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Though Value Chain Finance

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Agriculture Value Chain Financing - Regulations

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Abstract

Indian agricultural development has focused on food security over the past decade. While the food security concerns have been allayed to some extent, Indian agriculture is still confronted with serious challenges. Lack of financing is one of them.

Policy guidance and institutional reforms have been launched to tackle the problems related to inadequate financing of agricultural development in India. This paper discusses India's experience in regulations of agricultural value chain financing and assesses the related impacts on agricultural value chain development in India.

The paper is focused on the institutional framework governing agricultural finance and various instruments available for financing agricultural development at several stages along a specific value chain. Various enabling policy and regulatory aspects that have evolved over the past decade are then discussed.

Also discussed are some of the disabling acts, the lacunae in some of laws and provisions that need reforms in Indian agriculture. Recommendations are made in the end and some lessons are drawn for financing agricultural value chains in Africa.

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Acronyms

ATMA	The Agriculture Technology Management Agency
AIC	Agriculture Insurance Corporation of India
APMC	Agriculture Procedure Marketing Committee
ATM	Automated Teller Machine
BR	Banking Regulation
CAGR	Compounded Annual Growth Rate
CCIS	Comprehensive Crop Insurance Scheme
CEO	Chief Executive Officer
CPIS	Coconut Palm Insurance Scheme
DCCB	District Central Cooperative Bank
DFID	Department for International Development
ECA	Essential Commodities Act
FCO	Fertiliser Control Order
GDP	Gross Domestic Product
KCC	Kisan Credit Card
NABARD	National Bank for Agriculture and Rural Development
NAIS	National Agricultural Insurance Scheme
NGO	Non-Government Organisations
PACS	Primary Agricultural Societies
POS	Point of Sale
PPP	Public Private Partnership
RBI	Reserve Bank of India
RRB	Regional Rural Bank
SCARDBs	State Cooperative Agriculture and Rural Development Banks
SCB	State Co-operative Bank
STA	State Cooperative Act
STCCS	Short Term Cooperative Credit Structure
UK	United Kingdom
WBCIS	Weather Based Crop Insurance Scheme
WRDA	Warehouse Development Regulatory Authority

1. Agriculture value chains and developing countries

It is strongly believed that the growth of agriculture in developing poor countries is critical for the inclusive growth and poverty eradication, particularly in Africa. With a large rural population in the developing countries, the importance of agriculture to their livelihoods is obvious. This is evident from the large scale of employment of people in agriculture in developing countries (see table 1).

Table 1: Agriculture employment and its contribution to GDP in select developing countries

Country	Population (Millions)	% of people in agriculture	Contribution to GDP[1]
India	1210[2]	58.2%[3]	13.9%
Bangladesh	152.40	54%[4]	18.4%
Uganda	35.62	82%	19%
Tanzania	47.65	80%	27.8%
Kenya	42.74	75%[5]	19%

Notes:
Contribution to GDP for India is for the year 2010-11
Total population for all countries except India is taken from FAO country profiles from their website
Where not stated in the footnotes, total % of people in farming is taken from CIA's website

The figures in the Table 1 relate to agriculture sector alone and not the entire value chain.

Contribution to GDP (table 1) is another factor to be considered. For example, there is a wide difference between the proportion of people depending on agriculture for their livelihoods and the agricultural sector's meagre contribution to GDP. These figures indicate wide income disparity in these countries and the importance of agriculture in the equitable development from a policy perspective. Increasing production, processing, and export of agricultural products can be an effective way of reducing rural poverty in developing countries. It has been observed that GDP growth from agriculture benefits the incomes of poor people two to four times more than GDP growth in other sectors of the economy[6].

For a number of the poorest countries, particularly in Africa, the potential for export growth from the manufacturing and services sectors is poor. Therefore, agriculture is the best hope for kick-starting growth. According to a document from the UK government's Department for International Development (DFID)[7]:

> "Agriculture remains the most likely source of significant economic growth in many developing countries. Historical experience suggests that agricultural growth and increases in agricultural productivity may be a prerequisite to broader-based sustained economic growth and development" (DFID, 2002: p. 9).

2. Importance of agriculture for India

The recent Indian growth story has been service-led. Services sector has largely replaced agriculture, which was traditionally the largest contributor to India's GDP. The fact is that agriculture now has a small share in GDP of only about 13.9%[8] (Advance estimate of in 2011-12) from a high of more than 56.5 per cent in 1950-51 and yet its importance in Indian economy is tremendous. This is because first, agriculture remains the largest employer having a share of around 58 per cent. Secondly, it holds the key to creation of demand in other sectors and remains by far an important indirect contributor to

[1] Accessed from https://www.cia.gov on 22nd September 2012
[2] Accessed from http:// agricoop.nic.in/Agristatistics.htm on 22nd September 2012
[3] Accessed from http://indiabudget.nic.in/es2011-12/echap-08.pdf on 22nd September 2012
[4] Accessed from web.worldbank.org on 22nd September 2012
[5] Accessed from http://www.feedthefuture.gov/country/kenya on 15th October, 2012
[6] Kwadwo Asenso-Okyere, Kristin Davis, and Dejene Aredo,November 2008, Advancing Agriculture in Developing Countries through Knowledge and Innovation, Synopsis of International Conference, International Food Policy Research Institute Washington, D.C.
[7] John Humphrey, 2006, Global Value Chains in the Agrifood Sector, UNIDO working paper
[8] Central Statistical Organization (CSO) and Department of Agriculture and Cooperation

India's GDP growth. The agriculture sector needs to grow at least by 4 per cent for the overall economy to grow at 9 per cent. Thus, though having a small share, the fluctuations in agricultural production can have large and significant impact on overall GDP growth. Thirdly, since food is an important component in the basket of commodities used for measuring consumer price indices, it is important that food prices are maintained at reasonable levels to ensure food security, especially for the poor.

3. Salient features of Agriculture sector in India – Size and volume

India is one of the largest agricultural producers in the world and given development of quite a few of its agriculture value chains, is of great interest to many who want to understand how its value chain financing model works, how have the related policies and regulations evolved over a period of time and how the poor and marginalized farmers benefit in the process.

> ***"Agriculture development is central to our growth strategy. Measures taken during the current year have started attracting private investment in agriculture and agro-processing activities. This process has to be deepened further."***
>
> Mr Pranab Mukherjie, Finannce Ministry, Budget Speech, 2011-12

India is the world's largest producer of many fresh fruits and vegetables, milk, major spices, fresh meats, select fibrous crops such as jute, and oil seeds like castor. India is the second largest producer of wheat and rice (table 2), the world's major food staples. The achievement in terms of production and exports are largely credited to the missions called 'green revolution' focused on wheat/rice and 'white revolution' on milk production in the country. Financing has played a key role in this moderate success amongst a host of policy, regulatory, institutional and technological interventions. Sections below layout how policy and regulatory landscape has evolved in terms of financing and development of agriculture value chains in India

Table 2: All India average annual growth rates of area, production, and yield of principal crops (%)[9]

Crops/Crop Groups	1990-91 to 1999-2000			2000-01 to 2010-11		
	A	P	Y	A	P	Y
Rice	0.70	2.09	1.36	-0.39	1.32	1.47
Wheat	1.62	4.52	2.87	0.57	1.39	0.73
Maize	0.85	2.24	1.37	2.68	7.12	4.13
Coarse Cereals	-2.42	-0.08	2.03	-0.13	5.0	4.64
Total Cereals	-0.12	2.29	2.38	-0.09	1.82	1.69
Gram	0.88	3.86	2.97	4.31	6.39	1.19
Tur	-0.45	1.89	2.03	2.58	1.89	-0.65
Total Pulses	-0.91	1.06	1.82	2.30	4.02	1.21
Total Food grains	-0.27	2.19	2.43	0.34	1.95	1.37
Groundnut	-2.25	-2.40	-0.30	-1.08	13.13	12.76
R&M	2.28	4.82	2.96	2.76	6.26	2.72
Soyabean	11.01	16.37	4.67	4.15	8.31	4.17
Oilseeds	0.75	2.53	1.76	1.27	7.00	5.18
Sugarcane	2.25	3.16	0.91	1.95	2.12	0.03
Cotton	1.42	0.93	-0.54	2.66	12.12	9.15
Note : A:Area, P: Production, Y:Yield						

[9] State of Indian Agriculture, 2012, Department of Agriculture and Cooperation, Credit Division

Table 3: Area, Production, and Productivity of Horticulture crops[10]

																Area: M.Ha. Production: Million tonnes Pdty /Yield: Tonnes/Ha.		
Crops	**2006-07**			**2007-08**			**2008-09**			**2009-10**			**2010-11**			**2011-12**		
	Area	**Prod.**	**Pdty.**	**Area**	**Prod.**	**Pdty.**	**Area**	**Prod.**	**Pdty.**	**Area**	**Prod.**	**Pdty.**	**Area**	**Prod.**	**Pdty.**	**Area**	**Prod.**	**Pdty.**
Fruits	5.55	59.56	10.72	5.86	65.59	11.20	6.10	68.47	11.22	6.33	71.52	11.30	6.38	74.88	11.74	6.58	77.52	11.78
Vegetables	7.58	114.99	15.17	7.85	128.45	16.37	7.98	129.08	16.17	8.01	134.10	16.74	8.49	146.55	17.26	8.59	149.61	17.42
Flowers Loose	0.14	0.88	6.12	0.17	0.87	5.23	0.17	0.99	5.95	0.18	1.02	5.60	0.19	1.03	5.42	0.19	1.03	5.42
Plantation Crops	3.21	12.01	3.75	3.19	11.30	3.54	3.22	11.34	3.52	3.27	11.95	3.65	3.31	12.01	3.63	3.35	12.99	3.88
Spices	2.45	3.95	1.62	2.62	4.36	1.67	2.63	4.14	1.58	2.46	4.02	1.63	2.94	5.35	1.82	3.03	5.73	1.89
Total	19.39	191.81	9.89	20.20	211.24	10.46	20.53	214.44	10.45	20.77	223.18	10.75	21.82	240.43	11.02	22.25	247.54	11.13

Table 4: Compounded Annual Growth Rate (CAGRs) in production of select products in percentage[11]

	1980-81 to 1989-90	**1990-91 to 1999-00**	**2000-01 to 2009-10**	**1980-81 to 2009-10**
Milk	5.6	4.2	4.2	4.6
Eggs	8.06	4.2	5.7	6.04
Wool	3	1.7	-1.3	1.00
Meat	-	-	3.34	-
Fish	4.4	4.2	3.3	4.4
Note: CACR for meat production is for the year 2000-01 to 2006-07. Meat production data from 2007-08 is not comparable with the previous years data as pultry meat production from commercial poultry farms was included from 2007-08 onwards.				

