2nd International Symposium on Work in Agriculture
Thinking the future of work in agriculture

March 29th – April 1rst, 2021
Clermont-Ferrand (France)

WS 6
Forms of work organisation
in farms

Outsourcing of Agricultural work in India: Emerging trends and implications for decent work and employment (A case study)

Sukhpal Singh [a]

[a] *Centre for Management in Agriculture, Indian Institute of Management, Ahmedabad, India*

Abstract: *Like other sectors of the economy, agriculture is also experiencing outsourcing, which refers to the firm's "make or buy" decision and is basically defined as the purchase of a service provided by another firm. Traditionally, outsourcing in agriculture links farms that have an excess capital in machinery and labor with those who do not have enough capital to perform specific tasks, such as harvesting. More recently, outsourcing has become a key component of agricultural development in many countries, including in developing countries, where it allows small farms to have access to new farming practices and equipment to improve their productivity or to capture new market niches. The motivations are as many as the types of outsourcing arrangements. On the demand side, more than a simple purchase of a service, outsourcing can also be viewed as a strategic decision of externalizing one or more tasks of the production process. On the supply side, outsourcing enterprises show a rich diversity of organizational architectures and governance structures. Today, outsourcing services are not only provided by farmers with an excess of capital, but also by entrepreneurs who specialize in this activity alone. The paper examines the nature and dynamics of agri outsourcing in a smallholder context of India with focus on the role of agri-outsourcing agencies in promoting inclusive and effective development, besides inferring on the potential and implications of this kind of innovation (agri-outsourcing) in the Indian agricultural context. It examines cases of agri outsourcing in a value chain of export grapes on the input and services side especially labour and marketing services with clear analysis of the implications of such institutional outsourcing innovations for future of value chains and small producers and workers.*

Key Words*: outsourcing, agriculture, exports, India, decent work*

Introduction

The changing nature of work in agri-food sector has many dimensions like outsourcing, and many implications for various stakeholders (Christiaensen *et al.*, 2020). In many western countries, the nature of outsourcing has different evolution and dynamics. In the Netherlands, agri outsourcing has been a regular practice even on small diversified farms that lack sufficient labour. This also led to lower cost of services, and better quality of service itself besides farmer being free to focus on specific activity. In France, outsourcing has been practiced for 20 years across both large and small farms and included financial counselling, farm management and labour supervision (Nguyen *et al.*, 2020). There could be many types of outsourcing of services including labour and machinery, management of the farm, machine and labour for combining various tasks and the task can be on farm or vertical in nature which can include both on farm and off farm. But, there is no doubt that outsourcing helps farm producers benefit in many ways *i.e.* increase in technology efficiency, labour and capital productivity and sales revenue as was seen in case of outsourcing apple growers compared with those who did not, in China (Zhang *et al.*, 2018) or in case of Spanish citrus growers (Picazo-Tadeo *et al.*, 2006) which removed the size constraint on small farms to achieve competitive production.

Major research questions in agri outsourcing domain include: Can a non-farming owner still be considered a farmer and receive government's subsidies? Or should the outsourcing firm be considered a farmer? There is also the issue of land concentration, farm up-scaling process and networking extension in smallholder and extensive landlessness context. But, at the same time, development of outsourcing allows small farms to access new technology to improve productivity, lower cost and have (better) access to new (markets). Seen from a value chains perspective, outsourcing raises many more

questions about the reorganisation and governance of the same with implications for primary producers as outsourcing agencies emerge as new players in the sector with knowledge and resources. From a developmental perspective, important research issues in this domain include: patterns of outsourcing across crops and activities, determinants of supply and demand and effect on input and output market besides externalities like employment, environment, and socio economic aspect of agricultural and rural livelihoods, besides exclusion of some segments from such services.

However, the impact of labour outsourcing on farm workers and their conditions and nature of work has not been studied adequately. Various studies on agri outsourcing don't pay attention to the implications of such practice on the laboring workers (Zhang *et al.*, 2017; Ji *et al.*, 2017; Yiyuan 2019) who may lose work or the patterns and nature of their work may change. Despite the fact that agriculture still plays a major role as provider of livelihoods in countries like India, there has been no research on this aspect though during the 1970s and 1980s there were studies of the impact of farm mechanisation per se and thru custom rentals in parts of Asia especially India (Aggarwal and Mishra, 1973; Thakur *et al.*, 2017). The combine harvester at that time displaced 9 person days per acre of paddy area (Aggarwal and Mishra, 1973). It not only displaced labour but also caused shortage of fodder which happened in the Indian Punjab a few years ago (Singh, 2010).

