Chapter 3
Indian Commodities Market

3.1 Introduction

Commodities market is one of the fastest growing markets with total value of commodities futures traded in India in the financial year 2011-12 was Rs.181.3 trillion. Commodity futures trading started in India on April 1, 2003 with an amount of trade of Rs1.3 trillion in the financial year 2003-04[17]. The trade volume has increased almost 180% from the year 2003 to 2012. This growth was triggered by the trading activity in bullion and agricultural commodities. Bullion grew up in volume of 85% over the year 2011, while agriculture commodities and the energy commodities recorded a year-on-year increase of 51% and 23 % respectively. Indian commodity exchanges have not only provided a room for better price discovery and price risk management but also have helped the farmers/producers in enhanced choice of crop/produce. It has helped framers make decision to store or sell in the market or making better storage decisions.

3.2. Commodity Forward market

Commodity trading in forward market existed in ancient times as it is mentioned in Kautilya's Arthashastra; which was written 2500 years ago. Bombay Cotton Trade Association was established in 1875 for trading cotton in India and is considered to be the world's second and India's oldest organized commodity futures exchange. Futures trading in oilseeds in 1900 started at "Gujarati Vyapari Mandali", and rawjute and jute goods futures began trading in Calcutta with the establishment of the "Calcutta Hessian Exchange Ltd"., in 1919. Futures market in bullion began at Mumbai in 1920. In due course, several other exchanges were also created in the country to trade in such diverse commodities as pepper, turmeric, potato, sugar and gur (jaggery). In the same year the Government of Bombay, passed the Bombay Contract Control (War Provision) Act and set up

[17] Annual report of Multi Commodity Exchange (MCX) FY 2011-2012

the Cotton Contracts Board. Number of regional exchanges were formed during the period of first and second world war at various locations like Muzaffarnagar Chandausi, Meerut, Saharanpur, Hathras, Gaziabad, Sikenderabadand and Barielly in U.P, Amritsar, Moga, Ludhiana, Jalandhar, Fazilka, Dhuri, Barnala and Bhatinda in Punjab and Jamnagar, Delhi, Calcutta, Rajkot and Mumbai to trade in various commodities like cotton, jute, raw jute, jute goods, groundnut, groundnut oil, castor seed, wheat, rice, sugar and gold and silver. By the year 1930 there were more than 300 exchanges dealing in different commodities. Enormous growth was experienced in Indian commodity futures market during the first and Second World War. There were concerns like: most of the exchanges were regionalized or localized. Trading was conducted both in options and futures but lack of a central regulator handicapped the system. There were problems in clearing and settlement system of the exchange. With a view to restricting speculative activity in commodity market, the Government of Bombay issued an Ordinance in September 1939 prohibiting option business. Bombay Options in Cotton Prohibition Act, 1939, later replaced the Ordinance. In 1943, the Defense of India Act was utilized on a large scale for the purpose of prohibiting forward trading in some commodities and regulating such trading in other commodities on an all India basis. In the same year oilseeds forward contracts prohibition order was issued and forward contracts in oilseeds were banned. Similarly orders were issued banning forward trading in food-grains, spices, vegetable oils, sugar and cloth. These orders were retained with necessary modifications in the Essential Supplies Temporary Powers Act 1946, after the Defense of India Act had lapsed. With a view to evolving a unified system; Bombay enacted the Bombay Forward Contract Control Act 1947.

3.2.2 Restricted Trade

After independence, the Constitution of India brought the subject of "Stock Exchanges & Futures markets" in the Union list or the central list and hence reduced the role of states. As a result, the responsibility for regulation of commodity futures markets was devolved on the Government of India. In order to regulate the futures market in India, the Government of India had passed a bill on the basis of the report submitted by Shroff committee, and in December 1952, the Forward Contracts (Regulation) Act, 1952, was enacted.

Futures as well as forward trading in the commodities became inactive during the seventies due to either suspension or prohibition of registered associations. Reintroduction of future trading was recommended by the Khusro Committee (June 1980)[18]. With the introduction of economic reforms, one more committee was setup under the Chairmanship of Prof. K.N. Kabra. The Committee recommended that futures trading be introduced in nine commodities like basmati rice, cotton and kapas, raw jute and jute goods and silver to name a few. The committee also recommended that some of the existing commodity exchanges may be upgraded to the level of international futures markets.

The National Agricultural Policy in 2000 envisioned the removal of price control in agricultural market and popularized the use of futures contracts for hedging. Setting up of the nation-wide Multi commodity exchange, Central warehousing corporation and introduction of certified Warehouse Receipts (WRs) systems will help in reducing quantity and price risks that are present in commodity futures. A system of certified WRs can contribute towards reducing the working capital requirements of both farmers and traders by WRs financing through banks.