[10] State of Indian Agriculture, 2012, Department of Agriculture and Cooperation, Credit Division
[11] State of Indian Agriculture, 2012, Department of Agriculture and Cooperation, Credit Division

4. Institutional framework of financing agriculture value chains

The institutional framework for agriculture value chain financing comprises of various ministries, government agencies, banks, financial institutions and apex bodies like Reserve bank of India (RBI) and National Bank for Agriculture and Rural Development (NABARD). The framework indicates vast network of financing institutions across the country. The figure below provides a diagrammatic representation of the institutional framework of financing agriculture value chain. The framework has a tiered structure where the apex bodies like RBI and NABARD are at the top while the Primary Agriculture Credit Societies (PACS) are at the village levels.

Apart from the above mentioned institutional framework, there are many informal and traditional mechanism of value chain financing existing locally. These may be in the forms of traders, input financers mainly at the farm gate. The financial sector policy towards agricultural financing always focused on bringing more and more farmers to the formal banking sector as the traditional financial arrangements were exploitative in nature.

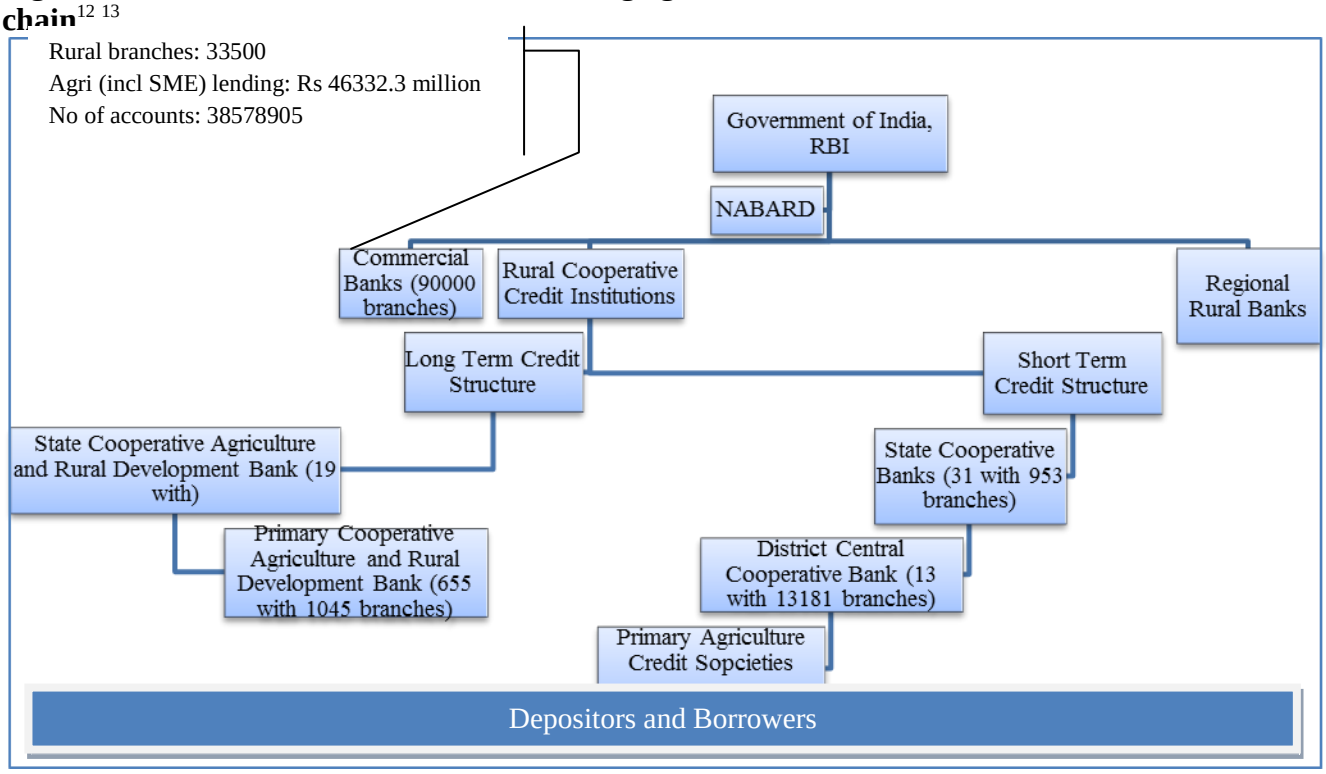
4.1. Government of India

Government of India through its relevant ministries like Ministry of Agriculture and Cooperatives, Ministry of Rural Development and Ministry of Finance provide overall policy guidance and thrust to rural and agricultural credit. Actual financing and regulations related to financing is handed down very prudentially to specialised institutions as described below. In addition to formulating policies, the ministries play more of a developmental role in agriculture. Ministry of Agriculture and Cooperatives has several developmental schemes, many rolled out as missions such as National Horticulture Mission, Technology Mission on oilseeds and pulses, and The Agriculture Technology Management Agency (ATMA), to name a few.

4.2. Reserve Bank of India (RBI)

In terms of financing agriculture value chains, RBI's role primarily is that of a regulator of banking system. RBI endeavours to enhance credit flow to agriculture by removing the bottlenecks in credit delivery. RBI is working on revitalising the rural cooperative credit system, strengthening regional rural banks, providing incentives to commercial banks for investments in rural economy and ensuring, adequate and timely delivery of credit at a reasonable price. The financial inclusion programme initiated by the RBI in collaboration with banks and several State Governments, by adopting modern technology, is also being intensified and expanded.

Figure 1: Institutional framework of financing agriculture value chain[12] [13]



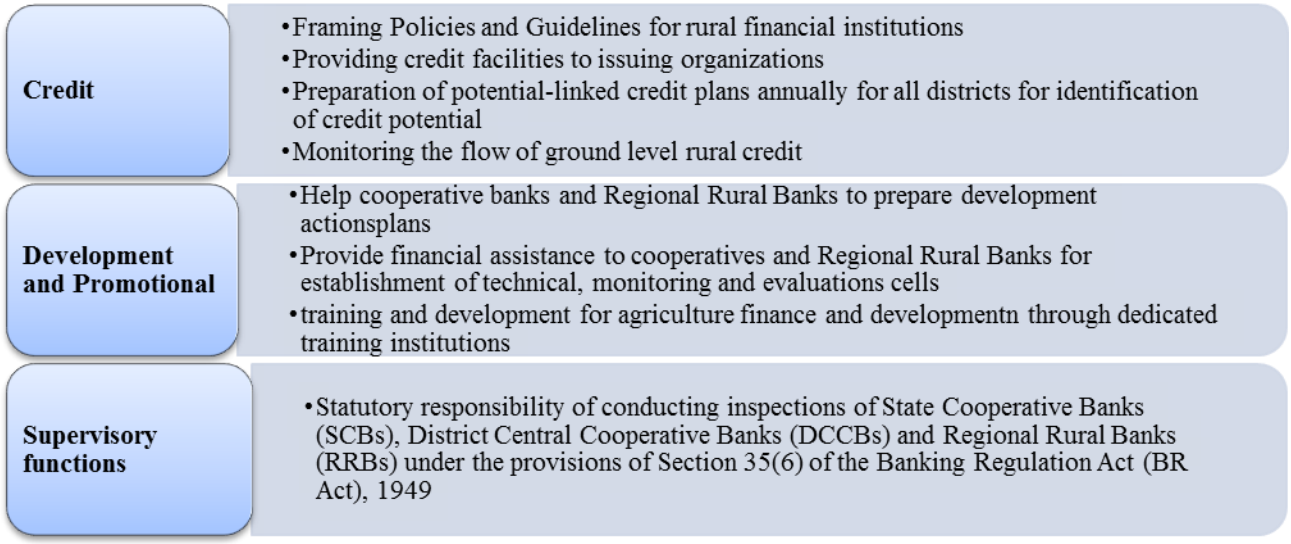
4.3. National Bank for Agriculture and Rural Development (NABARD)

NABARD is a development bank with the mandate of facilitating credit flow for promotion and development of agriculture and integrated rural development. The mandate covers supporting all other allied economic activities in rural areas, and promoting sustainable rural development. As an apex development finance institution NABARD handles matters concerning policy, planning and operations in the areas of credit for agriculture and for other economic and developmental activities in rural areas. As the refinancing institution to the banks and financial institutions, NABARD offers production credit and investment credit for promoting agriculture and developmental activities in rural areas.

[12] Annual report 2011, Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India

[13] The long terms credit structure includes only the federated structure. It does not include the unitary structure that has 7 State Cooperative Agriculture and Rural Development Banks (SCARDBs) with 716 branches.

