H R Khan: Food inflation and agricultural supply chain management

Keynote address by Mr H R Khan, Deputy Governor of the Reserve Bank of India, at the 16th Conference of Globoil India, Mumbai, 22 September 2012.

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Shri Kailash Singh, Managing Director, Tefla's, Shri Ramesh Abhishek, Chairman, Forward Market Commission, Dr. D. Bhalla, Joint Secretary, Department of Food and Public Distribution, Government of India, Shri. Sushil Goenka and Vijay Datta of the Solvent Extractors' Association of India, Shri. Sandeep Bajoria, Chairman, Globoil Organising Committee, Shri. Dinesh Shahra, Dr. B. V. Mehta and other leaders from the edible oil and agri-commodity trade industries, and distinguished delegates, both from India and abroad. It is indeed a pleasure to interact with people from the agribusiness world, especially at a time when the demand for food items are rising and is expected to continue to rise for several years from now. I am sure people here who have greater exposure and expertise can elucidate in much better way the ground level facts about the current rise in food prices, particularly that of edible oil and challenges that lie ahead in countries like India which are net importers of edible oil. I thank both Globoil India and Tefla's for inviting me. I wish to congratulate Globoil India on its 16th Anniversary – a long enough period for an organisation to grow out from infancy and reach adulthood. Around 50 per cent of India's domestic consumption of edible oil is met through imports and India has an import share of more than 15 per cent in the world market. Given this, Globoil has an important role to play and I wish them all the best in their efforts. I hope the proceedings of this event would help in improving domestic productivity, availability and marketing efficiency of edible oils.

Taking a broader and generalised view of your industry, I shall be looking at the role of agribusiness in growth of the economy as well as inflation management. In particular, I would be discussing the importance and potential of supply chain management in the evolving scenario.

Growth and inflation – role of agribusiness

Before discussing the role of agribusiness in growth and inflation, it would be apposite to define and understand the concept of agribusiness. Way back in 1957, Davis and Goldberg[1] had defined agribusiness very lucidly as the sum total of all operations involved in the manufacture and distribution of farm supplies; production operations on the farm; and the storage, processing and distribution of farm commodities and items made from them. Thus, agribusiness essentially encompasses today, the functions which the term agriculture denoted 150 years ago and agriculture now is a subset of the larger superset called agribusiness.

As far as growth and inflation is concerned, you may be aware that the weights attached to objective of growth *vis-à-vis* that of price stability in choice of policy measures vary according to the extant macroeconomic environment. For example, during the Great Moderation, the policies all over the world were focussed on growth enhancing measures. Presently, in view of the continuance of low inflation and low or negative growth in the developed economies, the policy measures, mainly in the form of liquidity enhancement and low interest rates, continue to focus on augmentation of growth.

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[1] Quoted from King, Robert P., Michael Boehlje, Michael Cook, and Steven T. Sonka (2010) "Agribusiness Economics and Management", *American Journal of Agricultural Economics*, Special Issue Commemorating the Centennial of the AAEA, Vol.92, No.2, April

In India, however, the conditions are very different. Along with economic slowdown, inflation is ruling significantly above the threshold level, beyond which inflation turns inimical to growth. Under the current macroeconomic environment, Indian policy makers have to think of various measures that can simultaneously achieve the twin objectives of higher growth and lower inflation. Opinions differ on the utility of different policy measures at the current juncture and you all may be familiar with the current debate on the timing, sequencing and complementarity of various measures. There is, however, near unanimity, amongst all that agriculture and agribusiness growth is a necessary prerequisite for moderation of inflation, particularly food inflation, as well as for acceleration and sustenance of inclusive growth.

The impact of agribusiness on inflation is also both direct and indirect. The direct impact of agribusiness is visible in the form of food inflation. With demand arising from increasing population and prosperity outstripping the growth of agricultural output, food inflation is likely to persist at the global level for the next several years. OECD-FAO has predicted that a grim global food inflation outlook could continue in the next ten years. The OECD-FAO Agricultural Outlook 2011–20 indicates that food prices may be higher in real terms over the five years 2015–20. For example, prices of oil seeds are projected to be higher by 36 per cent relative to the levels prevailed during the five year period 1998–2003.[2] High prices at global level limit the use of imports as a tool for our domestic inflation management. Even when global prices are low, the import option is limited as mere news of entry of a large consumer like India entering the global market can spike up prices. Further, higher imports would only add to the pressure on our already high current account deficit.