For improving the income of the farmers through commodity futures market, Federation of Indian Chamber of Commerce and Industries (FICCI) has proposed to the government, the abolition of Essential Commodities Act, Mandi Tax and APMC Act (Agricultural Marketing Produce Committee Act) for free movement of agricultural goods across states, and to reduce input prices.

3.2.3 Liberalized Market

The restrictions on commodity forward trade were lifted in April 2003. During the same year three national level commodity exchanges and 21 regional exchanges got registered with Forward market commission (FMC). National Commodity & Derivatives Exchange Ltd. (NCDEX) based in Mumbai, National Multi Commodity Exchange of India Limited. (NMCE) based in Ahmadabad and Multi Commodity Exchange of India Ltd based in Mumbai was established.

[18]Forward Market Commission www.fmc.gov.in

FMC regulates the market under the guidance of the Ministry of Consumer Affairs, Food and Public Distribution, Govt. of India. It is a statutory body set up in 1953 under the Forward Contracts (Regulation) Act; 1952. Indian commodity trading is one of the fastest growing markets in the world. In spite of the market being very young this market is driven by a domestic base of individual investors in agriculture futures, energy and precious metals. At present 113 commodities are allowed to be traded by FMC of which 40 commodities are actively traded[19].At present there is six national level exchanges and 16[20] regional exchanges. There were three more admission to national level exchanges one of them is the Indian Commodity Exchange Limited(ICEX) which started in 2009 and is based in New Delhi .Apart from online trading this exchange gives a lot of importance to warehousing facilities in order to facilitate deliveries of commodities. The second one is Ace Derivatives and Commodity Exchange Limited, which started in 2010 and is based in Mumbai; the third is Universal Commodity Exchange Ltd., Navi Mumbai which started in 2012. The motive behind setting up of these exchanges is that India is still an untapped market and most of the foreign countries' futures market trade is 10 times the physical commodity market trade. The present state in India commodity futures market trade is only 3 times the physical/spot market trade[21].

[19] Standing Committee On Food, Consumer Affairs and Public Distribution (2011-12)

[20] FMC Bulletin

[21] http://www.icexindia.com

Table 3. 1Commodity futures value of trade from 2003-04 to 2010-11(In Rs. Crore)

Year	Bullion	Metals	Energy	Agriculture	Others	Total
2003-2004	3315	2134	-	123914	-	129369
2004-2005	179053	618	1900	390188	-	571759
2005-2006	760675	18723	181883	1192227	1614	2155122
2006-2007	1723348	405637	230712	1317125	104	3676926
2007-2008	1725952	897714	500942	941283	98	4065989
2008-2009	2973675	618776	1026442	627303	2760	5248956
2009-2010	3164152	1801636	1577882	1217949	3135	7764754
2010-2011	5493892	2687673	2310988	1456389	-	11948942
2011-2012*	6423687	1545332	1584446	1083495	1	10636961

Source: Standing Committee on Food, Consumer Affairs and Public Distribution (2011-12)
* 2011-2012 includes information till 31.10.11

Agricultural commodities are traded through a network of 28,090 wholesale and primary rural markets (7557 regulated markets), which are spread across the country[22]. Agricultural spot market is governed by two legislations by the central government, namely the Essential Commodity Acts, 1955 and Agricultural produce Marketing Committee Act 1966.

3.2.4 Forward Contracts (Regulation) Act (FC(R) A), 1952

As per FMC the total number of Recognized Commodity Exchanges is 22 (16 Regional and 6 National Exchanges). Exchange is completely regulated by FMC. It was only in Jan 2008 that FMC got the status of independent regulator, until then it was attached to the office of Ministry of Consumer Affairs, Food and Public Distribution. This change has brought in more economic freedom and operational autonomy to FMC.

Even though India's commodity derivatives market are significantly contributing to Indian economy it is still in a budding stage, if we compare it with western countries especially U.S. Indian market still operates under the

[22] Bose (2008)

regulation of Forward Contracts (Regulation) Act (FC(R)A), 1952 while many of the latest contracts is not available in (FC(R)A), 1952 this a big bottleneck which need to be addressed. Amendment Bill (2010) has already been recommended by the Parliamentary Standing Committee of the Ministry of Consumer Affairs, Food and Public Distribution, on 19 December, 2011 and is awaiting passage by the Parliament[23] .If the bill gets clearance; it will bring in new product/contracts to the Indian market like options and intangibles such as digital goods etc. If the Indian government permits banks, financial institutions and foreign financial institutions to trade in India then will observe a better depth and width in the commodity market.

Table 3. 2 Milestones in Indian Commodity Futures Trading

1875	Bombay Cotton Trade Association
Between 1st and 2nd World war	Rapid growth of futures markets
During 2nd World War	Defense of India Act- Prohibited Futures trading in major Commodities owing to short supply.
1950s to mid 1960s	Thriving Commodity futures markets
Mid 1960s to 1970s	Banned Commodity Futures trading in most of the Commodities except two minor Commodities - Pepper and Turmeric.
1980s	Revival of Futures trading in Potato, Castor Seed and Gur (Jaggery).
1992	Futures trading in Hessian (Jute) permitted.
1999	Futures trading in various edible oilseeds complexes permitted
2000	The National Agricultural Policy recognized the positive role of forward and futures markets in price discovery and price risk management.
2001	Futures trading in Sugar permitted.

