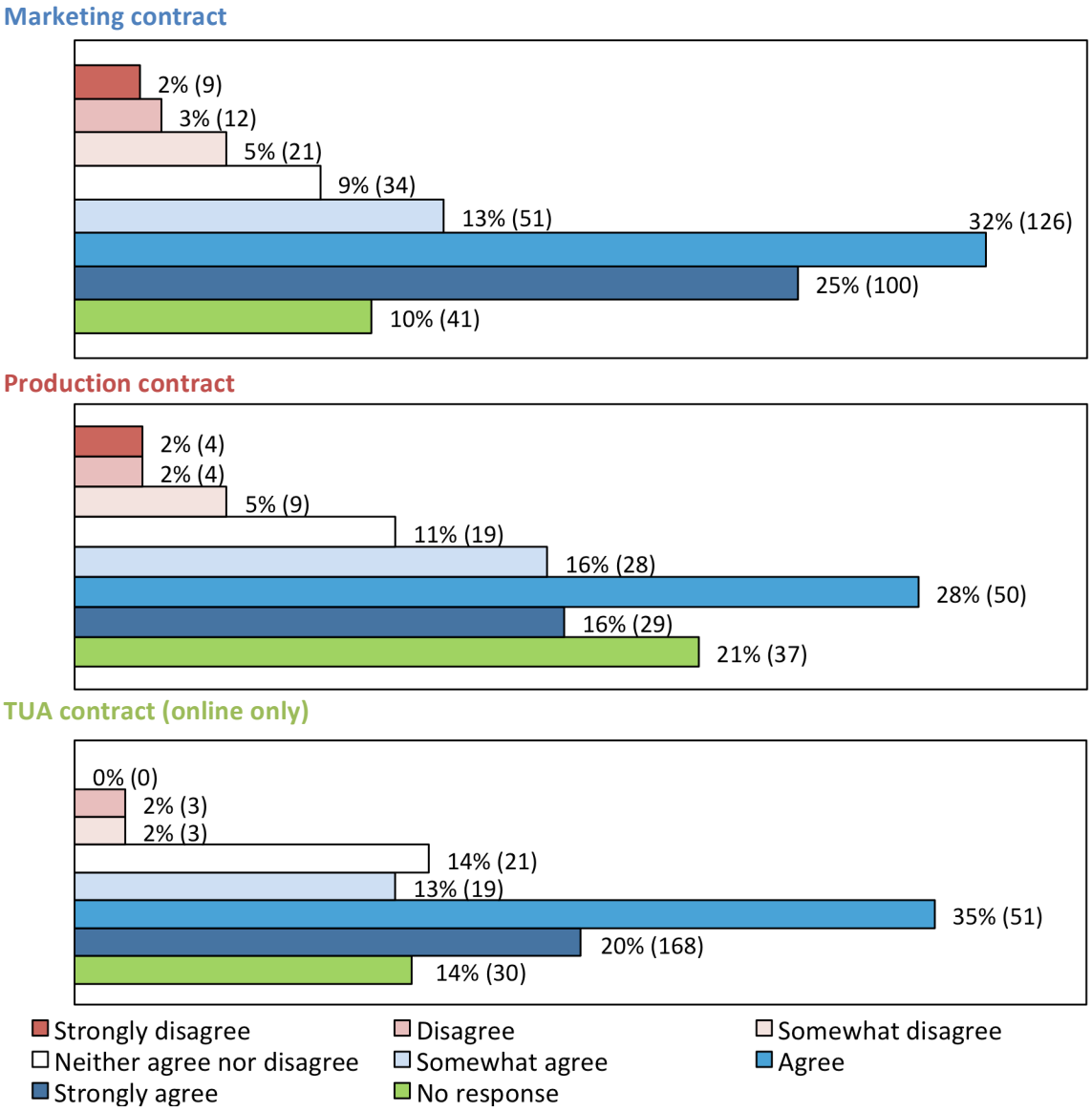
The next question asked those that use contracts if they believe they are treated fairly (Figure 15). Of those who responded, fewer than 25 percent of the individuals using marketing contracts disagreed to some extent that they are treated fairly, while less than 50 percent felt they are treated fairly by marketing contracts. For respondents that use production contracts, less than 10 percent believe they are treated unfairly by the contract, compared to 40 percent that believe they are treated fairly. Alternatively, over 40 percent of respondents using TUA contracts indicated that they do not agree with the statement and feel they are treated unfairly, while only 25 percent feel they are treated fairly by TUA contracts.

Figure 15. Respondents' perspective of "I am treated fairly by contracts"



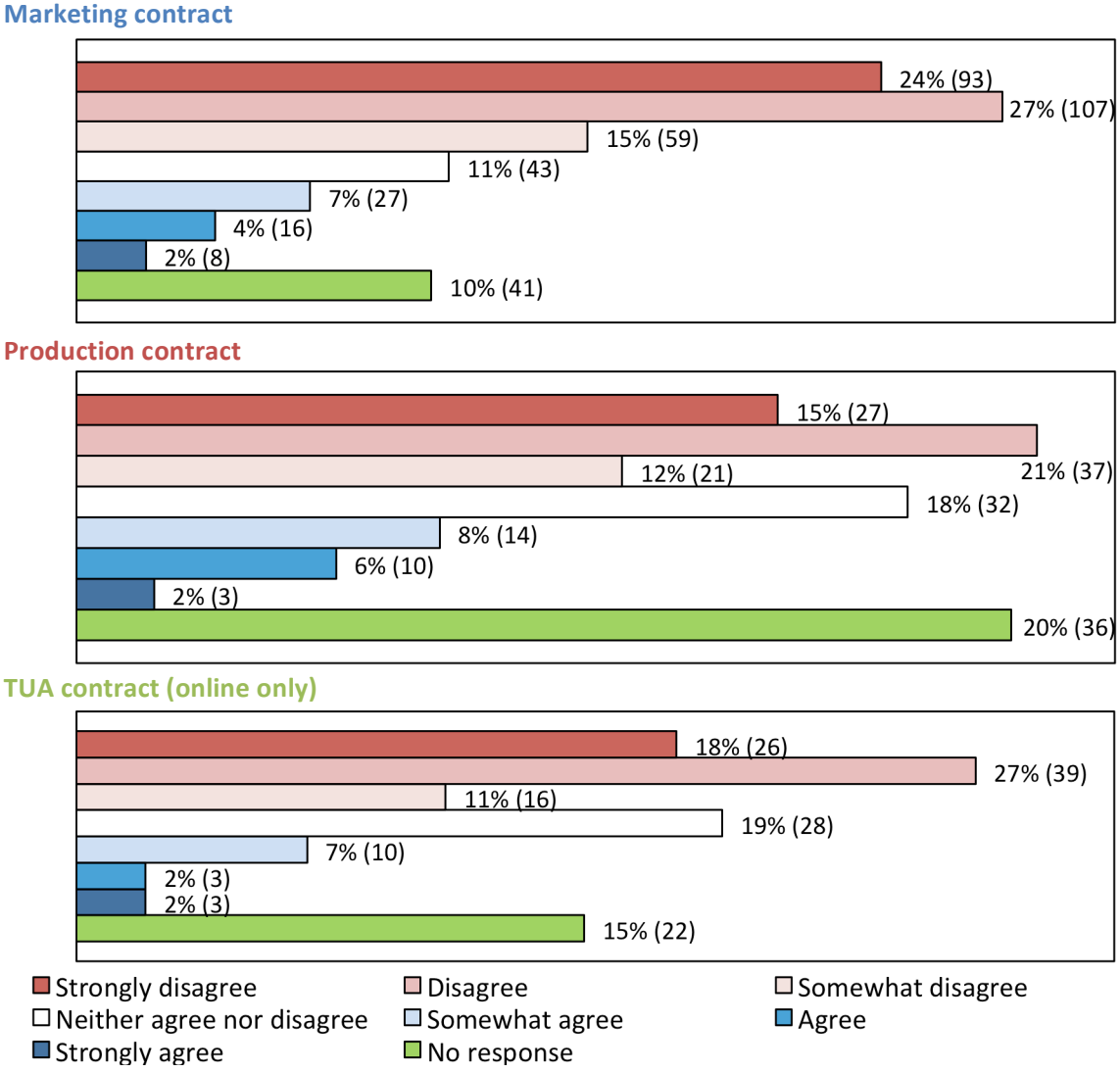
When participants were asked if they believe they are forced to meet contract obligations, as shown is Figure 16, 60 to 70 percent of all individuals using marketing, production, and TUA contracts "Somewhat agree" to "Strongly agree" that they are forced to meet contract obligations. Conversely, 10 percent or less of those using contracts disagree to some extent with the statement.

Figure 16. Respondents' perspective of "I am forced to meet contract obligations"



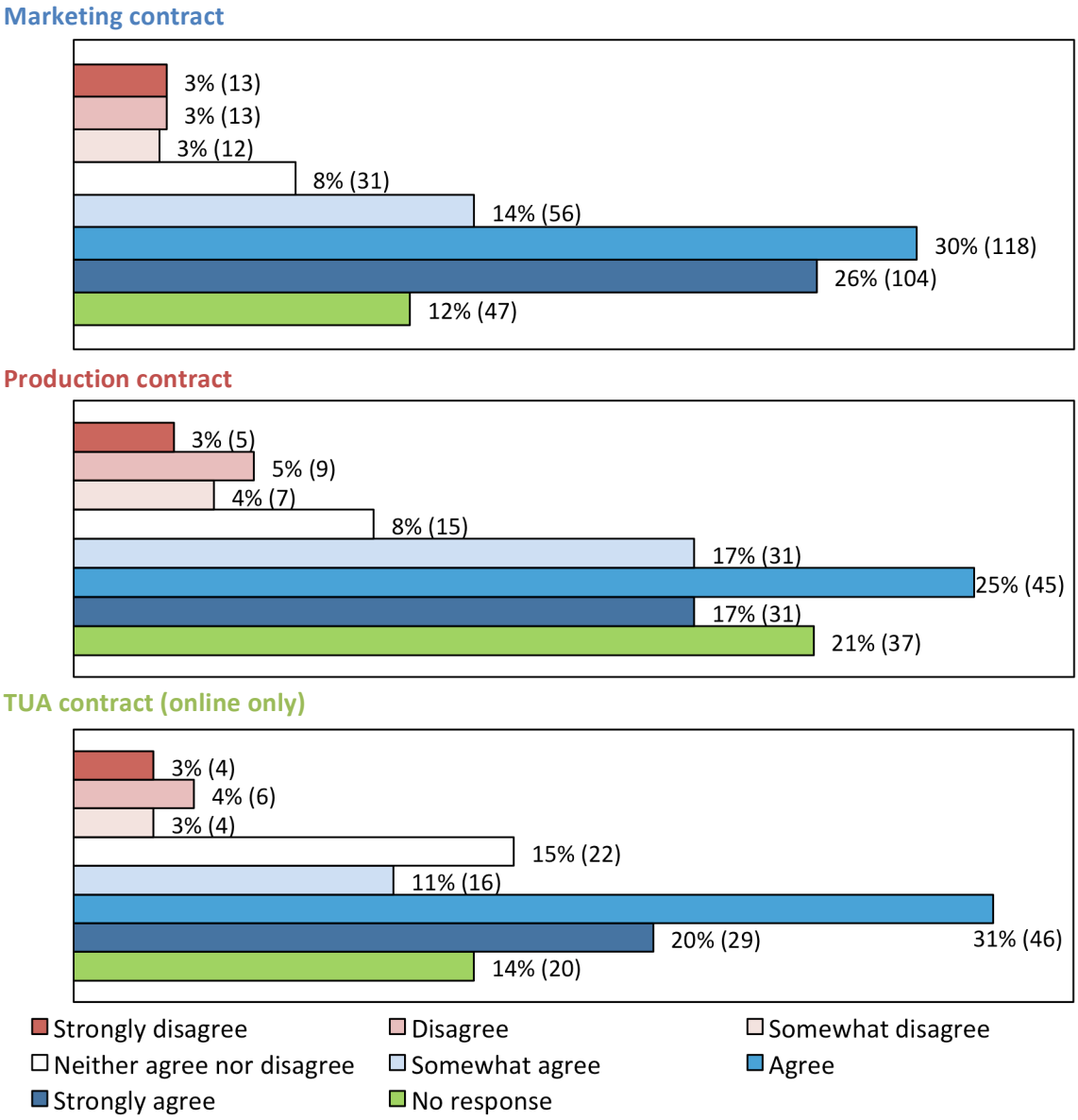
As shown in Figure 17, when respondents were asked if they believe they can get out of a contract easily, almost 70 percent of those that responded regarding marketing contracts "Somewhat disagree" to "Strongly disagree" with the statement, while only 13 percent agree that they can get out of a marketing contract easily. For those respondents using production contracts, almost 50 per cent disagreed to some extend with the statement and just over 15 percent agreed with the statement. As for TUA contracts, those individuals that responded to the question indicated that 56 percent "Somewhat disagree" to "Strongly disagree" with that statement and believe it difficult to get out of a TUA contract. Conversely, 11 percent believe it is easy to get out of a TUA contract.

Figure 17. Respondents' perspective of "I can get out of a contract easily"



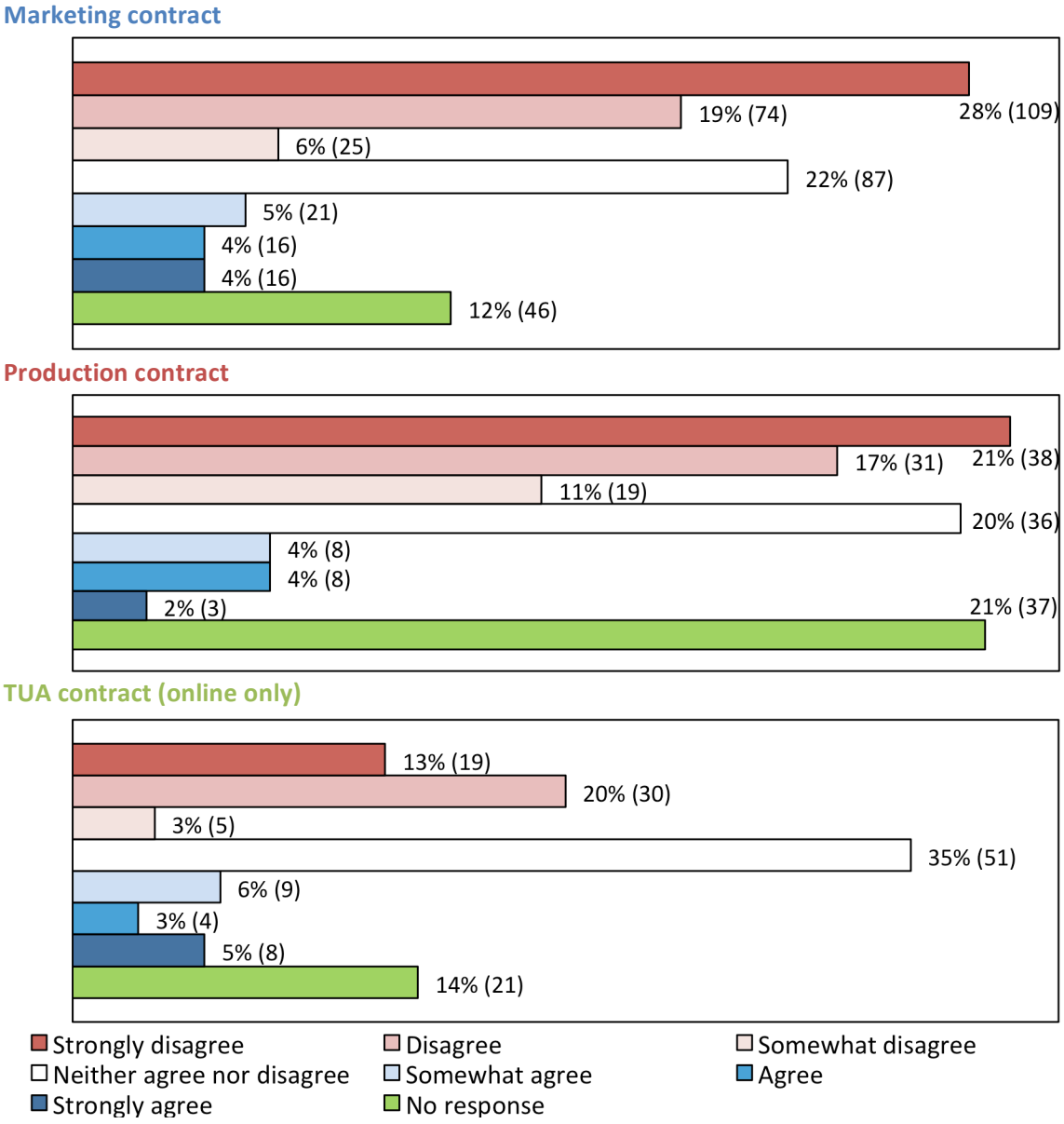
Respondents were also asked if they believe by breaking the contract they will incur a penalty. Results from Figure 18 show that, those using marketing contracts indicated 70 percent of respondents believe they will incur a penalty if they break the marketing contract agreement, while less than 10 percent believe they will not incur a penalty if they break the contract. Overall similar results are found for respondents using production and TUA contracts, where 59 and 62 percent, respectively, believe they will incur a penalty if they break the contract agreement and only 12 and 10 percent, respectively, believe they will not incur a penalty.