The indirect impact of agribusiness on inflation is reflected in the rise in cost of living arising from high food inflation leading to higher wages, which, in turn, contributes to generalised inflation through higher cost of production. This may trigger a wage-price spiral. Hence, though food inflation or at least spike in food inflation is normally a supply side phenomenon, it is monitored very closely and remains one of the most difficult challenges for the central banks. The Reserve Bank is presently grappling with this challenge of high food inflation as often monetary policy has to act as the first line of defence, even if it is a persistent supply side issue. However, managing food inflation from a medium-term perspective would include measures to increase production, improve productivity and enhance efficiency of supply chain management.

On the growth front, while service sector has been driving growth for the past several years, acceleration of growth of the economy and its sustenance at higher level critically hinges on the performance of agriculture sector in terms of supply of food and food products, employment of large section of population and providing a large and growing demand base for the other segments of the economy, *viz.,* industry and services. Given the strong backward and forward linkages of agribusiness with both the industrial and services sector, this sector not only directly contributes to growth but also facilitates growth in the rest of the economy. Also, the growth of agribusiness has the potential to generate gainful employment within the farm sector, which could help in reducing the incidence of underemployment and disguised unemployment in agriculture.

The role of agribusiness has become even more important in the context of the challenges that global economy faces in enhancing food production to cater to increasing demand for food, fuel and feed. OECD-FAO estimates[3] suggest that with world population touching 9 billion by 2050, agricultural production will need to increase by 60 per cent over the next 40 years to meet the rising demand for food. Additional one billion tonnes of cereals and 200 million tonnes of meat a year has to be produced by the year 2050 as compared with 2005–07 levels. The demand for bio-fuel production is also expected to double. Increased

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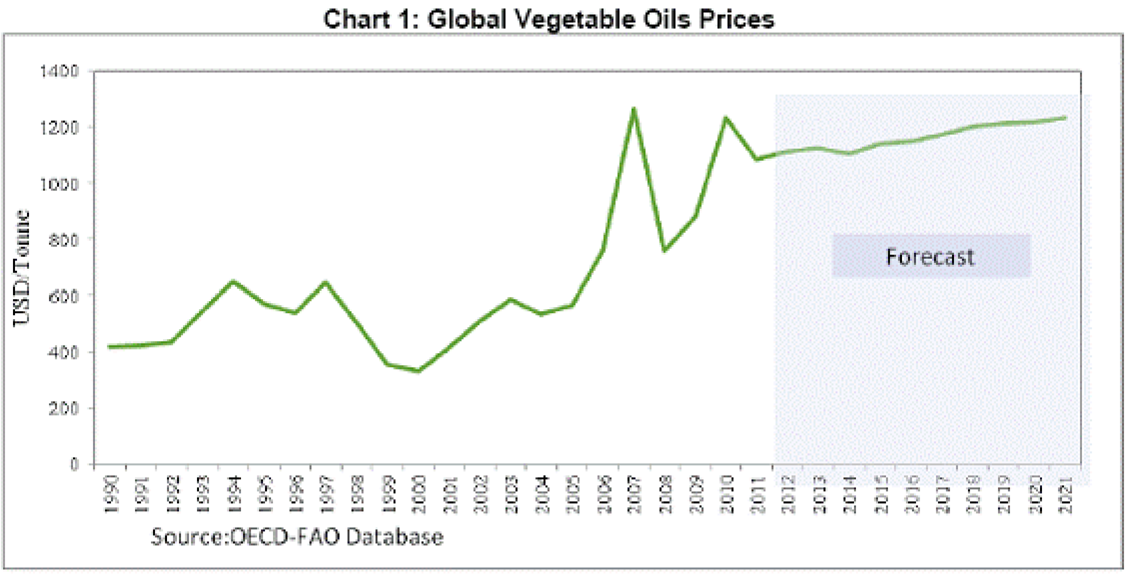
[2] OECD-FAO Agricultural Price Outlook: http://www.oecd.org/site/oecd-faoagriculturaloutlook/