[23] Standing Committee On Food, Consumer Affairs and Public Distribution (2011-12)

2003	Lifted prohibition on futures trading in all Commodities Recognition to 3 National Commodity Electronic Exchanges MCX, NCDEX and NMCE
2008	Banning of Wheat Futures due to volatility of wheat in sopt market Commission issued guidelines on setting up of New National Multi Commodity Exchanges.
2009	Recognition to ICEX as 4th National Exchange
2010	Recognition to ACE as 5th National Exchange. Notified "Iron Ore" under section 15 of the FCRA, 1952.
2012	Recognition to Universal Commodity Exchange Ltd.6th National Exchange

Source: FMC annual report 2011-12 table modified by author

3.3.1 Indian Agricultural sector

Indian agriculture sector offers promising future on both the demand and supply frond. India is a country with large population 1.22 billion people and the demand for commodity will naturally come from the size of population. India is located in such a position that it has access to Middle East and Southeast Asia (Asia's best trade centers) hence supply/import is relatively simple. One if the main concern is commercialization of agriculture is how to improve productivity, streamline supply chain, improve price discovery. There is lot of restrictions in free movement of agriculture goods across states, in marketing of goods outside the regulated market etc. There exist fragments of small farming lands which escalate the cost of production because of lack of economies of scale. Decreasing natural resources and uncertainties of the monsoon and over dependence on rainfall is yet another concern.

3.3.2 Commodity Spot Markets

Spot market trade or physical market trade take place in two different ways one is through *Mandis* the local market or through online exchanges. The spot market trades in various states are regulated by Agricultural Produce Marketing Committee (APMC). The role of APMC is to regulate the buying and selling of agricultural produce [24] and this regulatory agency comes under the Agricultural Produce Marketing (Regulation) Act (APMC Act). Regulation of most of the wholesale commodity market and rural primary commodity markets comes under this APMC Act. This committee is allowed to collect a fee form the traders of commodity as prescribed by the APMC Act. One of the main problems with agricultural commodity market is the need for the free movement of agricultural produce. Single window fee clearance is only solution left for fee movement form sate to sate for better price for farmer and end customers.[25] One of the recommendations of Inter-Ministerial Group (IMG) (2011) on curbing inflation and food prices was restructuring of APMC Acts to support supply-chain efficiency.

Under the governance of Agricultural Produce Marketing Committee (APMC) there are regulated markets 7557 in number each market is regulated market and will have a approximately population of 1, 35,000 therefore can imagine the influence this committee can make to the Indian development.[26] Barrier-free countrywide commodity market and sincere efforts to encourage public private partnership is the key for improvement in agricultural sector.

Table3. 3 Agricultural Produce Marketing Committee (APMC) regulated markets

Indian Five Year Plan	Regulated Market	Population served by each market	Area served by each Market	Gross Cropped Area served by each market
Mid-year IX Plan	7127	144120	46120	26700
Mid-year X Plan	7557	135903	43500	25180

Source: FICCI Data

24 Agricultural Produce Marketing (Regulation) Act (APMC Act)
25 Indian Economic Survey 2012, pp 83
26 Ministry of Food Processing Industries

3.3.3 Mandi

The Ministry of Agriculture classifies commodities into two *principle commodities* and *non-principal commodities.* This categorization is based on the basis of total cropped area in the country occupied by cultivation of the commodity. Rice is the largest principle commodity with 50% area under cultivation other principle crop includes wheat, pulses, oilseeds, sugarcane and cotton.

Mandis[27] play a very important role in Indian commodity market's price discovery. Mandis are set up only with the permission of state government. State Agriculture Marketing Board (SAMB) sets up '*Mandi Board* 'that looks into the setting up of new mandis. Mandi Inspector inspects the quality and quantity of the crop, the seller/farmer is given a certificate of the type and quantity of the produce. Each mandi usually trades on single primary commodity which is produced in the locality. With the quality certificate the framers has a free access to other mandis in the district to get the best price. Mandi board of various districts takes the responsibility of collecting all information on prices from different mandis and reports to Ministry of Agriculture. It is ensured that the spot market prices are available to the public for every trade day via daily news papers, bulletins and prices are displayed on the website www.agmarknet.nic.in. In spite of this, collecting real time data for research is a difficult task. National commodity and derivatives exchange (NCDEX) ventured into this online real time tracking of spot commodity prices based on the polling process, similar to the concept of spot price polling of London Interbank Offer Rate (LIBOR) and Mumbai Interbank Offer Rate (MIBOR). Spot prices of various commodities collected from the key mandis across the country are cleaned by a process called 'boot strapping' [28]to arrive at a price that represent the prices of various mandis across the country.