Figure 2: Role of NABARD



4.4. Cooperative institutions

Cooperatives once the main institutional agencies for dispensation of agricultural credit, have been losing their market share to commercial banks. There are two distinct structures originally set up of cooperative institutions –one for long term investment credit and another for the short term credit. The short terms structure consists of village-level Primary Agricultural Credit Societies (PACS), District Central Cooperative Banks (DCCBs) and State Cooperative Banks (SCBs) providing primarily short- and medium-term agricultural credit in India. The long term cooperative credit structure consists of State Cooperative Agriculture and Rural Development Banks (SCARDBs).

Cooperatives have a network presence nearest to the customers with about one branch for every six villages. Both the short term and long term coop structures have been losing market share to commercial banks on account of resource scarcity and operational inefficiencies. The ongoing reform programme seeks to recapitalise cooperatives with potential. But the extent of credit and the product basket have failed to enthuse customers. Small farmers have mostly remained with cooperatives and the larger customers with high revenue potential have become customers of commercial banks. The reforms are expected to make the cooperatives competitive and IT enabled in order to level the playing field.

4.5. Commercial Banks

There are 166 scheduled commercial banks with about 90,000 branches at the end of 2011. Of these rural branches consist of over 33500 branches/offices. Balance outstanding of all the direct and indirect agriculture lending (including SMEs) was Rs 46332.3 million as at the end of year 2010. This covered total accounts of 38578905. Commercial banking had almost been reserved for public sector post-nationalisation of banks. The reforms in early nineties led to gradual shift from public sector character to private sector in banking. Still the government of India has considerable ownership of banking and thereby the ability influence business policies. Despite the lack of specialisation (a recent phenomenon) in rural areas and floating staff in rural branches, commercial banks do three fourths of lending for agriculture. The resource base of commercial banks is large and therefore their involvement in agricultural finance is critical.

4.6. Regional rural banks

RRBs are specialised banks set up for banking in rural area with an objective to ensure sufficient institutional credit for agriculture and other rural sectors. The RRBs mobilize financial resources from rural / semi-urban areas and grant loans and advances mostly to small and marginal farmers, agricultural labourers and rural artisans. The area of operation of RRBs is limited to one or more districts in the State. As on date there are 82 Regional Rural Banks. Despite being located in the rural

areas and a development mandate RRBs have not been able to quickly improve their share of agricultural lending. Most RRBs have a business model that focuses on investment of resources in government securities and financial investments than provide loans to individuals and enterprises. NABARD and sponsor banks do provide refinance facilities to RRBs to fill in any liquidity constraints. In the recent past there has been some improvement in RRBs' approach to rural lending.

Table 5: Flow of Institutional Credit to Agriculture Sector (Rs Crore)[14]

Particulars/Agency	1998-99	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
I. Production(ST) Credit														
Cooperative Banks	12514	14771	16528	18787	19668	22640	27157	34930	38622	40515	40230	56946	64527	47497
RRBs	1710	2423	3245	3777	4775	6088	10010	12712	16631	20715	22413	29802	37806	24976
Commercial Banks	9622	11697	13486	17904	21104	26192	36793	57640	83202	122289	147818	189908	216773	109049
Other Agencies	59	74	55	41	39	57	104	68	0	0	0	0	0	0
Sub Total (A)	25905	28965	33314	40509	45586	54977	74064	105350	138455	183519	210461	276656	319108	181522
II. MT/LT Total														
Cooperative Banks	3356	3489	4190	4737	3968	4235	4074	4474	3858	3169	5962	6551	5578	2335
RRBs	750	749	974	1077	1295	1493	2394	2511	3804	4099	4352	5415	6160	2484
Commercial Agencies	8821	13036	14321	15683	18670	26249	44688	67837	83283	50798	81133	95892	115933	37039
Other Agencies	30	29	28	39	41	27	89	314	0	0	0	0	0	0
Sub Total (B)	12957	17303	19513	21536	23974	32004	51245	75136	90945	66066	91447	107858	127671	41858
ST+MT/LT Credit														
Cooperative Banks	15870	18260	20718	23524	23636	26875	31231	39403	42480	48258	46192	63497	70105	49832
RRBs	2460	3172	4219	4854	6070	7581	12404	15223	20435	25312	26765	35217	49968	27460
Commercial Banks	18443	24733	27807	33587	39774	52441	81481	125477	166485	181088	228951	285800	332706	146088
Other Agencies	87	103	83	80	80	84	193	382	0	0	0	0	0	0
Grand Total (A+B)	36860	46268	52827	62045	69560	86980	125309	180485	229400	254658	301908	384514	446779	223380
***Upto September 2011**														

[14]State of Indian Agriculture, 2012, Department of Agriculture and Cooperation, Credit Division

5. Agriculture value chain financing instruments

A typical agriculture value chain (table 5) comprises of producers, traders or aggregators, processing/packaging, and marketing. Each actor of the value chain has distinct characteristics and financing requirements. A producer will require finance for farm investments or inputs while the requirement for those engaged in processing/packaging will require a large long term credit and equity for investments in plant, machinery and buildings. Within each category of actors as well, the requirements will vary for different actors. For example the need for finance will vary between the large farmer and marginal farmer depending upon the farm size. A large farmer will require higher credit to purchase heavy machinery while the marginal farmer will require credit to purchase inputs like seed, fertiliser, and pesticide.

Table 6: Typical agriculture value chain components and the type of credit requirements

Value Chain Components	Producer	Traders/Aggregators/ Storage	Processing/Packaging	Marketing
Value Chain Actors	Small, Marginal, and Large farmers	*Adhatiyas* [15] , buying house, large corporate houses, , farmers collectives -Ware house, cold stores, transport	Processing and packaging plants, Sorting and grading equipment	Retailers, Corporate retailers, Export houses, Exchanges
Type of financing requirement	Irrigation equipment, tractors, threshers, etc and production loans for farm inputs	Working capital, trade finance, Long term Capital Investment	Working capital against inventory, Long term Capital Investment	Working capital

To meet the financing requirement of various actors of value chain different forms of financing are available specific to the segment (table 6).

Table 7: A typical financing instrument used in Agriculture value chain financing[16]

Instruments	Brief Description
Product Financing	
1. Trader Credit	Traders advance funds against the expected outputs to producers to be repaid in kind, at harvest time. This allows traders to procure products, and provides a farmer with needed cash (for farm or livelihood usage) as well as a guaranteed sale of outputs. Less commonly, trader finance is also used "upward" in the chain whereby the trader delivers products to buyers on credit
2. Input Supplier Credit	An input supplier advances agricultural inputs to farmers (or others in the VC) for repayment at harvest or other agreed time. The cost of credit (interest) is generally embedded into the price. Input supplier credit enables farmers to access needed inputs which enables increase in sales of suppliers.
3. Marketing Company Credit	A marketing company, processor or other company provides credit in cash or in kind to farmers, local traders or other value chain enterprises. Repayment is most often in kind. Upstream buyers are able to procure outputs and lock in purchase prices and in exchange farmers and others in the value chain receive access to credit and supplies and secure a market for selling their products
4. Lead Firm Financing:	A lead firm either provides direct finance to value chain enterprises including farmers, or guaranteed sales agreements enabling access to finance from third party institutions. Lead firm financing, often in the form of contract farming with a buy-back clause, provides farmers with finance, technical assistance and market access, and ensures quality and timely products to the lead firm
Receivable Financing	
5. Trade Receivable Financing (including bill	A bank or other financier advances working capital to agribusiness (supplier, processor, marketing and export) companies against accounts receivable or confirmed orders to producers. Receivables financing takes into account the strength of the buyer's purchase

[15] Adhatiyas are the traditional middlemen/commodity brokers

[16] Miller and Jones, 2010

discounting and letter of credit)	and repayment history
6. Factoring	Factoring is a financial transaction whereby a business sells its accounts receivable or contracts of sales of goods at a discount to a specialized agency, called a factor, who pays the business minus a factor discount and collects the receivables when due. Factoring speeds working capital turnover, credit risk protection, accounts receivable bookkeeping and bill collection services. It is useful for advancing financing for inputs or sales of processed and raw outputs that are sold to reliable buyers.
7. Forfaiting	A specialised forfaitor agency purchases an exporter's receivables of freely-negotiable instruments (such as unconditionally-guaranteed letters of credit and 'to order' bills of exchange) at a discount, improving exporter cash-flow, and takes on all the risks involved with the receivables
Physical Asset Collateralisation	
8. Warehouse Receipts	Receipts from certified warehouses that can be used as collateral to access a loan from third party financial institutions against the security of goods in an independently controlled warehouse. Such systems ensure quality of inventory, and enable sellers to retain outputs and time the sale for a higher price
9. Repurchase Agreements (Repos):	A buyer receives securities as collateral and agrees to repurchase those at a later date. Commodities are stored with accredited collateral managers who issue receipts with agreed conditions for repurchase. Repurchase agreements provide a buy-back obligation on sales, and are therefore employed by trading firms to obtain access to more and cheaper funding due to that security
10. Financial Lease (Lease- Purchase)	A purchase on credit which is designed as a lease with an agreement of sale and ownership transfer once full payment is made (usually in instalments with interest). The financier maintains ownership of said goods until full payment is made making it easy to recover goods if payment is not made while allowing agribusinesses and farmers to use and purchase machinery, vehicles and other large ticket items without requiring the collateral otherwise needed for such a purchase
Risk Mitigation Products	
11. Insurance	Insurance products are used to reduce risks by pooling regular payments of many clients and paying out to those affected by disasters. Payment schedules are set according to statistical data of loss occurrence; and mitigate the effects of loss to farmers and others in the value chain from natural disasters and other calamities
12. Forward Contracts	A forward contract is a sales agreement between two parties to buy/sell an asset at a set price and at a specific point of time in the future, both variables agreed to at the time of sale. Forward contracts allow price hedging of risk and can also be used as collateral for obtaining credit
13. Futures and options	Futures are forward contracts – see definition above – that are standardized to be traded in futures exchanges. Standardization facilitates ready trading through commodity exchanges. Futures provide price hedging, allowing trade companies to offset price risk of forward purchases with counter-balancing of futures sales
Financial Enhancements	
14. Securitization Instruments	Cash-flow producing financial assets are pooled and repacked into securities that are sold to investors. This provides financing that might not be available to smaller or shorter-term assets and includes instruments such as collateralized debt obligations, while reducing the cost of financing on medium and longer term assets
15. Loan Guarantees	Agricultural loan guarantees are offered by 3rd parties (private or public) to enhance the attractiveness of finance by reducing lending risks. Guarantees are normally used in conjunction with other financial instruments, and can be offered by private or public sources to support increased lending to the agricultural sector
16. Joint Venture Finance	Joint venture finance is a form of shared owner equity finance between private and/or public partners or shareholders. Joint venture finance creates opportunities for shared ownership, returns and risks, often with complementary partner technical, natural, financial and market access resources

Above mentioned value chain financing models have their own benefits, limitations, potentials, and application. Different instruments are suitable for different actors in a value chain.

