

Open Access Digital Platforms to Enforce Competition in Contract Farming

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Abstract

In 2020, government of India introduced some major policy changes in the Agriculture sector. These changes deal primarily with agricultural marketing. Following these changes, contract farming is now permitted all across India. However, concerns have been raised about monopolistic practices that the sponsors (usually big corporations) in contract farming arrangements could engage in, which would be detrimental to the interests of farmers. Open access digital platforms have the potential to address some of these concerns by making commodity prices and quality norms publicly available. They could also reduce information asymmetry among contract farming participants and thus create a level-playing field. We propose a platform, similar to existing e-marketplaces that match buyers with sellers, where farmers can express willingness to undertake production of agricultural commodities on contract with pre-specified quantity, quality and price norms and sponsors can easily find willing farmers. Such platforms would have the potential to provide more opportunities for farmers, introduce competition in contract farming space, and reduce information asymmetries, and thus safeguard and advance farmers' interests.

1.0 Introduction:

In June 2020, the government of India introduced major policy changes dealing with the agriculture sector in India by promulgating three ordinances. In September 2020, three bills were introduced in the Indian Parliament to replace these ordinances and were passed by the Indian Parliament, thereby becoming laws. These three laws are the following: (Press Information Bureau, Government of India)

1. The Farmers' Produce Trade and Commerce (Promotion and Facilitation) Act, 2020
2. The Farmers (Empowerment and Protection) Agreement of Price Assurance and Farm Services Act, 2020
3. The Essential Commodities (Amendment) Act, 2020

The first law provides a new ecosystem in which farmers and traders, as per the government, will enjoy the freedom of choice relating to sale and purchase of their products through competitive alternative trading channels including electronic trading which will promote efficient and barrier-free inter- and intra-state trade and commerce.

The second law provides a national framework on farming agreements that allows farmers to engage with agri-business firms, processors, wholesalers, exporters or large retailers for farm services and sale of future farming produce at a mutually agreed price framework. In other words, this law facilitates contract farming (CF) and it is applicable across India.

The third law removes commodities like cereals, pulses, oilseeds, edible oils, onion and potatoes from the list of essential commodities. This will, in the opinion of the government, remove fears of private investors of excessive regulatory interference in their business operations. The freedom to produce, hold, move, distribute and supply will, thus, lead to harnessing of economies of scale and attract private sector/foreign direct investment into agriculture sector.

These legislations have been met with protests by some farmer groups, particularly in North India; we have detailed about these legislations and the corresponding contestation in an earlier work (Beriya A., 2021). As far as CF is concerned, respected commentators have expressed doubts over the susceptibility of small farmers to possible monopolistic practices by big corporations (Basu K., Project Syndicate, 2021; Panwar R., TheHindu BusinessLine, 2020). Specifically, they have expressed fears that, with the passage of time, CF corporations could monopolize markets and, in the process weaken the bargaining power of smallholders. In the long run, critics fear that even the means of smallholder livelihoods could be affected. Still, these critics acknowledge the positive role that CF and big corporations could play in the Indian agriculture sector. While the debate surrounding these contestations could be vast, this paper focuses only on the law related to CF and explores how digital technologies,

particularly open access digital platforms can address some concerns being raised in case of CF and thus enforce and enhance competition and transparency in CF in India.

It begins by briefly exploring the need and potential of digital technologies to enhance competition in agricultural marketing; how platforms and new age marketplaces (e-marketplaces) leverage the digital space and information and communication technologies (ICTs) in the field of agricultural marketing. Then some examples from India are provided in this regard. Then literature concerning CF is reviewed and the possibilities and opportunities CF can provide to smallholders are explored. Next, we suggest the broad contours of an open access digital platform that can further enforce/enhance competition in the sphere of contract farming through introducing/enhancing (as the case may be), choice, competition, transparency and opportunity for smallholder farmers in CF. After this we conclude the paper.

