Journal of Pharmacognosy and Phytochemistry

Available online at www.phytojournal.com

Meera Kumari
Department of Agricultural Economics, B.A.C, Sabour, Bihar, India

RR Singh
Dean Agriculture, B.AU, Sabour, Bhagalpur, Bihar, India

Rajesh Kumar
Department of Agronomy (A.H), Bhagalpur, Bihar, India

Issues and approaches for linking small vegetables growers to markets in Bihar: A policy brief

Meera Kumari, RR Singh and Rajesh Kumar

DOI: https://doi.org/10.22271/phyto.2020.v9.i4Sg.12155

Abstract
This paper discusses the importance of markets to the rural people and strategy to achieve the remunerative price of their produced in order to reduce hunger and poverty as well as promoting health and nutrition in Bihar. This paper undertakes a situational analysis of existing marketing pattern, disposal pattern as well as expenses incurred while marketing of major vegetable crops in target district of Bihar based on five year average of data collected from traders , producers and consumers for the period from 2013-2018. Trend in arrivals and prices of major vegetables in the selected markets indicated that there was an increasing trend in arrivals and prices of different vegetables over different periods which might be because of the increase in general price level and increase in population. The major focused was on development of proper enterprise based policy for enhancing the livelihood security and creation of procurement centre in each production zones that would be act as added incentives to the vegetable growers. Therefore reliance type of organized retail market at public- private mode should be initiated as alternate channel for the marketing of vegetables and Gujarat kind of marketing model should be implemented for dairy products in which value addition should be initiated by the farmers.Linking small farmers to markets would only be possible through organized mandi /proper collection centre i.e. one centre for five villages should be established to assure the supply of vegetables in Bihar.

Keywords: Vegetables, marketing cost, integration index etc.

Introduction
Market matters a lot to the rural poor. It is increasingly realised that eradicating poverty market related issues including access to information, institution, and linkage and trade rule are vital conditions. Failure to address these issues means that the benefits of other developments threaten to bypass the rural poor. The small farmers and marginal farmers are having 1-2 hectares of land holding because of which they have low amount of produce. And as they are completely dependent on agriculture for their living, they don't have enough saving, whatever produce they obtained from the cultivation, they sold it to the traders or stakeholders at arbitrary price provided by them. As a result, there condition remained unimproved. Thus; there is need to link the farmers to the agricultural markets. According to the Agricultural Census, within one decade the average size of landholding in India has declined from 1.33 ha in 2000-01) to 1.15 ha by the end of 2010-11 (GOI, 2010). The small and marginal farming units contribute more than half (51.2%) of the total agricultural output of the country. They together contribute around 52% of the total food grains and 69% of the milk produced in India. Both make a large contribution to the production of high – value crops, around 70% of the total vegetable production, 55% of the total fruits production against their share of approximately 44% of total landholding (Brithal, *et al.* in 2008) [4]. Hence, such farmers cannot be neglected and sidelined by the stakeholders engaged in agricultural marketing. (Brithal; 2005) [3]. Solving the persistent hunger problem is not only a matter of developing new agricultural technologies and practices. As most of the small holders cannot afford to buy expensive technologies. To solve the problem ,sustainable intensification is the best available technologies and inputs such as best genotypes, best agronomic management practices and best postharvest technologies to maximize yields, However ,according to www.hindustan times.com survey the estimated losses in value term was approximately Rs 10700 crore due to poor management practices ,market dysfunction and lack of proper storage facilities in Bihar . As far as status of fruits and vegetables of Bihar is concerned, over the years losses have been reduced sharply because of phenomenal increase in total number of cold storage and processing units as well.

Corresponding Author:
Meera Kumari
Department of Agricultural Economics, B.A.C, Sabour, Bihar, India

The post-harvest losses of fruits in Bihar were varied from 22 to 30 per cent of gross production, however for vegetables like 39 per cent for tomato, 18 to 22% for cauliflower to the total of gross production respectively (Kumari, *et al.* 2017). Due to post-harvest losses, availability would likely be declined from 5481thousand metric tonnes to 5386 thousand metric tonnes up to 2031. That is why researcher has to play important roles which involve better management practices through promotion of infrastructure development are another way to increase availability of vegetables and fruits in Bihar. It has been estimated that the state would have a trade surplus in both fruits (Mango and Litchi) and vegetables. The policy makers should promote processing of these vegetables and fruits for value addition and also explore export avenues.