Table 8: Instrument benefits, limitations, application, and potential[17]

Instrument	Benefits	Limitations	Application potential
Product Financing			
1. Trader Credit	• Farm-gate finance with ease of transaction • Culturally accepted and well known at all levels • Secures sale/purchase and price of seller and buyer	• Opaque transactions and price setting-erodes value for producers • Often informal with potential for side-selling • Quality and quantity uncertain when given pre-harvest	• "Middleman" traders will remain important but as chains integrate will lessen in importance • Tendency of traders toward acting as agents of wholesalers
2. Input Supplier Credit	• Buyers obtain needed inputs • Suppliers secures sales	• Lack of security in repayment • Lack of competitive suppliers in many regions – price and quality disadvantage for producer • Smallholder's safe use and application of inputs is often weak • Opaque price setting process	• Focus on reducing administration and risk with multi-party links with banks and produce buyers are promising – for direct payments from sale • Quality and food safety are growing concerns
3. Marketing Company Credit	• Secures product quantity and price • Funds advanced as needed; payments often discounted directly • Uses contracts to set finance, price and product specifications	• May not be directly accessible to small farmers • Credit advances increase financial outlay and administration • Compliance of contracts is often not respected	• Value chain control through contract farming is growing in importance • Value chain approaches reduce transaction costs and risks
4. Lead Firm Financing	• Secures market and price • Technical guidance for higher yields and quality • Less side-selling options due to closer monitoring • Enforceable contracts with less side-selling due to closer monitoring • Lead firm can often hedge price risk	• Less access for small farmers • Restricts price rise gains to producer • Cost of management and enforcement of contracts	• Growing use and strong potential to provide access to markets, technical assistance and credit
Receivables Financing			
5. Trade Receivables Finance (including bill discounting and letter of credit)	• Reduces finance constraints for exporters and ease repayment urgency from importers • Can be cheaper than bank loan alternatives	• Requires a proven track record of trader/agri firm • May be less suitable for perishable products • Is most suitable for large transactions	• Is used for import-export transactions by companies for durable commodities • Increasingly used by input suppliers, equipment dealers and major commodity traders

[17] Miller, C., 2011, Agriculture value chain finance strategy and design, Technical Note, FAO

6. Factoring	• Provides a means of working capital for operations • Facilitates business and finance by passing collection risk to a 3rd party (factor)	• Is complex and requires a factoring agency • Is not yet allowed in some countries • Is a lack of knowledge and interest by financial markets	• Its use in agriculture is less common but is growing • Is best used for processors and input suppliers where product flows and accounts are stable
7. Forfaiting	• Like factoring, it makes capital available • It takes care of collection risks and cos. • Can be selectively used for specific project funding or accounts	• Forfaiting requires to sell the accounts at a discount • Is complex and requires the presence of specialized forfaiting or factoring agencies	• Is less common but similar in principle to factoring • Invoice instruments are • negotiable but complex, limiting their application potential
Physical Asset Collateralization			
8. Warehouse Receipts	• Uses negotiable warehouse receipts that has underlying physical commodities as collateral to increase access to financing • Where organization and trust are built, can also work on a less formal basis without the official WR legislation in place	• Commodity traded must be well standardized by type, grade and quality • Increases costs • Often requires special legislation	• Is relatively well known with potential for increased use • Can be used at various VC levels and growth potential •
9. Repurchase Agreements (Repos)	• Can reduce financial costs and has proven successful in selected commodities with well-functioning commodity exchanges	• Is complex and requires commodities to be stored with accredited collateral managers and requires commodity exchanges	• Limited potential in near future and used infrequently by exporters for some commodities
10. Financial Leasing (Lease purchase)	• Provides more loan security and ease of asset repossession in case of default • Is especially good where legal system for loan collection is weak • Often are tax benefits	• Requires coordination of seller, buyer and financier • Only feasible for medium long-term purchases of non-perishables • Often requires insurance	• High potential use for equipment if legislation allows
Risk Mitigation Products			
11. Insurance	• Reduces risk for all parties in value chain • Is commonly used and easily applied for fire, vehicles, health and death insurance • Crop and livestock insurance is increasing	• Is costly, requiring subsidy, when applied to agricultural production • Insufficient data limits weather indexing use in insurance	• High interest by many donors and governments is increasing use • Growth without subsidies will be modest for production insurance until sufficient data is available

12. Forward Contracts	• Companies can hedge price risk, thus lowering financial risk and cost • Can be used as collateral for borrowing in case of delivery based contracts • Are not dependent upon commodity exchanges • Benefits can flow though chain when one party forward contracts and can offer forward or fixed prices to others	• Requires reliable market information • Commodity traded must be well-standardized by type, grade and quality • Contract enforcement could be difficult	• Is frequently used by larger companies and for major commodities • Has potential to increase significantly wherever reliable market information is available
13. Futures, options	• Is used globally in agricultural commodities to hedge risk • Futures serve as price benchmarks for reference trade	• Commodity traded must be well-standardised by type, grade and quality • Requires a well-organized futures market	• Has growing use and potential when commodity exchanges function • Use is limited to larger producers, processors, farmer collectives and marketing companies
Financial Enhancements			
14. Securitization Instruments	• Has potential to reach lower-cost capital market funding where homogenous pooling is possible • Has been successfully used in microfinance	• Is costly and complex to set up • Is adversely affected by securitization problems from the sub-prime financial crisis	• Has limited potential for agricultural value chain investments of similar tenor and cash flow
15. Loan Guarantees	• Reduces risk of finance and/or the business venture creating more access for funding • Can facilitate investment needed in a value chain	• Is costly and often subsidized in agriculture • Can reduce lender responsibility and accountability	• Is occasionally used as incentive for stimulating capital flows to infrastructure, new markets and exports and occasionally production
16. Joint Venture Finance	• Provides equity capital and borrowing capacity • Reduces financial leverage risk of investors • Often brings expertise and/or markets	• Is hard to attract suitable investors of common vision • Dilutes investor returns Is hard for small producers to participate	• Has growing potential in globalizing world • Strategic partnership, including public and private, is increasingly important in value chains

6. Key policy enablers of agriculture value chain financing and development

6.1 Enablers in Policy guidance and Operations

Agriculture finance and development in India has proactive policy support from Government and Regulator. This is largely in view of market failure in key economic sectors as agriculture that an active policy guidance and intervention is required. India being a socialist state, the affect of market failures on small holder farmers is something that the government cannot ignore. Indian government has initiated several measures to galvanize the institutional credit system to make them more responsive to the needs in agriculture value chain. Some of these measures are discussed below:

6.1.1 Priority Sector Lending[18]

Origins of priority sector lending go back to late 1960s when the government started to emphasise the bank lending to priority sectors of the economy. The definition of priority sector was formalised in 1972 and it was in 1974 that the Banks were advised to raise their share of advances to priory sectors to 33.5% by 1979. The definition of priority sector itself has evolved over a period to include the weaker sections. The Reserve Bank of India issues the revised priority sector guidelines from time to time and monitors the achievement of targets in respect of each bank. The major highlights of the priority sector lending guidelines are provided in Annexure II.

Government of India and RBI have been monitoring the flow of agriculture finance very closely. As can be seen from the table 9 and 10 below, the achievement has always surpassed the target set for agriculture credit flow. For the year 2012-13, there is a budget of Rs.57,50 billion earmarked for agriculture credit. The numbers show that agriculture is a high priority agenda of the government.

Table 9: Target versus achievement for agriculture credit flow

Year	Target (in Rs. Million)	Achievement
2004-05	10,50,000	12,53,090
2005-06	14,10,000	18,04,860
2006-07	17,50,000	22,94,000
2007-08	22,50,000	25,46,570
2008-09	28,00,000	30,19,080
2009-10	32,50,000	38,45,140
2010-11	37,50,000	45,93,410

It may be fair to say that if not push of meeting targets under priority sector lending the growth in the agriculture sector would have been subdued. Looking beyond the number provided in the table 9, it appears that targets have actually been missed in case of 'direct agriculture' which is lending to the farmers. Bulk of the focus in the priority sector agriculture lending has been on indirect agriculture lending which is a more viable lending segment. Clearly, banks have been looking for profitable opportunities within the priority sector segments.