Figure 18. Respondents' perspective of "If I break the contract I will incur a penalty"



Lastly, individuals were asked if they agree or disagree with the statement "I do not care about contract enforcement mechanisms since they will take years to settle" (Figure 19). Of those that responded to this question for marketing contracts, 53 percent "Somewhat disagree" to "Strongly disagree" with the statement and do care about contract enforcement mechanism, compared to 13 percent that "Somewhat agree" to "Strongly agree" with the statement. To a similar extent, those that responded regarding production and TUA contracts found that 49 and 36 percent "Somewhat disagree" to "Strongly disagree" with the same statement and 10 and 14 percent "Somewhat agree" to "Strongly agree" with the statement, respectively.

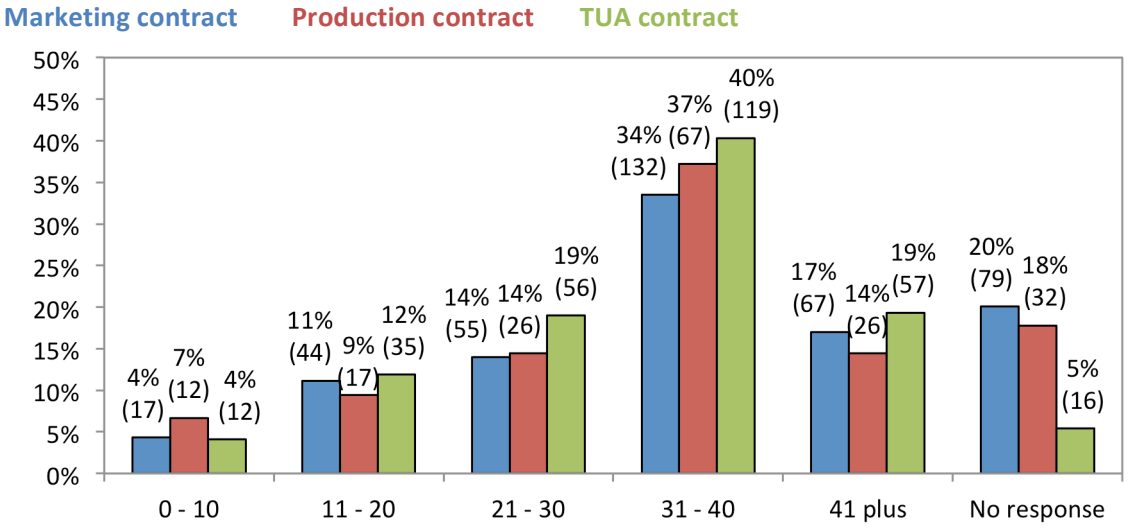
Figure 19. Respondents' perspective of "I do not care about contract enforcement mechanisms since they will take years to settle"



7.0 PRODUCERS' PERSONAL AND FARM CHARACTERISTICS

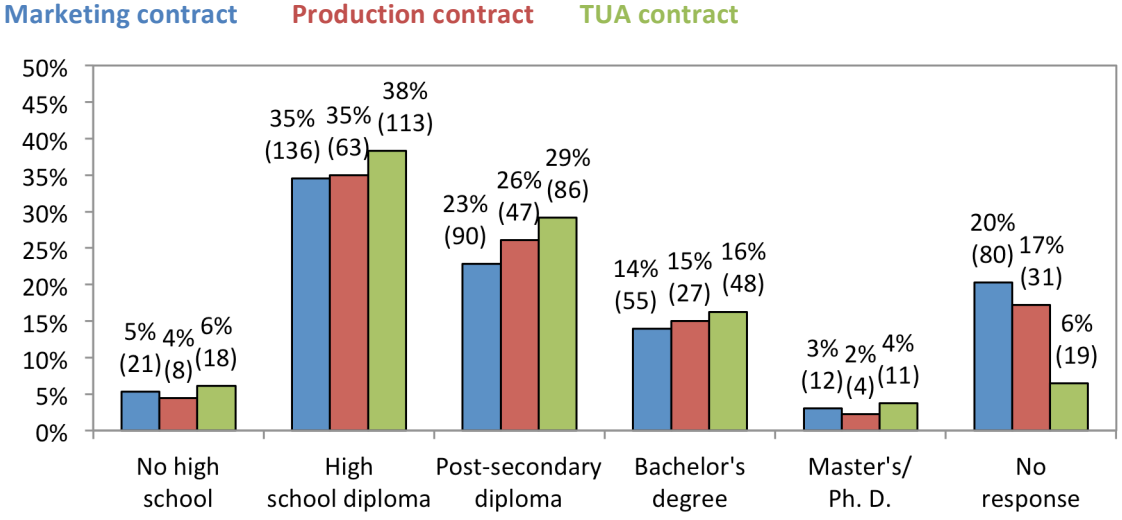
The final aspect of the survey was to ascertain personal and farm operation characteristics from those that use marketing, production, and TUA contracts. One of the first questions asked individuals to indicate the number of years of experience they have farming. As Figure 20 shows, the majority of respondents who answered the question for marketing, production, and TUA contracts have between 31 to 40 years of experience. Of the participants, only a small percentage indicated having zero to 10 years of experience. A similar distribution of responses was revealed for age.

Figure 20. Respondents' farming experience in years



The next question asked respondents to indicate their highest level of education completed (Figure 21). Of those that responded, 35 to 40 percent of the individuals indicated they have a high school diploma, followed closely by 23 to 30 percent indicating they have a post-secondary diploma for all contracts. Less than five percent indicated they completed a Master's and/or Ph.D., compared to 15 percent that completed a Bachelor's degree. There were also around five percent of respondents indicating they did not complete high school.

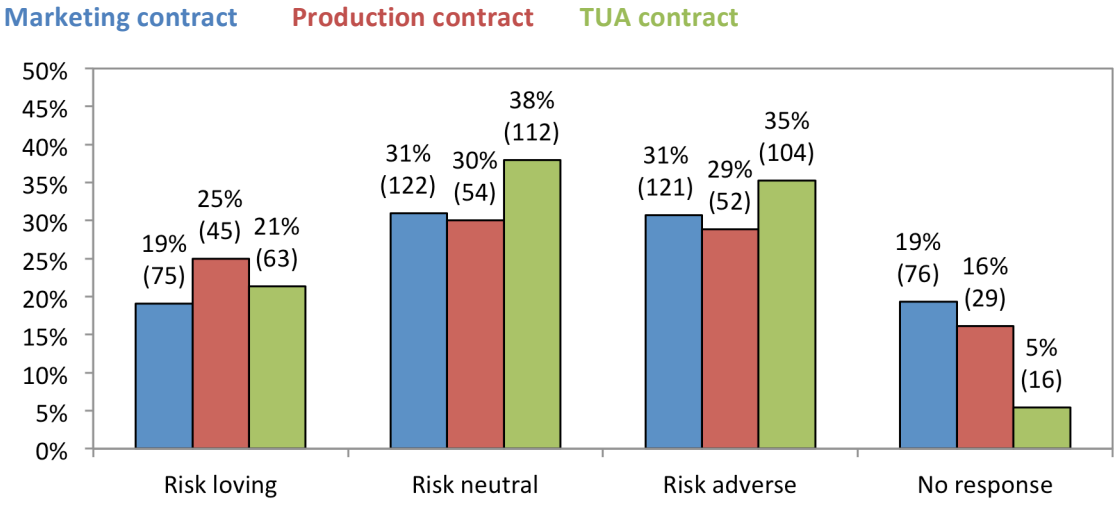
Figure 21. Respondents' level of education



Another aspect of the farmer characteristics portion of the survey was to determine producers risk attitude. In order to accomplish this, a series of questions asking producers to indicate their level of agreement or disagreement with the following statements were used: "I like to "play it safe" instead of taking risks in my farm operation", "I accept less risk in my farm operation than other farmers", "I am concerned more about a large loss in my farm than missing a significant gain", "I prefer financial certainty to financial uncertainty when selling/marketing my agricultural commodities", and "I am

usually cautious about accepting new ideas." The last two statements "I am hesitant about adopting new ways of doing things until I see them working for those around me" and "With respect to my farm, I dislike risk" had to be omitted because of an error on the online survey with caused the two statements to combine. A numerical value was attached to each of the option in the scale: 1 = "Strongly disagree", 2 = "Disagree", 3 = "Somewhat disagree", 4 = "Neither agree nor disagree", 5 = "Somewhat agree", 6 = "Agree", and 7 = "Strongly agree". To come up with one single value the average of the five statements was calculated, for values ranging from one to three, respondents were classified as risk loving and values of five to seven were classified as risk adverse, while any numbers in between the two categories meant the respondent was risk neutral. Overall, of those that responded to the question, 31 percent of those using marketing contracts were considered risk neutral, 31 percent risk adverse, while only 19 percent were risk loving (Figure 22). Similar distributions were found for production and TUA contracts were the slight majority of respondents were risk neutral, followed by risk adverse, while the least amount were considered risk loving.

Figure 22. Respondents' risk preference



With farm characteristics, two questions from the surveys stuck out, respondents business structure (Figure 23) and respondents' farm type (Figure 24). Of those that responded to the first question for all contracts, over 40 percent identifying their farm as corporation, 35 percent as sole proprietorship, and 15 percent as a partnership. Less than five percent indicated that their farm business structure was classified as a joint venture, cooperative, or no longer farming. The second question indicated that the majority of those using marketing, production, and TUA contracts identified their farm as a grain farm (60 percent), while 40 percent said their farm was classified as a mixed operation (i.e. both livestock and grain).

Figure 23. Respondents' farm business structure

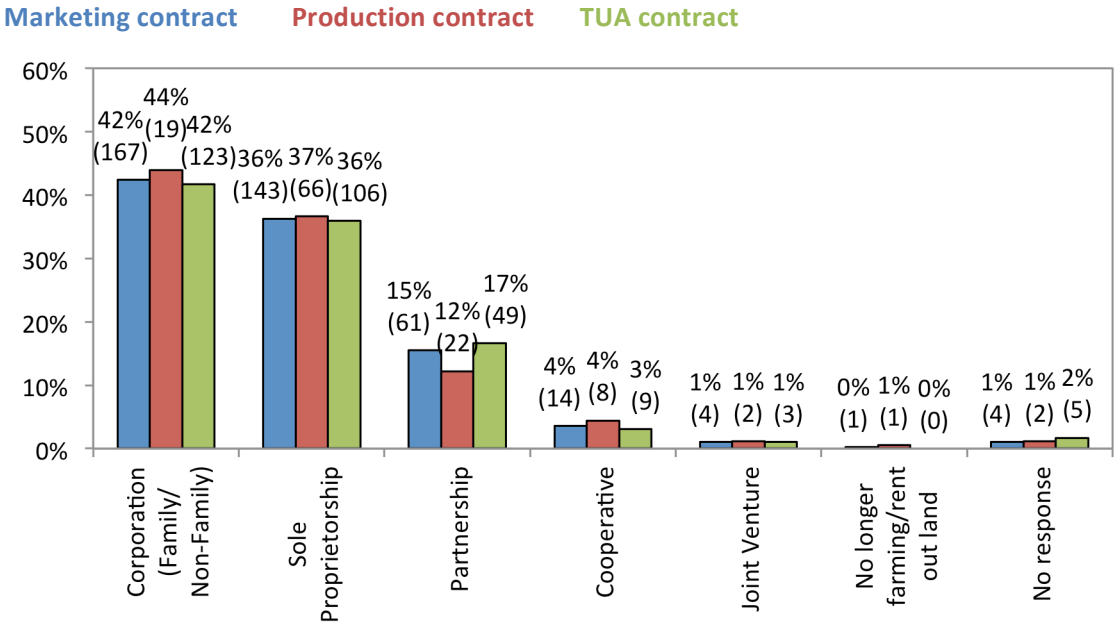
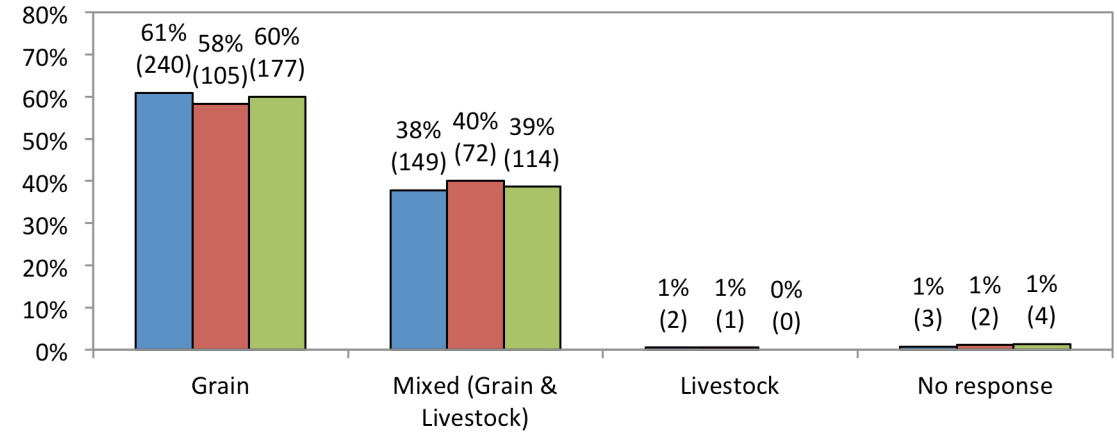


Figure 24. Respondents' type of farm operation



8.0 ECONOMETRIC MODEL & RESULTS

The survey data described above were used in an econometric model intended to determine the factors affecting farmers' decision to use one or more types of contracts. The methodology involves a two-step process: the first step reviews information that goes into the decision of whether or not to contract the crop in some manner. This involved employing a procedure in SAS which used all responses to questions relating to the producer's farm, crops grown, and demographic characteristics to identify those variables that exerted a statistically significant impact upon a farmer's choice to use one or more types of contracts. This yielded equation (1), below, where the dependent variable y'_t takes on a value of 0 when

a producer indicates they do not enter into any of the types of contracts specified and a value of 1 if they do enter into one or more of the types of contracts specified.

$$(1)\quad y_t' = \beta_0 + \beta_1 FARM_t + \sum_{i=1}^{18} \beta_2\, CROP_{it} + \beta_3 INCOME_t + \beta_4 EXPER_t + \sum_{i=1}^{3} \beta_5\, RISK_{it} + \varepsilon_t$$

Where y_t' is the binary dependent variable and the independent variables for this equation consist of producers' responses to a subset of the survey questions: FARM refers to farm type (livestock, grain, other); CROP refers to the set of crops grown on a respondent's farm; INCOME refers to net farm income plus off-farm income; EXPER refers to the years of farming experience possessed by the respondent, and RISK refers to the level of risk aversion (risk averse, risk neutral, risk preferring) possessed by the respondent.

This equation is modeled as logistic rather than ordinary least squares (OLS) because the latter assumes that residuals will be normally distributed; however, the residuals of a dichotomous dependent variable will not possess this characteristic. Because of this, a binary logistic model is appropriate; Agresti (2002) provides a background of logistic regression and the logit model. PROC LOGISTIC from SAS version 9.3 was used to estimate the model. Selection=Backward option was chosen using the "Fast" computational algorithm. Using the backward selection process, the model starts with all independent variables available in the model and then eliminate variables that have a p-value of significance greater than α = 0.05.

Odds ratios representing the effect that specific variables would have on the probability that a producer would choose to contract or not to contract were then calculated (Table 1). The effects shown in Table 1 correspond to the variables in equation (1) as having a statistically significant effect upon the a producer's contracting decision. Odds ratios are interpreted relative to 1.0 – that is, referring to the first few rows in Table 1, a grain farmer is approximately twelve times as likely to contract as the other types of farms listed. By contrast, a livestock farmer is approximately 25% as likely to contract as are other types of farmers. Similarly, corn farmers are slightly less likely to contract than other types of farmers, while barley and oat farmers are slightly more likely, and so on. The interpretation of odds ratios is somewhat less straightforward when it comes to variables with multiple categories like the risk attitudes of respondents at the bottom of Table 1. In this case, it is sufficient to note that as respondents' level of risk aversion increased, they were less likely to sign contracts. This may seem counterintuitive given the common understanding of contracts as being a method to *minimize* risk. However, producers often regard the mere act of signing a contract as inherently risky – that is, "locking in" is frequently seen as a riskier course of action than simply relying upon (say) traditional storage to mitigate seasonal price variations. Put another way, it is not uncommon for farmers to be concerned about their ability to fulfill their end of a (say) marketing contract if they realize a catastrophic weather-related crop loss.