[3] OECD FAO Food and Agricultural Outlook: 2012–2021

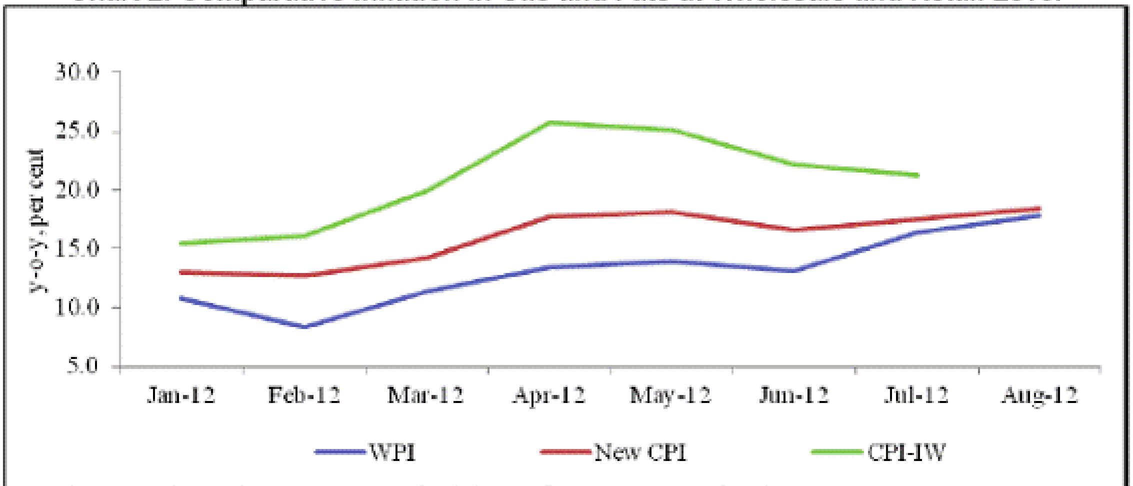
demand for meat and meat products also require additional agricultural feedstocks. Given the limited scope for expanding farmland area around the world and problems of soil degradation and water scarcity, apart from over exploitation of fish stocks, augmenting agricultural production has become a major challenge. Global warming, climate change and extreme weather conditions have added further uncertainties.

Increases in food prices across the globe have become a major issue in recent years. The spike in global food prices that was witnessed during the period 2004–08 had significant welfare consequences in terms of millions of people pushed into poverty and hunger. The increase in prices was witnessed in almost all the major commodities and edible oils have been no exception. Though prices have been volatile in recent period, the forecasts suggest that the prices could continue a secular upward trend, which could put pressure on inflation (***Chart 1***). This is a critical issue for a country like India which is a major importer of edible oils. Also, it has been observed that in India, the domestic prices are significantly impacted by the trends in global prices of edible oils.