Despite the increasing importance and diversity of outsourcing in agriculture, the literature on this phenomenon is so far rather limited compared to that on the non-agricultural sectors. The issue of impact of growth of outsourcing on farm labour is a dimension which has not been explored at all in literature though it is of paramount importance in the developing agrarian economy context. There has been outsourcing of sugarcane harvesting and transport of it to the migrant worker families in Maharashtra and Gujarat in India who travel with families and bullock carts to undertake this work for months together. This work is outsourced by sugar mills- both private and o-operative for decades now which has been exploitative of these workers (Breman, 1978 and 1990). But, sugarcane is more of a traditional crops and domestically processed and consumed product unlike grapes which are high value and non-traditional export product. The objective of the paper is to fill this gap by examining the nature of outsourcing with a specific case study of a high value export crop (grapes) and discussing the worker livelihood and policy implications. Section two details out the context and methodology followed by analysis of outsourcing in grape value chain with the help of a case study (section 3) and a concluding section (4) on the future dynamics of such outsourcing and the implications of the same for farm workers in India.

Conext and Methodology

In India, land outsourcing is not possible due to land ownership and leasing restrictions for corporates (non-agriculturists) under the provincial level regulations on land ownership and land leasing since it is a provincial subject as is agriculture per se. Therefore, only farmers can own agricultural land and no family can own more than a certain limit which varies across states (Singh, 2006). On the other hand, until recently, there was no noticing of labour outsourcing as India is a labour surplus country especially in the farm sector. It is only during the last couple of decades that due to labour migration to cities as a consequence of unviability of small farm holdings and the public employment program- Mahatma Gandhi National Rural Employment Guarantee Program (MGNREGS) under which a rural household is provided a right to demand work for 100 days a year at a minimum wage as fixed under the program that labour shortage has become a topic of discussion though it is more of wage tightening (higher wage levels) due to the alternative of MGNREGS that labour outsourcing has become common and there has been a rise of labour contracting which is not very well documented. However, this so called

shortage has led to outsourcing of many mechanical activities like harvesting and ploughing or weeding or land levelling and even the state agencies are promoting such rental use services, not ownership of machine and equipment to expand agricultural mechanization across Indian provinces (Singh, 2017).

India is a small producer of grapes with a global share of less than 2%. India produced more than 1.2 million tonnes of grapes from 0.11 million hacs in 2010-11 of which 8% was exported. Of total production, 87% was used as table grade, 10% dried, 2% for juice and 1% for wine. Grapes account for 2.7% of production and 1.4% of fruit area in India. Grapes are one of the important fruit exports of India with 9.1% share in all fruit and nut export (Sharma and Jain, 2011). The Netherlands and the UK took 25% share in quantity and 41% in value while Bangladesh and UAE took 50% share in quantity and 26% share in value of grapes exported (www.apeda.gov.in).

Maharashtra state accounts for 70% of India's grape acreage, and 63% of production (www.apeda.gov.in). The average size of holding in Nashik (study site) is the same as the average for the state (1.67 hacs). 39% of its main workers are farmers and 21% agricultural labour. 73% farmers in Nashik are small or marginal and operate 40% of land (Shroff *et al.*, 2011). Nashik district accounts for 78% of acreage and 80% of production of grapes in Maharashtra and contributes 55% of India's and 75% of the state's grape exports (NCAP, n.d.).

Within Maharashtra, the grape crop comprises 12% of the fruit acreage with half of it in Nasik district. Sangali, Solapur, Pune and Ahmednagar are the other important grape production locations. There are more than 10,000 grape growers in Nasik district comprising large individual export growers, and organized ((through grape farmer co-operatives and Primary Marketing Organisations (PMOs)) smaller growers of whom only about 1000 produce export quality. In Nasik, there are not many small farmers in grape cultivation as it is costly and risky to grow. As the procurement manager working with a company for 9 years and earlier with grape growers' association for one year, remarked "it is a rich farmers' crop". On the other hand, in Sangali, it is mostly small farmers who are into grape cultivation and due to small holdings and family labour crop care, the exportable quality crop proportion is higher (70-80%) in this area compared to that in Nashik region (30-35%).