Table 1. Odds Ratios, Farmer Decision to Contract/Not Contract

Effect	Point Estimate	95% Wald Confidence Limits	
Grain Farm	12.25	2.641	56.83
Livestock Farm	0.258	0.031	2.163
Mixed Farm	6.309	1.336	29.781
Grows Corn	0.866	0.219	3.426
Grows Barley	1.115	0.611	2.034
Grows Oats	1.381	0.735	2.597
Grows Rye	0.606	0.163	2.252
Grows Peas	2.129	1.052	4.307
Grows Flax	3.389	1.208	9.509
Grows Canola	3.034	1.49	6.178
Grows Soybeans	0.989	0.347	2.824
Grows Wheat	1.114	0.507	2.446
Grows Mustard	1.127	0.302	4.208
Grows Hemp	3.875	0.077	194.573
Grows Canary Seed	1.926	0.329	11.269
Grows Beans	0.817	0.148	4.498
Grows Forage Grass	1.164	0.585	2.314
Grows Other Crop	2.156	0.462	10.057
Total Income	1.621	1.242	2.117
Years Farming	0.971	0.95	0.992
Risk Preferring	6.611	2.043	21.391
Risk Neutral	6.125	1.944	19.298
Risk Averse	3.977	1.332	11.875

The next step in the econometric procedure is to identify those variables which are statistically significant in affecting the respondent's contracting behaviour, this time assessing the effects of respondents' understanding and use of, along with attitudes toward, the three specific types of contracts. The methodology again employs an iterative stepwise procedure where statistically insignificant variables are progressively omitted. The second resulting second equation can thus be written

$$(2)\ y_t = \sum_{i=1}^{8} \beta_{0i} + \beta_1 \theta PREVMKT_t + \sum_{i=1}^{4} \beta_2\, \theta READMKT_{it} + \beta_3 \theta MKTUNDERSTAND_t + \beta_4 \phi PREVPROD_t + \beta_5 \phi DISPUTEPROD_t + \beta_6 \phi INDIFENFORCE_t + \beta_7 \phi FIRMDETINPUTS_t + \beta_8 \phi PRODFIELDMAN_t + \beta_9 \gamma PREVTUA_t + \sum_{i=1}^{4} \beta_{10}\, \gamma READTUA_{it} + \varepsilon_t,$$

where y_t = 0 if there is no contract, = 1 if there is a marketing contract, = 2 if a production contract, = 3 if TUA, = 4 if marketing and production contracts, = 5 if marketing contract and TUA, = 6 if production contract and TUA, and = 7 if marketing and production contracts and TUA. *It is critical to note that y_t is thus not interpreted as a "typical" dependent variable.* Rather, y_t just identifies the choice of contracting method reported by the respondent – accordingly, equation (2) is multinomial logistic model since the dependent variable can take on one of eight different values. Indicator variables θ, ϕ, and γ represent whether a particular producer used a particular type of contract for the relevant survey response. Specifically, θ = 1 if marketing contracts are used (0 otherwise), ϕ = 1 if production contracts are used (0 otherwise), and γ = 1 if TUAs are used (0 otherwise).

The procedure employed for this analysis found that a producer's specific contracting behaviour is affected by their previous use of marketing contracts, how much of their marketing contract is read, the ease of understanding marketing contracts, their previous use of production contracts, the presence of a dispute settling mechanism in a production contract, being indifferent about enforcement mechanisms present in a production contract since any dispute could take years to settle, the contracting firm being responsible for decisions about input use, the contracting firm supplying a fieldman to provide advice for production contracts, their previous use of TUAs, and the proportion of TUAs read before signing.

Odds ratio estimates for the model presented in equation (2) are shown in Table 2, below. Results in the first row of Table 2 can be interpreted to mean that a producer is 98.6% less likely to select another type of contract (or some combination of other types of contracts) if they have used a marketing contract previously. This seemingly complex explanation can be interpreted simply to mean that producers who have used a contract type previously (this result is consistent across production contracts and TUAs) were found to be more likely to use that type of contract again. Results shown in the second through fifth lines of Table 2 can be interpreted in a similar way; reading some proportion of a marketing contract makes it less likely that the producer will select an alternative contract type. Other odds ratios can be interpreted similarly in this case; for example the presence of a production contract dispute resolution mechanism reduces the odds by 71.8% that a contractor would select some other contract type or some other combination of contracts. The last four rows of Table 2 have very small odds ratios, perhaps indicating that the amount of the TUA read by a producer does not have a large impact on the odds that the producer would select an alternative contract type. This may be a function of the fact that TUAs have become a hallmark of production of (for example) Roundup Ready canola, where producers have little choice but to sign the TUA as a condition of growing the crop. This may also resign farmers to not reading much of a TUA, which is both a common and a complex contract type.

Table 2. Odds Ratios, Farmer Selection of Contract Type(s)

Effect	Point Estimate	95% Wald Confidence Limits	
Used Marketing Contract Previously	0.014	0.006	0.036
Reads None of Marketing Contract	0.15	0.024	0.948
Reads Some of Marketing Contract	0.098	0.035	0.279
Reads Most of Marketing Contract	0.093	0.03	0.282
Reads All of Marketing Contract	0.276	0.081	0.942
Marketing Contract Easy to Understand	0.88	0.751	1.031
Used Production Contract Previously	0.007	0.003	0.019
Production Contract Dispute Mechanism	0.282	0.106	0.753
Indifferent About Production Contract Enforcement Mechanism	0.506	0.357	0.717
Firm Determines Inputs in Production Contract	1.503	0.916	2.467
Fieldman is Provided in Production Contract	0.51	0.365	0.713
Used TUA Previously	0.302	0.122	0.747
Reads None of TUA	<0.001	<0.001	<0.001
Reads Some of TUA	<0.001	<0.001	<0.001
Reads Most of TUA	<0.001	<0.001	<0.001
Reads All of TUA	<0.001	<0.001	<0.001

9.0 AGRIBUSINESS FIRM DATA

The second component of this research pertained to collecting information from Canadian agribusinesses or firms involved in contracting with producers. A total of 314 surveys were distributed either via mailout or email to agribusiness firms in Canada during the spring of 2013 (Appendix 3); a reminder was sent after a few weeks. The list was developed from web-based searches and other publicly available sources. Thirty-two agribusinesses responded, yielding a response rate of just under ten percent. The survey was similar in structure to the producer survey outlined above, but uniquely targeted to agribusinesses. The objective for including Canadian agribusinesses in the research was to gain important insight into the firm's usage and motivations for entering agreements with producers. Ali

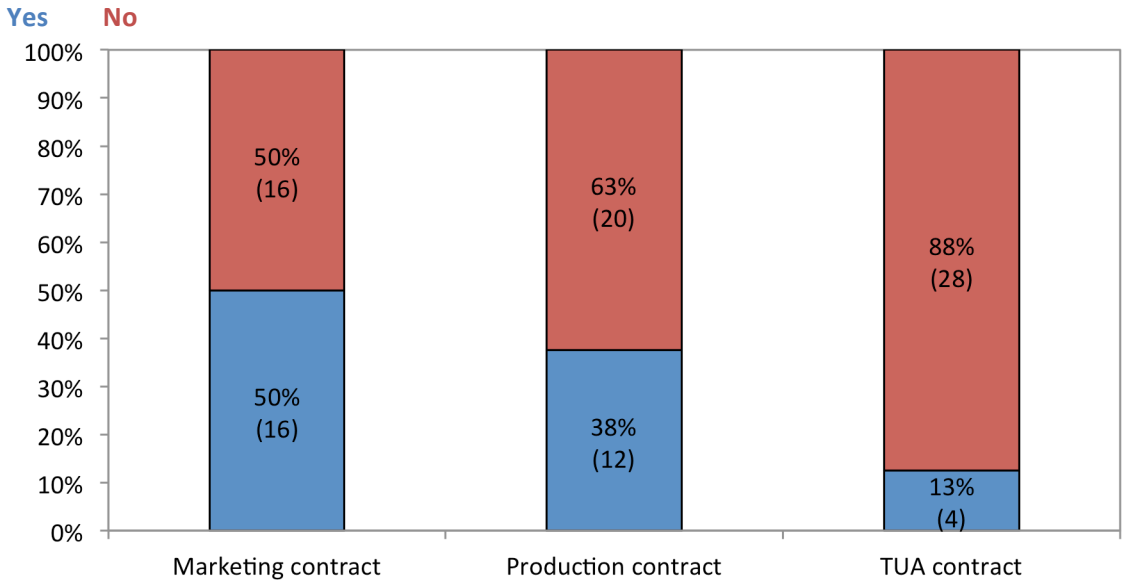
& Kumar (2015) performed a similar study analyzing the structure of contractual agreements of 83 mango contractors in India. They found contractors preferring to enter into contracts before pre-flowering stage pay more attention to the contract management attributes, while those entering post-flowering were more likely to pay attention to orchard-related features. Additionally, they note the density and age of mango trees, availability of minimum infrastructure, contract pricing and duration, and contract enforcement mechanism are important contract design attributes influencing mango contracting decisions.

Similar to the farm level survey, the firm survey was divided into five sections. The first section asked respondents about their firms' characteristics, while sections two through four asked about usage, structure and terms, and perception of marketing, production, and TUA contracts. Although the observations were limited due to lack of responses, the preliminary results reveal the following about the firms' operational characteristics. Of the 32 respondents, 59 percent were comprised of firms that were considered corporations, 59 percent operate at a national level compared to 34 percent that operate at provincial level, and 29 percent of respondents are considered wholesalers and/or brokers. Additionally, of those individuals that responded, the majority (56 percent) replied that they typically handle grain.

10.0 FIRMS' USAGE OF MARKETING, PRODUCTION, AND TUA CONTRACTS

In terms of contract usage, Figure 25 shows that of those firms surveyed, only 50, 38, and 13 percent use marketing, production, and TUA contracts, respectively. However, of those that use marketing contracts, 31 percent indicated they typically sign contracts with fewer than 100 producers and 56 percent sign contracts with anywhere from 100 to 500 producers, compared to only 13 percent that sign contracts with more than 5,000 producers in a production year. In terms of production contracts, of those that responded, 60 percent sign contracts with fewer than 100 producers, while 40 percent sign contracts with 100 to 500 producers. For TUA contracts, one respondent indicated the firm contracts with fewer than 100 producers, while the other respondent indicated the firm contracts with anywhere from 100 to 500 producers in a production year. Only two to three firms' chose to complete the TUA section, so caution is advised when interpreting the results.

Figure 25. Contractors' use of marketing, production and TUA contracts



11.0 STRUCTURE AND TERMS OF MARKETING, PRODUCTION, AND TUA CONTRACTS REPORTED BY FIRMS

In terms of the general structure and terms of all three contracts, approximately 90 percent plus respondents indicated that the firm ensures the producer reads the contract (including terms and conditions) before signing. Firms were also asked to indicate whether their contracts included a clause for dispute resolutions. For those that responded, 60, 67, and 100 percent indicated that the firms marketing, production, and TUA contracts do include a clause for dispute resolution, respectively. Some of the more specific questions asked to contractors of marketing contracts indicated that 75 percent of contracts used are forward contracts, followed closely by target, deferred, and/or delayed delivery contracts. Another question asked respondents to indicate if the contracts paid premiums and/or discounts. Of those that responded, 80 percent did use premium and/or discounts in marketing contracts.

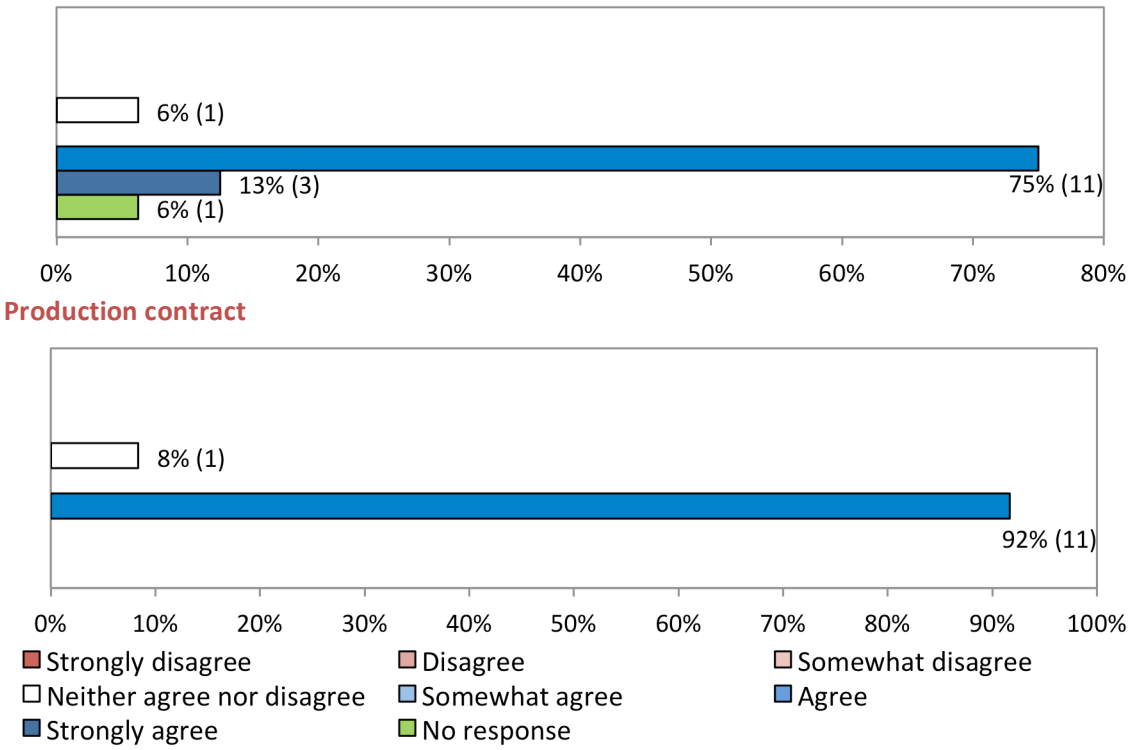
For contractors providing production contracts, the most commonly used pricing mechanism was minimum and/or maximum pricing (40 percent) followed by reference and flat-fee pricing (both at 30 percent). When asked if contracts paid a premium and/or discounts, over 70 percent of the individuals indicated that the contracts indeed paid premiums and/or discounts. Next firm respondents were also asked if any inputs were supplied to producer under the terms of the production contracts, only three of the respondents said yes, with seed being the most commonly supplied input. Moving on to TUA contracts, when respondents were asked to indicate if producers were required to sell back production to the firm, 67 percent (two respondents) indicated the contract required the producer to sell 100 percent of their production back to the contract provider.

12.0 FIRMS' PRESPECTIVE OF MARKETING, PRODUCTION, AND TUA CONTRACTS

Using a seven-point Likert scale to identify factors that motive firms to provide marketing contracts revealed that 80 percent "Somewhat agree" to "Strongly agree" to the following statements regarding their firms motivation and/or incentive to offering marketing contracts: facilitates risk-sharing and

stabilizes delivery price. Other statements shown to motivate firms to contract included control of input supply, increased market power, and stabilize delivery price. For the aspects that motivate firms to offer production contracts, an overwhelming percentage indicated that the key factor to offering contracts is stabilizing supply with 92 percent of respondents "Somewhat agree" to "Strongly agree" with the statement. Other statements indicated by the majority of respondents as being important factors to contracting include facilitates risk-sharing and improves quality. As for TUA contracts it is harder to determine which factors motivate firms to contract given only three responses. However, two of the three contractors indicated they "Somewhat agree" to "Strongly agree" with the following statements; control input supply, facilitates risk-sharing, stabilizes delivery price, stabilizes supply, and improves quality.

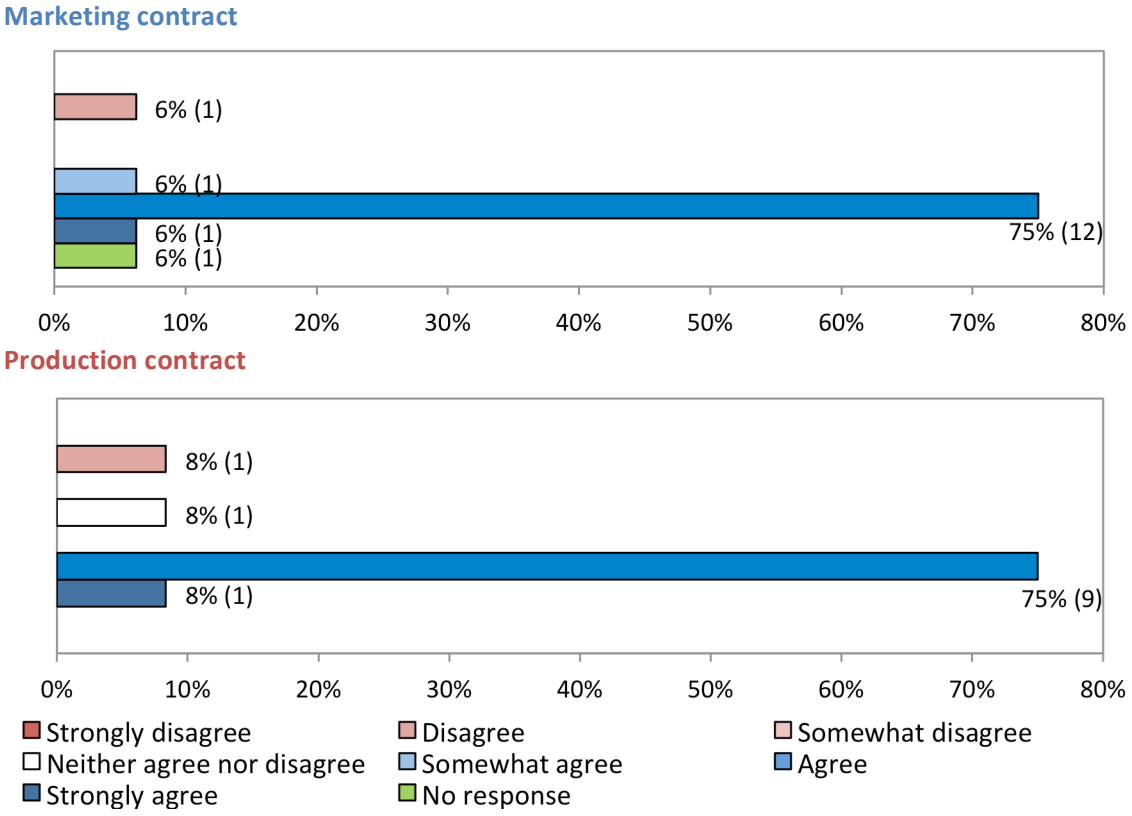
Figure 26. Contractors' perspective of "Farmers' rights are protected when using contracts"



Firm respondents were next questioned about their perspective regarding marketing, production, and TUA contracts, where they were asked to rank a list of statements using a seven-point Likert scale similar to the one used in farm level data, where 1 = "Strongly disagree" and 7 = "Strongly agree" with the statement. Since only three of the four responding firms that provide TUA contracts responded to the questions regarding TUA perspectives, the authors have chosen not to present the results as it is difficult to draw meaningful conclusions from only three observations (see Appendix 4). As shown in Figure 26, when contractors were asked to indicate whether they believed producers rights are protected by marketing and production contracts, the majority of respondents agreed or strongly agreed that producers' rights are protected. Likewise, when contractors were asked if they believed the firms' rights are protected by the contracts, the majority also agreed with the statement while less than 10 percent of respondents for marketing and production contracts indicated they do not believe the contractors rights are protected by the contract (Figure 27). For both statements, the three respondents

using TUA contracts indicated they agreed with the statements that both the firm and producers' rights are protected by the contract.