Table 10: Number of farm loan accounts financed under the category of small/marginal farmers

Year (loan A/c in Million)	Total No of farm loan a/cs financed	No. of Small Farmer(SF)/Marginal Farmer (MF) loan a/c financed	% of SF/MF loan a/cs to total loan a/cs
2009-10	48.23	28.47	59.0
2010-11	54.96	33.46	60.8
2011-12	32.10	19.37	60.3
For 2011-12, the data is upto 30th Sept, 2011			

6.1.2 Multi-Channel funding approach

One of the approaches used is to get in as many players as possible. Today, India has public and private scheduled commercial banks, cooperatives, rural banks and non-banking financial institutions. This is in addition to a plethora of government channels through the department of agriculture and rural development, and export promotion department who implement several subsidy based agriculture development and export promotion schemes. This has also meant that each of these categories of entities is targeting specific segments within the agriculture value chain (see table 11)

[18] This section has been extracted from RBI's circular

Table 11: Institution categories, their customer segments, and loan size range

Institution Category[19]	Target Customer segment	Loan Size-Range
Public Sector Banks	Medium and Large farmers, Companies	No limit, but most of the loans are below USD 7000
Private Sector banks	Medium and Large farmers, Companies, Farm Equipment finance	No limit, but most loans are between USD2200 to 11000
RRBs	Small and Marginal farmers, Agri Labours, Agri allied households	Normally below USD 1100
Co-operative Banks	Small and Marginal farmers, Agri Labours, Agri allied households	Normally below USD 1100
NBFCs	Large farmers, Farm equipments	No limit, normally between USD 6500 to USD 11000

This has meant that there are several financing options available along the agriculture value chain both for the small and large players.

6.1.3 Reforms in Cooperative credit structure

Short term cooperative credit structure is of vital importance with a view to reach out to the small and marginal farmers. A need had, therefore, been felt to rejuvenate this very important credit delivery channel to the rural masses. Accordingly, Vaidyanathan Committee Task Force was instituted to look into the health of the credit cooperatives structure and make recommendations to the government of India. In pursuance of recommendations made by the Vaidyanathan Committee Task Force, the Govt. of India had approved a Revival Package for Short Term Cooperative Credit Structure (STCCS) aimed at making it a well-managed and vibrant structure to best serve the credit needs of Rural India. Revival Package envisages an outlay of about $ 4 billion for recapitalization of STCCS, capacity building & training and computerization subject to legal reforms by the State Governments. The Revival Package seeks to (a) provide financial assistance to bring the system to an acceptable level of health; (b) introduce legal and institutional reforms necessary for their democratic, self-reliant and efficient functioning; and (c) take measures to improve the quality of management as an *integrated* package. So far, 25 States covering 96% of the STCCS units in the country have already signed the Memorandum of Understanding (MoU) with Government of India and NABARD[20].

Amongst some other significant institutional reforms is the amendment of Cooperative State Acts (CSAs) in 21 states. Professional CEOs and Directors with a professional background have been appointed in most of the states. Statutory audit of banks has been entrusted to Chartered Accountants in 16 states. The GoI has released about $ 1.8 billion so far for recapitalisation of 52,000 PACS in 16 states and the process for further releases is on. Other institutional strengthening measures include a major human resources development initiative in the cooperatives. Focus in developing the human resources of these banks is on business diversification and prudent financial and business management. Over 80,000 staff and secretaries of PACS, 1.09 lakh elected members of PACS, 370 CEOs of DCCBs and SCBs, 2,000 elected Board Members of DCCBs and 1,500 branch managers of CCBs have been trained within two years through modules, specially designed by NABARD.

6.1.4 Computerisation of land records:

The centrally sponsored scheme on Computerization of Land Records was started in 1988–89 with 100% financial assistance as a pilot project in eight districts. It was decided that efforts should be made to computerize core data contained in land records, to assist development planning and to make records accessible to people, planners and administrators. The broad objectives of the scheme are:

[19] Brahmanand Hegde, Structure and Growth of Agriculture Finance Lessons from India, presentation For AgriFin-World Bank, March, 2011

[20] Annual report 2011, Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India

a. To implement a comprehensive and transparent land information system capturing the entire work flow of land records maintenance with a provision to store, retrieve and process land records data containing ownership, tenancy rights, crop details, land revenue, source of irrigation, mutation, its updation and dispute resolution.
b. On demand distribution of computerized copies of Record of Rights to the landowner at reasonable charges with the provision of an online mutation module for ownership changes, seasonal crop updation etc. at tehsil level.
c. Provision of legal sanctity to computer generated certificates of land records/title documents after authentication by authorized revenue official.
d. To generate and integrate various level of data for purposes of planning, monitoring, evaluation of developmental programmes.

Several states have digitized the land records and in a few states the land owners can generate ownership documents through facilitation centres. This enables easy collateralisation of land for loans, easy renting, leasing and sale of land in case of need.

6.1.5 National Seed Policy

The government has enacted a law to ensure certification and minimum quality standards of seeds of notified kinds/varieties. The seed legislation authorizes formation of advisory bodies like Central Seed Committee, Central Seed Certification Board and its sub-committees, Seed Certification Agencies, Seed Testing Laboratories, Appellate Authorities, etc. Licenses are issued to enforce checking the supply of inferior seeds of notified and un-notified seeds to the farmers. All persons carrying on the business of selling, exporting and importing seeds need to be licensed and should abide by terms and conditions of license.

National Seeds Mission

With a focused, time bound and integrated approach to further improve availability of quality seeds to farmers at reasonable price, a Centrally Sponsored Scheme 'National Mission on seeds' has been proposed for implementation during the Twelfth Five Year Plan, starting 2012.

There is a seed bill (2006) pending with the government and this is slated to replace the existing Act of 1966 to accommodate recent innovations in the seed sector, entry of private industry and introduction of varieties of seeds and its importation in India. The legislation seeks to regulate the quality of seeds and planting materials, curb the sale of spurious and poor quality seeds, increase corporate private sector participation in seed production and distribution, and liberalise imports of seeds. There are some concerns that the Bill might throw the peasants out of business of seed production and hand over the critical input to seed companies.

6.1.6 Risk Management

In 1965, the Central Government introduced a Crop Insurance Bill and circulated a model scheme of crop insurance on compulsory basis to constituent state governments for their views. The bill provided for the Central Government framing a reinsurance scheme to cover indemnity obligations of the states. However because of very high level of financial obligations none of the states accepted the scheme[21]. Later a Comprehensive Crop Insurance Scheme (CCIS) was introduced with effect from 1st April 1985 by the Government of India. This scheme was implemented by the General Insurance Corporation of India. Subsequently, at the behest of Government of India, Agriculture Insurance Corporation of India (AIC) was established in December 2002, "to subserve the needs of farmers better and to move towards a sustainable actuarial regime"[22]. Comprehensive Crop Insurance Scheme was then taken over by AIC.

There are two major and a number of small area and crop specific insurance schemes/products being offered by AIC. The two major products are National Agricultural Insurance Scheme (NAIS) (now in its modified form called Modified NAIS or MNAIS) and Weather Based Crop Insurance Scheme. National Agricultural Insurance Scheme with increased coverage of crops, risk and farmers is being

[21] Gurdev Singh, June 2010, Working Paper, No. 2010-06-01, IIM, Ahmedabad
[22] http://www.aicofindia.com

implemented and is available to both loanee and non-loanee farmers. At present, the scheme is implemented by 25 States and 2 UTs. To overcome some limitations and to make the scheme more farmer friendly, a modified NAIS (MNAIS) was implemented on pilot basis. A total of over 187 Million farmers have been covered over the last 12 years (24 sowing seasons under the scheme) – this means an average of about 15 Million farmers annually. A Weather Based Crop Insurance Scheme (WBCIS) is also being implemented on pilot basis. Over 8.3 Million farmers were covered through the scheme in 2011. Besides, the Coconut Palm Insurance Scheme (CPIS) has also been approved for implementation on pilot basis in selected areas of some states to provide insurance coverage against loss[23]. According to the annual report of AIC, it provides crop insurance cover to nearly 250 Million farmers through several schemes.

Table 12: Various insurance schemes for different crops and commodity[24]

	**WBCIS - Weather Based Crop Insurance Scheme**
	MNAIS - Modified National Agricultural Insurance Scheme
	Bio - Fuel Tree / Plant Insurance
	Cardamom Plant & Yield Insurance
	Coconut Palm Insurance Scheme (CPIS)
	Potato Crop Insurance
	PulpWood Tree Insurance Policy
	RainFall Insurance Scheme For Coffee - 2011
	Rubber Plantation Insurance
	Varsha Bima / RainFall Insurance
	Weather Insurance (Rabi or winter crops)

6.1.7 Technological Innovations

Information Technology through use of internet and cellphones has enabled a unique way for empowering farming communities and benefitting the overall agriculture value chains. There have been some unique initiatives – both private sector and government led that are worth studying. Some of them are briefly described below:

ITC's E-Choupal

ITC is corporate giant with major interest in agri-business but is better known for its cigarette business. Its initiative called E-Choupal[25] is a powerful illustration of corporate strategy linking business purpose to larger societal purpose. Launched in 2000, e-Choupal leverages the Internet to empower small and marginal farmers – who constitute a majority of the 75% of the population below the poverty line.

Table 13: Snapshot of e-choupal

e-Choupal	**Now**
States covered	10
Villages covered	40,000
No. of e-Choupals	6,500
Farmers e-empowered	4 million

By providing them with farming know-how and services, timely and relevant weather information, transparent price discovery and access to wider markets, e-Choupal has enabled economic capacity to proliferate at the base of the rural economy. E-Choupal', has already become the largest initiative among all Internet-based interventions in rural India. 'e-Choupal' services today reach out to

[23] Annual report 2011, Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India
[24] Accessed from http://www.aicofindia.com on 7th October 2012
[25] *Choupal* (hindi) means a community place where people sit together and discuss issues of common interest

over 4 million farmers growing a range of crops - soyabean, coffee, wheat, rice, pulses, and shrimp - in over 40,000 villages through 6500 kiosks across ten states[26].