Under GlobalGAP (Global Good Agricultural Practices) system, thee is a provision for group certification. But, under group certification, producers must be members of an arrangement called PMO to obtain certification. A PMO is supposed to take legal responsibility for the whole operation of a scheme where each individual producer is subject to signing a legally binding contract agreeing to me*et al.*l the required specifications of the GlobalGAP protocol. Importantly, detected non-compliance of one member in the group may result in de-certification of the entire group. Primary Marketing Institutions (PMIs, read PMOs) take title to goods and the facilitating marketing institutions do not take title to goods they deal in (Amekawa, 2009). In India, some exporters organize (small) growers under Globalgap group certification acting as PMOs for quality exports, which are certified by a third party. The farmers pay certification charges and the 18-month long contract agreement specifies rules for participation and reasons for disqualification from the scheme.

In export to GlobalGAP based markets, each farmer has a traceability code and each punnet and cartoon has a grower name and location and pack house details and batch number. The Globalgap record register for each farmer maintains all crop related information like plot number, variety grown, area in acres, year of plantation, method of farming, spacing, number of wines, source of irrigation, type of soil, farm map, input use and water management and stock and inventory record for traceability. Globalgap certification costs Rs. 4000 per farmer annually under the case study exporter system but farmers have to invest in infrastructure at the farm level which is of the order of US$ 400-500 per acre per year. The certification cost does not differ by size of holdings.

Produce quality is checked at farm harvest level, pack house level and final dispatch level. 50% of the farms of the exporter's group were also compliant for German supermarkets like Metro, Aldi and NettoPass. The farms and pack houses were also compliant with the UK Ethical Trading Initiative (ETI) code and legal minimum wages. The farms were monitored by 17 quality and procurement staff of the exporter varying from 10 in Nasik, five in Sangali and two in Latur. The leased pack houses are Globalgap certified. The exporter had three pack houses in Sangali, of the five, which are leased from cooperatives. There are 36 different packing formats in terms of labels, weight and pack type. The processes at the export pack house include: receipt of raw material at pack house, weighment and acceptance of produce, trimming, sorting and grading, weighment, packing and coding, pre-cooling, sulphur dioxide padding, palletization, storage (cold stores), container loading and transportation (www.apeda.gov.in). In contrast, produce destined for the domestic market was packed and weighed on the farm in crates after grading immediately post-harvest, by local women workers and dispatched to market in trucks by noon.

The quality parameters in export grapes include: bunch and berry size, color, weight, shape, firmness, sugar content, acidity, absence of bruises or blemishes, no off flavour, odour or taste, absence of pesticide/chemical residue, stem color, no split or damaged berry, no pest or chill damage, correct MRL, packing quality and average check weight (Roy and Thorat, 2008). In export oriented production, thinning and dipping are done differently and more carefully and these two determine the produce quality and amount of work for labour. Ensuring complex quality levels meeting requires skilled labour. Work has to be performed precisely and on time and in right season and right stage of the vineyards (Rath, 2003). These quality parameters and tasks influence the work regimes at the farms, and in harvesting includes both quantity and quality fruits, as there are penalties for rejections from pack houses and buyers on growers (Rogaly, 2008).

The paper is based on case studies carried out in Maharashtra after preliminary value chain mapping of the region, wherein major players, export crops and sites of production and trade were identified and mapped. The mapping involved interviews with provincial-level government officials, various exporters, managers of the exporting companies and facilitators of the operations, like packers and transporters, across various horticultural crops, like potato, onions and grapes. Finally, given the prevalence of the networks and nature and extent of outsourcing, only the grape crop was found to be suitable as a case with global linkages and significant farm-level linkages and practices. It is the largest export crop of the region and has presence of various types of exporters- co-operative (Mahagrapes), private and multinational corporations and has the highest extent of outsourcing after sugarcane.

Information was obtained from grape farmers, farm workers, harvesting workers and packhouse workers handling these crops after harvest in the grape belt of Maharashtra. Sample of farmers and workers was chosen to cover various types of both and in case of workers, since there are women workers and there is a gender dimension of the work given gendering of tasks in agriculture in India, they were interviewed across two (relevant) worker categories. Table 1 provides details of the number of respondents interviewed in each category of workers and even farmers. Interviews were also conducted with exporting company managers and chief executives, their production and procurement managers, and service providers like packhouse and harvesting management agencies. The farmer and worker interviews were mostly conducted on site in packhouses, and farms and in a few cases in residential locations of such workers- both local and migrant.

Farmers	Non-harvest workers		Harvest workers		Pack house workers		All		Total
	Men	Women	Men	Women#	Men	women	Men	women	
25	12	8	22	-	11	14	45	22	67

Table 1. Number of farmers, farm workers, harvesting workers and pack house workers interviewed in grape network. *Note: # There are no women harvesting workers in grapes as it is done only by male workers.*

Labour arrangements for grape farms and pack houses

The case study Indian exporter in this research exported fresh fruits which was estimated to account for US$ 10 million business. The supplies to the African company in the UK- a category manager for major supermarkets in the UK which had moved into India to extend its sourcing period -were on fixed volume basis, not fixed price. The Indian exporter had 9% share in export of grapes from India. The grapes sales season lasts four weeks.