Figure 27. Contractors' perspective of "The firms' rights are protected by contracts"



As shown in Figure 28, when contractors were asked if they believe the contracts are easy to understand, all contractors providing marketing and production contracts indicated they "Somewhat agree" to "Strongly agree" with the statement. Similar results found for TUA contracts. Furthermore, when asked if contractors believe producers are treated fairly by the contract, an overwhelming majority also indicated that they "Somewhat agree" to "Strongly agree" that producers are treated fairly by marketing, production, and TUA contracts (Figure 29). Respondents were then asked to indicate if they believe producers are forced to meet contract obligations, as shown in Figure 30, where close to 87 percent of firms providing marketing contracts replied that they "Somewhat agree" to "Strongly agree" with the statement, while a slightly smaller percent of contractors providing production contracts (80 percent) also agreed with the statement that producers are forced to meet contract obligations.

Figure 28. Contractors' perspective of "Contracts are easy to understand"

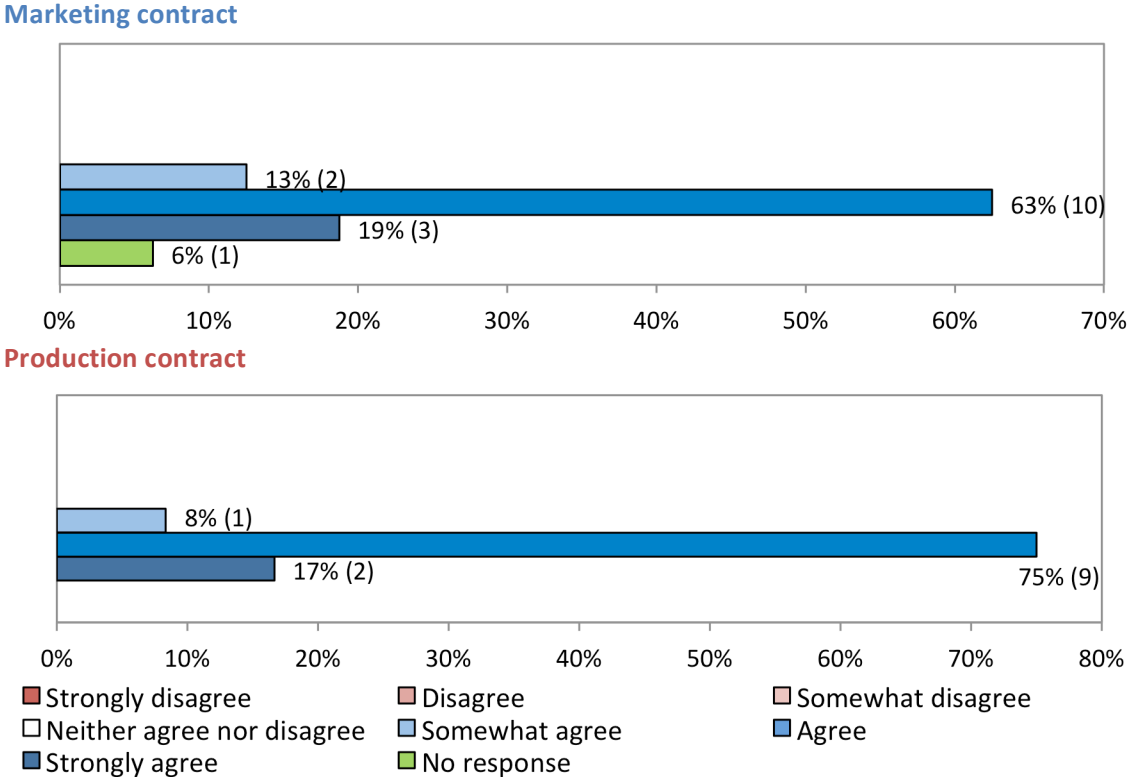


Figure 29. Contractors' perspective of "Farmers are treated fairly by marketing contracts"

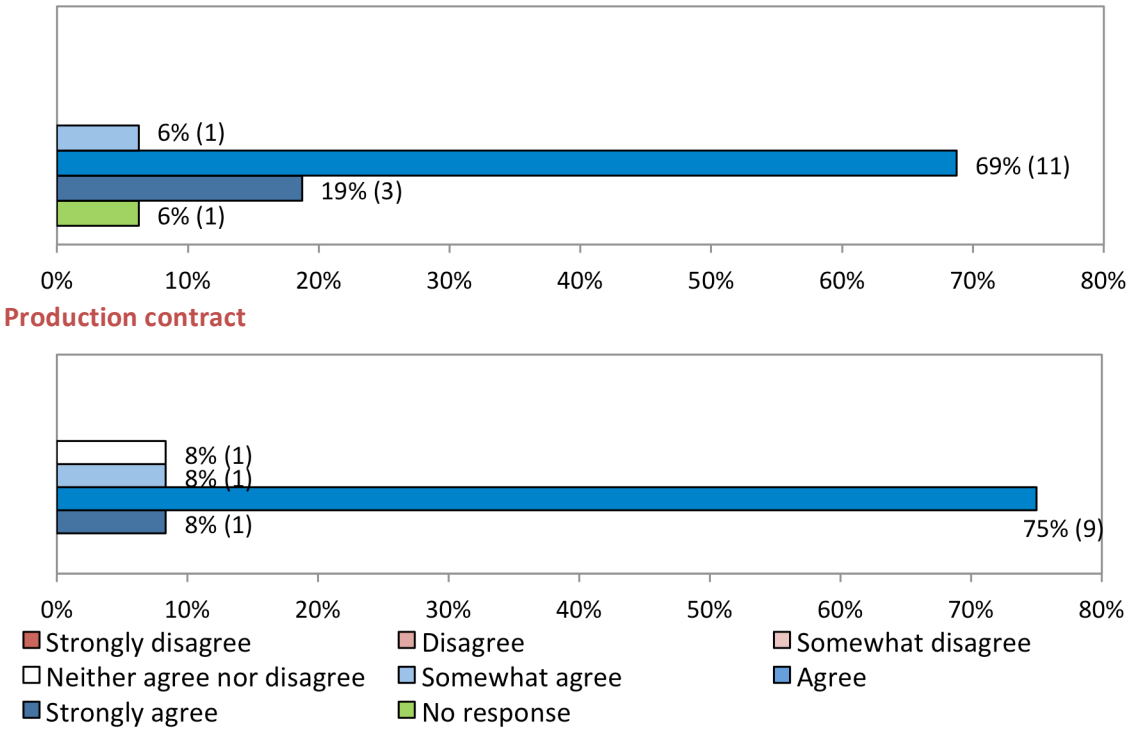
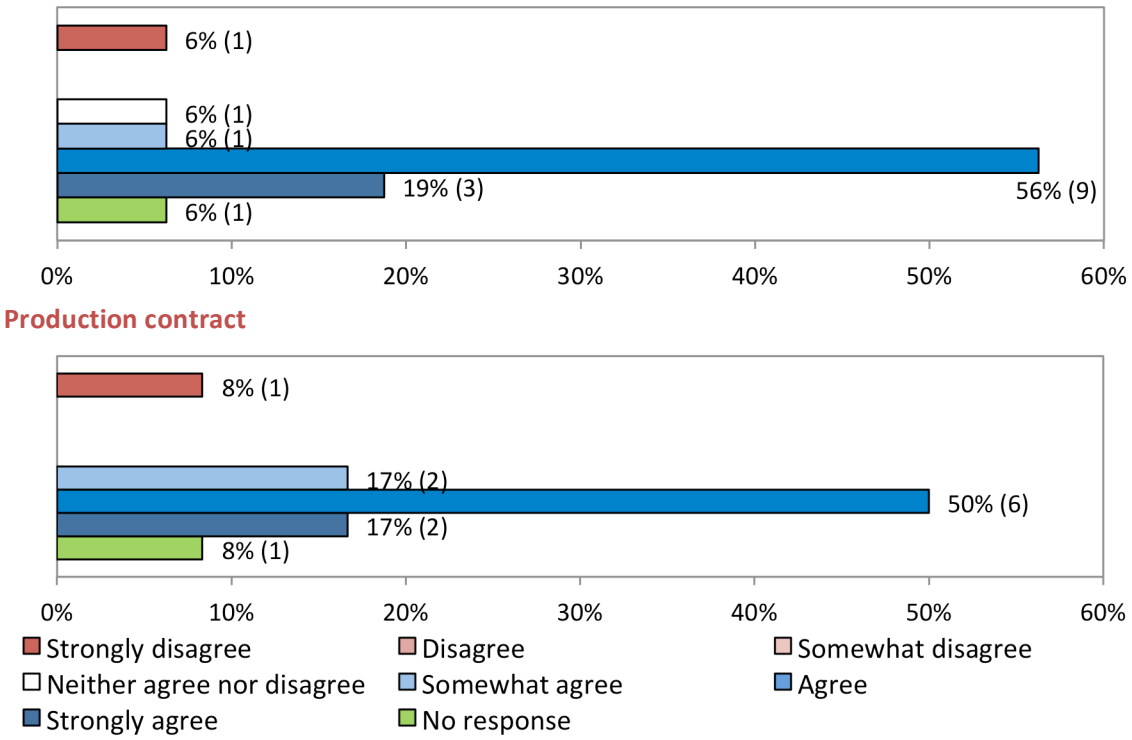


Figure 30. Contractors' perspective of "Farmers are forced to meet contract obligations"



Mixed opinions were revealed when contractors were asked if they believe producers can get out of a contract easily. As Figure 31 shows, opinions are split, 44 percent of contractors providing marketing contracts to producers "Disagree" to "Strongly disagree" with the statement, while the other 44 percent of respondents "Somewhat agree" to "Agree" that producers can easily get out of their marketing contract. A slightly different story is revealed for production contracts, were 33 percent of those that responded disagree with the statement, compared to 50 percent that agree with the statement. Finally, contractors were also asked to indicate if they believe producers will incur penalty if they break the contract (Figure 32). Besides 13 percent of respondents that disagree with the statement for marketing contracts, 76 percent of respondents "Somewhat agree" to "Strongly agree" that producers will incur penalties if they break the contract. However, for production contracts opinions were split between those that responded, with 44 percent disagreeing with the statement and the other 44 percent agreeing that a penalty will be incurred if contract is broken by the producer. As for contractors providing TUA contracts, all three respondents agree to some extent with the statement.

Figure 31. Contractors' perspective of "Farmers can get out of a contract easily"

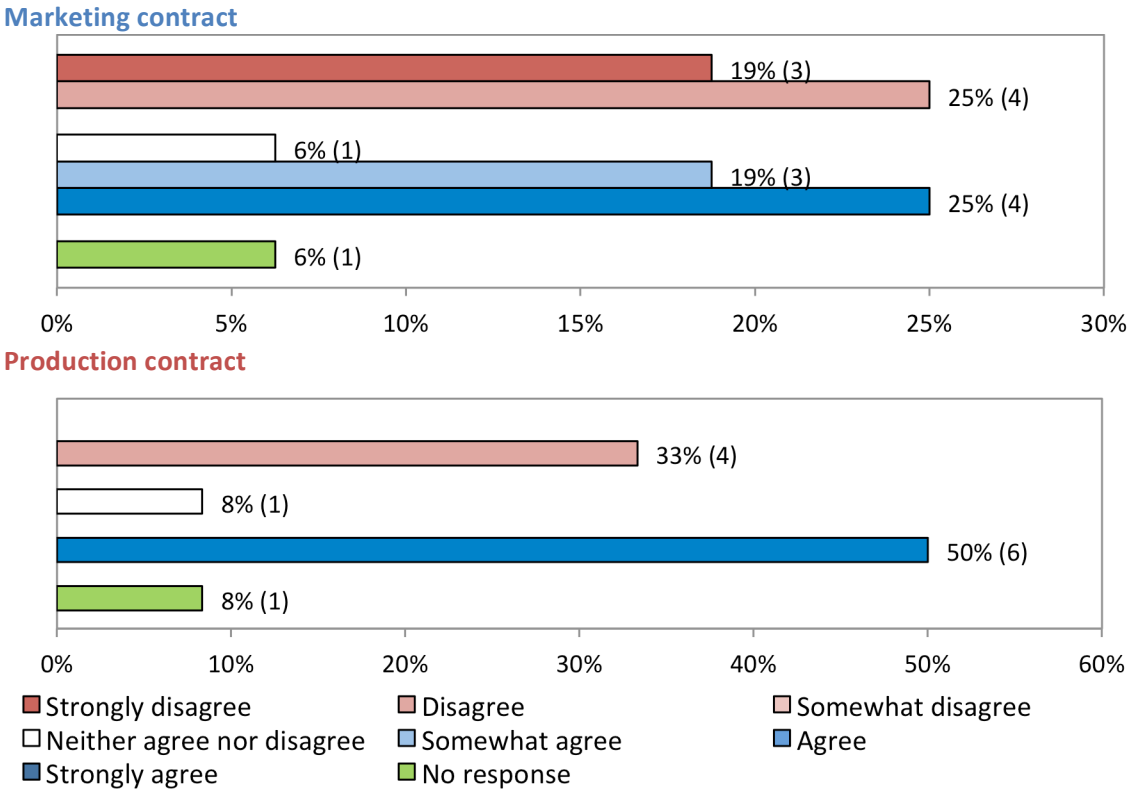
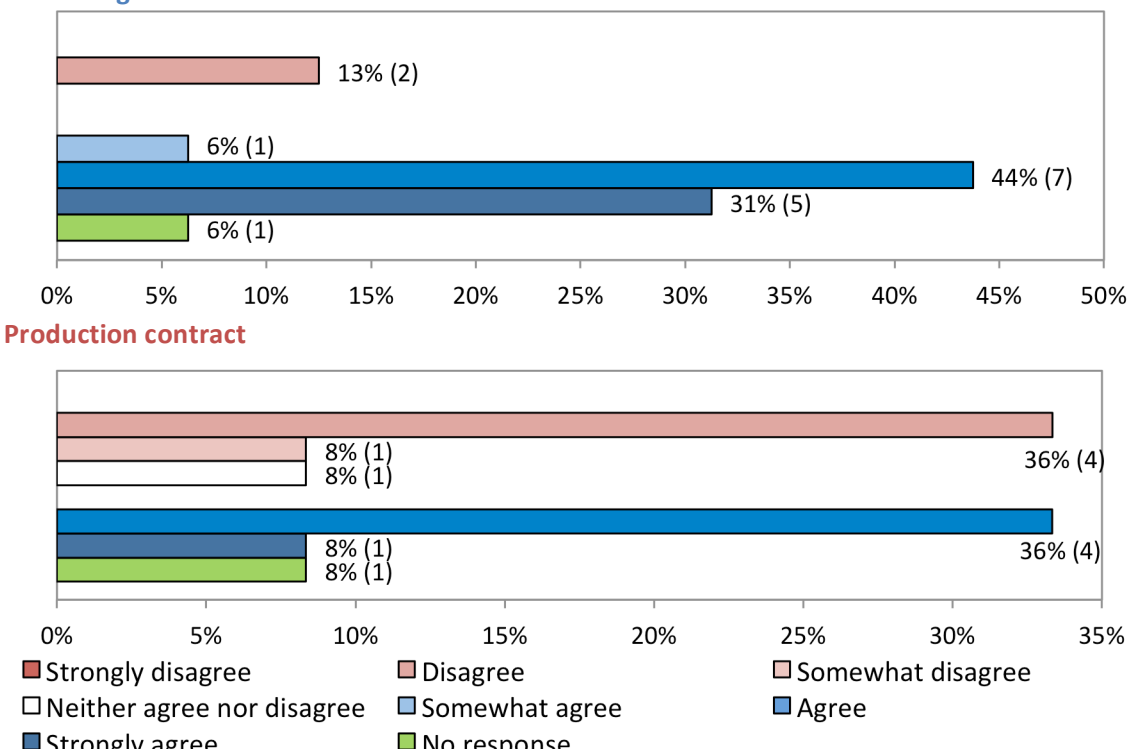


Figure 32. Contractors' perspective of "If farmers break a contract, they will incur a penalty"



13.0 SUMMARY AND CONCLUSIONS

The goal of the research reported here was to assess current trends in contract use by agricultural producers and agribusinesses, to provide an overview of the structure and terms of these contracts as well as producer and agribusiness perspectives on and attitudes toward them, and to quantitatively identify factors affecting contract use by producers. This was accomplished using data obtained from a mailout and online survey of Prairie producers and a mailout survey of agribusinesses. Between the two producer surveys, 587 usable responses were obtained. Marketing contracts, production contracts, and Technology Use Agreements (TUAs) were the focus of this research.

Results demonstrate that farmers are frequent users of all three types of contracts – more than 70% of respondents use marketing contracts, 64% use TUAs, and 37% use production contracts, with a significant number having used contracts for five years or more. Despite this frequent usage, only a small minority of respondents (19% for marketing, 14% for production, and 16% for TUAs) read an entire contract before they sign it. This may suggest producers are already familiar with the terms of the contract, or that there is a significant level of trust with the contractor.

The research found that forward (28%) and basis (20%) contracts were among the most popular types of contracts used to market grain and that tonnage (19%), delivery period (15%), delivery location (15%), and quality (15%) were typical attributes of marketing contracts. Each of those was also a common attribute of production contracts, as was acreage.