ITC e-Choupal - A win-win Model

1. The eChoupal provides a number economic benefits to ITC and the farmers. Web-enabled real time data on crop prices provide the farmers with the market prices for their produce. ITC gains from direct purchase from the farmers
2. The intermediaries were not removed from the value-chain, instead they were made partners in the value chains - as *samyojaks* (coordinators) who help ITC manage business at e-choupals. They also handle the physical transportation of the goods and earn a commission on it.
3. By providing information on weather and scientific farming methods, and the supply of high quality farm inputs, ITC has enabled the farmers to improve the productivity and quality of their output. This also provided indirect benefits to ITC by reducing the risk in supply chain

Kisan Credit Card

Kisan Credit Card scheme is an innovative financial product aimed at providing adequate and timely credit support from the banking system under a single window to the farmers for their cultivation & other needs as indicated below[27]:

a. To meet the short term credit requirements for cultivation of crops
b. Post-harvest expenses
c. Produce Marketing loan
d. Consumption requirements of farmer household
e. Working capital for maintenance of farm assets and activities allied to agriculture, like dairy animals, inland fishery etc.
f. Investment credit requirement for agriculture and allied activities like pump sets, sprayers, dairy animals etc.

Banks (including the commercial banks, RRBs and the cooperatives are issuing Kisan Credit Cards to farmers for providing for meeting one or more of the above needs. According to the annual report of the Ministry of Agriculture, about 1078 lakh KCC were issued up to 30th October, 2011. Banks have been advised to provide active KCCs to all the eligible and willing farmers in a time bound manner. Interesting feature of the scheme is that the farmer can use the card to draw up to his credit limit from any of the following channels:

a) Operations through branch
b) Operations using Cheque facility
c) Withdrawal through ATM / Debit cards
d) Operations through Business Correspondents and ultra thin branches
e) Operation through PoS available in Sugar Mills/ Contract farming companies, etc., especially for tie-up advances
f) Operations through PoS available with input dealers
g) Mobile based transfer transactions at agricultural input dealers and *mandies*[28].

Annexure III contains number of KCCs issues and amounts sanctioned since inception upto October, 2011

[26] http://www.echoupal.com/frontcontroller.ech
[27] http://rbidocs.rbi.org.in/rdocs/notification/PDFs/CRB5100512KC.pdf
[28] Mandies (Hindi) means markets

6.2 Regulatory enablers

India has been able to evolve and implement some regulations over the last several decades. Some of these regulations have been quite enabling for the agriculture value chain. These regulations are discussed below.

6.2.1 Regulatory carrot and stick

RBI as a regulator of the banks oversees the opening of new branches by the banks. In doing so, RBI uses what may be termed as a 'carrot and stick' policy. The objective is to incentivise the banks to open branches in areas which are underserved, for example rural and semi-urban areas. RBI's guideline on branch licensing states, "The RBI will, while considering applications for opening branches, give weightage to the nature and scope of banking facilities provided by banks to common persons, particularly in under banked areas (districts), actual credit flow to the priority sector, pricing of products and overall efforts for promoting financial inclusion, including introduction of appropriate new products and the enhanced use of technology for delivery of banking services"

Domestic scheduled commercial banks (other than RRBs) are permitted to open branches, Administrative offices, Central Processing Centres and Service branches in Tier 2 to Tier 6 centres (with population up to 99,999 as per Census 2001, and to open mobile branches in Tier 3 to Tier 6 centres (with population up to 49,999 as per Census 2001) without prior approval from Reserve Bank of India. Further, the domestic scheduled commercial banks are required to open at least 25 percent of the number of new branches proposed during a year in unbanked rural (Tier 5 and Tier 6) centres. Here an unbanked rural centre is defined as a rural (Tier 5 and Tier 6) centre that does not have a brick and mortar structure of any scheduled commercial bank for customer based banking transactions. In practice, this policy ensures that the banks first open the branches in rural/under-served areas before tapping the banking potential in urban areas. On the contrary, however, '100 Small Steps' a report of expert committee on financial sector reforms suggests that branching as a strategy to improve inclusion itself seems to have reached diminishing returns. The poor have no more access in the richly branched urban areas than in the rural areas. Inclusion has to be more than opening up more branches.

6.2.2 Essential commodities Act

In mid-sixties agriculture input industry transformed into a full-fledged business as a consequence of the green revolution. Seed, fertilizer and pesticide industry grew at rapid pace and began competing with the world players. This, therefore, needed legal support from government to ensure quality and fair play. Government of India enacted the Essential Commodities Act, to control the production, supply and distribution of, and trade and commerce in certain commodities, in the interest of the general public. Accordingly, Fertilizers whether inorganic, organic or mixed" is an Essential Commodity, as per government's notification. Essential Commodities Act also empowers the Central Government to make order providing for regulating or prohibiting the production supply and distribution of any essential commodity and trade and commerce therein so as to maintain or increase its supply or for securing its equitable distribution and availability at fair price, etc.

To ensure the availability of right quality and adequate quantity of fertilizers, at right time and at fair price to the farmers in all parts of the country the Central Government promulgated the Fertiliser (Control) order to regulate manufacture, quality, sale, distribution, price movement, etc. of fertilizers. Sale of fertilizers not conforming to the prescribed standards such as non-standard, adulterated, spurious, fake, etc. has been prohibited and made punishable offence. It has been made obligatory for all the manufacturers, importers, pool handling agencies, dealers etc. to make a memorandum of intimation to the notified authority of the concerned state government as fertilizer dealers (except industrial dealers who are to be registered with the Central Government). Provisions for inspection, drawal, analysis of fertilizer samples, detention/seizure of stocks, and debarment have been made.
Any violation of the provisions of FCO is punishable under ECA, and has been made cognizable and non-bail able offence and attracts penalties like suspension/ cancellation of the certificate issued under FCO and/or imprisonment up to seven years, with or without fine.

ECA Allocation Orders (issued bi-annually): With a view to securing equitable distribution and availability of fertilizers to the farmers in time, the Central Government issues an order every six months before the onset of each cropping season allocating the total production of a manufacturing unit to different areas/districts/states. Apart from fertiliser, food grains, sugar, edible oils are also subject to the ECA regulations and from time to time government places controls on stocking and movement of these goods from the point of view of customer protection. Such controls prevent volatility in market prices and can reduce income gains for producers.

However, beyond customer protection (on demand side for the farmers for example), the Act has been prohibitive for the agriculture sector in terms of unnecessary restrictions and prohibitions. The government has been reviewing the list of essential commodities from time to time with reference to the production and supply and in the light of economic liberalisation. Accordingly, the number of essential commodities which stood at 70 in the year 1989 has been brought down to 7 at present through such periodic reviews[29].

6.2.3 Pesticides

Import, manufacture, sale and distribution of pesticides is regulated under the Insecticide (Amendment) Act, 2000. There is a provision for registration of pesticides at the Central Government level and licensing for manufacturing and sale of pesticides by states/UT Governments after registration. There is a network of 49 State Pesticide Testing Laboratories and 2 Regional Pesticide Testing Laboratories of the Central Government, and the Central Insecticides Laboratory, established under Section 16 of the Insecticides Act, 1968 to test and analyze the quality of insecticides. About 50,000 samples are drawn and tested annually. Both central and state governments implement the Act. The Central Government is responsible for registration of pesticides and state governments are responsible for enforcement of the provisions relating to manufacture, sale, transport, distribution and use. The manufacturing and sale licensing are given by state governments. Central and state governments are both responsible for quality control, and for the purpose, there are laboratories at centre, state and regional levels.

6.2.4 Labour

Important sections in the rural population that can benefit from welfare measures are agricultural labourers, an overwhelming majority of whom live below the poverty line. The practical method by which they can be helped to achieve a higher standard of living is only by improving their levels of income. For this purpose, the Government of India enacted the Minimum Wages Act, 1948. It is applicable *inter alia* to employment in agriculture. The Act empowers the states to fix the minimum wages for various categories of agricultural workers. The implementation of the various provisions of the Minimum Wages Act, 1948, in agriculture, is beset with considerable difficulties because of the nature of work, fragmentation of holdings, payment of wages in kind, borrowings by the agricultural labour, vagaries of weather, traditions and customs, lack of adequate organization among the agricultural labour and illiteracy among the employers and the employees alike.

The following laws are also applicable to the agricultural labourers: (*a*) Payment of Bonus Act, 1965, applicable to agricultural labourers (is not excluded from the purview of the Minimum Wages Act); (*b*) Employees' Provident Fund and Family Pension Act, 1972; (*c*) Payment of Gratuity Act, 1972; (b) and (c) Acts do not cover agricultural labour as a class by itself, but both the Acts are applicable to labourers employed by plantations, fruit orchards, etc.; (*d*) The Industrial Disputes Act, 1947- applicable to labourers on agricultural farms run on commercial lines; the Act does not apply to other labourers engaged in agriculture; (*e*) The Trade Unions Act, 1926 which provides for the registration of unions; the Act is applicable to registered unions of agricultural workers; and (*f*) The Workmen's Compensation Act, 1923 is applicable *inter alia* to workers employed in farming with tractors and other contrivances driven by steam or other mechanical power or by electricity.

[29] Taken from http://india.gov.in/sectors/consumer_affairs/index.php?id=10 on 18th October, 2012

The enforceability of these laws in the rural areas has been found difficult. To a large extent minimum wages have been secured more on account of migration driven scarcity of labour and the Governments employment guarantee programme in recent times.