In agriculture, marketing is the key factor that determines the economic viability of farming. To bring in the market reforms, a lot of information is required about the complete cycle of cultivation, consumption and trade. Many times there are a lack of production but over production also hits the stability of farmers. A supply glut, such as the one presently faced by chili, potato, and onion cultivators in Bihar generally leads to a price crash, which resulted in poor returns. The main objective of this Paper was to develop market linkage especially for those who wanted to be entrepreneurs of specific enterprises and suggest the approaches to solve the problems of market access in Bihar.

Methodology
To suggest the channels in prevailing area especially for those who wanted to be entrepreneurs of specific enterprises, a lists of selected enterprises like mushroom, vegetables and livestock, were prepared and identified from two districts of Bihar purposively.

Selection of Sites: For the present study Bhagalpur and Banka districts of Bihar was selected purposely. To know the existing supply chain in the targeted area, three markets corresponding to the selected villages/k.v.k have been selected randomly. At the next step a list of major vegetable growing villages having substantial area and production falling in the hinterland of selected markets of the districts was obtained from block offices and from these list ,three village namely Kulkulia, Golsarai & Dildarpur of Bhagalpur and Jhirwa, Belatikar, Nonihari, & Sijwa of Banka district were selected purposely. The list of vegetables growers was obtained from the village records and total of 30 entrepreneurs of four enterprises from selected villages of both districts consisting at least two enterprises were selected randomly for detail study. The major vegetables crops grown were okra, pointed gourd, tomato, brinjal, and other enterprises were mushroom and dairy for entrepreneurship development.

Selection of the Markets
Based on the maximum arrivals and main channels of transaction used by the producers, three markets from each district were selected randomly for the study. Sabour, ghogha, nawghachia, and Bhagalpur of Bhagalpur district and Banka, kokwara, and samukhia hatt in Banka district corresponding to each KVK were surveyed and changes in prices were compared with main market prices for the selected enterprises. The data pertaining to the arrivals and prices of selected crops viz., potato, okra, pointed gourd, tomato, brinjal, and cauliflowers were collected for last five years .Due to non function of APMC (Regulated market in Bihar),

data were collected on the basis of reliability of private traders as well as producers involved in marketing of the produce.

Primary data: To study the price spread, 30 producer, 10 commission agent 20retailers and 20 consumers from each markets were selected randomly. The data on various aspects like price received and paid per quintal of produce, different market charges , detail information on cost and margin etc under study were collected from all selected markets for three marketing period i.e. peak, mid and lean marketing for the year under reference period for study. To study the marketing pattern, trend in arrival and prices of selected vegetables in the selected markets month wise data on arrival and prices for the period from mid , peak and lean were obtained from private trader records of selected markets of Bhagalpur and Banka.. For studying spatial and temporal price disparity i.e. price integration of vegetables between the markets and within the markets, descriptive statistics i.e standard deviation and coefficient of variation were used.

Johansen's maximum likelihood method of co-integration: The test was conducted on the variables in level (original price series) and first differences. The variables which are integrated of the same order may be co- integrated, while the unit root test finds out which variables were integrated of order one, or I (1). It was tested after checking the availability and found that requirement and quality data for the same was not up to mark. It was mainly due to the fact that time series data on arrival and prices were not documented and published by the district in particular and for the state as a whole after dismantling of market committee in Bihar.

1. Producer's share in consumer's rupees were find out through
Ps= (pf*pc)100
Ps= price spread
Pf= price receive by the farmer
Pc= price paid by consumer

2. Total cost= Cf+m1+cmi+cm2+cm3+……………….+cmn
C= total cost of marketing
Cf= cost paid by the producers
Cmi= cost paid by ith middleman

3. Shepherd's formula for marketing efficiency
Me= (v/i-1)100
V= price paid by the consumer
i= total marketing cost

A. Integration index = wholesale price of commodity in a particular market in particular year*100/Mean of the prices at all vegetable market for the year under study.
Lastly Kendall's rank coefficient of concordance test was used to find out the significant factors affects on market integration. (Siegel, 1966).

$$W = \frac{12 \sum (R_i - R)^2}{k^2 (N^3 - N)}$$

Where,
W = Kendall's coefficient of concordance
R = Mean of ranks assigned to the constraints
R_i = Rank given to the ith constraints N = Number of farmers selected
k= Number of sets of ranking