3.3.4 Spot Market Exchanges

National Commodity & Derivative Exchange Ltd. (NCDEX) powered commodity Spot Exchange NCDEX *Spot Exchange* is online spot exchange

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[27] Local market where farmers come to sell their produce to licensed traders

[28] Booting or boot strapping is a self sustaining process that proceeds without external help.

which allows delivery based commodity trade, across India a *spot market* for agriculture and non-agriculture commodities. This spot exchange will facilitate framers to trade and take delivery. One of the advantages of this kind of exchange is farmers will come to know the best possible price available in market without the help of middleman. Spot commodity exchange was established on October, 18 2006. For the non-agricultural producers users of commodities this spot exchange bring in access to real time data, better business transaction, and reduction of raw material cost or input cost .Ministry of Consumer Affairs have extended the role of Forward Market Commission to regulate all online spot exchange, but in the near future we may see one more regulator for these spot exchanges. Having an integrated, organized regulator looking after both the physical commodity trade an online commodity trade is very important for the market development.

National Spot Exchange Limited (NSEL) is the national level online spot exchange commenced its operation on October 15, 2008. It is considered to be the largest online spot exchange having a market share of 99% [29] .NSEL deals with 52 commodities across 16 states in India. They have come out with NSEL's e-Series. This is an e-product required to have compulsory demat account, the contracts include e-gold, e-silver, e-copper etc. which have bought in lot of interest in the retail investor in online commodity spot trading. E-series facilitate investors to buy and sell commodities just like in equity market and make cash settlement within T+2 days. This exchange also takes care of the procurement requirement of the buyers and enters into procurement agreement for charge of 2%. NSEL owns warehouses for facilitating better infrastructure for commodity trade and also helps in warehouse receipt funding[30].

Reliance Spot Exchange is a business to business spot exchange started its operation in 2009 with metal commodities and started the bullion trade in 2011.

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[29] http://www.nationalspotexchange.com

[30] Warehouse Receipts (WR) are documents issued by warehouse facility owner which is recognised by central warehousing corporation as evidence that specified commodities of given quantity and quality, have been warehoused at particular licensed warehouses by the depositor.
Warehouse financing is a facility of discounting this receipt with a bank or financer.

This exchange is part of Reliance Capital and intends to get multi commodity spot trade status by introducing more commodities to its basket.

3.3.4.1 National Spot Exchange Ltd. Scam: Need for refinement in regulations

There was an estimated Rs.5500[31] cr. Default of money by the National Spot Exchange Limited (NSEL) to its investors .NSEL is a prominent spot exchange in India promoted by Financial Technologies (FT) and National Agricultural Cooperative Marketing Federation of India (NAFED) .The scam came to lime light in July 2013 the main reason for the scam was that the transactions on this exchange were done on paper that is there was no underling commodities in the warehouse receipts. The contract included steel, sugar paddy and ferrochrome to name a few. The electronic warehouse receipt was not verified correctly to the extent that commodities did not exist in the warehouses. There were irregularities in the operation of the exchange as they facilitated financing of these fake receipts.

Scam gets created by making use of the loopholes in the regulatory environment. In NSEL case the Forward Contracts (Regulation) Act (FC(R) A), 1952 clause 27.Sopt exchanges / electronic mandis is one which physical delivery takes place within T+2 days .Under Forward Contracts (Regulation) Act any contract that is settled in T+11 day that is the transaction date and eleven days were considered as spot transaction and would not come under the definition of forward trade .Due to this reason spot exchange transaction did not come under the preview of Forward Market Commission (FMC) and Department of Consumer Affairs were the regulator. Since there were no securities involved it did not come under the governance of Securities Exchange Board of India (SEBI)[32]. Since there was no direct lending and borrowing undertaken by the exchange it did not come under the regulation of Reserve bank of India (RBI)[33].

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[31] http://in.news.yahoo.com/the-rs-5-500-crore-scam-no-one-wants-to-deal-with-092739318.html

[32] *SEBI* protects the interests of investors in securities and promotes the development of the securities market through appropriate regulation

[33] The *RBI* is *India's* central *bank*. It makes monetary policy, regulates *banks*, the external sector, and the fixed income and currency markets

The exchange encouraged paired trade[34] , the investors was motivated to take up this arrangement because of the huge margin (almost 15% p.a. and broker would get 3% on the same transaction).This paired trade had a parallel relation to the financing program “badla financing “[35] .Most of the investors where business houses and it was easier to get loan through the spot exchange form the bank by collateralizing stock of commodities. This was going on for more than a year in July 16th the T+25 financing period was reduced to T+10 investors did not receive this change well and stopped rolling over to next contract. The borrowers did not payback the cash and exchange and financers could not collect the money back by selling the recovered commodities as the warehouses did not possess the stock[36]. There were almost 15000 unsettled traders, initial attempt of payment with a 30 week settlement chart in September 2013 failed.