Respondents were somewhat split on the question of whether their rights are protected by contracts, with many farmers not having a strong feeling one way or the other. They do, however, strongly believe that firms' rights are protected by contracts. Responses from producers regarding the ease with which contracts are understood indicate there are significant numbers of producers who find contracts challenging in this regard. This, coupled with the aforementioned finding that farmers believe firms' rights are strongly protected in contracts, may indicate that legal advice should be retained by producers if they have any doubts about contract terms.

Respondents generally believe that they are treated fairly by marketing and production contracts, with a minority (24% for marketing contracts, 18% for production contracts) stating some level of disagreement with the statement that they are treated fairly by contracts. However, 41% of respondents disagree to some extent with the statement when it applied to TUAs. This may be a result of the more onerous terms associated with TUAs, and perhaps a few of the highly publicized cases of producers facing legal action for not abiding by the terms of a TUA.

Producers indicate that they take honouring contracts very seriously, with a majority believing that they cannot get out of contracts easily and that if they do break a contract, they will incur a penalty. They also recognize that enforcement mechanisms are available to contractors, and disagree consistent across contract types that enforcement mechanisms are unimportant to them.

Econometric analysis of the survey data was used to ascertain the factors affecting respondents' willingness to sign contracts. It was determined that farm type, crop mix, net farm income plus off farm income, years farming, and respondent attitudes toward risk exert statistically significant influences upon farmers' decision to contract or not contract. Odds ratio analysis further suggest that grain farms are much more likely to contract than other types of farms, that higher-income farms have a higher

probability of using contracts, and that the likelihood of contract usage grows as a farmer becomes less averse to risk.

A second econometric model was used to ascertain the types of contracts respondents are most likely to use based upon their perceptions of and attitudes toward contracts, as well as the specific characteristics of the contract type. It was discovered that for each type of contract, previous use of that type made it statistically more likely that a contract would be signed again. It was further discovered that the extent to which marketing contracts are read and understood reduce the odds that an alternate type of contract is selected by the producer. Other factors affecting contracting behaviour for production contracts in this model included the presence of a dispute settlement mechanism, being indifferent about enforcement, having input use determined by the contractor, and having a fieldman provided. For TUAs, similar to what was found for marketing contracts, the amount read by a respondent had a statistically significant impact upon contracting behaviour. Odds ratio analysis provided an indication of the magnitude of the effects for each of the significant variables in the contracting behaviour model.

Agribusinesses were also surveyed about their use of and perspectives on contracts. Only about ten percent of contractors chose to respond to the survey; half of these indicated they use marketing contracts while just over a third are involved with production contracts and one-eighth (four firms) offer TUAs. Unfortunately, the small number of firms participating in the survey makes it difficult to draw many conclusions and impossible to undertake a meaningful econometric analysis. Nonetheless, contractors do appear to believe both farmers' and firms' rights are protected by contracts, that contracts are easy to understand, and that farmers are treated fairly by contracts. Firms do agree that farmers are required to meet contract obligations and farmers they will incur penalties if a contract is broken. They also recognize that it is not easy for producers to get out of a contract once it is signed.

In conclusion, the results of this research seem to indicate that contracts are widely used and well understood by agricultural producers in the Prairies. It appears to be the perception of farmers that firms' rights are better protected by contracts than are their own; this may be a cause for concern that could indicate the need for educational efforts to help ensure farmers clearly understand the structure and terms of the contracts offered to them. It also seems to be the case that not all producers are reading their contracts completely; while it is possible this suggests a high level of trust or comfort based upon previous contract use, it also could be further evidence that enhanced efforts with respect to education in the area of farm contracts is warranted.

14.0 REFERENCES

Ali, J., and S. Kumar. 2015. Understanding the contract structure for mango and empirical analysis of its determinants. *British Food Journal* 117(8): 2161-2181.

Ali, J., and S. Kumar. 2011. Information and communication technologies (ICTs) and farmers' decision-making across the agricultural supply chain. *International Journal of Information Management* 31(2): 149-159.

Agresti, A. 2002. *Categorical Data Analysis*, Second Edition, New York: John Wiley & Sons.

Bogetoft, P., and H. Ballebye Olesen. 2002. Ten rules of thumb in contract design: lessons from Danish agriculture. *European Review of Agricultural Economics* 29(2): 1219-1225.

Davis, C.G., and J.M. Gillespie. 2007. Factors affecting the selection of business arrangements by US hog farmers. *Review of Agricultural Economics* 29(2): 331-348.

Dileep, B.K., R.K. Grover, and K.N. Rai. 2002. Contract farming in tomato: an economic analysis. *Indian Journal of Agricultural Economics* 57(2): 197-210.

Drescher, K. 2000. Assessing aspects of agricultural contracts: an application to German agriculture. *Agribusiness: An International Journal* 16(4): 385-398.

Elliott, M.S., L.M. Elliott, and Y. Lin. 2015. Corn and soybean marketing contract adoption and site-specificity. Paper prepared for Agricultural and Applied Economics Association and Western Agricultural Economics Association Conference, San Francisco, CA, July 26-28.

Eswaran, M., and A. Kotwal. 1985. A theory of contractual structure in agriculture. *American Economic Review* 75(3): 352-367.

Faller, D. 2011. Agricultural Producers Association of Saskatchewan. Personal communication, February.

Franken, J.R.V., J.M.E. Pennings, and P. Garcia. 2012. Crop production contracts and marketing strategies: What drives their use? *Agribusiness* 28(3): 324-340.

Franken, J.R.V., J.M.E. Pennings, and P. Garcia. 2009. Do transaction costs and risk preferences influence marketing arrangements in the Illinois hog industry? *Journal of Agricultural and Resource Economics* 34(2): 297-315.

Goodhue, R.E. 1999. Input control in agricultural production contracts. *American Journal of Agricultural Economics* 81(3): 616-620.

Goodwin, B.K., and T.C. Schroeder. 1994. Human capital, producer education programs, and the adoption of forward-pricing methods. *American Journal of Agricultural Economics* 76(4): 936-947.

Guo, R.W., and J. Zhu. 2005. Contract farming in China: supply chain or ball and chain? Paper prepared for Minnesota International Economic Development Conference, Minneapolis, MN, April 29-30.

Harl, N.E. 2000. The age of contract agriculture: consequences of concentration in input supply. *Journal of Agribusiness*18(1): 115-127.

Hueth, B., and D.A. Hennessy. 2001. Contracts and risk in agriculture: conceptual and empirical foundations. Paper prepared for SER-IEG meetings, Gulf Shores, AL, March 22-24.

Hueth, B., and T. Melkonyan. 2004. Identity preservation, multitasking, and agricultural contract design. *American Journal of Agricultural Economics* 86(3): 842-847.

Katchova, A. 2010. Agricultural contracts and alternative marketing options: a matching analysis. *Journal of Agricultural and Applied Economics* 42(2): 261-276.

Katchova, A.L. 2013. Agricultural contracting and agrifood competition. Book chapter in the Ethics and Economics of Agrifood Competition, Harvey S. James, ed. Springer, Chapter 9:177-192.

Katchova, A.L., and M.J. Miranda. 2004. Two-step econometric estimation of farm characteristics affecting marketing contract decisions. *American Journal of Agricultural Economics* 86(1): 88-102.

Key, N. 2005. How much do farmers value their independence? *Agricultural Economics* 33(1): 117-126.

Key, N., and W. D. McBride. 2008. Do production contracts raise farm productivity? An instrumental variables approach. *Agricultural and Resource Economics Review* 37(2): 176-187.
Key, N., and W. D. McBride. 2003. Production Contracts and Productivity in the US Hog Sector. *American Journal of Agricultural Economics* 85(1): 121-133.
Lajili, K., P.J. Barry, S.T. Sonka, and J.T. Mahoney. 1997. Farmers' preferences for crop contracts. *Journal of Agricultural and Resource Economics* 22(2): 264-280.
Ma, W., and A. Abdulai. 2015. Linking apple farmers to markets: determinants and impacts of marketing contracts in China. Paper prepared for Agricultural and Applied Economics Association and Western Agricultural Economics Association Conference, San Francisco, CA, July 26-28.
MacDonald, J.M. 2015. Trends in agricultural contracts. *Choices: The magazine of food, farm, and resource issues* 30(3): 1-6.
MacDonald, J.M. 2006. Agricultural contracting, competition, and antitrust. *American Journal of Agricultural Economics* 88(5): 1244-1250.
Miller, J.A. 2003. Contracting in agriculture: potential problems. *Drake Journal of Agricultural Law*8: 57-90.
Musser, W.N., G.F. Patrick, and D.T. Eckman. 1996. Risk and grain marketing behavior of large-scale farmers. *Review of Agricultural Economics* 18(1): 65-77.
Nagaraj, N., M.G. Chandrakanth, P.G. Chengappa, H.S. Roopa, and P.M. Chandakavate. 2008. Contract farming and its implications for input-supply, linkages between markets and farmers in Karnataka. *Agricultural Economics Research Review* 21(2008): 307-316.
Paulson, N.D., A.L. Katchova, and S.H. Lence. 2010. An empirical analysis of the determinants of marketing contract structures for corn and soybeans. *Journal of Agricultural and Food Industrial Organization* 8(1): 1-23.
Peerlings, J., and N. Polman. 2009. Farm choice between agri-environmental contracts in the European Union. *Journal of Environmental Planning and Management* 52(5): 593-612.
Pennings, J.M.E., O. Isengildina-Massa, S.H. Irwin, P. Garcia, and D.L. Good. 2008. Producers' complex risk management choices. *Agribusiness* 24(1): 31-54.
Roe, B., T.L. Sporleder, and B. Belleville. 2004. Hog producer preferences for marketing contract attributes. *American Journal of Agricultural Economics* 86(1): 115-123.
Ruto, E., and G. Garrod. 2009. Investigating farmers' preferences for the design of agri-environment schemes: a choice experiment approach. *Journal of Environmental Planning and Management* 52(5): 631-647.
Roy, E.P. 1963. Contract Farming. The Interstate Printers and Publishers Inc., Denvile Illinois, U.S.A.
Sartwelle III, J., D. O'Brien, W. Tierney Jr., and T. Eggers. 2000. The effect of personal and farm characteristics upon grain marketing practices. *Journal of Agricultural and Applied Economics* 32(1): 95-111.
Shapiro, B.I., and B.W. Brorsen. 1988. Factors affecting farmers' hedging decisions. *North Central Journal of Agricultural Economics* 10(2): 145-153.
Tudor, K., A. Spaulding, K.D. Roy, and R. Winter. 2014. An analysis of risk management tools utilized by Illinois farmers. *Agricultural Finance Review* 74(1): 69-86.
Vassalos, M. 2015. Current issues in agricultural contracts. *Choices: The magazine of food, farm, and resource issues* 30(3): 1-2.
Vavra, P. 2009. Role, usage and motivation for contracting in agriculture. *OECD Food, Agriculture and Fisheries Working Papers No. 16*, OECD Publishing doi: 10.1787/225036745705
Velandia, M., R.M. Rejesus, T.O. Knight, and B.J. Sherrick. 2009. Factors affecting farmers' utilization of agricultural risk management tools: the case of crop insurance, forward contracting, and spreading sales. *Journal of Agricultural and Applied Economics* 41(1): 107-123.

Wang, H.H., Y. Wang, and M.S. Delgado. 2014. The transition to modern agriculture: contract farming in developing economies. *American Journal of Agricultural Economics*96(5): 1257-1271.

Wolf, C. and N.J. Olynk Widmar. 2014. Dairy farmer adoption of forward-pricing methods. *Journal of Agricultural and Applied Economics* 46(4): 527-541.

Wu, J., and B.A. Babcock. 1996. Contract design for the purchase of environmental goods from agriculture. *American Journal of Agricultural Economics* 78(4): 935-945.

Wu, S.Y. Contract theory and agricultural policy analysis: a discussion and survey of recent developments. *The Australian Journal of Agricultural and Resource Economics* 50(4): 490-509.

Young, L.M., and J.E. Hobbs. 2002. Vertical linkages in agri-food supply chains: changing roles for producers, commodity groups, and government policy. *Review of Agricultural Economics* 24(2): 428-441.

Zheng, X., T. Vukina, and C. Shin. 2008. The role of farmers' risk aversion for contract choice in the US hog industry. *Journal of Agriculture and Food Industrial Organization* 6(1): 1-20.

APPENDIX 1. FARM LEVEL MAILOUT SURVEY

Section 1: Farm/Production Characteristics

1. Which type of business structure does your farm operate under?
◯ Sole proprietorship ◯ Partnership ◯ Family corporation ◯ Non-family corporation ◯ Cooperative ◯ Other (please specify): _____

2. Your total acres farmed: _____ (acres) Total acres owned: _____ (acres)

3. Which best describes your farm type?
◯ Grain ◯ Livestock ◯ Mixed, mostly grain ◯ Mixed, mostly livestock ◯ Other (please specify): _____-_____

For the questions that follow, please include non-contracted and contracted grain in a *typical* year.

4. Please check the type of crops and indicate the number of acres of each produced on your farm operation in a *typical* year: (*Please check all that apply*)
◯ Corn: _____ (acres) ◯ Barley: _____ (acres) ◯ Oats : _____ (acres)
◯ Rye: _____ (acres) ◯ Peas: _____ (acres) ◯ Lentils: _____ (acres)
◯ Flax: _____ (acres) ◯ Canola: _____ (acres) ◯ Soybeans: _____ (acres)
◯ Wheat (including durum): _____ (acres) ◯ Sunflower: _____ (acres) ◯ Other: _____ _____ (acres)
◯ Other: _____ _____ (acres)

5. Does your farm operation purchase crop insurance? ◯ Yes ◯ No
If ***yes***, please specify the percentage of insurance coverage: (%) _____

Section 2: Marketing Contracts

1. Does your farm operation use ***marketing contracts*** for any commodity produced in a typical year? (A marketing contract is a written or oral agreement reached before harvest or before completion of a production phase, setting a price or price formula for the commodity. The commodity is typically owned by the farmer/operation prior to delivery) ◯ Yes◯ No

2. Have you ever signed a marketing contract previously? ◯ Yes◯ No

If you answered "no" to both question 1 and question 2, please skip to next section: production contracts

3. Before signing a marketing contract, how much of it do you typically read?

◯ All of it ◯ Most of it ◯ Some of it ◯ None of it

4. Please indicate the length of your *typical* marketing contract: _____ (months)

5. Does your marketing contract *typically* include a clause for dispute resolution? ◯ Yes ◯ No

6. Please list the commodities sold in a typical year with ***marketing*** contracts.

Commodities with marketing contracts (Write in commodities)	Quantity of commodity marketed with contract (Quantity)	Proportion of production (Percent)

(please continue on reverse side of this sheet)

7. What type of pricing mechanisms does your farm use to market grain in a *typical* year? (*Please check all that apply*)

◯ Forward contract (fixed or flat price) ◯ Basis contract ◯ Futures contract

◯ Deferred or delayed price contract ◯ Minimum/maximum price contract

◯ Other (please specify):

_____

8. Does your *typical* marketing contract specify any of the following: (*Please check all that apply*)

◯ Tonnage ◯ Acreage ◯ Maximum tonnage

◯ Quality ◯ Delivery period ◯ Delivery location

◯ FOB ◯ Transportation methods ◯ Delivery contract required

◯ Other (please specify):

_____

9. Does your *typical* marketing contract pay premiums/discounts for certain qualities delivered? ◯ Yes ◯ No

10. How is your payment for delivering under a marketing contract typically received?

◯ Cash payment at time of delivery ◯ Prepaid deposit ◯ Payment within 30 days after delivery ◯ Payment after 30 days of delivery ◯ Other (please specify): _____

11. Your *typical* marketing contract is signed with a company or buyer with delivery points located:
◯ Less than 40 miles (64 km) from your farm ◯ More than 40 miles (64 km) from your farm

12. Does your farm operation use an advisory service or consultant for marketing in a *typical* year? ◯ Yes ◯ No

Please use the following scale to answer Questions 13 to 15. (*Please circle the number that represents your view*)

1 = Strongly disagree; **2** = Disagree; **3** = Somewhat disagree; **4** = Neither agree nor disagree; **5** = Somewhat agree; **6** = Agree; **7** = Strongly agree

13. On a scale of 1 to 7, where 1 is 'strongly disagree' and 7 is 'strongly agree', would you agree or disagree with each of the following statements regarding the enforcement mechanisms present in marketing contracts:

	Strongly Disagree						Strongly Agree
I am forced to meet marketing contract obligations.	1	2	3	4	5	6	7
I can get out of marketing contracts easily.	1	2	3	4	5	6	7
I do not care about contract enforcement mechanisms since they would take years to settle.	1	2	3	4	5	6	7
If I break the contract I will incur a penalty.	1	2	3	4	5	6	7

14. On a scale of 1 to 7, where 1 is 'strongly disagree' and 7 is 'strongly agree', would you agree or disagree with each of the following statements regarding your perception of marketing contracts:

	Strongly Disagree						Strongly Agree
Marketing contracts have less risk than cash markets.	1	2	3	4	5	6	7
Marketing contracts help reduce price risk.	1	2	3	4	5	6	7
Marketing contracts lower prices in the cash market.	1	2	3	4	5	6	7
Farmers with marketing contracts get higher prices than those who sell in the cash market.	1	2	3	4	5	6	7
Marketing contracts help coordinate delivery.	1	2	3	4	5	6	7
Marketing contracts guarantee my price and	1	2	3	4	5	6	7

delivery, while also managing my cash flow.							