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2.0 Agricultural Marketing and Digital Technologies:

Henderson (1984), in his paper elucidating the principle and practice of electronic marketing defines the concept of electronic marketing as it applies to agriculture, its practice and relevance. As per the paper, electronic marketing should include only markets which utilize an open, competitive price establishment procedure (such as some variation of auction) as contrasted to computer assisted trading systems which simply provide communications for private negotiations between an individual buyer and seller. The advantages of electronic markets are that they can accommodate many traders simultaneously, a critical ingredient to centralized trading and efficient pricing. Electronic markets also facilitate the use of detailed product descriptions allowing great descriptive precision which reduces the chance of misrepresentation of products. Hence electronic markets offer the potential to mitigate perceived pricing problems and improve coordination in agriculture without imposing higher exchange costs on participants.

Recent evidence from Kenya (Bergquist L F. and Dinerstein M., 2020) suggests a high degree of intermediary market power in agricultural markets and suggests that identifying mechanisms that increase competition is still an open challenge. Their estimate indicates increased competition would yield large gains to consumers and improve market efficiency. Further, new technologies, such as mobile marketplaces also hold promise in this respect

because these platforms, offer more anonymity than traditional agricultural markets, making coordination on price more difficult. However, these technological solutions also face the real-world challenges of high transportation costs, limited trust, and other barriers that discourage exchange between new parties. The authors of the above paper identify the power of these technologies, along with other potential mechanisms for expanding competition in these markets more broadly, as a ripe area for future research.

An article by the Paris Innovation review details that agricultural produce and food, as well as equipment or supplies are available on many platforms, but there are also specific platforms for agriculture and food. Such platforms can be called ‘new marketplaces’ New Marketplaces: Platforms are coming into being as “marketplaces”, or virtual meeting places, that match the supply and demand of goods and services by bringing together users and professional suppliers. These marketplaces, involve intermediate consumption as well as agricultural production. Hence, they can potentially replace wholesale markets. But the usefulness of these platforms is not limited to bringing together buyers and sellers. They also offer management services for contracts and invoices, in order to simplify administrative procedures. Furthermore, an independent lab analyzes and controls the products for sale. Digital technology provides a wide reach and allows these platforms an “open” interface and thus allows both buyers and sellers who could be farmers as well as companies to transact.

Other such categories of platforms for agriculture and food apart from ‘new marketplaces’ include:

- Trade and sharing: these are collaborative spaces (sites), not necessarily commercial, which puts the emphasis on sharing and exchange; an example is agriculture equipment sharing sites
- Professionals and private individuals: These are another type of collaborative platforms that brings together private individuals (consumers) with producers (farmers) in short supply chains
- Crowdfunding: crowdfunding platforms where fund providers are private individuals, consumers or professionals for agriculture projects
- Peer-to-peer: private individuals come into play where exchanges involve mainly catering and gastronomy and involve private individuals eating together or sharing prepared meals or even food products

The economics of platforms is thus emerging as an accelerator that is considerably simplifying trade in the fields of agriculture and food. It also acts as a disruptor: farmers can evolve into providers of services, and, due to their visibility and advertising, exchanges are integrated into the formal economy, thus opening opportunities for all kind of experiments. (Paris Innovation Review, 2016)

As far as India is concerned, there have been significant initiatives taken in e-marketplaces and digital platforms for agricultural marketing. Some examples are noted below.

eNAM: National Agriculture Market (eNAM) is a pan-India electronic trading portal, which networks the existing regulated APMC market yards called ‘mandis’ (physical market yards managed by the Agriculture Produce Marketing Committee (APMC) under regulations of the respective state APMC Acts) to create a unified national market for agricultural commodities. It is a digital platform primarily envisaged to enhance competition and address issues arising from the inefficiencies in existing mechanisms of agricultural marketing due to differing regulations across different states of India. It was launched in 2016 and a government of India agency runs it. This is thus a public initiative.

As of December 2020, more than 16 million farmers, 240000 traders and commission agents, and 1000 mandis (markets) from 21 states of India have registered on eNAM (eNAM Dashboard). The eNAM platform leverages the physical infrastructure of the mandis through an online trading portal, enabling buyers situated even outside the Mandi/ State to participate in trading at the local level. It also facilitates quality assaying. Weighbridges & electronic weighing scales have been integrated with e-NAM to ensure transparency and error-free weighing of commodities. Logistics module of eNAM is being continuously upgraded to further streamline logistics, quality assaying and same-day payment realisation to further facilitate inter-mandi and inter-state transportation of traded commodities under eNAM. It is available as a website, a smartphone application and is available in 12 Indian languages and equipped with GPS-based mandi locator for searching mandis within 100 km radius.