Department of *Consumer Affairs* under *Ministry* of *Consumer Affairs*[37] indistinctly regulates commodities spot exchange. This abnormality was discovered in April 2012 and show cause notice was issued by the ministry to the NSEL but it was kept under deep freezer and gave room for more defaults by the exchange until it came out as a big scam worth millions and no absolute person to pay the defaulters money.

The persons who profited from the scam include high net worth individuals (HNI) who operated the warehouses, the brokers, the promoters and management who was the chief architect of the scam. Three senior executives of the exchange and two investors were arrested[38] . NSEL issued products that settled after 25 to 35 days, called T+25, or T+36 contracts was illegal – such contracts are forward contracts and spot exchanges was not authorized to carry out these. There is get need for refinement and amendment bill on Forward

[34] With the help of the broker the investor were buying T+2 commodity in online spot exchange and selling T+23 or T+35 .Which helped the exchange improve transaction cost .

[35]Badla was an indigenous carry-forward system made-up on the Bombay Stock exchange .This system is banned by SEBI based on various irregularities and due to the introduction of stock futures trading in 2000.

[36] The warehouse receipts were not verified by the spot exchange for commodity quality and quantity.

[37] The Department of Consumer Affairs under Ministry of Consumer Affairs, Food and PD is responsible for the formulation of policies for Consumer Cooperatives, Monitoring Prices, and Consumer Movement in the country and Controlling of statutory bodies like Bureau of Indian Standards (BIS) and Weights and Measures.

[38] In the first charge sheet issued by Mumbai police in Jan 2014 on cheating, forging and criminal conspiracy. Many more charge sheet to follow to bring in a meaningful settlement to the case.

Contracts (Regulation) Act and need for single regulator to stream line online spot trading.

3.3.5 Warehouse Receipts (WRs)

A written document given by a warehouse-man for items received for storage in his or her *warehouse*, which serves as evidence of title to the stored goods[39].Warehouse receipts (WR) are negotiable instrument backed by underlying commodities, this provide logistic support to the commodity market. Warehousing ensures that there is uninterrupted supply of commodity in all season.

3.3.5.1 The need for WR in commodity market

Agriculture is very influential sector in India contributing more than 22 percentage to Gross Domestic product (GDP), moreover 72% of Indian population is employed in this sector is a fact that central government cannot dispense with. The central bank of India that is the Reserve Bank of India (RBI) in their effort to bring in more financial support to farmers is encouraging banks to lend to farmers though warehouse receipts[40]. Currently banks[41] are not permitted to participate in commodity trading but this effort of RBI on warehouse financing will bring in opportunities to banking sector to participate indirectly in commodity market and help in developing it. The working group set up by RBI on Warehouse Receipts & Commodity Futures also looked at the possibilities of banks providing innovative commodity derivative based products to farmers that would facilitate the farmers to hedge their risks as most farmers do have knowledge in hedging through an exchange. In developed market WR acts as instrument of trade finance with lesser interest, and transaction cost. WR can be clubbed with other trading strategies to reduce the margin money. WR facilitates farmers to attain better price for their agriculture produce.

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[39] http://legal-dictionary.thefreedictionary.com

[40] RBI Working Group on Warehouse Receipts & Commodity Futures (2005)

[41] Section 8 of the Banking Regulation Act, 1949, no banking company can deal in goods. Section 6(1)(o) of the B. R. Act, 1949 permitting banks to deal in the business of agricultural commodities including derivatives

National level warehouse certifying agencies include Central Warehousing Corporation (CWC), Food Corporation of India (FCI) and each state has a State warehousing corporation. CWC operates under a capacity of 10.56 million tones [42] of storage capacity, with 466 warehouses across India. CWC contain food-grain, industrial and custom bonded warehouses, container freight stations, inland clearance depots and air cargo complexes etc.

Table 3. 4 Warehouse Capacity with Food Corporation of India

(Figures in million tonnes)

Capacity	1st Apr. 2005	1st Apr. 2006	1st Apr. 2007	1st Apr. 2008	1st Apr. 2009	1st Apr. 2010	1st Apr. 2011	1st Apr. 2012
Covered								
Owned	12.91	12.93	12.94	12.95	12.97	12.97	12.99	13.01
Hired	10.46	09.90	09.34	08.71	10.12	12.89	15.46	17.21
Total	23.37	22.83	22.28	21.66	23.09	25.86	28.45	30.22
CAP (Cover and Plinth)*								
Owned	2.25	2.21	2.29	2.20	2.17	2.51	2.62	2.63
Hired	0.41	0.51	0.63	0.03	0.02	0.47	0.54	0.75
Total	2.66	2.72	2.92	2.23	2.19	2.98	3.16	3.38
Grand Total	27.03	25.55	25.20	23.89	25.28	28.84	31.61	33.60

Source: Food Corporation of India * Traditional temporary *storage* methods used for crops are *Cover-and-plinth* (CAP), flexible silos, pit *storage* and bunker *storage* usually used during buffer stocks.