15. On a scale of 1 to 7, where 1 is 'strongly disagree' and 7 is 'strongly agree', would you agree or disagree with the each of the following statements regarding marketing contracts in general:

	Strongly Disagree ←						→ Strongly Agree
When I read a marketing contract, it is easy to understand.	1	2	3	4	5	6	7
My rights are protected by marketing contracts.	1	2	3	4	5	6	7
I am treated fairly by a marketing contract.	1	2	3	4	5	6	7
The company's rights are protected by a marketing contract.	1	2	3	4	5	6	7
I plan to continue using marketing contracts.	1	2	3	4	5	6	7
It is important to have complete control over all marketing decisions in my farm operation.	1	2	3	4	5	6	7
It is important to establish trust with the other party to a marketing contract.	1	2	3	4	5	6	7

Use the following scale to answer Question 16. (*Please circle the number that represents your view*)

1 = Prevents me from contracting; **2** = Negative aspect of contracting; **3** = Slightly negative aspect of contracting;
4 = Does not affect decision whether to contract or not; **5** = Slightly positive aspect of contracting;
6 = Positive aspect of contracting; **7** = Causes me to contract

16. On a scale of 1 to 7, where 1 is 'prevents me from contracting' and 7 'causes me to contract', to what extent would each of the following items cause or prevent you from using marketing contracts:

	Prevents me from contracting ←						→ Causes me to contract
The marketing contract may be broken by either party if they pay a penalty.	1	2	3	4	5	6	7
I am able to protect my price by signing a marketing contract.	1	2	3	4	5	6	7
Pricing mechanisms are transparent.	1	2	3	4	5	6	7
Cash spreads are used to determine whether premiums or discounts are incurred.	1	2	3	4	5	6	7
The contractor (not the farmer) regulates and determines time of delivery.	1	2	3	4	5	6	7
Payments are received after delivery.	1	2	3	4	5	6	7

Section 3: Production Contracts

1. Does your farm use ***production contracts*** for any commodity produced in a typical year? (A production contract is a written or oral agreement that sets terms, conditions, and fees to be paid by

the contractor to the farmer/operation for the production of crops. The commodity is typically owned by the contractor, who often provides inputs)

◯ Yes ◯ No

2. Have you ever signed a production contract previously? ◯ Yes ◯ No

If you answered "no" to both question 1 and question 2, please skip to next section: TUAs

3. Before signing a production contract, how much of it do you typically read?

◯ All of it ◯ Most of it ◯ Some of it ◯ None of it

4. Please indicate the length of your *typical* production contract: _____ (months)

5. Does your production contract *typically* include a clause for dispute resolution? ◯ Yes ◯ No

(please continue on reverse side of this sheet)

6. Please list the commodities sold in a typical year under ***production*** contacts.

Commodities with production contracts (Write in commodities)	Quantity of commodity marketed with contract (Quantity)	Proportion of production (Percent)

7. What type of production contract(s) does your operation use? (*Please check all that apply*)

◯ Flat-fee contract ◯ Formula pricing contract

◯ Contract with incentive payments ◯ Contract with no incentive payments

◯ Other (please specify):

_____

8. How is the price determined for your production contract(s)? (*Please check all that apply*)

◯ Fixed price ◯ Based on reference price ◯ Specific maximum price ◯ Per unit price

◯ Negotiated yearly ◯ Specific minimum price ◯ Other (please specify):_____

9. Does your *typical* production contract specify any of the following: (*Please check all that apply*)

◯ Tonnage ◯ Acreage ◯ Maximum tonnage

◯ Quality ◯ Delivery period ◯ Delivery location

◯ FOB ◯ Transportation methods ◯ Delivery contract required
◯ Other (please specify):
_____

10. Does your *typical* production contract pay incentives for certain qualities delivered? ◯ Yes ◯ No

11. Are some of your production inputs (seed, fertilizer, chemicals, etc.) supplied by the contractor? ◯ Yes ◯ No

12. If answered ***yes*** to Question 11, please indicate which inputs are supplied by the contractor for your grain operation (if applicable): (*Please check all that apply*)
◯ Seed ◯ Fertilizer ◯ Pesticides/herbicides
◯ Equipment ◯ Buildings ◯ Managerial assistance
◯ Labour ◯ Storage facilities ◯ Other (please specify):
_____

13. How is your payment for delivering under a production contract typically received?
◯ Cash payment at time of delivery ◯ Prepaid deposit
◯ Payment within 30 days after delivery ◯ Payment after 30 days of delivery

14. Does your production contract include a clause for dispute resolution? ◯ Yes ◯ No

15. Your typical production contract is signed with a company or buyer that has delivery points located:
◯ Less than 40 miles (64km) from your farm ◯ More than 40 miles from your farm

16. Did you have experience farming before signing your first production contract? ◯ Yes ◯ No

Please use the following scale to answer Questions 17 to 19. (*Please circle the number that represents your view*)

1 = Strongly disagree; **2** = Disagree; **3** = Somewhat disagree; **4** = Neither agree nor disagree; **5** = Somewhat agree; **6** = Agree; **7** = Strongly agree

17. On a scale of 1 to 7 , where 1 is 'strongly disagree' and 7 is 'strongly agree', would you agree or disagree with each of the following statements regarding the enforcement mechanisms present in production contracts:

	Strongly Disagree	◄					Strongly Agree ►
I am forced to meet contract obligations.	1	2	3	4	5	6	7
I can get out of the contract easily.	1	2	3	4	5	6	7
I do not care about the enforcement	1	2	3	4	5	6	7

	Strongly Disagree						Strongly Agree
mechanisms since it will take years to settle.							
If I break the contract I will incur a penalty.	1	2	3	4	5	6	7

18. On a scale of 1 to 7 , where 1 is 'strongly disagree' and 7 is 'strongly agree', would you agree or disagree with each of the following statements regarding your perception of production contracts:

	Strongly Disagree						Strongly Agree
Contractual agreements are only favourable for the contractor or buyer, farmers do not benefit at all.	1	2	3	4	5	6	7
Production contracts provide my farm with more planning security.	1	2	3	4	5	6	7
By signing a production contract, I lose some of my managerial responsibilities.	1	2	3	4	5	6	7
Production contracts raise my farm productivity by improving quality of inputs.	1	2	3	4	5	6	7
Some local buyers may close if area farmers begin contracting.	1	2	3	4	5	6	7
Production contracts improve the coordination of product delivery for farmers.	1	2	3	4	5	6	7

19. On a scale of 1 to 7 , where 1 is 'strongly disagree' and 7 is 'strongly agree', would you agree or disagree with each of the following statements regarding production contracts in general:

	Strongly Disagree						Strongly Agree
When I read a production contract, it is easy to understand.	1	2	3	4	5	6	7
My rights are protected by production contracts.	1	2	3	4	5	6	7
I am treated fairly by a production contract.	1	2	3	4	5	6	7
The company's rights are protected by a production contract.	1	2	3	4	5	6	7
I plan to continue producing under a contract.	1	2	3	4	5	6	7
It is important to have complete control over all production decisions in my farm operation.	1	2	3	4	5	6	7
I have established trust with the contractor.	1	2	3	4	5	6	7

(please continue on the reverse side of this sheet)

Use the following scale to answer Question 20. (*Please circle the number that represents your view*)

1 = Prevents me from contracting; **2** = Negative aspect of contracting; **3** = Slightly negative aspect of contracting; **4** = Not affect decision whether to contract or not; **5** = Slightly positive aspect of contracting; **6** = Positive aspect of contracting; **7** = Causes me to contract

20. On a scale of 1 to 7, where 1 is 'prevents me from contracting' and 7 'causes me to contract', to what extent would each of the following items cause or prevent you from using production contracts:

	Prevents me from contracting						Causes me to contract
The contract may be broken by either party with only small penalties.	1	2	3	4	5	6	7
The contractor can terminate a contract with only a few months notice to the farmer.	1	2	3	4	5	6	7
Pricing mechanisms are transparent.	1	2	3	4	5	6	7
Production contract provides bonus or penalties for quality delivered.	1	2	3	4	5	6	7
The contractor regulates production in order to control timing of deliveries.	1	2	3	4	5	6	7
Production contracts provide access to technology and credit.	1	2	3	4	5	6	7
The contractor determines the inputs used in the farm operation.	1	2	3	4	5	6	7
A fieldman visits the farm operation and advise the farmer.	1	2	3	4	5	6	7

Section 4: Technology Use Agreements

1. Does your farm use ***Technology Use Agreements (or TUAs)*** for any commodity produced in a typical year? (A TUA is a contract with a company or buyer that supplies a product with an intellectual property (IP) license. An IP license is intended to protect the company or buyer's rights over the product) ◯ Yes ◯ No

2. Have you ever signed a TUA previously? ◯ Yes ◯ No

If you answered "no" to both question 1 and question 2, please skip to the next section on you/your farm

3. Before signing the TUA, how much of it do you typically read?
   ◯ All of it ◯ Most of it ◯ Some of it ◯ None of it

4. Please indicate the length of your *typical* TUA: _____ (months)

5. When using a TUA, are you *typically* required to sell the commodity back to the company or buyer of the product once the production phase is completed? ◯ Yes ◯ No

6. Does your TUA *typically* include a clause for dispute resolution? ◯ Yes ◯ No

7. Your *typical* TUA is signed with a company or buyer with delivery points located:
◯ Less than 40 miles (64 km) from your farm ◯ More than 40 miles (64 km) from your farm

8. Do TUAs you sign *typically* require bundling/tying of specific products (in other words do you have to agree to buy/use other products from the contractor/company if you use a product that requires you to sign a TUA)? ◯ Yes ◯ No

Use the following scale for Question 7. (*Please circle the number that represents your view*)

1 = Strongly disagree; **2** = Disagree; **3** = Somewhat disagree; **4** = Neither agree nor disagree; **5** = Somewhat agree; **6** = Agree; **7** = Strongly agree

9. On a scale of 1 to 7, where 1 is 'strongly disagree' and 7 is 'strongly agree', would you agree or disagree with each of the following statements regarding TUAs in general:

	Strongly Disagree ←						→ Strongly Agree
When I read a TUA, it is easy to understand.	1	2	3	4	5	6	7
My rights are protected by TUAs.	1	2	3	4	5	6	7
I am treated fairly by a TUA.	1	2	3	4	5	6	7
The company's rights are protected by a TUA.	1	2	3	4	5	6	7
I plan to continue signing TUAs.	1	2	3	4	5	6	7
It is important to have complete control over all technology use decisions in my farm operation.	1	2	3	4	5	6	7
The nearest delivery point for commodities that involve TUAs is less than 40 miles from the production site.	1	2	3	4	5	6	7
I have established trust with the contractor.	1	2	3	4	5	6	7

Section 5: Demographic/Farm Questions *(Principal operator or person completing survey)*

1. Gender: ◯ Male ◯ Female

2. Year born: _____

3. Highest level of education:

◯ No high school ◯ High school diploma ◯ Post-secondary diploma (not college/university)

◯ Bachelor degree ◯ Masters degree/Ph.D.

4. Total farm family income (***net*** farm income plus off-farm income):

◯ Under $50,000 ◯ $50,000 - $99,999 ◯ $100,000 - $249,999

◯ $250,000 - $499,999 ◯ $500,000 - $999,999 ◯ $1,000,000 or higher

5. Approximate percent of household income received from off-farm sources: _____ (%)

6. What is the value of your farm operation's total farm assets, including farmland and buildings?

◯ Under $499,999 ◯ $500,000 - $999,999

◯ $1,000,000 - $1,499,999 ◯ $1,500,000 - $1,999,999

◯ $2,000,000 - $2,499,999 ◯ $2,500,000+

7. Do you consider farming to be your primary occupation?

◯ Yes ◯ No

8. Number of years you have been farming: _____ (years)

9. Approximate debt-to-asset ratio: (Farm total debts divided by farm total assets)

◯ No debt ◯ 1 – 19% ◯ 20 – 39% ◯ 40 – 59% ◯ 60%+

10. In which province is your farm located?

_____

(please continue on the reverse side of this sheet)

Use the following scale for Question 11. (*Please circle the number that represents your view*)

1= Much less willing to take risk; **2** = Somewhat less willing to take risk; **3** = Neither less nor more willing to take risk; **4** = Somewhat more willing to take risk; **5** = Much more willing to take risk

11. On a scale of 1 to 7, where 1 is 'much ***less*** willing to take risk' and 7 is 'much ***more*** willing to take risk', would you be willing to take more or less risk ***relative*** to other farmers in the following areas:

	Much ***less*** willing to take risk						Much ***more*** willing to take risk
Farm Production	1	2	3	4	5	6	7

Commodity Marketing	1	2	3	4	5	6	7
Overall Management	1	2	3	4	5	6	7

Use the following scale for Question 12. (*Please circle the number that represents your view*)

1 = Strongly disagree; **2** = Disagree; **3** = Somewhat disagree; **4** = Neither agree nor disagree; **5** = Somewhat agree; **6** = Agree; **7** = Strongly agree

12. On a scale of 1 to 7, where 1 is 'strongly disagree' and 7 is 'strongly agree', would you agree or disagree with each of the following statements:

	Strongly Disagree						Strongly Agree
I like "playing it safe" instead of taking risks in my farm operation.	1	2	3	4	5	6	7
I accept less risk in my farm operation than other farmers.	1	2	3	4	5	6	7
I am concerned more about a large loss in my farm than missing a significant gain.	1	2	3	4	5	6	7
I prefer financial certainty to financial uncertainty when selling/marketing my agricultural commodities.	1	2	3	4	5	6	7
I am usually cautious about accepting new ideas.	1	2	3	4	5	6	7
I am hesitant about adopting new ways of doing things until I see them working for those around me.	1	2	3	4	5	6	7
With respect to my farm, I dislike risk.	1	2	3	4	5	6	7

Thank you for completing this survey!

APPENDIX 2. FARM LEVEL ONLINE SURVEY

Researchers at the University of Manitoba are conducting a study on Prairie farmers' use of production and marketing contracts, technology use agreements along with producers' perceptions about the fairness and equity considerations of contracts. We have received sponsorship from the Structure and Performance of Agriculture and Agri-Products Industries research network for this study, which is also supported by the Alberta Federation of Agriculture (formerly Wild Rose Agricultural Producers), the Agricultural Producers Association of Saskatchewan, and Keystone Agricultural Producers in Manitoba. We are interested in learning more about the frequency with which farmers use contracts, the types of contracts most commonly used by producers, and the characteristics of those contracts.

We would very much appreciate your assistance with our research by completing our questionnaire. We know farmers get way too many surveys, but we also know that finding out more about how producers use and perceive contracts will allow us to (1) spread the word among farmers about how their own contracting practices compare to others', (2) develop learning tools to help those less familiar with contracts to become more comfortable with them, (3) find out whether farmers believe contract terms are fair, and (4) identify any concerns producers have with the characteristics of contracts and bring those concerns to the attention of policy makers.

The questionnaire should not take too much of your time to complete. We have tried to keep it short while also trying to obtain enough information to address our research questions. We hope that our results can be used by farmers to help increase their understanding and usage of contracts.

We are particularly interested in farmers letting us know about any particular types of contracts they consider to be fair or unfair, and any particular terms in contracts that they particularly like or do not like. There is a question at the end of the survey that allows farmers to identify those contracts/terms, or you can email us to let us know about them.

If you have any questions or concerns about this research, please email the Principal Investigator for this project: Jared_Carlberg@umanitoba.ca or if you would like to fax us an example of a contract you think is particularly fair/unfair to bring it to our attention, send it to (204) 261-7251.

Section 1: Farm/Production Characteristics

1. Which type of business structure does your farm operate under?

- ○ Sole proprietorship
- ○ Partnership
- ○ Corporation (Family/Non-family)
- ○ Cooperative
- ○ Joint venture
- ○ Other (please specify)

2. Your total acres farmed: (acres)

3. Total acres owned: (acres)

4. Which best describes your farm type?

- ○ Grain
- ○ Livestock
- ○ Mixed, mostly grain
- ○ Mixed, mostly livestock
- ○ Other (please specify)

5. Is your farming operation considered organic?

- ◯ Yes
- ◯ No

For the questions that follow, please include non-contracted and contracted grain in a *typical* year.

***6. Please check the type of crops produced on your farm operation in a *typical* year: (*Please check all that apply*)**

- ☐ My farm does not grow crops
- ☐ Corn
- ☐ Rye
- ☐ Flax
- ☐ Wheat (including winter and durum)
- ☐ Alfalfa
- ☐ Barley
- ☐ Peas
- ☐ Canola
- ☐ Sunflowers
- ☐ Hemp
- ☐ Oats
- ☐ Lentils
- ☐ Soybeans
- ☐ Mustard
- ☐ Canary Seed
- ☐ Other (please specify)

7. Please indicate the number of acres of each crop produced on your farm in a *typical* year? (*Please indicate acres for all crops that apply*)

Corn	
Rye	
Flax	
Wheat (including winter and durum)	
Alfalfa	
Barley	
Peas	
Canola	
Sunflowers	
Hemp	
Oats	
Lentils	
Soybeans	
Mustard	
Canary Seed	
Other (please specify)	

Section 2: Marketing Contracts

A grain marketing contract is a written or oral agreement reached before harvest or before completion of a production phase, which sets prices (or price mechanism) for a commodity. The commodity is typically owned by the farmer/operation prior to delivery. Risk of production remains with the farmer but price risk is shared between the farmer and contractor.