Major Findings
The study was carried out in Bhagalpur and Banka districts of Bihar to identify the different existing marketing channels and patterns of vegetables i.e. trend of arrival and prices of vegetables in selected markets over five years and also to find out the price spread and marketing efficiency of different vegetables in six selected markets of Bhagalpur and Banka district of Bihar. Co-integration between these selected vegetable markets as well as the possible routes through which commodity passed from producers to ultimate consumers in study area were also analyzed. To find out the major enterprises for the commercial purpose, percentage of area under different crops were worked out i.e. the total area under vegetable. On the basis of area under vegetables, three enterprises including four major vegetable, mushroom and dairy were selected in which there was a scope for development of entrepreneurship in the study area. Among vegetables okra, brinjal, tomato, cauliflowers and pointed gourd were selected. From survey it was found that three main identified channels were involved in marketing of vegetables were as

1st -channel identified from producers to village trader to commission agent to retailer then after consumer

2n-d channel from producer to commission agent to retailer to consumer, and third

3rd- identified channel started from producers to consumers in the hinterland of survey area.

Table 1: Existing Marketing Channels in selected district (2018-19)

	Bhagalpur (%)	Banka (%)
Channel I	66.66	60.00
Channel II	20.00	36.66
Channel III	13.3 4	03.34

Source: Compiled by authors

Out of these identified channels for transaction, most prevalent channel used by the entrepreneurs' were the channel I ranked first through which approximately 60 to 66.66 percent of vegetables growers marketed their produce followed by channel II (20-36 percent) and channel III (3 to 13 percent). It clearly indicated that in both districts' more than 60to 67 percent farmers were using channel I to sold their vegetables to consumers and only 3 to 13 percent farmers generally used to sold their produce directly to the consumers. it might be due to lack of transportation facilities farmer of the selected villages were not able to took their produced directly to the consumers and unable to fetch maximum share. Cleanliness of a markets area, parking space and safety during shopping were influential factors for the

consumers to use a market place. However, consumers perceived that these factors are still lacking in many of the marketing channels. The policy makers should address these issues to satisfy the consumers.

Trend in arrivals and prices of major vegetables in the selected markets indicated that there was an increasing trend in arrivals and prices of different vegetables over different periods which might be because of the increase in general price level and increase in population. The prices were observed low during peak arrivals and vice versa during period under reference. The maximum arrival of tomato in peak period was estimated as (39 percent) however arrival during the same time was lowest for brinjal (36.7 percent). Trend of price during the peak ,mid and lean period for different vegetables indicated that prices during the different periods varied with the arrival as maximum prices for the chilli and minimum prices received for okra was observed in different markets i.e. maximum prices was Rs 2940/quintal for chilli and minimum prices was Rs 700/quintal for okra.

Table 2: Commodity wise M.E in Bhagalpur District

Name of enterprises	Price paid by consumer	Price received by the farmers	Marketing cost +margin	M.E
Bhindi	1800	700	1100	0.60
Pointed	2156	1400	1100	0.96
Chilli	2940	1900	1100	1.67
Onion	1250	850	1100	0.14

Source: Compiled by authors

The study of producer's share in consumer's rupees indicated that price spread were maximum in channel I because more number of intermediaries were involved in this channel while from channel III price spread was minimum due to producers sold directly their vegetables/produce to markets to get maximum prices. Shepherd's formula was used to calculate the marketing efficiency, and was found less in channel I and was more in channel III. The commodity wise M.E in Bhagalpur market indicated that M.E for chilli was accounted maximum share (1.95 percent followed by pointed gourd and was minimum for onion i.e. less than one). Percentage share of cost to the total cost indicated that commission agent were accounting 63 percent of share to the total cost followed by transportation cost for movement of commodity from producers to ultimate consumers. The similar patterns were also observed in Banka district of Bihar. But one of the interesting findings was observed that cost of transportation as well as share of commission agents to the total cost of transaction in Banka were almost equally spreaded for transaction of all the commodities in selected markets.

Table 3: Markets wise cost of Transactions and share of intermediaries in selected district of Bihar.