The exporter had 374 registered Globalgap certified farmers with it as a PMO, with written contracts under an outsourcing arrangement. The exporter managed the entire grape business with 35 staff. It had three regional managers for three locations covering 200 farmers in Nasik, 150 farmers in Sangali and 24 farmers in Latur. The exporter had three local organizers (service providers) for harvesting and delivery of grapes to the pack houses and their packing. Harvesting was done either early in the morning or late in the day. The case study PMO exporter's grape growers were medium land holders (average of 11.12 acres or 4.4 hacs) with land holdings ranging from 4.5 to 33.5 acres, educated (with average schooling of 9 years and only 8% being illiterate) with 41 years' average age. They were highly experienced in grape production (average of 30 years) with 6.4 years in export ranging from 5-13 years (table 2). They were much larger landholders than the average farmer in the state (4.1 acres) (Shroff *et al.*, 2011). Average area under crop was 7.36 acres and large part (4.76 acres) for export market with grapes being 66% of cropped area. The area ranged from 3.5 to 19 acres and it was entirely drip irrigated. 60% had pickup trucks and 80% diesel engines with 90% area being under high value crops including vegetable and sugarcane. They worked with exporter for reasons of higher price, secured payment and good extension (primary survey).

Average Landholding and range (in acres)	Crop area and %ag of grape acreage in total	High value crop area %	Grape Export experience	Grape Crop experience	Cropping intensity	Hired labour use (% of growers)
11.12 (4.5-33.5)	7.32(66)	90	6.4	30	113	100

Table 2. A brief profile of sample grape growers. *Source: primary survey*

The PMO exporter aggregated demand for the season and met it with registered farmer produce. It provided a minimum price guarantee to the farmers but did not buy the produce unlike other competitors; it only charged a commission from the farmers for facilitating the sale of their produce besides deducting all the costs incurred on behalf of the farmers. Only minimum prices were offered at harvest as the prices in western markets were not pre-agreed but were consignment based where price for each lot could be different. Even Tesco which received the exporter's grapes through African company did not agree on purchase price in advance. Importers paid only an advance of UK£3-4 per Kg. and the rest of the payment was made based on the prevailing market price on delivery of consignment at destination.

The case study exporter did not bear any risk for the farmers, who bore all risk and benefits exporter-PMO was only a service provider.

The exporter's service providers hired in 13 Globalgap certified pack houses for grapes in different production areas in Sangali, Nasik and Latur in Maharashtra who both pack the grapes and manage their harvesting in the registered farmers' farms. Four pack houses were hired in from one farmer who was previously an exporter of grapes. It had hired all the processing and other facilities and did not own any infrastructure on its own. Even punnets were bought on six-month credit in bulk from foreign suppliers. The farmer interface was low key in that it did not provide any extension.

The member farmers had to deposit Rs. US$200 as an interest free security deposit to the exporter which would not be returned if they were unable to produce two tons of export quality grapes per acre or did not comply with Globalgap/Tesco's Nature's Choice (now 'Nurture') standards. The produce should have achieved the following qualities before harvesting: minimum bunch weight of each bunch not <150 grams; berry diameter not < 16 mm; sugar content minimum 16%, and spotless berries. The exporter paid the basic (minimum) price of US$ 0.30 per kg for the packed produce to the member farmer within 15 working days after receipt of the delivery at its Mumbai office. Deductions were made from the basic payable amount for expenses and fees to cover: Globalgap /Tesco Nature's Choice certification and obtaining the necessary markings, documents and reports; pesticide residue testing (other than subsidy), and soil and water testing. Full amount arising from exporting the grapes was paid to the member farmer within 90 working days from the day of harvesting the produce after deducting already paid amount, transportation and handling charges like cold storage, packing, containerization, local and foreign taxes and commission of the exporter as PMO (12.5%), certification and export quality clearance charges like AGMARK, Phyto-sanitary certification and any other direct/indirect expenses incurred for export of grapes (Figure 1). Accepted produce was only about 30-35% of the total and the farmer took back the rest of the produce for selling elsewhere. The exporter paid US$ 0.6 as advance price and farmers received US$ 0.85 as the final price in 2010-11. Grapes from India sold at UK£3 on April 10, 2010 as a discount offer of two packs of 500 gms. in a UK supermarket, which sold more from Chile and South Africa than from India.