(www.enam.gov.in)

Dhaan Mandi: Dhaanmandi.in is a classified web portal dedicated to the farmers. Here farmers can sell their crop to more potential buyers across the country. (<http://dhaanmandi.in/>)

Digital Mandi India: Digital Mandi India is a mobile application helps an end user to check the latest Indian agricultural commodities mandi prices across different states and cities

Mandi Trades (smartphone application): It is a location-based trade enabling service available as a multilingual mobile-based application and web portal aggregator. It targets farmers and bulk buyers — such as retailers, traders, exporters, hotels and caterers directly — through a business-to-business model. Any farmer can register himself on the Mandi Trades app, enter details of the produce he wants to sell, location and price, which is then uploaded on the cloud. “It’s a marketplace, just like Flipkart. With the app, the farmer can reach potential buyers directly. Once a buyer selects the produce he wants to buy, he receives information on the seller’s location, contact details and even a route map to the place (Livemint, 2016; Yourstory, 2018)

Thus we can observe that there are a number of initiatives which are aimed at increasing competition in agricultural marketing using digital means in India.

3.0 Contract Farming:

A resource book on contract farming (Gulati, Joshi and Landes, 2008), identified that CF is practised through verbal or informal contracts more often in India. Even written contracts lack enforceability of provisions and thus don't provide much legal protection to either party in India as compared to other countries. They cite instances of breach by both farmers and sponsors due to market conditions. They find that neither party is keen to contest these issues in the courts of law; that mutual trust plays a key role in such contracting relationships. Moreover, CF arrangements are often criticized for being biased in favor of firms or large farmers, while exploiting the poor bargaining power of small farmers. To overcome such situations, they proposed forming clusters of small farmers that can create a scale effect and also enhance the bargaining position of the farmers. They identify, as a key challenge, successful contracting models or other forms of farm-firm linkages that are effective for smallholders' participation in the transformation of Indian agriculture.

Vamuloh V. V et al. (2019) studied smallholders' engagement in CF in detail with the basic premise that CF offers a win-win-win (triple win) for companies (sponsors), smallholders and the environment. According to the study, there are broadly 5 models followed in CF.

- ❖ centralized CF model (contracting company buys a commodity from several independent smallholders under highly regulated production conditions)
- ❖ nucleus-estate model (contracting company buys crops from independent smallholders but at the same time also owns a farmland)
- ❖ multipartite CF model (model usually involves governments, nongovernmental organizations, farmer producer organizations and smallholders)
- ❖ informal CF model (model consists of small scale contracting companies that engage in informal contracts with several smallholder farmers usually on seasonal basis)
- ❖ the intermediary CF model (usually involves three contracting parties—a contracting company, a middleman or a cooperative/FPO and smallholders)

Further, according to the above review, some of the benefits of CF:

- For the Farmers (especially smallholders) are:
 - ✓ Higher income levels
 - ✓ increased productivity
 - ✓ smallholders can access farm inputs such as credit, information, technology, and extension services

- ✓ infrastructural development, employment opportunities, and the development of local markets within small farmer communities
- For the Sponsors are:
 - ✓ it reduces production costs
 - ✓ it helps contracting companies in maintaining a stable supply of desired quality products
 - ✓ companies can also garner positive reputation by engaging small farmers
- For the environment are:
 - ✓ agricultural innovation on smallholder production systems can prevent encroachment into forests and other protected areas

The conclusion of the above paper is that small and marginal farmers' exclusion from CF can severely restrict the reach of its triple win promise and hence stakeholders (policymakers, global food sector companies etc.) should actively pursue strategies for improving smallholder participation in CF programs.