8. Does your farm use *marketing contracts* for any grain commodity produced in a *typical* year?

- ◯ Yes
- ◯ No

***9. Have you ever signed a marketing contract?**

- ◯ I have never signed a marketing contract
- ◯ This is my first year signing a marketing contract
- ◯ This is my first year not signing a marketing contract
- ◯ I have consistently signed marketing contracts for the past 5 years
- ◯ I have consistently signed marketing contracts for the past 10 years
- ◯ I have consistently signed marketing contracts for over the past 10 years
- ◯ Other (please specify)

Section 2: Marketing Contracts

10. How many marketing contracts does your farm *typically* sign in a marketing year (typically a 12 month period)?

11. Before signing a grain marketing contract, how much of it do you typically read?

◯ All of it ◯ Most of it ◯ Some of it ◯ None of it

12. Please indicate the length of your *typical* marketing contract (from the point when you sign the contract to when you typically delivery grain against the contract): (months)

13. Does your grain marketing contract *typically* include a clause for dispute resolution? (Dispute resolution clause is a legal procedure set by contracting parties to settle disputes, including litigation, arbitration, and mediations.)

- ◯ Yes
- ◯ No

14. Please indicate the portion of your production for each commodity marketed in a *typical* year with grain marketing contracts. For example, wheat: 35%.

Corn	
Rye	
Flax	
Wheat (including winter and durum)	
Alfalfa	
Barley	
Peas	
Canola	
Sunflowers	
Hemp	
Oats	
Lentils	
Soybeans	
Mustard	
Canary Seed	
Other (please specify)	

15. What type of marketing contract do you use to price grain in a *typical* year? (*Please check all that apply*)

- ☐ Forward contract (fixed/flat price)
- ☐ Deferred/delayed delivery contract
- ☐ Target price contract
- ☐ Basis contract
- ☐ Minimum/maximum price contract
- ☐ CWB Producer Payment Options (prior to open market)
- ☐ CWB Cash contracts (after open market)
- ☐ Futures contract
- ☐ Pool (prior to open market)
- ☐ Pool (after open market)
- ☐ Other (please specify)

16. Does your *typical* grain marketing contract specify any of the following: (*Please check all that apply*)

- ☐ Tonnage
- ☐ Quality
- ☐ FOB
- ☐ Price
- ☐ Acreage
- ☐ Delivery period
- ☐ Transportation methods
- ☐ 'Act of God' clause
- ☐ Delivery location
- ☐ Delivery contract required
- ☐ Other (please specify)

17. Does your *typical* marketing contract pay premiums/discounts for certain qualities delivered?

- ◯ Yes
- ◯ No

18. Your *typical* grain marketing contract is signed with a company or buyer with a delivery point located:

- ☐ Less than 40 miles (64 km) from your farm
- ☐ More than 40 miles (64 km) from your farm

19. Does your farm operation use an advisory service or consultant when marketing grain in a *typical* year?

- ◯ Yes
- ◯ No

Section 2: Marketing Contracts

20. To what extent would you agree or disagree with <u>each</u> of the following statements regarding the enforcement mechanisms present in grain marketing contracts? (*Please check only one box per statement*)

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
I am forced to meet contract obligations.	◯	◯	◯	◯	◯	◯	◯
I can get out of a contract easily.	◯	◯	◯	◯	◯	◯	◯
If I break the contract I will incur a penalty.	◯	◯	◯	◯	◯	◯	◯
I can easily transfer the contract to another farmer.	◯	◯	◯	◯	◯	◯	◯
I can easily buyout of the contract.	◯	◯	◯	◯	◯	◯	◯
The contract includes a dispute resolution clause that treats both parties involved fairly.	◯	◯	◯	◯	◯	◯	◯
I do not care about contract enforcement mechanisms since they will take years to settle.	◯	◯	◯	◯	◯	◯	◯

21. To what extent would you agree or disagree with <u>each</u> of the following statements regarding usage of grain marketing contracts? (*Please check only one box per statement*)

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
If I do not deliver a specific quality of grain I will incur a penalty.	○	○	○	○	○	○	○
If I do not deliver the specified quantity of grain indicated in contract I will incur a penalty.	○	○	○	○	○	○	○
Marketing contracts help coordinate delivery.	○	○	○	○	○	○	○
I am always able to deliver grain at the specified delivery period indicated in the contract.	○	○	○	○	○	○	○
If I do not deliver during the specified delivery period I will incur a penalty.	○	○	○	○	○	○	○

22. To what extent would you agree or disagree with <u>each</u> of the following statements regarding your general thoughts towards grain marketing contracts? (*Please check only one box per statement*)

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
When I read the contract, it is easy to understand.	○	○	○	○	○	○	○
When using the contract, my rights are protected.	○	○	○	○	○	○	○
The company's rights are protected by marketing contracts.	○	○	○	○	○	○	○
I am treated fairly by marketing contracts.	○	○	○	○	○	○	○
I plan to continue using marketing contracts.	○	○	○	○	○	○	○
I have established trust with the contractor.	○	○	○	○	○	○	○
Farmers hold more power with regards to contracts.	○	○	○	○	○	○	○
Agribusinesses hold more power with regards to contracts.	○	○	○	○	○	○	○

23. To what extent would <u>each</u> of the following items cause or prevent you from using marketing contracts? (*Please check only one box per statement*)

	Prevents me from contracting	Negative aspect of contracting	Slightly negative aspectc of contracting	Does not affect decision whether to contract or not	Slightly positive aspecct of contracting	Positive aspect of contracting	Causes me to contract
The marketing contract may be terminated by the contractor without any notice.	○	○	○	○	○	○	○
When I (the farmer) terminate a contract I must pay a penalty.	○	○	○	○	○	○	○
The contractor (not the farmer) regulates and determines time of delivery.	○	○	○	○	○	○	○

Section 3: Production Contracts

A grain production contract is a written or oral agreement where the farmer/operation agrees to produce a crop in a manner set forth by the contractor to sell or deliver the crop to the contractor. In return, the farmer receives a payment from the contractor. The commodity is typically owned by the contractor, who often provides inputs. These contracts are not the same as marketing contracts which involve the sale of grain produced and owned by the farmer.

24. Does your farm use *production contracts* for any grain commodity produced in a *typical* year?

- ◯ Yes
- ◯ No

***25. Have you ever signed a production contract?**

- ◯ I have never signed a production contract
- ◯ This is my first year signing a production contract
- ◯ This is my first year not signing a production contract
- ◯ I have consistently signed production contract for the past 5 years
- ◯ I have consistently signed production contract for the past 10 years
- ◯ I have consistently signed production contract for over the past 10 years
- ◯ Other (please specify)

Section 3: Production Contracts

26. How many production contracts does your farm *typically* sign in a crop year (typically a 12 month period)?

27. Before signing a grain production contract, how much of it do you typically read?

◯ All of it ◯ Most of it ◯ Some of it ◯ None of it

28. Please indicate the length of your *typical* production contract (from the point when you sign the contract to when the contract expires or is renewed): (months)

29. Does your grain production contract *typically* include a clause for dispute resolution? (Dispute resolution clause is a legal procedure set by contracting parties to settle disputes, including litigation, arbitration, and mediations.)

- ◯ Yes
- ◯ No

30. Please indicate the portion of your production for each commodity produced in a *typical* year with grain production contracts. For example, wheat: 35%.

Corn	
Rye	
Flax	
Wheat (including winter and durum)	
Alfalfa	
Barley	
Peas	
Canola	
Sunflowers	
Hemp	
Oats	
Lentils	
Soybeans	
Mustard	
Canary Seed	
Other (please specify)	

31. What type of price mechanism does your production contract *typical* use? (*Please check all that apply*)

- ☐ There is no pricing mechanism
- ☐ Formula pricing (i.e. comparison of your grain to other similar grains)
- ☐ CWB pool (prior to open market)
- ☐ Pool
- ☐ Futures
- ☐ Flat-fee
- ☐ CWB Producer Payment Options (prior to open market)
- ☐ CWB Cash contracts (after open market)
- ☐ Reference price
- ☐ Minimum/maximum price
- ☐ Other (please specify)

32. Does your *typical* grain production contract specify any of the following: (*Please check all that apply*)

- ☐ Tonnage
- ☐ Quality
- ☐ FOB
- ☐ Price
- ☐ Acreage
- ☐ Delivery period
- ☐ Transportation methods
- ☐ 'Act of God' clause
- ☐ Delivery location
- ☐ Delivery contract required
- ☐ Other (please specify)

33. Does your *typical* production contract pay premiums/discounts for certain qualities delivered?

- ◯ Yes
- ◯ No

34. Your *typical* grain production contract is signed with a company or buyer with a delivery point located:

- ☐ Less than 40 miles (64 km) from your farm
- ☐ More than 40 miles (64 km) from your farm

35. Is identity preserved grain involved in your *typical* production contract?

- ◯ Yes
- ◯ No

36. Are some of your production inputs (seed, fertilizer, chemicals, etc.) supplied by the contractor?

- ◯ Yes
- ◯ No

37. If you answered *yes* to the previous question, please indicate which inputs are supplied by the contractor for your grain operation: (*Please check all that apply*)

- ☐ Seed
- ☐ Fertilizer
- ☐ Pesticides/herbicides
- ☐ Equipment
- ☐ Buildings
- ☐ Managerial assistance
- ☐ Labour
- ☐ Storage facilities
- ☐ Other (please specify)

Section 3: Production Contracts

38. To what extent would you agree or disagree with each of the following statements regarding the enforcement mechanisms present in grain production contracts? (*Please check only one box per statement*)

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
I am forced to meet contract obligations.	○	○	○	○	○	○	○
I can get out of a contract easily.	○	○	○	○	○	○	○
If I break the contract I will incur a penalty.	○	○	○	○	○	○	○
I can easily transfer the contract to another farmer.	○	○	○	○	○	○	○
I can easily buyout of the contract.	○	○	○	○	○	○	○
The contract includes a dispute resolution clause that treats both parties involved fairly.	○	○	○	○	○	○	○
I do not care about contract enforcement mechanisms since they will take years to settle.	○	○	○	○	○	○	○

39. To what extent would you agree or disagree with each of the following statements regarding usage of grain production contracts? (*Please check only one box per statement*)

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
If I do not deliver a specific quality of grain I will incur a penalty.	○	○	○	○	○	○	○
If I do not deliver the specified quantity of grain indicated in contract I will incur a penalty.	○	○	○	○	○	○	○
Production contracts help coordinate delivery.	○	○	○	○	○	○	○
I am always able to deliver grain at the specified delivery period indicated in the contract.	○	○	○	○	○	○	○
If I do not deliver during the specified delivery period I will incur a penalty.	○	○	○	○	○	○	○

40. To what extent would you agree or disagree with <u>each</u> of the following statements regarding your general thoughts towards grain production contracts? (*Please check only one box per statement*)

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
When I read the contract, it is easy to understand.	◯	◯	◯	◯	◯	◯	◯
When using the contract, my rights are protected.	◯	◯	◯	◯	◯	◯	◯
The company's rights are protected by production contracts.	◯	◯	◯	◯	◯	◯	◯
I am treated fairly by production contracts.	◯	◯	◯	◯	◯	◯	◯
I plan to continue using production contracts.	◯	◯	◯	◯	◯	◯	◯
I have established trust with the contractor.	◯	◯	◯	◯	◯	◯	◯
Farmers hold more power with regards to contracts.	◯	◯	◯	◯	◯	◯	◯
Agribusinesses hold more power with regards to contracts.	◯	◯	◯	◯	◯	◯	◯
Contractual agreements are only favourable for the contractor, farmers do not benefit at all.	◯	◯	◯	◯	◯	◯	◯
Production contracts provide my farm with more planning security.	◯	◯	◯	◯	◯	◯	◯

41. To what extent would <u>each</u> of the following items cause or prevent you from using grain production contracts? (*Please check only one box per statement*)

	Prevents me from contracting	Negative aspect of contracting	Slightly negative aspectc of contracting	Does not affect decision whether to contract or not	Slightly positive aspecct of contracting	Positive aspect of contracting	Causes me to contract
The production contract may be terminated by the contractor without any notice.	◯	◯	◯	◯	◯	◯	◯
When I (the farmer) terminate a contract I must pay a penalty.	◯	◯	◯	◯	◯	◯	◯
The contractor (not the farmer) regulates and determines time of delivery.	◯	◯	◯	◯	◯	◯	◯
The contractor determines the inputs used in the production of the grain.	◯	◯	◯	◯	◯	◯	◯
A fieldman visits the farm operation and advises the farmer.	◯	◯	◯	◯	◯	◯	◯

Section 4: Technology Use Agreements

A Technology Use Agreement or Technology Licence Agreement (TUA/TLA) is a contract with a company or buyer that supplies a product with an intellectual property (IP) licence. An IP licence is intended to protect the company or buyer's rights over a product.

42. Does your farm use *TUAs* for any grain commodity produced in a *typical* year?

◯ Yes

◯ No

***43. Have you ever signed a TUA?**

- ◯ I have never signed a TUA
- ◯ This is my first year signing a TUA
- ◯ This is my first year not signing a TUA
- ◯ I have consistently signed TUA for the past 5 years
- ◯ I have consistently signed TUA for the past 10 years
- ◯ I have consistently signed TUA for over the past 10 years
- ◯ Other (please specify)

Section 4: Technology Use Agreements

44. How many TUAs does your farm *typically* sign in a crop year (typically a 12 month period)?

45. Before signing a TUA, how much of it do you typically read?

◯ All of it ◯ Most of it ◯ Some of it ◯ None of it

46. Please indicate the length of your *typical* TUA (from the point when you sign the contract to when the contract expires): (months)

47. Does your TUA *typically* include a clause for dispute resolution? (Dispute resolution clause is a legal procedure set by contracting parties to settle disputes, including litigation, arbitration, and mediations.)

- ◯ Yes
- ◯ No

48. Please indicate the portion of your production for each commodity produced in a *typical* year with grain TUAs. For example, wheat: 35%.

Corn	
Rye	
Flax	
Wheat (including winter and durum)	
Alfalfa	
Barley	
Peas	
Canola	
Sunflowers	
Hemp	
Oats	
Lentils	
Soybeans	
Mustard	
Canary Seed	
Other (please specify)	

49. Your *typical* grain TUA is signed with a company or buyer with a delivery point located:

☐ Less than 40 miles (64 km) from your farm ☐ More than 40 miles (64 km) from your farm

50. Are you *typically* required to sell your entire output back to the provider?

◯ Yes
◯ Yes, but only a portion
◯ No

51. Does your TUA *typically* require bundling/tying of specific products (in other words do you have to agree to buy/use other products from the contractor/company if you produce a commodity that requires a TUA)?

◯ Yes
◯ No

52. If you answered *yes* to the previous question, please indicate the types of products that are typically bundled or tied with the commodity?

Section 4: Technology Use Agreements

53. To what extent would you agree or disagree with <u>each</u> of the following statements regarding the enforcement mechanisms present in TUAs? (*Please check only one box per statement*)

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
I am forced to meet contract obligations.	◯	◯	◯	◯	◯	◯	◯
I can get out of a contract easily.	◯	◯	◯	◯	◯	◯	◯
If I break the contract I will incur a penalty.	◯	◯	◯	◯	◯	◯	◯
I can easily transfer the contract to another farmer.	◯	◯	◯	◯	◯	◯	◯
I can easily buyout of the contract.	◯	◯	◯	◯	◯	◯	◯
The contract includes a dispute resolution clause that treats both parties involved fairly.	◯	◯	◯	◯	◯	◯	◯
I do not care about contract enforcement mechanisms since they will take years to settle.	◯	◯	◯	◯	◯	◯	◯

54. To what extent would you agree or disagree with <u>each</u> of the following statements regarding usage of grain TUAs? (*Please check only one box per statement*)

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
If I do not deliver a specific quality of grain I will incur a penalty.	◯	◯	◯	◯	◯	◯	◯
If I do not deliver the specified quantity of grain indicated in contract I will incur a penalty.	◯	◯	◯	◯	◯	◯	◯
I am always able to deliver grain at the specified delivery period indicated in the contract.	◯	◯	◯	◯	◯	◯	◯
If I do not deliver during the specified delivery period I will incur a penalty.	◯	◯	◯	◯	◯	◯	◯

55. To what extent would you agree or disagree with <u>each</u> of the following statements regarding your general thoughts towards grain TUAs? (*Please check only one box per statement*)

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
When I read the contract, it is easy to understand.	◯	◯	◯	◯	◯	◯	◯
When using the contract, my rights are protected.	◯	◯	◯	◯	◯	◯	◯
The company's rights are protected by TUAs.	◯	◯	◯	◯	◯	◯	◯
I am treated fairly by TUAS.	◯	◯	◯	◯	◯	◯	◯
I plan to continue using TUAs.	◯	◯	◯	◯	◯	◯	◯
I have established trust with the contractor.	◯	◯	◯	◯	◯	◯	◯
Farmers hold more power with regards to contracts.	◯	◯	◯	◯	◯	◯	◯
Agribusinesses hold more power with regards to contracts.	◯	◯	◯	◯	◯	◯	◯
Contractual agreements are only favourable for the contractor, farmers do not benefit at all.	◯	◯	◯	◯	◯	◯	◯
It is important to have complete control over all technology use decisions in my farm operation.	◯	◯	◯	◯	◯	◯	◯

56. To what extent would <u>each</u> of the following items cause or prevent you from using grain TUAs? (*Please check only one box per statement*)

	Prevents me from contracting	Negative aspect of contracting	Slightly negative aspectc of contracting	Does not affect decision whether to contract or not	Slightly positive aspecct of contracting	Positive aspect of contracting	Causes me to contract
The TUA may be terminated by the contractor without any notice.	◯	◯	◯	◯	◯	◯	◯
When I (the farmer) terminate a contract I must pay a penalty.	◯	◯	◯	◯	◯	◯	◯
The contractor (not the farmer) regulates and determines time of delivery.	◯	◯	◯	◯	◯	◯	◯
The contractor determines the inputs used in the production of the grain.	◯	◯	◯	◯	◯	◯	◯
A fieldman visits the farm operation and advises the farmer.	◯	◯	◯	◯	◯	◯	◯

Section 5: Demographic/Farm Questions

57. Gender:

◯ Male

◯ Female

58. Year born:

59. Highest level of education:

- ◯ No high school
- ◯ High school diploma
- ◯ Post-secondary diploma (college/university)
- ◯ Bachelor degree
- ◯ Masters degree/Ph.D.