All harvesting in the case of exports is done by the buying party's service provider. The harvest labour is mostly male labour. The entire crop in a given farm is harvested in 4-5 days with workers from neighboring villages through a labour leader who gets US$ 0.65 higher per day than other workers for grape harvesting where the work hours are 4 am to 12 noon (primary survey). Most of the individual activities on the farm are done by contract labour in a group *e.g.* covering of the berries with paper cost US$175 per hectare. The farmer owners also supervise harvesting and pack house grading to check wastage and rejection. The contract labour which was 20% of the total and migrant labour live on the farms during the season which lasts from September to May. They came from dryland regions in and around the district and were paid advance up to 50% of the contract value by the farmers one year before the grape crop season commenced. Contract labour worked from morning to evening to finish fast the given task, whereas day-wage work was for fewer designated hours. Farmers tried to retain same labour groups over the years though the cost has increased fourfold in the last 10 years. Most of the pack house and harvest workers did other casual labour in non-grape season (primary survey).

Workers work in *tolis* or groups which are locality based. The toil (group) leader organizes work for the group, monitors their work and wages, agrees work schedules with farmers, collects wages and distributes them to the workers in the group. Unlike other labour organizers or contractors, they do not receive payments for these tasks although it gives them social and political respect and status. The

group leader of the *toli* visits the farm before the onset of the grape season and fixes the wages, and the other terms and conditions with the grower. Usually, farmers paid 10-15% of the fixed contract amount in advance before the start of the season to avoid non-availability of labour during the peak season. On the job training is provided by the 'lead labour' and inspectors in plucking and bunch identification which are somewhat specialized activities.

The harvesting of grapes was organized by through 'harvest organizers'. In the case of export grape service providers who also acted as labour recruiters and suppliers, a firm was shelved due to violation of labour regulation. The service provider agreed that companies like his violated labour laws which could cause trouble, if caught.