Vamuloh V.V., Robert A. Kozak R. A. and Panwar R. (2020) identify that the success of CF can have significant positive implications for SDGs related to food security, poverty reduction, climate action, and others. CF, according to them, has the potential to ameliorate multiple economic, social, and environmental challenges in the global food sector. However, to fully realise the promise of CF the participation of smallholder farmers should be increased by listening to their voices and meaningfully addressing their concerns. Using data from the case of CF in oil palm cultivation in Ghana, they find that small farmers

- (i) abstain from CF primarily due to unfavourable contract requirements;
- (ii) quit CF primarily because they view CF as an exploitative practice that lacks equity;
and
- (iii) participate in CF primarily to obtain critical farm inputs and to access mainstream markets.

Thus, according to the paper, only attracting small farmers to CF isn't enough, retaining their participation is very important. They suggest some measures that can be adopted, significant among those are listed below

- contract design requirements should be simplified and ideally be co-created by contracting companies and small farmers
- open and transparent dialogues should be facilitated between companies and small farmers to better understand each other's situations and expectations
- promoting a sense of fair treatment is essential to retain small farmers in CF

- transparent estimates of price variations
- addressing practical bottlenecks for farmers as well as sponsors

Kumar P. et al (2021) have undertaken a detailed empirical study on CF in the four Indian states of Punjab, Haryana, Karnataka and Andhra Pradesh (AP). Their study is based on a primary survey of more than 2000 farmers across these four states. The study was conducted by choosing farmers who are doing CF (contract farmers), those who are leasing-in land for farming (lease farmers) and non-contract and non-leasing farmers (control farmers). 70% of the sample farmers were contract farmers.

Some significant findings of their study are:

- Awareness regarding CF is low in India amongst different stakeholders; this lack of information has kept CF sponsors away from a vast area in the country
- Absence of a legal framework impedes the flourishing of CF in India
- Price fixation under the present CF system is mostly unilateral by the sponsors, not involving the producers (farmers). Quality concerns are amplified by the sponsors in case of a crash in market prices
- More than 90% of farmers in the study area are practising CF on verbal agreements and there is no written contract except in Punjab. Even the written document in Punjab is only on plain paper without any legal sanctity. Hence, in official data, there is hardly any record of sponsors, contract farmers and area under CF
- Contract farmers were younger and more educated as compared to the other groups in the study sample in all the four states
- Contract farmers were growing a greater number of crops as compared to the other two categories studied. Major contract crops in AP were groundnut, paddy, gherkin, red chilli/jalapeno, cotton, maize seed and baby corn; in Karnataka were baby corn, ragi, tomato, gherkin and chilli/jalapeno and in Punjab and Haryana were mainly the seed crops of cereals like paddy, wheat, jowar, bajra, maize and vegetables like potato, peas, carrot, radish, French beans and cotton
- Contract farmers were having only one crop under CF in a year with the exception of Haryana where seed crops were grown under CF in both Kharif and Rabi seasons
- The average size of area under CF was 4 acres for the sample where the average operated area was 11 acres and gross cropped area was 21 acres. Thus, only 20% of the gross cropped area was under CF. This means even contract farmers were undertaking CF on a limited scale on their operated land
- As per the study, farmers stated that assured irrigation and easy access of labour were necessary requirements to undertake CF while reasonable size of land holding was desirable but was not mandatory for CF
- All the study contract farmers indicated that the contracted produce was being procured with minimum breach of terms by either farmers or companies
- 58% contract farmers were satisfied, 24% somewhat satisfied, 7% very much satisfied with CF. 10% were not satisfied and 0.5% were totally dissatisfied with CF. Majority

contract farmers indicated that assured income, superior quality based price and hassle free marketing were the main advantages of CF for them

- Net returns per acre for contract crops were Rs 46000 in AP (Rs 15000 in case of control crops), Rs 26000 in Karnataka (Rs 9000 in case of control crops), Rs 25000 in Punjab (Rs 23000 in case of control crops) and Rs 22000 in Haryana (Rs 19000 in case of control crops). Moreover, these returns were higher than the returns for lease and control crops. As per the study, AP and Karnataka realized significantly higher returns on contract crops due to growing high value crops as compared to their respective control crops as well as Punjab and Haryana

The authors of this study offer the following policy suggestions for CF:

- ✓ Institutional interventions to induce agribusiness firms to offer more attractive and equitable contracts to farmers
- ✓ Unsuccessful cases of CF point to the problem of enforceability of contracts as well as standardization and operationalization of CF agreements. This issue should be addressed by providing transparent price determination mechanism and quality verification.
- ✓ It should be made compulsory for sponsors to include small and marginal farmers to some extent
- ✓ Government should intervene for information dissemination and alternate market creation to reduce information asymmetry and monopsony market conditions
- ✓ There should be a regulatory authority to register all CF taking place

4.0 Open Access Digital Platform for Contract Farming

CF in India is presently generally practised through the informal model. It is common knowledge that influential persons in a particular geography who can aggregate farmers in their area of influence and deliver on the contract to get a certain quantity and quality of produce are used as intermediary for CF in India. Thus it is difficult for any interested individual farmer to offer his land for CF if present arrangements of CF are not prevalent in his geography. With the already enacted Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Act, 2020 (the CF act applicable to whole of India), there could be an opportunity for willing individual smallholders farmers also to engage in CF if they find it profitable. For this, a platform where they can express their willingness to undertake production of agricultural commodities on contract for sponsors with pre-specified quantity, quality and price norms can be relevant. Such an avenue has the potential to open up opportunities for value maximisation for the farmer's land, skill and entrepreneurial abilities and increase the farmer's net income. Such a platform can have relevant details needed to understand the crop production potential of a particular farm and contact details of the farmer

on the one hand and relevant details about the sponsor on the other side. The basic design and features of the platform would be similar to the many already functioning e-marketplaces (Amazon, Flipkart etc.) which match buyer and seller. It is hoped that such a design will enhance visibility of pricing, quality parameters and other relevant terms among the stakeholders, reducing information asymmetry and ensuring conformity with the basic requirements of an electronic market as identified by Henderson and quoted in the previous section in this paper. This should lead to increase in competition as well as transparency benefitting all stakeholders, especially farmers. The portal can also tie up with third party quality assayers and integrate quality assaying facilities to minimise disputes about quality.

Advantages of the portal (both general and with regard to various concerns expressed with respect to smallholders and CF):

- ✚ The portal has the potential to enhance transparency from present levels of almost opaque practices in CF as practiced in India. Presently, price determination is almost entirely done at the discretion of the sponsor and is the one of the main reason for disputes in CF; whereas if an agreement is undertaken through the portal, the contract price or the criteria to fix the price would necessarily have to be pre-determined and available to all concerned thus infusing better transparency and predictability in the pricing process.
- ✚ At the same time, geographical factors that may act as constraints to the participation of smallholders in CF can perhaps be mitigated almost altogether with such an initiative and the overall pool of both farmers and sponsors, to engage in CF, can be expected to increase.
- ✚ The platform will aim to simplify the concept of CF and agreements for the farmers and thus could be a support system for farmers.
- ✚ The platform could lead to emergence of new entrepreneurs from among the farming classes as well as elsewhere and thus provide and enhance economic opportunities for the population.
- ✚ As we have already noted above, that successful and fair CF can aid in the SDGs and thus this sort of a portal could positively contribute towards SDGs.
- ✚ Such a platform will make available data about the volume and nature of CF for better policymaking.
- ✚ Another advantage will be the creation of a robust and fully digital database with granular and accurate data about farms, farmers, crops, crop demand/supply and quality.

Further, some aspects under the Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Act, 2020, where the portal can facilitate and ease compliance are as follows:

- The "farming agreement" should be a written agreement entered into between a farmer and a sponsor, or a farmer, a sponsor and any third party
- The Central Government will issue model farming agreements, for the purposes of facilitating farmers to enter into written farming agreements. Such model agreements can be incorporated as templates in the portal to conclude agreements
- Contracting parties entering into such agreements are required to agree on mutually acceptable quality, grade and standards of a farming produce
- The agreement should also mention price details as well as method used for price markup in case of variable pricing
- Every farming agreement shall explicitly provide for a conciliation process and formation of a conciliation board for dispute resolution
- Easy registration of contracts because the agreements would have to be registered
- No ambiguity with respect to terms in case of disputes
- An easily accessible source of information for the conciliation board as well as other authorities to settle disputes, if any arise, at any point