Name of Markets	Transportation	loading	Cleaning	Weighing	M.M	C.A	TC
Bhagalpur	1.08	0.59	0.25	0.31	4.73	4.37	6.96
Naugachia	0.54	0.50	0.01	0.19	4.87	4.00	5.71
Ghogha	1.47	0.67	0.30	0.21	5.00	4.00	6.95
Average marketing cost	1.03	0.59	0.19	0.24	4.87	4.12	6.54
% share	15.73	8.97	2.85	3.60	4.87	63	100.0

Source: Compiled by the authors
M.M=Marketing Margin, M.C=Marketig Cost, T.C=Total Cost

The extent in variation of prices in market was also found less due to the fact of regular supply of these vegetable grown in all season throughout the states. Same trend was also observed for the bottle gourd as was observed from the table that the mean level of prices of bottle gourd was found lowest

in Bhagalpur market i.e. 1100 Rs/ quintal and highest in Sabour markets i.e. 1310 Rs/quintal. The standard deviation was lowest in Bhagalpur market i.e. 137.64% and highest in Sabour market i.e. 151.83%. However the co-efficient of variation of prices were lowest in Sabour market (11.59%)

and highest in Bhagalpur market (12.51%). It clearly indicated that brinjal , bottlegoud and okra was one of the most profitable enterprises not only for Bhagalpur district but also for state as a whole indicating less variation in the prices for those market which is well connected with road and railways . The variation in price of selected commodities in identified markets was mainly due to the problems of dynamics of market structure .As behaviours of consumers towards the consumption very much depend on its availability and keeping qualities of vegetables.

Table 4: Degree of Disparity in Prices of vegetables in Bihar

Name of markets	Range		Mean Price (Rs/ quintal	S.D	C.V	particular range of integration		pix
Bhagalpur	1500	2200	1625	214.90	13.22	1410.1	1839.90	63.77
All markets	1200	2000	1825	248.94	13.64	1610.1	2073.95	
Total	1350	2100	1725	231.92	13.43	1510.1	1956.92	

Source: Compiled by the Authors, PIX=Price Integration Index

The integration price index was found to be less for okra than the other vegetables i.e. 45.8 Rs/quintal when we compared with the Sabour market. The degree of variation in prices of different vegetables in two markets indicated that the variation of prices of pointed gourd was found maximum i.e. 13.22 percent and minimum in brinjal i.e. 4.4 percent. The integration price index data showed that both the markets i.e Bhagalpur and sabour did not follow the similar patterns of arrivals and prices of vegetables. The same pattern was observed for all markets when compared with Bhagalpur markets. The particular range of integration varied from Rs 61 to Rs 63 in different markets. It was also observed that the integration price index was estimated lowest for okra i.e. 45.88 and highest for pointed gourd i.e. 63.77 in selected markets of Bihar. The values of standard deviation and co-efficient of variation of prices were found to be lowest in Sabour market (75.91 percent & 4.2 percent respectively) and highest in Bhagalpur market (53.81 percent & 8.56 percent respectively). It clearly indicated that not a single markets selected for study were found under range of integration, which showed that both the markets did not follow the same patterns of prices as devaraja (1998) [6] had same observations..To know the reason behind non integration between the markets the problems of transportation faced by the vegetable growers in general and lack of procurement facilities in particulars for all vegetable growers followed by non-function of extension staff responsible for extending their knowledge with respect to market intelligence, storage structure, were the major contributory factors for getting different prices in different markets. It may be concluded that distance to the markets did not have significant effects on the retail price of the vegetables in all selected markets under study i.e. in Bhagalpur and Sabour markets; not a single market with relation to wholesale price were found integrated as they were not influenced by the adjacent markets. The Chi-square at n-1d.f – was estimated as calculated value was observed to be greater than Chi-square tabulated value at1%and 5% level of significance indicated that due to these factors not a single market in Bhagalpur district followed the same pattern of marketing But it is need of hour that the two markets must be integrated to transfer the price signals from one market to another and help in stabilization of prices of the particular commodity. Hence accelerated efforts are needed at integrating different markets, which would go a long way to protect the interest of producers-sellers.

Regarding second enterprise, i.e mushroom, cost of production varied from variety to variety, i.e. for button mushroom it was estimated as Rs 100/Kg and for oyster it was 50-60/kg in selected districts of Bihar. The variation in price between the varieties clearly indicated that cultivation of button mushroom required some indoor composting.

Unavailability of indoor composting facilities was the major problem in both of districts. They were doing only homestead marketing. Price received was Rs100- 150 for oyster and 280-300 for button mushroom respectively. Due to difficulties in production of quality compost and favourable environment, producers were unable to grow button mushroom despite of the fact of high demand in markets. From consumer's side, lack of availability of quality product in the market at right time and places were major problems.