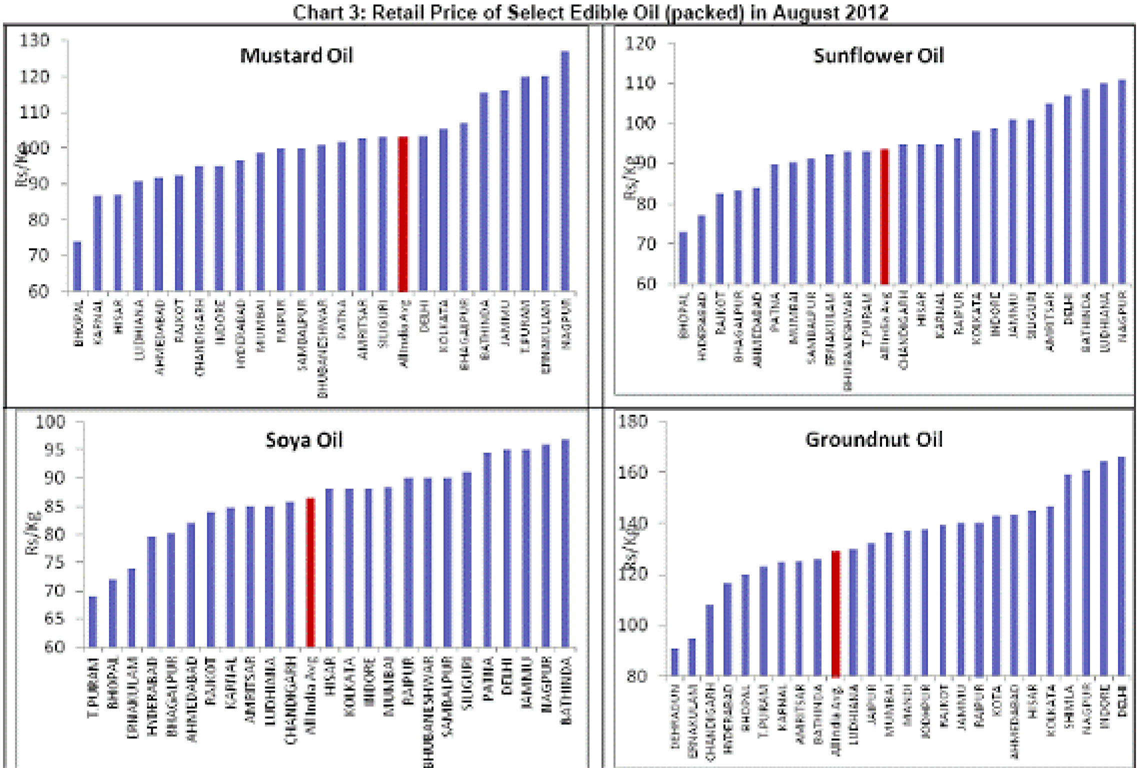
Incidentally, during the current year so far, inflation at the retail level in oils and fats has been higher than at the wholesale level (***Chart 2***). While this phenomenon can be attributed to a number of factors, improvement in supply change management will certainly help in narrowing the gap. Also, the price trends at retail level indicate that the price paid by final consumer for the edible oil differs significantly across major cities within the country (***Chart 3***). While some part of this divergence could be attributed to factors like transportation cost and state specific taxes as well as quality of product, the difference of such magnitude also point towards issues related to supply chain which is critical in a country like India which has a large domestic market.

Chart 2: Comparative Inflation in Oils and Fats at Wholesale and Retail Level



Source: CSO, Labour Bureau and Ministry of Commerce and Industry

Chart 3: Retail Price of Select Edible Oil (packed) in August 2012



Source: Price Monitoring Cell, Department of Consumer Affairs, Ministry of Food and Public Distribution

Hence, I shall now turn to the supply chain through which farm products move to reach the final consumers and need to be upgraded in view of the growing challenges mentioned earlier.

Supply chain management and agribusiness

It has been observed that there is a wide divergence between the farm gate prices and retail prices of various food items. The usual reference to 1-2-3-4 in supply chain is quite well known, where what the producer sells for one rupee, by the time it reaches the final consumer fetches four rupees due to the presence of intermediaries. The recently appointed Inter-Ministerial Group[4] on Inflation has emphasised on the need to cut down the margin between farm gate prices and retail price. Improving supply chain is beneficial both for the producer and final consumer as producers would get remunerative price for his produce and consumer would be benefitted from the lower price. Therefore, increasing efficiency of supply chain could help in bringing food inflation down and increase the efficiency of our food markets and make our agriculture sector sustainable and viable.

A well-known feature of current structure of food inflation is the sharp rise in prices of protein food items. These comprise perishable items such as milk, eggs, meat, fish, vegetables and fruits – all of which require advanced and effective supply chain management.