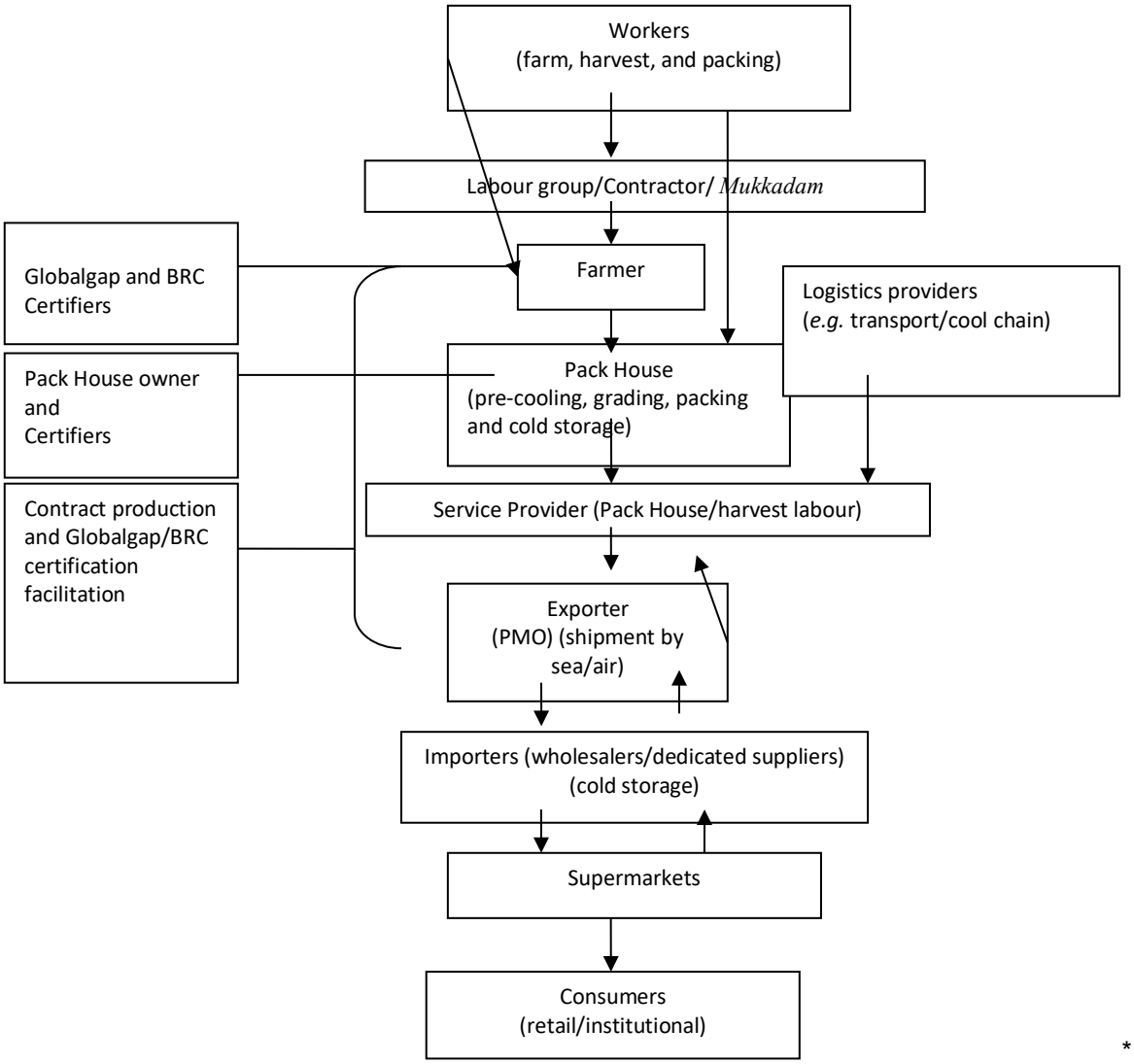

Figure 1. Quality and labour dynamics of export grape production network in India.

Service providers

The pack house operator (service provider to the exporter) had 15 years' experience in this business, was a grape grower with 10 acre GlobalGAP certified crop and worked for the case study exporter since 2007. Another service provider who had five leased pack houses had been managing exporter's business for the last two years. The owner of the pack house was a tractor dealer and was into grape export with one pack house in the past and built others for the exporter. He also provided labour to the exporter from harvesting to containerization. The pack house and harvest labour were exclusive of each other. The harvesting of grapes started at 7.00 am and ends at 9:30 am. The all men harvest labour was picked up from their place of residence and dropped back. The supervision of farms at the time of harvest was done by field officers of the exporter with each one supervising 5-6 plots every day. The service provider was paid US$ 0.11 for all the services and was given targets by exporter to carry out all activities on time.

Another high school literate service provider to the case study exporter exclusively ran harvesting and packing services as a part time business for 2-3 months. His work involved surveying grape farms, scheduling harvesting, grading and packing of the fruit besides pre-cooling, cold storage, and containerization in the seasonally leased-in pack house. The pack house had more than 100 workers, mostly women, working for him for the last 3-4 years. The labour was contracted and approached through a *toli* leader on mobile phone. The toli leader (known as *Mukkadam* locally) headed a team of upto 15 workers and also worked in the pack house or in harvesting team. He didn't get any commission for this service. Harvest labour worked only 5 hours compared with 8 hours for pack house workers. In pack houses, men did heavy work like weighing and crate lifting and women carried out light activities like grading and palleting. The produce from the pack house went in the name of pack house owner. There were seven women supervisors in pack house but none in harvesting teams. The workers traveled to the pack house by a shared taxi or cycles.

Workers

The harvesting workers were younger in age (28 years) compared with non-harvest workers (men 31 years and women 29 years). Only 2/3 of them were married as against 75-83% of non-harvest workers. Average schooling years were higher for harvest workers (6.1 years) compared with just 5.5 years for men and 4.87 for women in case of non-harvest workers. Harvest workers had been in farm work for average of nine years and for four years in harvest work alone with 45% doing harvest work for 4-6 years. This was higher than non-harvesting workers at 10 years and 13 years for men and women in farm work and 10 and 8 years for men and women respectively in grape work (table 3). Non-harvest workers were under different arrangements like task contract, annual contract, and permanent labour and included some migrants. In contrast, harvesting workers were all local and worked on daily wages for the service provider. Both kinds of labor (local and migrant) in case of non-harvesting category had group leaders, who bargained wages for the *toli* on their behalf before the start of the season. Another recent study (Rath, 2003) found similar worker profiles. Harvesting labour was paid US$2.14 per day of which US$0.4 was for transport. The non-harvest women workers received US$1.5 per day of which Rs. 80 was the wage and the rest for transportation/other deductions. This was slightly higher than MGNREGS wage, a government public works scheme run under an Act of parliament which entitled each rural household to obtain 100 days of work for a member.