6.2.5 Warehousing (Development and Regulation) Act, 2007

To help farmers avail better credit facilities and avoid distress sale and also to safeguard financial institutions by mitigating risks inherent in credit extension to farmers, Warehousing (Development and Regulation) Act, 2007 was. The Act enabled pledging/collateralisation of agricultural produce with a legal backing in the form of negotiable warehouse receipts has led to increase in flow of credit against commodities and in development of chain of quality warehouses.

Before the act, the receipts issued by the warehouses were not negotiable and did not enjoy the confidence of the bankers. There were impediments in the negotiability of the warehouse receipts creating difficulties for the farmers. Warehouse act enabled warehouse receipts as negotiable instruments and facilitated financing against the warehouse receipts helping the lower end of value chain, i.e. the farmers and traders. Banks, on the other hand improved the quality of their loan portfolio. The act has enabled financing against the agricultural commodities, lowered the cost of finance, shortened the value chain and enabled better price risk management at the farmer level.

In summary, the overall advantages to the agriculture value chain due to the negotiable warehousing system are:

Farmers
1. The farmers need not suffer distress sale of their crops 2. It has enabled scientific storage of the commodities 3. Finance is easily available to meet the needs of next crop cycle and consumption 4. The cost of financing has become lower on account of reduced risk. The commodities are insured and there is a recourse available in case of risk event. 5. Higher returns to farmers as post harvest distress sale is avoided

Traders	Banks/Insurance Companies
1. Increased trade and finance in agriculture commodities 2. Shorter and more efficient supply chain 3. Can purchase commodities at the time of harvest, obtain financing against NWR and keep using the commodities for processing as and when needed 4. Option of availing finance in foreign currency based on the commodity stored	6. Increased business opportunity because of relatively lower risk lending to the agriculture sector 7. Increase business opportunity since the warehouse needs to compulsorily insure the stored goods

6.2.6 Agricultural Produce Marketing Act

In India agriculture marketing is a Provincial (State) subject and most of the states have their own Agriculture Procedure Marketing Committee (APMC) Act to regulate agriculture marketing. As per the Agricultural Produce Market Committee Act (APMC Act), a farmer must take his produce to a `market yard` and sell it through middlemen. The chain of middlemen might consist up to ten links, each eroding the producers' income. In view of the above, reforms in the agricultural marketing sector were considered necessary to move away from a regime of controls to one of regulation and competition. In view of liberalization of trade and emergence of global markets, it was necessary to promote development of a competitive marketing infrastructure in the country and to bring about professionalism in the management of existing market yards and market fee structure. While promoting the alternative marketing structure, however, Government needs to put in place adequate safeguards to avoid any exploitation of farmers by the private trade and industries. For this, there was

a need to formulate model legislation on agricultural marketing. Accordingly a new model act was drafted.

The draft model legislation titled the State Agricultural Produce Marketing (Development and Regulation) Act, 2003, provides for establishment of Private Markets/ yards, Direct Purchase Centres, Consumer/Farmers Markets for direct sale and promotion of Public Private Partnership in the management and development of agricultural markets in the country. It also provides for separate constitution for Special Markets for commodities like onions, fruits, vegetables, flowers etc. The new Model APMC Act is adopted by 16 States[30]. The model Act also has provisions for contract farming. The provisions provide for registration of contract farming sponsors and recording of contract farming agreements with the Agricultural Produce Marketing Committee (APMC) or a prescribed authority under the Act, protection of title or rights of the farmers over the land under such contracts, dispute settlement mechanism and a model draft agreement suggesting various terms and conditions.

Table 14: Major highlights of State APMC Act

Major Highlights of The State Agricultural Produce Marketing (Development & Regulation Act, 2003)
1. The Title of the Act is changed to highlight the objective of development of agricultural marketing in addition to its regulation under the Act
2. Legal persons, growers and local authorities are permitted to apply for the establishment of new markets for agricultural produce in any area. Under the existing law, markets are setup at the initiative of State Governments alone. Consequently, in a market area, more than one market can be established by private persons, farmers and consumers
3. There will be no compulsion on the growers to sell their produce through existing markets administered by the Agricultural Produce Market Committee (APMC). However, agriculturists who does not bring their produce to the market area for sale will not be eligible for election to the APMC
4. Separate provision is made for notification of 'Special Markets' or 'Special Commodities Markets' in any market area for specified agricultural commodities to be operated in addition to existing markets
5. The APMC have been made specifically responsible for: b) ensuring complete transparency in pricing c) providing market-led extension services to farmers; d) ensuring payment for agricultural produce sold by farmers on the same day; e) promoting agricultural processing including activities for value addition in agricultural produce; and f) publicizing data on arrivals and rates of agricultural produce g) Setup and promote public-private partnership in management of agri markets
6. Appointment of a professional Chief Executive Officer from open market
7. A new Chapter on 'Contract Farming' added to provide for compulsory registration of all contract farming sponsors, recording of contract farming agreements, resolution of disputes, exemption from levy of market fee on produce covered by contract farming agreements. Model specification of contract farming agreements provided in the Addendum to the model law.
8. Provision made for direct sale of farm produce to contract farming sponsor from farmers' field without the necessity of routing it through notified markets
9. Provision made for the purchase and sale of agricultural produce through private yards or directly from agriculturists in one or more than one market area.
10. Market Committees permitted to use its funds to create facilities like grading, standardization and quality certification; to create infrastructure on its own or through public private partnership for post harvest handling of agricultural produce

[30] zeenews.india.com/.../model-apmc-act-adopted-by-16-states_764985...

6.2.7 Forwards Contract Act, 1952[31]

Forward market commission is a regulatory body established under forwards contract act, 1952 and regulates various commodity exchanges in the country. Currently 5 national exchanges, viz. Multi Commodity Exchange, Mumbai; National Commodity and Derivatives Exchange, Mumbai and National Multi Commodity Exchange, Ahmedabad, Indian Commodity Exchange Ltd., Mumbai and ACE Derivatives and Commodity Exchange, regulate forward trading in 113 commodities. Besides, there are 16 Commodity specific exchanges recognized for regulating trading in various commodities approved by the Commission under the Forward Contracts (Regulation) Act, 1952. The commodities traded at these exchanges comprise the following:

- Edible oilseeds complexes like Groundnut, Mustard seed, Cottonseed, Sunflower, Rice bran oil, Soy oil etc.
- Food grains – Wheat, Gram, Pulses, Pearl Millet, Maize etc.
- Metals – Gold, Silver, Copper, Zinc etc.
- Spices – Turmeric, Pepper, Cummins etc.
- Fibres – Cotton, Jute etc.
- Others – Jaggery, Rubber, Natural Gas, Crude Oil etc.
- The total volume of trade across all Exchanges in 2011-12 was 14,025.74 lakh MT at a value of Rs.181, 26,103.78 Crores[32]. The total of deliveries of all commodities on Commodity Exchange platform is 8, 88,250 MT during the year 2010-11.

The different intermediaries and clients registered at these recognized national exchanges are,

- Members - 4081,
- Other intermediary - 234,
- Warehouse service provider / warehouse - 35 and
- Clients - 33,75,123

Apart from the forward/future markets, there also exists a spot market which also comes under the regulation of Forwards Market Commission, State APMC act, and Warehouse development regulatory authority (WRDA). The spot exchanges are located in 5 different states. This requires changes in the model APMC act. The linking of all the spot exchanges will help the farmer in accessing different markets and also in better price realisation on daily basis.

Forward/ Futures trading in a commodity is a mechanism for price discovery and price risk management, useful to all sectors of the economy including the farmers and consumers. The prices of agricultural commodities are generally at their lowest at the harvest time and increase substantially in the lean season when the demand exceeds supply. This adversely affects the farmers (as they realize lower prices of their produce in the harvest season) and consumers (as they have to pay higher prices in the lean season to meet their requirements). Forward/ futures markets provide a market mechanism to balance this imbalance of the supply –demand pattern of agricultural commodities. Futures trading provide a means of appraising the supply-and-demand conditions and dealing with price risks, over time and distance. Trading in futures not only provides price signals to the market of today, but also of months ahead, and affords guidance to sellers (farmers/ growers/ processors) and buyers (consumers) of agricultural commodities in planning ahead.. Futures markets therefore are beneficial to both the consumers and farmers.

6.3 Other important enablers

a. Banks have been advised to simplify the procedure for documentation for agricultural loans and to cover all eligible and willing farmers under Kisan Credit Card.

b. To improve the outreach among the poor and the informal sector, the SHG-Bank linkage programme was intensified. Banks have also been advised to finance Joint Liability Groups and Tenant Farmers' Groups in addition.

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[31] Accessed from http://www.fmc.gov.in on 7th October 2012

[32] 1 crore = 10 million

c. As part of the measures announced by the Reserve Bank of India (RBI) for financial inclusion, banks have been advised to open "No Frills" accounts and issue simple overdraft facility against such accounts. Banks have also been advised to issue General Credit Cards upto Rs. 25,000/- without insisting on security and end use of funds.

d. Banks have been advised to undertake, on a pilot basis, 100% financial inclusion in at least one district in each State. Based on the success of the pilot, the State Level Bankers Committee in the States will draw a time bound plan for achieving 100% financial inclusion in other districts of the State.