Basic Features of the platform:

- 1) The platform will have two broad types of users
 - a. Farmer
 - b. Sponsor
- 2) Platform will work as a search engine.
- 3) What Farmers will show:
 - a. Landowner's Name
 - i. Dead or Alive
 - ii. Single ownership/multiple owners
 - iii. Relationship of farmer to landowner
 - b. Land Area
 - c. Status of land:
 - i. Agricultural/Non-Agricultural
 - d. Coordinates of land
 - e. Marking of the boundary of the land on platform
 - f. Type of Soil
 - g. Soil test results and thus nutritional status of the farm soil - If not tested the system will show that it is not tested
 - h. Irrigation availability on land and type of irrigation (diesel/solar/electricity based)
 - i. Irrigation if available, owned or hired or shared ownership
 - j. Mobile number
 - k. WhatsApp number

- 4) What sponsor will show:
 - a. Legal status of sponsor
 - (i) an individual;
 - (ii) a partnership firm;
 - (iii) a company;
 - (iv) a limited liability partnership;
 - (v) a co-operative society;
 - (vi) a society; or
 - (vii) any association or body of persons duly incorporated or recognized as a group under any ongoing programmes of the Central Government or the State Government;)
 - b. Crop of interest
 - c. Quantity sought to be purchased (minimum lot size and also maximum)
 - d. Price offered and detailed terms of price determination
 - e. Quality parameters of the produced crop to be procured
 - f. Preferred geographical location (State, district, subdivision, block, gram panchayat)
 - g. Preferred mode of agreement (trade and commerce agreement; production agreement , combination of the aforesaid or any other mode of agreement)
Details to be provided for the same
 - h. Minimum size of land parcel required, if any
 - i. Total/Maximum size of land parcel required, if any
- 5) What the other information portal will provide
 - a. About each parcel of land on offer
 - i. Administrative address, like state, district etc. upto gram panchayat/ revenue village, as the case may be
 - ii. Distance from different types of Road
 - iii. Distance from nearest railway station
 - iv. Distance from nearby towns, urban centres
 - v. Distance from River
 - vi. Distance from Mandi
 - vii. Ownership status
 - viii. Under any legal/court case: Yes/No
- 6) Any entity desirous of acting as third party for the purposes of CF should also register themselves as sponsor in the portal
- 7) Platform will support regional language for ease of access. Audio and video support features will also be available
- 8) Transparent multi-parameter based rating system for both farmer and sponsor based on experience of corresponding party; this will ensure that all parties provide accurate data about themselves

- 9) All parties on the platform (farmers, FPOs and sponsors, service providers etc.) can browse, narrow down and view their respective requirements on this portal (much like we do on amazon and flipkart) and when they find a match, they can take the arrangement further
- 10) Platform will support all models of CF identified earlier as well as hybrids between CF models. For this, necessary provisions will be made in the platform to accommodate multiple parties to an agreement. Farmer Producer Organisations (FPOs) can create a profile and can act both as farmer as well as sponsor
- 11) In due course, the platform may be expanded to provide services to farmers, say like combine harvester hiring services etc.
- 12) Platform will be free for farmers but all other parties would need to pay charges for registering on the portal and then a commission based on each transaction volume
- 13) The platform will be free and 'open access' for the farmers in the sense that any farmer from any place in India can register himself/herself and offer their land to undertake CF and deregister too as per his/her choice.

5.0 Conclusion:

Indian Agriculture is vast and diverse and hence offers potential to various approaches to better the state of affairs it is in presently. CF is one such approach which holds potential to provide opportunities to farmers to enhance their incomes. It is hoped that open access digital platforms, like the one that has been outlined in this paper, can provide more opportunities, choice, transparency and better terms to smallholders desirous of participating in CF. It would provide needed transactional transparency to address concerns of farmers exploitation by sponsors. If successfully implemented, such a platform could, over time, broaden the scope and practice of CF from present levels. The data generated through the use of proposed digital platform would enable evidence based evaluation of CF. CF policies in India can be further fine-tuned to benefit all stakeholders and safeguard farmers' interests.

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