Category of grape worker>	Harvest workers	Packhouse workers		Non-harvesting farm workers	
Gender category> Parameter	All male	Male	Female	Male	Female
Average age (years)	28.27	26.27	32.64	31	28.75
Average number of years in school	6.1	7.54	4.86	5.5	4.87
Average family size (and working adults)	6.68 (4.18)	5 (2.82)	3.57(2.21)	5.08 (2.75)	4.89 (2.88)
Average number of working years in farming and (grapes)	9.29 (4.09)	6.36(3.07)	13.92(5.78)	10(10)	13 (8)
% of total with agricultural land	36.7	9.0	7.0	33.0	13.0
Average size of landholding (acres)	2.5	0.23	0.07	1.08	0.12
Total work days and those in grape harvesting (in ( ) and in {% of all working days}	280 (85) {30%}	282(31%)	262 (33%)	250	220

Table 3: Demographic and work profile of grape harvesting, packhouse and grape farm workers;

Pack house workers were, on average, not much different from farm workers in age (women 33 years and men 26 years) and were mostly married (80% women and 70% men). They were somewhat better schooled especially men, although 40% of women workers were illiterate. Generally, women had worked on farms for an average of 14 years and pack house for as many as six years with majority for 4-9 years each (table 3). This was longer than men who worked on farm for an average 6 years and pack house for three years each, with a majority for less than three years. Women and men did pack house work for better wages, extra income for family and transport facility besides better quality of work available (including better wages, fixed working hours, safe work environment and proximity to place of living).

Generally, farmers provided transport to the non-harvesting local workers, and housing facilities to migrant labourers on the farm. The local labourers worked from 10 am to 6 pm, while migrant worked from 8 am to 6 pm with some flexibility in working hours. They took either the contract for the entire season or activity linked contracts. The non-harvest labour carried out all the operations from April pruning to last thinning including pruning, auxiliary bud removal, sub caning, pinching, removing failed shoots, dipping, thinning, girdling, paper wrapping. The migrant labour was more flexible than local labour which was needed for quality grape production and was possible as they lived close to or on the grape farms.

What emerges as crucial is the role of service providers (outsourcing agencies) which are the real drivers of local systems for export production as they belong to local areas and leverage their networks for production and labour supply. The exporters only engaged in minimum interface with farmers as required due to certification systems *i.e.* smallholder group certification and traceability requirements, which were indirectly enforced by supermarket buyers. It was common in grape sector in India to find a service provider working with multiple exporters or managing multiple leased pack houses or harvesting teams. Skilled labour required for grapes was provided by contractors as it is traditionally locally available in and around the state though facilitators/pack house operators would not like to directly employ labour for various reasons.

Conclusions

The above analysis of the grape farm and off farm activity outsourcing shows that global market based standards and cost pressures encourage farmers to go for outsourcing and this spreads fast when there are local agencies and groups to undertake this task. In this case study, the uniqueness of the arrangement was that it was the exporter who lined up all other outsourcing agencies like labour contractors and pack house managers for setting up a quality based export network wherein the exporter undertook management of the export activity in terms of creating value and delivering the product in exports markets. Interestingly, the model involved even exporter working on a commission basis, not taking much risk. Therefore, in this case, the farmer risk -both production and market risk- was not reduced. But, outsourcing led to even small farms becoming part of global export network and for the exporter to procure cost effectively from such farms.

On the other hand, there was some new employment generated on and outside the farm which was through contractors. But, since the crop did not involve much mechanization, there was not much immediate negative impact on landless worker employment and livelihoods as same work which was earlier done by these workers under farmer supervision was being done though service providers with better organisational efficiency. The change for workers was that now they had to be a part of the labour contractor network to get this work which was outsourced by the farmer earlier at individual level, not at the exporter (across all PMO affiliated farmers) level.

In such situations, it is important to bring in the worker interest by way of wages being part of the compensation terms for farmers and other intermediaries. Whenever workers are organized, that helps in getting better work conditions and wages, but NGOs are not involved in helping such groups in better bargaining or improving of the arrangements in any significant way. The role of the state is not effective as of now as farm sector minimum wages are not enforced. MGNREGS had helped some worker communities in low wage areas but in high value crop work like grapes or vegetables, it did not seem to make a difference as it could not compete on wage levels.

Further, since there was predominance of women workers in such outsourcing networks, there was need to bring in more gender equitable work conditions which make lives of women workers safer and better as they help the networks perform better and remain competitive. This can be part of the network driver's strategy as well as of the workers' unions or NGOs in such situations.