Different aspects of agribusiness and the supply chain are undergoing transformation which is likely to continue in future. Emphasis on processing, trading and marketing is going to increase over time. Demand for protein rich and other high value food like fruits, vegetables, edible oil and livestock products are increasing. Demand for high quality, safe and convenient (frozen, pre-cut, pre-cooked and ready-to-eat) foods is rising. Meeting these demands emanating from within the country and from the growing Indian diaspora through more efficient supply chain management is expected to facilitate growth and moderate inflation.

Supply chain management and agricultural business are integral part of agricultural marketing system. Efficient supply chain and business models are necessary for creating efficient agricultural market which delivers agricultural produce from the farmer to the consumer in the most efficient way. While output and productivity are supply side factors, markets provide an intermediate link between producers and final demand by consumers. Efficiently functioning markets add to welfare of producers as well as consumers. Efficient agricultural markets can also be a potent tool for poverty reduction.

Agricultural markets in India, in particular the supply chain management and business models, are inefficient. In India, farmers' produce is generally disposed of in the village, rural/primary market or secondary agricultural market. The challenges facing supply-chain management and agribusiness in India can be broadly classified into three, namely, 1) lack of accessibility to regulated markets, 2) lack of competitition under the Agricultural Produce Market Committee (APMC) Act, and 3) absence of a nationwide common agriculture market. These are challenges that run across the various channels through which the supply-chain and agribusiness models operate. These channels are (i) Producer-Consumer, (ii) Producer-Retailer-Consumer, (iii) Producer-Wholesaler-Retailer-Consumer, (iv) Producer-Commission agent-Wholesaler-Retailer-Consumer and (v) Producer-Village Merchant-Wholesaler-Retailer-Consumer.

Agriculture markets in India are regulated through the model APMC Acts. The number of regulated (secondary) agricultural markets stood at 7,157 as of March 2010 as compared to just 286 in 1950. There are also about 22,221 rural periodical markets, about 15 per cent of which function under the ambit of APMC regulation.[5] The model APMC Act allows States to collect market fees from the buyers/traders on the sale of notified agricultural produce which are generally high. The high incidence of commission charges on agricultural/horticultural produce renders marketing cost high. There are other charges like entry tax/octroi tax that vary across states as well as across commodities. These charges prevent the emergence of a nationwide common market for agricultural produce. Moreover, restrictions on the movement of goods under the Essential Commodities Act remain in place in various states.

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4 Position Paper No.1 from the IMG on Inflation http://finmin.nic.in/workingpaper/IMG%20on%20Inflation.pdf

5 Average area served by a market is 115 sq. km while an average area served by a regulated market is 454 sq km. According to recommendations by National Farmers Commission, availability of Markets should be within 5 km radius (approx. 80 sq km).

These had inhibited free access of agriculture markets. Most of the agricultural markets are also characterised by dominance of cash based transactions where issues of cash management also become important. Also, there are issues of weights and measurements as well as the presence of brokers and commission agents.

There is reason to believe that regulatory barriers have constrained investments in development of storage and processing facilities, hampered the development of effective institutions, and lowered the capacity of agricultural producers to be internationally competitive. India, for example, is the world's largest producer of fruit and vegetables but it has been estimated that inadequate post-harvest storage and transportation cause losses of around 30–40 per cent, only 7 per cent value addition takes place, and only about 2 per cent of production is processed commercially. Road connectivity, development of horticulture, dairying & other animal husbandry activities and expansion of cash crops, which provide the necessary wherewithal for greater access of the farm sector to market oriented agriculture are still lacking in the country. This is particularly important for the segment of "high value" agriculture, where demand pressures are going to be most intense in the coming years, and major investments will be needed in the development of efficient value chains to save on high wastages and intermediation costs. The inadequate facilities for storage of products also results in considerable seasonal fluctuations in the prices of products.