Food Corporation of India[43] looks into safeguarding the interest of farmer by providing price support operations, frequently intervening in the market for price stabilization and distribution of food-grains throughout the country for public distribution system[44].

3.3.5.2 Warehousing Development and Regulatory Authority (WDRA)

Warehousing (Development and Regulation) Act, 2007 looks after the progress and regulation of warehouses. It also regulates the negotiability of warehouse receipts and upholds systematic growth of the warehousing/storage.

[42] Central Warehousing Corporation website http://cewacor.nic.in/
[43] 45 year in to existence
[44] Objectives of FCI

Warehousing (Development & Regulation) Act, 2007 has been made effective from the 25th October, 2010. As per the provisions of the Act, the Warehousing Development and Regulatory Authority (WDRA) will regulate the warehousing sector in India.[45] Warehouses acts as a backbone to the infrastructure development of commodity market. Total available warehousing capacity in India is 108.75 million MTs, all existing facility provided by public, cooperative and private sector put together.[46]

Table 3. 5 Warehousing Capacity in India

Sl. No	Name of the organization /sector	Storage capacity in million MTs
1	Food Corporation of India (FCI)	32.05
2	Central Warehousing Corporation (CWC)	10.07
3	State Warehousing Corporations (SWCs)	21.29
4	State Civil Supplies Departments	11.30
5	Cooperative Sector	15.07
6	Private Sector	18.97
	Total	108.75

Source**:** Annual report WDRA (2012)

3.3.5.3 Dematerialization of warehouse receipts

Warehouse receipt in physical form has a lot of limitations as the receipt cannot be separated into smaller denomination and there can be treating of theft or damage to the instrument. By dematerialization of warehouse receipts the person depositing commodity will get a direct credit entry in its demat account. The time for the user is reduced drastically as not waiting for the physical paper copy to arrive, hence transition and settlement time gets reduced. Electronically networked farmers and consumers will go a long way in doing away with intermediaries or middleman who usually takes a lion share of the profit. There will be no room for any forgery and miss-representation and there will be quick access to information.

[45] Warehousing Development and Regulatory Authority (WDRA)
[46] Annual report WDRA (2012)

In United States the WR are similar to a performance bond which is similar to insurance bond[47]. The uses of WRs are not for agriculture it is used extensively for bullion market in Dubai. Dubai's Commodity Receipt (DCR) system WRs are negotiable instruments and is membership based available to individuals and business on the background of business history and financial stability. DCR is owned and controlled by Dubai Metal and Commodity Centre.

3.3.6 Regulator of Hydrocarbons

Directorate General of Hydrocarbons (DGH) under the guidance of Ministry of Petroleum & Natural Gas was established in 1993. DGH is responsible for the oil and natural gas resources and also handle environmental products. They are responsible for environment, safety, technological up-gradation and economic side of the petroleum industry. Giving sanction for starting a new oil well, drilling activities of non-conventional hydrocarbon like Coal Bed Methane (CBM) and advanced hydrocarbon energy assets like Gas Hydrates and Oil Shales.[48]

3.3.6.1 Trading and Settlement of Commodity Futures Contract

Trading in commodities futures is just like a trade in equity market, need to choose a broker say ICICI commtrade with ICICI direct. Then you can initiate the trade by bringing in the margin money, which you pay to the exchange trough the broker. The margin money ranges between 5 to 10 percentages based on the value of the contract. The minimum fund required to trade for a retail investor is approximately Rs.5000. Placing the trade is done using the commodity code.

Modern online trading practices standardized commodity futures contracts; makes warehouse support up to date, introduce clearing arrangement and ensure wide dissemination of daily price change. Having said that, the complexity of futures contract like large size (10 tonnes contract) rules out the participation of resources-poor farmers/cultivators. In turn the big institution players and the brokers would indulge in arbitraging activity in the market and the inter market operations are intense to exploit the price difference.

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[47] US Warehousing Act of 1916

[48] Website of Directorate General of Hydrocarbons http://www.dghindia.org

Jeera, guar, chana, soya oil & seed, menthe oil, masure, Burmese urad and wheat are very popular futures contract in volume of trade but their weight or contribution to national income is very less. Whereas commodities like castor seeds, pepper, turmeric, jute cotton commodities have a significant impact. This is due to their higher contribution to national income and influences the macroeconomic fundamentals [49]of the Indian economy.

3.3.6.2 Daily Price Limit

By daily price limit we mean when commodity prices, rises (falls) above (below) 4% on the opening price, the exchange becomes more cautious and a relaxation is allowed up to 6% rise or fall without cooling off period. If the price rise (fall) beyond 6% a stoppage of trade for 15 minutes is given called as *cooling off period* to a maximum limit of 9%. In case the international commodity price rises above 9% the exchange allows the prices to increase by 3% more on a gradual manner.