60. Total farm family income (net farm income plus off-farm income):

- ◯ Under $50,000
- ◯ $50,000 - $99,999
- ◯ $100,000 - $249,999
- ◯ $250,000 - $499,999
- ◯ $500,000 - $999,999
- ◯ $1,000,000 or higher

61. Do you consider farming to be your primary occupation?

- ◯ Yes
- ◯ No

62. Please indicate the number of years you have been farming: (years)

63. In which province is your farm located?

- ☐ Manitoba
- ☐ Saskatchewan
- ☐ Alberta

Section 5: Demographic/Farm Questions

64. To what extent would you agree or disagree with each of the following statements?
(Please check only one box per statement)

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
I like to "play it safe" instead of taking risks in my farm operation.	◯	◯	◯	◯	◯	◯	◯
I accept less risk in my farm operation than other farmers.	◯	◯	◯	◯	◯	◯	◯
I am concerned more about a large loss in my farm than missing a significant gain.	◯	◯	◯	◯	◯	◯	◯
I prefer financial certainty to financial uncertainty when selling/marketing my agricultural commodities.	◯	◯	◯	◯	◯	◯	◯
I am usually cautious about accepting new ideas.	◯	◯	◯	◯	◯	◯	◯
I am hesitant about adopting new ways of doing things until I see them working for those around me. With respect to my farm, I dislike risk.	◯	◯	◯	◯	◯	◯	◯

Thank you for completing this survey!

APPENDIX 3. FIRM LEVEL MAILOUT SURVEY

Answer the following questions based on your firm in a typical year. Please check only one response, unless otherwise indicated.

Section 1: Firm Characteristics

1. The ownership structure of your firm is:

◯ Private ◯ Private limited ◯ Public traded
◯ Cooperative ◯ Other

2. The firm operates at the following level:

◯ National ◯ Provincial ◯ Municipal

3. Firms average annual sales:

◯ Less than $500,000 ◯ $500,000 - $999,999 ◯ $1,000,000 - $2,499,999
◯ $2,500,000 - $5,999,999 ◯ $6,000,000 - $9,999,999 ◯ More than $10,000,000

4. Number of full-time employees working at firm (more than 37.5 hours per week): ____ Person(s)

5. Your firm is considered a:

◯ Wholesaler/broker ◯ Processor (slaughterhouse, meat packer, miller)
◯ Feedlot ◯ Distributor (seed, chemical, fertilizer)
◯ Grain Handling Facility ◯ Manufacturer of biotechnologies

6. Firms debt-to-asset ratio: (Your total debts divided by your total assets)

◯ No debt ◯ 1 – 19% ◯ 20 – 39%
◯ 40 – 59% ◯ More than 60%

7. Where is your firms target market located? (*Please check all that apply*)

◯ Domestic market ◯ Foreign market

8. What type of organizational chain connects your firm with farmers?

◯ Firm + farm ◯ Firm + cooperative + farm ◯ Firm + middlemen + farm
◯ Other (specify: _____)

Section 2: General Contract Usage

Definitions:	
Marketing contract	A written or oral agreement setting a price or price formula for a commodity.
Production contract	A written or oral agreement, setting terms, conditions, and fees to be paid by the contractor to the operation for the production of crops or livestock.
Technology use / stewardship agreement	A contract that grants permission to a farmer to use a particular technology or product with an intellectual property (IP) license, under specific conditions.

1. Does your firm provide farm (marketing, production, technology use) contracts?
   ◯ Yes ◯ No

If answered ***yes***, please proceed to Question 4. Otherwise please proceed to the next question.

2. Has your firm ever provided farm (marketing, production, technology use) contracts to farmers in the past? If ***yes***, how long ago did you last offer farm contracts?

   ◯ Yes _____ (yrs) ◯ No

If answered ***yes*** to Question 2, please answer the next question.

3. Please list the reasons why your firm no longer is involved in farmer (marketing, production, technology use) contracts.

   _____

   _____

   _____

Proceed to Question 4, ***only*** if answered ***yes*** to Question 1. Otherwise this is the end of the survey.

4. What percentage of your firms business involves contracting with farmers? _____ (%)

5. Main incentive/motivation for signing farm (marketing, production, technology use) contracts with farmers: (*Please check all that apply)*

   ◯ Control input supply ◯ Stabilize delivery price ◯ Reduce transaction costs
   ◯ Market power ◯ Stabilize supply ◯ Improve quality
   ◯ Risk-sharing ◯ Other (specify: _____

   _____)

6. What type of farm contract(s) does your firm typically sign with farmers? (*Please check all that apply*)

◯ Marketing ◯ Production ◯ Technology use agreement

7. If your firm signs ***marketing*** contracts with farmers please list the type(s) of commodities delivered under this contract.

_____

_____

_____

8. If your firm signs ***production*** contracts with farmers please list the type(s) of commodities delivered under this contract.

_____

_____

_____

9. If your firm signs ***technology use agreements*** with farmers please list the type(s) of products sold with this contract.

_____

_____

_____

10. Please indicate who has access to use your firm's farm contracts:

◯ All farmers ◯ Members only ◯ Other

Section 3: Contract Characteristics/Structure

1. What type of farm contract(s) does your firm offer to farmer?

◯ One standard contract ◯ Several different types ◯ Unique for each farmer

2. The typical form of farm contract(s) used by your firm is: (*Please check all that apply*)

◯ Written ◯ Oral

3. When signing or drafting a contract with a farmer, do negotiations occur between both parties?

◯ Yes ◯ No

4. The typical contract length is:

◯ Less than 1 year ◯ 1 – 2 years ◯ 2 – 3 years ◯ More than 3 years

5. In a typical year, what percentage of contracts signed by farmers with your firm, are typically delivered? _____ (%)

6. If farm contract(s) default, how many days does your firm wait before they seek legal action against the farmer? _____ (days)

7. Farm contract violation typically occurs with:

◯ Smaller farms ◯ Middle sized farms ◯ Larger farms

8. What type of enforcement mechanisms are included in farm contracts to prevent contracts from defaulting? (*Please check all that apply*)

◯ Dispute resolution ◯ Arbitration or mediation clause ◯ Warranties
◯ Exclusivity clause ◯ Legal and regulatory compliance clause
◯ Other (specify: _____)

9. What type of policing mechanisms does your firm use to insure commodity delivered meets quality agreed upon in farm contract(s)? (*Please check all that apply*)

◯ Input control ◯ Monitoring (site visits)
◯ Quality measurements (penalties/bonuses) ◯ Revenue sharing

Section 3: Firm Perspective towards Contracts

Use the following scale to answer Question 1.

1 = Strongly disagree; **2** = Disagree; **3** = Somewhat disagree; **4** = Neither agree or disagree; **5** = Somewhat agree; **6** = Agree; **7** = Strongly agree

1. On a scale of 1 to 7, where 1 is 'strongly disagree' and 7 is 'strongly agree', would you agree or disagree with the following statements regarding contracts your firm offers: (*Please circle the number that represents your firms view*)

	Strongly Disagree ◄——————————► Strongly Agree						
Contract(s) allow for co-ordination of production	1	2	3	4	5	6	7
Contract(s) balance decisions-making process between farmer and firm	1	2	3	4	5	6	7
Contract(s) encourage co-operation with farmers by sharing knowledge	1	2	3	4	5	6	7
Contract(s) allow for renegotiation of contact	1	2	3	4	5	6	7

Building a one-on-one relationship with farmer (contractee) is very important	1	2	3	4	5	6	7

2. How fair does your firm perceive farm (marketing, production, technology use) contracts:

•	•	•	•	•	•	•
Very Fair			Unsure			Very Unfair

3. Who holds more power with regards to (marketing, production, technology use) contracts:

•	•	•	•	•	•	•
Farmers have more power			Power is equal			Agribusinesses have more power

Section 3: General Information

Would your firm be interested in participating in a follow-up interview?

○ Yes ○ No

If answered ***yes***, please provide the following information:

First Name: _____ Last Name: _____

Company: _____ Position: _____

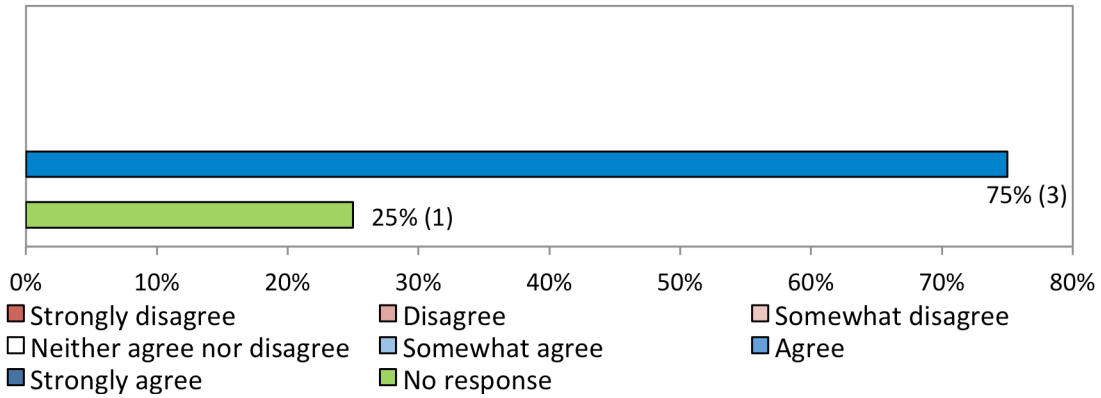
Address: _____

Email: _____ Phone #: _____

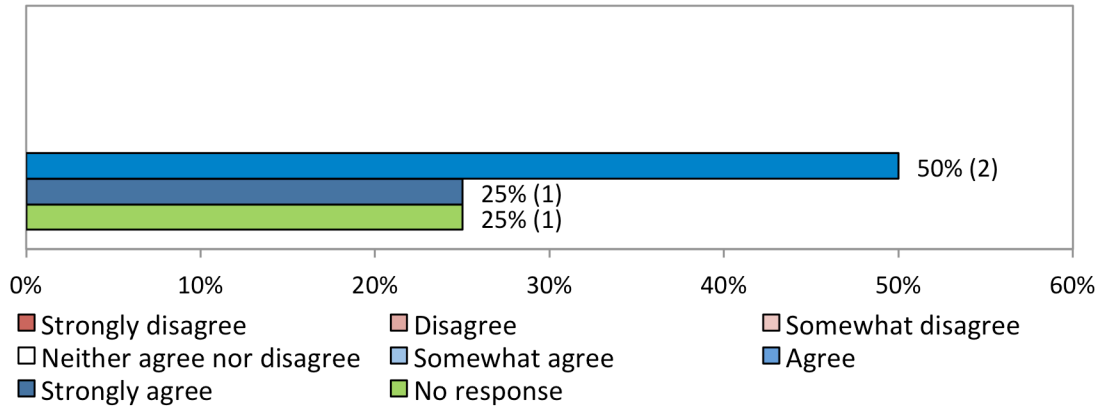
Thank you for participating in this survey!

APPENDIX 4. FIRMS' PERSPECTIVE OF TUA CONTRACTS

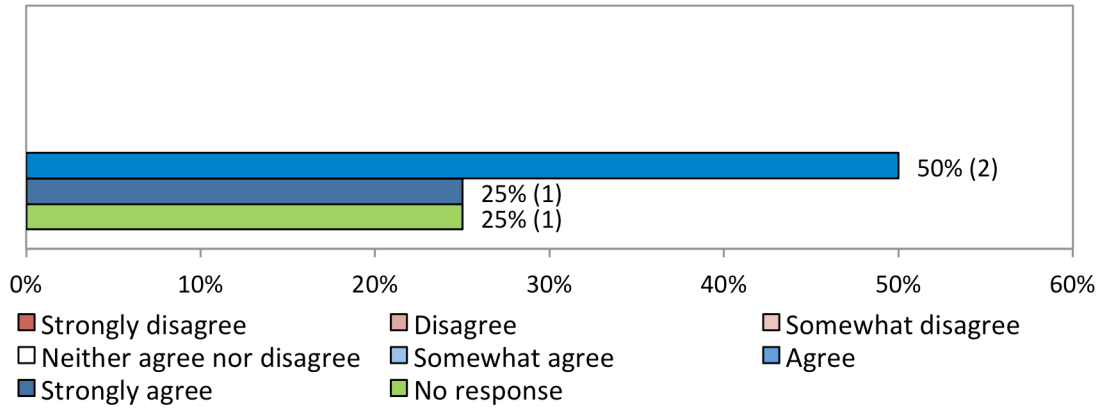
Contractors' perspective of "Farmers' rights are protected when using contracts"



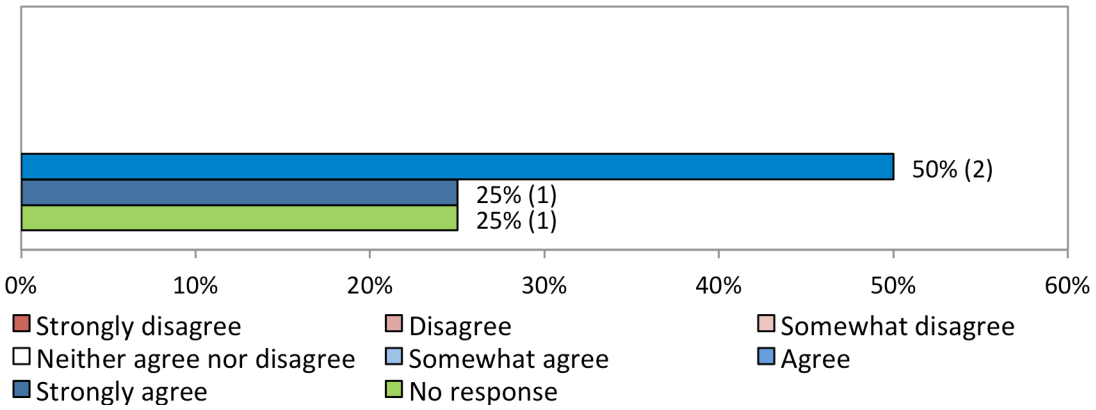
Contractors' perspective of "The firms' rights are protected by contracts"



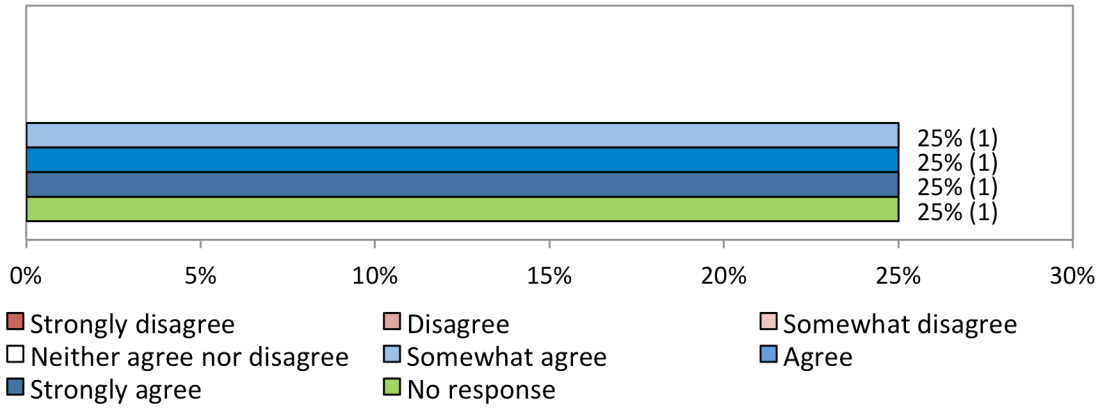
Contractors' perspective of "Contracts are easy to understand"



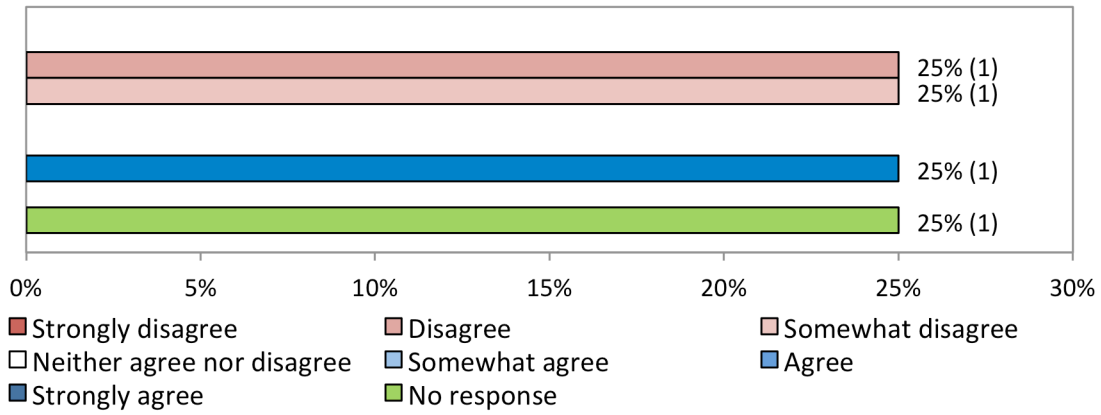
Contractors' perspective of "Farmers are treated fairly by marketing contracts"



Contractors' perspective of "Farmers are forced to meet contract obligations"



Contractors' perspective of "Farmers can get out of a contract easily"



Contractors' perspective of "If farmers break a contract, they will incur a penalty"