The country needs a single point market fee system for facilitating free movement of produce, bringing price stabilization, and reducing price differences between the producer and consumer market segments. Use of Information & Communications Technology (ICT) solutions (for example, pre-paid card based payments at octroi posts) would facilitate easy movement of agricultural produce. Besides boosting productivity on a sustained basis, cleaning, grading and packaging of agricultural produce, would have to be popularized for greater market penetration. The current fragmented marketing system and lack of infrastructure are the serious constraints to the efficient functioning and competitiveness of supply chains in India. An efficient supply chain would need to integrate the supply chain with the value chain wherein at each stage within the chain, significant value addition takes place. It is essential to link the farmers with the markets with state-of-art infrastructure. Effective linkage can help remove the constraints of logistics, quality maintenance and thus, help in efficient access, delivery, price discovery and compete with global products. Linking small primary producers with markets can help improve the livelihoods for millions of poor in India. Banking and bank finance also plays a critical role in the entire agribusiness chain.

As a result a broad consensus has emerged about the need for reforms in agricultural market policies and important reform measures have been implemented in recent years, as part of the ongoing policy reform process in India, such as, amendments to the APMC Act as also the recent initiative to allow Foreign Direct Investment (FDI) in the retail sector. At a more specific level, introduction of negotiable warehouse receipt system, the scheme of bank financing against such receipts, establishment of Warehouse Development & Regulatory Authority (WDRA) and guarantee support scheme up to ten years for construction of warehouses/storage facilities would provide much needed fillip to efficient marketing management and price risk reduction for the producers. Further, the disbursements under the Rural Infrastructure Development Fund (RIDF) administered by the National Bank for Agriculture and Rural Development (NABARD) with a special earmarking of ₹50 billion for the year 2012–13 for developing cold storage and warehousing facilities in rural areas would also provide boost to infrastructure development for marketing efficiency. External Commercial Borrowing (ECB) for infrastructure to cover cold storages has also been allowed. Considering the need to boost the supply and value chains in certain critical agricultural products that have significant implications for both the producers and the consumers, NABARD has initiated a few pilot programmes on supply chain development for potato in West Bengal and Uttar Pradesh, onion in Maharashtra and tomato in Punjab and Haryana. These projects, which would involve the banks, the State Governments and the research institutes, are comprehensive in nature and are expected to help the farmers in better sorting/packaging, warehousing and marketing apart from helping at the production stage by adopting better agricultural practices, involving quality inputs and R&D support.

Measures to improve supply chain

The suggestions from various policy documents to strengthen the supply chain can be classified into: 1) enhancing the capabilities of farmers, 2) strengthening infrastructure, and 3) legislative interventions. By encouraging farmers to organise themselves into groups – growers' groups, co-operatives, self-help groups, joint liability groups, and producer companies given the preponderance of small and marginal farmers in our country – supply chains can be streamlined as well as made more egalitarian. Recently, NABARD has set up Producers Organization Development Fund (PODF), which could play a catalytic role in this regard. Also, investments across the entire agro-value chain spectrum, such as creation of cold chains, rural godowns, new agricultural marketing infrastructure, and modernisation of existing markets could be promoted by providing them fiscal incentives. As suggested by the Inter-Ministerial Group on Inflation, perishables could be taken out of the ambit of the APMC Act to encourage arbitrage activity by small traders and farmers by allowing them to freely trade perishables through buying where it is cheap and selling where it is expensive. Similarly from the long-term perspective of inflation management, it is crucial to improve *mandi* governance with focus on transparency and efficiency by holding regular elections of agricultural produce market committees as well as to bring professionalism into the functioning of the existing regulated markets through public private partnership.

Analysis of international market developments reveals that encouraging large scale integrated players to develop the supply chains in various commodities with latest technology infrastructure is the right approach suitable for Indian conditions. The existing system of fragmented handling of various supply chains should be converted into integrated handling systems so as to ensure better realisation to the farmers. Contract farming and supermarket procurement arrangements are two supply chain arrangements that are gaining ground amid active debate in India. Recent experience in India indicates that contract farming and supermarket procurement approaches will have to involve small-scale farmers in the medium term, because the farm structure obliges them to do so. Initiatives like the one in Argentina by the company El Tejar where the small and marginal farmers are pooled together by taking the land on rent and providing them wage employment could be experimented. In some countries, public-private partnerships have been instrumental to the success of new supply chain arrangements, for example, in providing extension and technical assistance to improve the quality and safety of produce and accreditation of farmers. The country needs a convergence platform at national, state and district level where private players join hands with large number of farmers through various ongoing schemes and programmes of Central and State Governments in a PPP mode. Approaches to promote equitable participation by large-and small-scale farmers who constitute more than 80 per cent of the rural farming community would include:

- Facilitating entry and competition among buyers, for example, improving the rural infrastructure or establishing collection centers to reduce the transaction costs involved in sourcing from small scale farmers;
- Organizing farmers into formal or informal groups to meet the volume requirements and strengthen farmers' bargaining power;
- Reforms in tenancy laws and legalizing tenancy farming to facilitate establishment of production rights and credit flow;
- Enhancing farmers' capacity to adopt improved production and post-harvest techniques to meet the required higher quality standards;
- Assisting farmers to obtain the capital, in addition to short-term production loans given by banks, to make on-farm improvements and other required investments, for

example, micro-irrigation, greenhouse, grading, or cooling facilities and acquire essential national and international certifications;

- Efficient dissemination of market information to the producers by leveraging ICT (for example, mobile phone based market information propagation);
- Training farmers and buyers about their rights and obligations under contract farming arrangement and in the design of contracts; and
- Developing institutions that assist farmers to settle contract disputes, such as, commodity or market associations.
- The Working Group of the 12th Five Year Plan on "Agriculture Marketing Infrastructure, Secondary Agriculture and Policy Required for Internal and External Trade"[6] has identified the following models of agriculture marketing that should be emphasized during the Plan period *viz.,* a) greater responsibility to producer organizations; b) direct linkage with retailers/processors/exporters; c) price discovery through virtual market platform; d) direct marketing; e) organized retailing and removing restrictions on FDI for greater competition; f) market access for small producers; g) reforms in APMC Act; h) integrated value chain system covering even areas like partnership, information and communication technologies, leveraging networks, value chain financing, smallholder policy, and contracts; i) promotion of innovative marketing models for effective market participation, and j) PPP for efficiency and effectiveness.

Finally, in the context of the role of public distribution system in cereals also needs to undergo a transformation. There are two opposing views on the desirable strategy of the PDS system. According to some, PDS should play a stabilising role by releasing stocks when food prices are high, particularly during periods characterised by supply chain manipulation. However, there are others who opine that the PDS dilutes competitive market forces and the government instead should focus on removal of supply chain rigidities. Given this rise in demand due to urbanisation and migration, higher per capita incomes, changing dietary habits, on one hand, and the huge costs and leakages associated with PDS, on the other, it is considered desirable and imperative for competitive market forces to play an increasingly greater role over time. The proposed alternatives to PDS like cash transfers/food coupons would also be effective only with the presence of a well integrated supply chain. Otherwise, the supply chain manipulation could lead to exploitation of cash transfer beneficiaries and could have implications for food inflation.

Concluding remarks

I would like to conclude by saying that the world is destined to struggle with shortage of supply of agricultural commodities vis-à-vis the growing demand for several years. The pressure would be reflected, among others, in rising prices. Apart from raising agricultural productivity, improvement in management of supply chain would be critical for sustenance of overall economic growth and for prevention of runaway rise in prices. Diversification into non-traditional areas like biofuels, polymers, pharmaceutical/health products and feed for poultry and diary to meet growing demand for protein food has major implications for supply chain. Increase in complexity and decentralisation of agribusiness organizations would guide the future changes in supply chains. It would also entail the need for development of new concepts and techniques. I hope you all would deliberate on these issues and suggest the way ahead.

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[6] Report of the "Working Group On Agricultural Marketing Infrastructure, Secondary Agriculture and Policy Required For Internal And External Trade For The Xii Five Year Plan 2012–17" http://planningcommission.nic.in/aboutus/committee/wrkgrp12/agri/weg_rep_market.pdf

I thank Tefla's and Globoil once again for giving me this opportunity to share some of my thoughts with such distinguished participants.