3.3.6.3 Commodity Margin

Margin is the money or equity that a trader in commodity futures has to bring in to transaction in commodity futures market. It acts as a security at the time of loss in the commodity futures market. Like the equity market commodity futures trading also have need of *initial* and *maintenance margin*.

3.3.6.4 Initial margin

An individual trading in commodity exchanges has to bring in an initial margin of 5 percentage on the contract value or margin based on the trading algorithm SPAN[50] whichever margin is higher. This is a measure taken by the exchange for reducing the default by the counterparty. This initial margin acts like collateral for the futures buyer to open a position in the market.

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[49] "As a lot of fund money is chasing commodities, prices have disconnect then self from fundamentals ". (Economic Times December 15, 2006).

[50] SPAN margining: SPAN stands for Standard Portfolio Analysis of Risk looks at the portfolio risk. It looks at the worse possible risk this portfolio can incur with a given time span (one trading day) and market condition. In the *SPAN methodology* is such that it comes out with *SPAN array* looks at the all possible gain or loss which relates to a particular contract. *SPAN methodology* is borrowed from Chicago Mercantile Exchange was first used for bond market.

3.3.6.5 Maintenance margin

Maintenance margin is the margin you have to maintain with the broker to carry on your trade. That is the minimum level your trading account can fall it is different among different brokers and you trade with.

3.3.6.6 Additional and/ or Special Margin

Additional margin has to be brought in to the exchange if the investor has to carry forward the position. So you have *additional long margin* and *additional short margin based on the short or long position of contract.* In case of high volatility a special margin can be called by the exchange with respect to the outstanding position. There are two types of special margin *special long margin* and *special short margin.* on 25th march 2013 initial margin of 5% and a trader margin of 6% (in total of 11%) on the contract value was charged for cotton contracts traded in MCX and the contract would expire on 29th March 2013. A *delivery margin* of 25% was also charged on Cotton MCX [51]

3.3.6.7 Delivery Margin

Traders with open position to buy commodity futures need to inform the exchange that he/she is interested in squaring off the position by cash settlement or taking a physical delivery within three days of the expiration of contract. It is an international practice that the delivery center for commodities can be left to the choice of the seller, provided it is one of the recognised delivery centers by the exchange. But in the case of buyer he has to go by the given delivery center mentioned in the contract specification. The delivery margin is collected for both the buyer and the seller when they intimate exchange that they wish to take physical delivery of commodity. Taking delivery margin is mainly done to keep the speculators away, form the market at the time of expiration. In Indian exchanges the delivery margin is kept at 25% on the contract value.

On the expiration of the contract the buyer has to ensure the required money is deposited in the clearing and settlement exchange. The seller has to clear all his warehouse charges on expiration of contract. Both the parties have to

[51] http://www.mcxindia.com/Sitepages/DailyMargin.aspx on 25th March 25, 2013

pay sales tax and position will be closed by the exchange of commodity by seller and payment of money by the buyer.