For Dairy, the estimated cost per kg of milk was Rs 20 -22, but producers were getting only Rs25/kg at wholesale level despite of having high price in open market, it was estimated to be around Rs 35-40/Kg but all the produce they were not able to sold daily/ /regularly. In all most all areas collection centre were playing major roles in marketing of milk; sometimes vendors got access to famers and collected from individuals in all villages selected for study. Problems of transportation faced by the vegetable growers in general and lack of procurement facilities in particulars for all vegetable growers followed by non-function of extension staff responsible for extending their knowledge with respect to market intelligence, storage structure, were the major contributory factors for low level or non integration of market .Analysis indicated that due to presence of large numbers of intermediaries, supply chain of vegetable as well as milk in selected districts had been fragmented. In majority of places like ghogha, aliganj, naughachia, kahalgaon, Bhagalpur, Sabour markets, traders arranged their producst for sale twice in week at nearby stations or in road sides. The same trend was also prevailing in Banka (Banka, kokwara, and samukhia hatt), where most of produces were transacted through retail marketing. It might be due to irregular pattern of marketing were observed in both of the districts. Among the cost of transaction transportation cost was major share over all other costs. Due to lack of established market in located area, traders association exploited the farmers.

It was further revealed that according to ranking assigned to each constraints lack of market information due to non-functioning of extension staff in the field of marketing followed by low price, storage/procurement were identified were the major constraints in marketing of vegetables in selected villages under study. Later on, it was tested to check the extent of influence of these assigned constraints on market integration of vegetables between the markets by using Kendall's coefficient of concordance test. The Chi-square at n-1 d.f. (degree of freedom) was estimated as calculated value which was observed to be greater than Chi-square table value at1 percent and 5 percent level of significance indicated that due to these factors pattern of marketing was irregular.

Conclusions and Policy Brief
Issues and challenges for vegetable growers in study area
Due to lack of infrastructure facilities, the farmers of Bihar depend upon village trades traders and other agents for the disposal of their farm produce which is sold at price less than prevailing price in markets ,helping the farmer in absolutely no way. In general, the farmers do not have a fair idea about the demand in the region. This information asymmetry makes them financially unstable and they are stuck in the vicious cycle of debt, which affects not only the loaned farmer but their immediate family and the generations to come. In some cases, the roads connecting villages to cities are non-existent. If they exist, they are inaccessible during the rainy seasons. The distinct of transport infrastructure forces the farmer to sell their crop at the closest market rather than at a place where they will get the best price for their produce. This is where the middlemen or commission agents make their money as they purchase the produce from these markets and sell it to extra orbit ant price in better markets. Due to lack of storage spaces and warehouses, farmers tend to store their produce at their own farms. Sometimes the farmers have to travel long distances with their harvest and fail to find a place in the warehouses. This results in waste of not only the produce, but also lot of time and money. Information regarding availability of space in warehouses needs to be provided to farmers through effective information solutions. This will help farmers save both time and money, and reduce wastage significantly

Policy and Approaches: On the basis of above observations, and for proper access, the suggested channels might be through organized mandis and proper collection centres. Therefore reliance type of organized retail market at public-private mode should be initiated as alternate channel for the marketing of vegetables and Gujarat kind of marketing model should be implemented for dairy products in which value addition should be initiated by the farmers.Linking small farmers to markets would be possible through organized mandi /proper collection centre i.e. one centre for five villages should be established to assure the supply. Because, in flood affected area not a single retailers or wholesalers had access to village; farmers himself took the produce into market through boat,/ cycle etc. Poor financial condition of farmers, higher marketing cost & lack of packaging facility followed by shortage of labour of both nature i.e. skill and unskilled during the peak marketing season are most common problems for marketing of all most all the produce in Bihar. Therefore proper policy intervention from the government, considering the farmers and private players capable of engaging in innovative marketing channels is the need of hour and organizing the farmers into grower's groups/commodity groups/ cooperatives/ Self Help groups/ producer companies might be ensure the participation of diversely located small and marginal farmers and their linkage with the markets through collectivization of their produces. Like Samridhi' with Kaushalya Foundation is integrating vegetable producers and shortening the supply chain in Nalanda district. There is a need to evolve mechanisms so that 'institutions reaching to the smallholders' rather than smallholder's struggle to reach institutions. Therefore, strategies to improve marketing system and all marketing approaches that support agencies should be undertaken for in study of the following key issues such as:
(i)Market demand, (ii) Local production conditions, (iii) Business environment, (iv) Interest of farmers and traders,