However, large scale mechanisation in other crops like cotton and sugarcane thru outsourced machines being promoted by state policy under its farm mechanisation policy can hit hard the worker interest as the very nature of crop and its harvesting would change once harvesters come into cotton which is picked totally manually as of now and provides employment to landless women who have lower opportunity costs. Further, some of these employment opportunities are also gender neutral in terms of wage levels as it is piece rate based, not daily wages, the latter being 30% lower than that of men in India. The High Density Planting System (HDPS) in cotton would make it possible to harvest the crop only once with a harvester as against multiple pickings by manual labour at present. Similarly, Direct seeding of rice (DSR) technology also hits labour interest hard as it replaces puddled field transplanting manually by workers. These technologies are being subsidised by the state and are subject to outsourcing in a big way in small farming context of India. This needs to be watched as outsourcing which would make such large machines available including by MNCs, can really play havoc with labour interest and employment in Green Revolution regions which have already depleted employment opportunities due to combine harvesting of paddy and wheat crops and mechanical transplanting of the paddy crop in these areas, by and large, and in some parts of south India.

References

Aggarwal P.C., Mishra M.S., 1973. The Combine Harvester and Its Impact on Labour: A Study in Ludhiana, *Indian Journal of Industrial Relations* 9(2), 293-308.

Amekawa Y., 2009. Reflections of the growing influence of good agricultural practices in the global south, *Journal of agricultural and environmental ethics* 22 (6), 531-557.

Breman J., 1978. Seasonal migration and co-operative capitalism; crushing of cane and of labour by sugar factories of Bardoli, *Economic and Political Weekly* 13(31/33), Special No. 1317-1360.

Breman J., 1990. Even dogs are better off; the ongoing battle between capital and labour in the canfields of Gujarat, *The Journal of Peasant Studies* 17(4), 546-608.

Christiaensen L., Rutledge Z., Taylor J.E., 2020. Viewpoint: The future of work in agri-food, *Food Policy,* doi:hhtp://doi.org/10.1016/j.foodpol.2020.101963.

Ji C., Guo H., Jin S., Yang J., 2017. Outsourcing agricultural production: evidence from rice farmers in Zhejiang province, *Plos One*12(1), 1-16.

NCAP (n.d.). Grape Insurance Product (Modified *Draksha Bima Yojana*) On Farm Survey, National Centre for Agricultural Economics and Policy Research (NCAP) New Delhi.

Nguyen G., Brailly J., Purseigle F., 2020. *Strategic Outsourcing and precision agriculture: Towards a silent reorganization of agricultural production in France?*, invited paper at the 202o annual meeting of the Allied social sciences Association (ASSA) January 3-5, SanDiego, USA.

Picazo-Tadeo A., Reig-Martinez E., 2006. Outsourcing and efficiency:the case of Spansih citrus farming, *Agricultural Economics* 35, 213-222.

Rath S., 2003. Grape Cultivation for Export-impact on vineyard workers, *Economic and Political Weekly* 38(5), Feb. 1, 480-489.

Rogaly B., 2008. Migrant workers in the ILO's global alliance against forced labour report: a critical appraisal, *Third World Quarterly* 29(7), 1431-1447.

Roy D., Thorat A., 2008. Success in high value horticultural export markets for the small farmers: the case of Mahagrapes in India, *World Development* 36(10), 1874-1890.

Sharma V.P., Jain D., 2001. *High Value Agriculture in India: Past trends and future prospects*, IIMA working paper no. 2011-07-02, IIM, Ahmedabad.

Shroff S., Kalamkar S.S., Kajale J., 2011. *Impact of emerging marketing channels in agricultural marketing in Maharashtra*, AERC, GIPE, Pune, AERC report/2011, April.

Singh S., 2006. *Corporate Farming in India: Is it must for Agricultural Development?*, W P No. 2006-11-06, IIM, Ahmedabad, Nov.

Singh S., 2010. *Agricultural Machinery Industry in India- growth, structure, marketing, and buyer behaviour,* Allied, New Delhi.

Singh S., 2017. How Inclusive and Effective are Farm Machinery Rental Services in India? Case Studies from Punjab', *Indian Journal of Agricultural Economics* 72(3).

Thakur T.C., Raj K., Khura T.K,. Tewari S.K., 2004. Impact of grain combine harvesters on agriculture in North-Western plains of India, *Agricultural Economics Research Review* 17(1), 101-120.

Yiyuan C., 2019. Land outsourcing and labour contracting; Labour management in China's capitalist farms, *Journal of Agrarians Change,* Vol 20, 238-254.

Zhang X., Yang J., Thomas R., 2017. Mechanization outsourcing clusters and division of labour in Chinese agriculture, *China Economic Review*,43, 184-195.

Zhang Q., Yan B., Hou X., 2018. What are the effects of participation in production outsourcing? Evidence from Chinese Apple farmers, *Sustainability* 10, 4525,doi:10:3390/su10124525.