3.3.6.8 Commodity transaction tax (CTT)

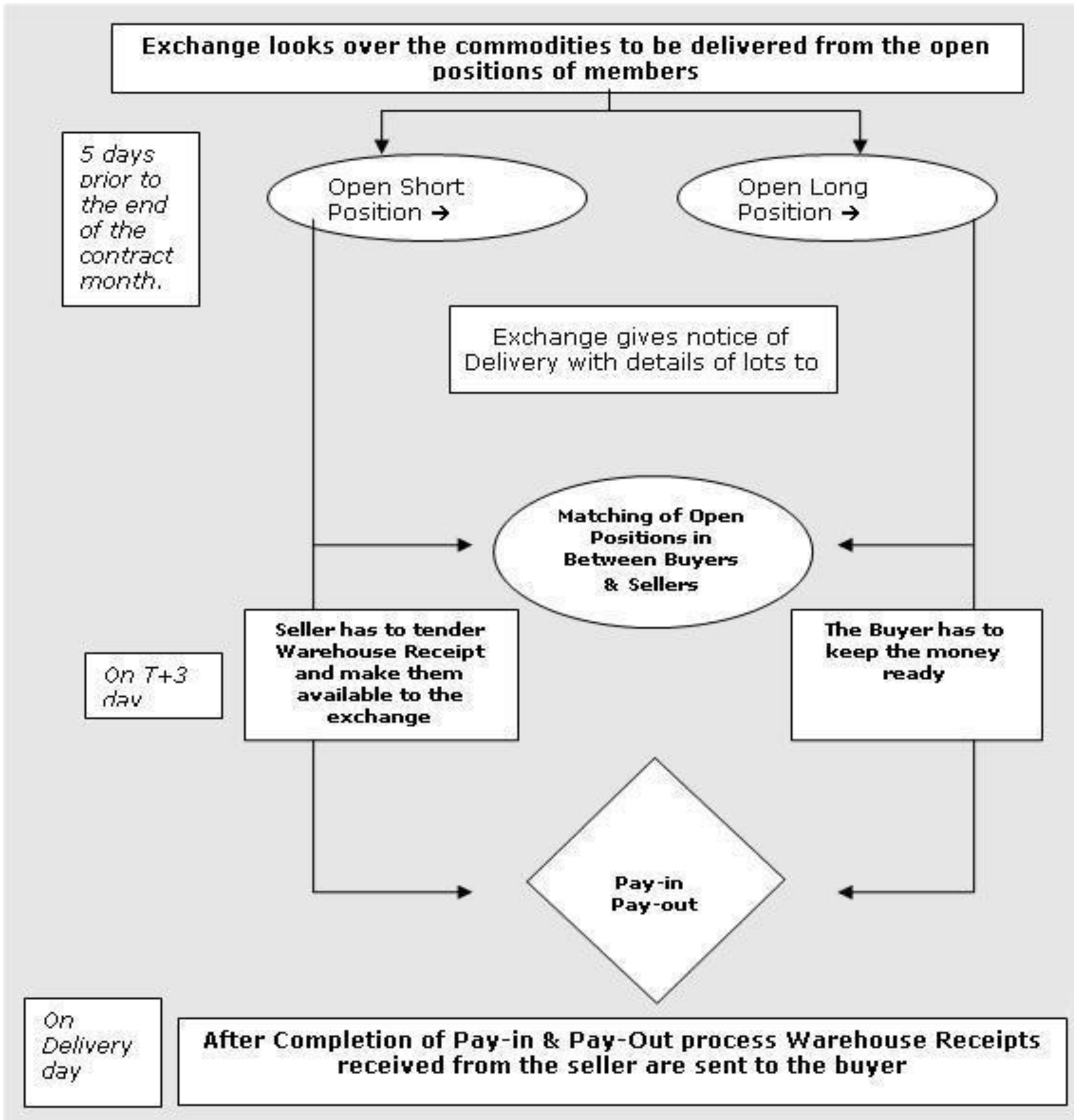
Commodity transaction tax (CTT) got introduced in 2013 budget, transaction tax of 0.17 percent on the purchase and sale of commodity derivatives contracts. This was done to bring in a level playing ground for equity and commodities. Securities transaction tax (STT) was introduced in 2004 and keeps track of the cash flowing into the stock markets and acts as a check on the black money being channeled into the market. Pavaskar and Ghosh (2008) comments CTT will provide little revenue for the government and at the same time give bitter feeling to commodity derivatives market.

3.4 Summary.

There is more price fluctuation in agriculture commodities due to time lag between demand and supply by one harvest season. This means the short term production and consumption elasticity are low. Production responsiveness is low due to one period lag between sowing of a crop and the new demand .For plantation crops like cashew, tea, rubber it takes two to seven years to respond to demand or price increase. This is when the commodity risk management techniques[52] have the potential to improve the fluctuation of the agriculture supply and demand mechanism.

[52] Use of commodity derivatives in hedging

Figure 3. 1 Trading with Commodity Futures in Indian Exchanges



Source: NMCE

Annexure I

List of Commodity Futures Exchanges in India

A	**National Multi-Commodity Exchanges**
1	National Multi Commodity Exchange of India Ltd., Ahmedabad (NMCE)
2	Multi Commodity Exchange of India Ltd., Mumbai (MCX)
3	National Commodity & Derivatives Exchange Ltd., Mumbai (NCDEX)
4	Indian Commodity Exchange Ltd., Mumbai (ICEX)
5	ACE Derivatives and Commodity Exchange, Mumbai
6	Universal Commodity Exchange Ltd.
B	**Commodity Specific Regional Exchanges**
7	Bikaner Commodity Exchange Ltd, Bikaner
8	Bombay Commodity Exchange Ltd, Mumbai
9	Central India Commercial Exchange Ltd, Gwalior
10	Cotton Association of India, Mumbai
11	The Chamber of Commerce, Hapur
12	East India Jute & Hessian Exchange Ltd., Kolkata
13	First Commodity Exchange of India Ltd, Kochi
14	Haryana Commodities Ltd., Sirsa
15	India Pepper & Spice Trade Association, Kochi
16	National Board of Trade, Indore
17	Rajkot Commodity Exchange Ltd., Rajkot
18	Spices & Oilseeds Exchange Ltd, Sangli
19	Surendranagar Cotton Oil & Oilseeds Association Ltd, Surendranagar
20	The Rajdhani Oil & Oilseeds Exchange Ltd, Delhi
21	Vijai Beopar Chamber Ltd., Muzaffarnagar
22	The Meerut Agro Commodities Exchange Company Ltd, Meerut

Source: FMC Annual Report 2011-12 modified by author