and (v) Ability to access business support services. During transactions, some time saving devices like use of app, smart phone that allows the producer to save money would be suggested for multiple trips to provide access on time, to relevant information. A critical challenge for smallholder farmers is the size of their production units and the associated economies of scale. To reduce the cost of inputs and improve sale prices, farmers can work together to bulk buy and market their goods. In the line of farmer's advisory services, market advisory services at block level should also be initiated. In Bihar the expansion of modern retailing has the potential to spark investment in marketing infrastructure and processing that would be benefited to both producers and consumers. In such cases small producers would be able to integrate into the supplying chains, supermarkets would offer considerably higher margins than the traditional clients, such as wholesales and groceries. A focused approach might be used to promote the formation of farmer's groups and apex organizations and government and other can facilitate in finding solutions to problems of inputs, procurement, markets and risk. To improve the system the Commission has considered four important models for group approach in the country namely Farmers Co-operatives, Producer's Companies, Farmers' groups such as those in Andhra Pradesh and SEWA (Self Employed Women's Association) Farmers' model.etc where small producers have been able to integrate into the supplying chains. The Centre should keenly watch on pattern of disposal so when there is a case of excess production, proper policy to reach the products in scarce area on a large scale should be encouraged through the concept of e-markets and digitization. It will surely help the issues of low returns to farmers and also the hardships that occur due to presence of multiple middlemen. The development of market infrastructure such as creation of pre- cooling chamber, cold storage, packinghouse etc. may be taken up by the concerted efforts of the Central and State Govt.

To avoid overproduction in a particular district, development of a mixed cropping pattern is needed as well as the linkage of production with processing and organized marketing is also needed to eliminate flooding of the local market and falling prices during peak seasons. The high quality, safety and logistical standards demanded by importers can be expensive and difficult, although not possible, to achieve by smallholders. Therefore linkages with public -private partnership mode to provide some sort of technical training and on-farm monitoring to the producers would be appear essential for success in high-value market. The companies involve in contracts with the small farmers helps them to overcome land constraints that would be present if they attempted to produce everything themselves.

References
1. Aabha, Kumari M, Kumari S, Swam S, Kumar Varun Vijay. Market Integration of Vegetables Growers in Bhagalpur District of Bihar, India. Int. J Curr. Microbiol. App. Sci. 2020; 9(02):3021-3025.doi: https://doi.org/10.20546/ijcmas.2020.902.347
2. Alam G, Verma D. Connecting Small-Scale Farmers with Dynamic Markets: A Case Study of a Successful Supply Chain in Uttarakhand. Centre for Sustainable Development, Dehradun, 2007
3. Birthal PS, Joshi PK, Gulati A. Vertical Co-ORDINATION in High-value Food Commodities: Implications for Smallholders. MTID Discussion Paper

No. 85, International Food Policy Research Institute, Washington, 2005

4. Birthal, Pratap S. Linking smallholder livestock producers to markets: Issues and approaches. Indian Journal of Agricultural Economics. 2008; 63(1):19-37.

5. CALPI. Toward accelerated growth in dairy: An action research to improve the traditional milk sector", Summary Report. Capitalization of Livestock Programme Experience India, Series II, institute &place, 2006

6. Devaraja. "Channels and Price Spread in Potato Marketing- A Case Study in Belgaum District." Indian Journal of Agriculture Marketing. 1998; 41(1):19

7. Emmanuel Z, Jolly. Constraints to Integration of Vegetable Production in Smallholder Dairy Systems of Uganda: International Journal of Research Studies in Biosciences (IJRSB). 2015; 3(1):141-149.

8. GoI. Agricultural Statistics at a Glance 2010, Ministry of Agriculutre, Viewed on 15 May 2013 (http://eands.dacnet.nic.in/latest_2006.htm). 2010.

9. Hugar LB, Junagond MM. Price spreads in marketing of selected vegetables in Osmania vegetable market, Raichur (Karnataka); International Research Journal of Agricultural Economics and Statistics. 2011; 2(1):122-125.

10. Joseph M, Soundrarajan N, Gupta M, Sahu S. Impact of Organised Retailing on the Unorganised Sector, Indian Council for Research on International Economic Relations, New Delhi, 2008

11. Kalhan A. Impact of malls on small shops and hawkers. Economic and political Weekly, Research Review, (Conference Number): 363-370. 2007; 42(22):2063-2066.

12. Kumar, Praduman, Mathur VC. Structural changes in the Demand for Food in India. Indian Journal of Agricultural Economics. 1996; 51(4):664-773

13. NCAP. Estimation of marketing effieciency of horticultural commodities under different supply chains in India, New Delhi, 2010.

14. Mahendra Dev S. Small farmers in India: challenges and opportunities. WP-2012-014, IGIDR, Mumbai, 2012.