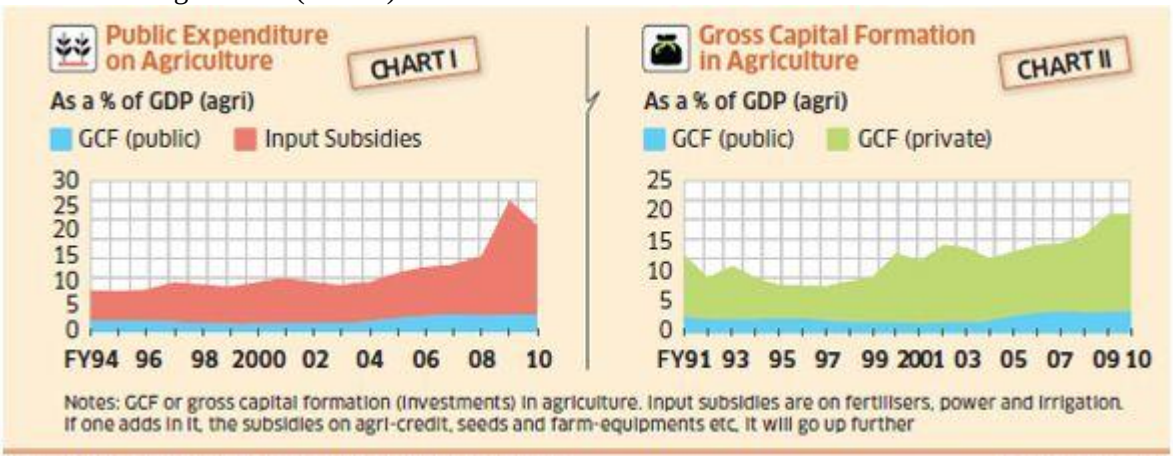
7. Disablers in the policies and regulations

There are a number of important policies and regulations that have enabled the development of agriculture value chains. However, there are still areas that should be improved from the perspective of healthy development of agriculture value chains. In fact enabling policy development and regulations is always a work in process. The governments and regulators learn from the experiences and work on developing a favourable policy and regulatory environment for agriculture.

For last several years, India has seen an almost decline in the growth rate of agriculture GDP. Sections below discuss some of the reasons that led to such slow performance of agriculture:

7.1 Inadequacy of investment on productivity enhancement and rural infrastructure

The share of agriculture in the total gross capital formation in real terms has been on a decline in recent years mainly on account of steady reduction in the share of public investment. There are concerns owing to inadequacy of private investment in meeting the capital requirements of agriculture more particularly rural infrastructure, which might pose constraint to agricultural growth[33]. Instead, public money is spent to finance subsidy on agriculture. Almost 80% of the public expenditure that goes into agriculture is in the form of input subsidies (fertilisers, power, and irrigation) and only 20% as investments in agriculture (Chart I)[34]



Subsidies in agriculture have seem to have crowded out public investments in agriculture, and have rather dis-incentivised private investments. It is likely that lower public investment due to more emphasis on provision of subsidy will further deteriorate the quality of public services like uninterrupted power supply. This leads to under utilization of power capacity due to poor distribution and maintenance. Subsidies in inputs increase demand (including spurious demand), lead to rationing of inputs and distortion in use.

7.2 Over-regulation of domestic agricultural trade and excessive protection of customer

While economic and trade reforms in the 1990s helped to improve the incentive framework, over-regulation of domestic trade has increased costs, price risks and uncertainty, undermining the sector's competitiveness. Customer protection from scarcities and high prices have been achieved through

[33] RBI's Approach to Agriculture, CAB Calling, April-June, 2008

[34] http://articles.economictimes.indiatimes.com/2012-08-06/news/33065670_1_public-expenditure-farm-investment-indian-agriculture

country wide initiatives that do not discriminate those who can afford to pay higher prices from those who cannot. The overall price effect of customer protection measures on sugar, food grains, edible oils, etc., have been such that farmers are unable to gain higher returns necessary to remain in farming. Policy should target those who need protection and design welfare schemes that are specific to the needy and avoid use of economy side measures that distort demand, supply, prices and incentives to pursue agriculture.

7.3 Institutional issues in credit delivery

Cooperative institutions that include a large number of Primary Agriculture Cooperative Society at the grassroots/village level face serious problems of governance, solvency and operational efficiency. A large segment of the Co-operative Credit structure is multi-layered, undercapitalised, overstaffed and under-skilled, often with mounting non-performing assets coupled with erosion of public deposits in certain cases[35]. PACS is the lowest layer of cooperative institutional structure at the village level. There are about 100,000 PACS in India which practically means there is a cooperative outlet for every 6 villages in India. However, the institutions are saddled with problems like low resource base, high dependence on external sources of funding, excessive Governmental control, huge accumulated losses, low business diversification, low repayment rates, etc. Around half of the PACS, a fourth of the intermediate tier, viz., the DCCBs, and under a sixth of the State-level apex institutions, viz., the State Cooperative Banks are loss-making. Task force on revival of rural credit operations noted that the cooperatives in India are largely focussed on credit and the concept of mutuality (with savings and credit functions going together), that provided strength to cooperatives, has been missing in India. The "borrower-driven" cooperatives are struggling with conflict of interest which has led to regulatory arbitrage, recurrent losses, deposit erosion, poor portfolio quality and a loss of competitive edge for the cooperatives.[36]

7.4 Control centric laws discouraging private sector participation

7.4.1 Acts: APMC and ECA

These two acts may also be considered to be stifling the development of agriculture value chain. They were relevant when market was underdeveloped, scarcity of essential commodities was an issue, communication was weak and private sector was exploitative. Situation has now changed.

ECA is seen as major hurdle for private sector participation and there is recognition that controlling the movement of products by licensing of dealers, limits on stocks and control on movements will hamper the growth of the agricultural sector and the promotion of food-processing industries. This Act was amended in 2003 to encourage free movement of agricultural commodities across regions.

APMC act (the act before adopting of the revised/model Act) hinders direct buying by business firms and is seen as a major constraint against diversification towards high value crops. The Act grants marketing monopoly to the state and has effectively prevented the private investments in agricultural market as it restricts the farmer from entering into direct contract with any processor/manufacture/bulk processor. This has led to weak agriculture markets and less than desirable development for agriculture value chain.

The model APMC Act of 2003 has been strongly opposed by the anti-retail and land acquisition lobby since the Act allows private companies to procure produce directly from farmers. However, those for the change allege that the old Act forces farmers to sell perishable items like fruits and vegetables only to a limited number of licensed traders at APMC *mandis* (wholesale markets), thereby encouraging cartel activity in agricultural marketing. However, the traders' lobby insists that the Act does not require any amendment.

[35] http://www.nabard.org/fileupload/DataBank/Speeches/MD_speech_Shri%20Y.S.P.%20Thorat_241105.pdf

[36] Taken from Vaidynathan committee report of 2004

As a result of the continuing debate over the adoption of new Act, some states have still shied away from adopting the model APMC Act.

7.5 Land and Credit Markets

While land distribution has become less skewed, land policy and regulations to increase security of tenure (including restrictions or bans on renting land or converting it to other uses) have had the unintended effect of reducing access by the landless and discouraging rural investments. Leasing out land is difficult in India as it is either legally prohibited or made difficult in most provinces of India. Since land is a state subject the laws governing sale, purchase and lease of land are governed by the respective state laws. Practically, this has left the landowners to resort to informal leasing agreements practically leaving little security with the tenants. This has dis-incentivised the tenants to make any long term investments in the land thus affecting the productivity. Studies have found that restrictions on land leasing have proved to be counterproductive and effectively anti-poor[37].

As it is, linking of small and fragmented farms with large-scale processors and retailers remains a challenge, which is further compounded by restrictive land (lease) policies. It is a challenge to allay the fears of a farmer regarding possible alienation from his own land because of leasing it out to the agri-business firms – corporate farmers, retailers or processors.

Since credit is intricately linked to land, access to credit is affected in case of marginal farmers who resort to informal means of leasing since institutional credit requires the pledging of collaterals.

7.5.1 Post-harvest losses in the value chain[38]

According to a study by Global AgriSystem of Fruit & Vegetable supply chain in four metros (Delhi, Mumbai, Bangalore and Kolkata) on an average there are 5-6 intermediaries between the primary producer and the consumer. The total mark up in the chain added up to 60-75%. As a result the primary producers receive only 20-25% of the consumer price. One of the reasons why this high mark may be added in the value chain is that there are wastages in the process of multiple handling in the range of 15-25%[39].

The food ministry has stated that foodgrains of USD 6 billion have gone waste in 2010, most of it in state warehouses. With a production (in 2010) of around 80 million tonnes of food grains and combined storage space of the Food Corporation of India, State Warehousing Corporations and other agencies of just 60 million tonnes, some 20 million tonnes of food is left out. The estimated loss was around INR 270 billion rupees (US $6 billion).

8. Recommendations for development of agriculture value chain financing and development

Financing value chains in agriculture is perceived to be a great challenge that requires vision, policy orientation and re-channelization of resources for success

8.1 Induce investments

8.1.1 Credit – shift from subsidies to timeliness, adequacy, quality and scope

Pricing of credit needs to be market-based to ensure effective flow of credit to all sections of the agricultural community. Emphasis has to shift from subsidized credit to timely and adequate credit at reasonable cost especially where credit delivery system is very weak and complex.

[37] Tajamul Haque, Impact of Land leasing Restrictions on Agricultural Efficiency and Equity in India, Council for Social Development

[38] Indian Agriculture: The view from the ground up, APCO Worldwide, March, 2011

[39] Status of Agricultural Marketing Reforms, Gokul Patnaik, http://www.igidr.ac.in/newspdf/srijit/PP-069-11b.pdf

It is also important to carefully monitor the usage of credit right from the input to the output stage so as to ensure proper utilization. Monitoring of credit should not only be limited to crops but also to related activities that are funded by financial institutions like NABARD.

Need for developing 'real' sector with credit to develop agriculture value chain

There is a lot of focus on agriculture credit to develop the agriculture sector. However a working group of experts constituted to study 'outreach of institutional finance, cooperatives and risk management' notes:

"...for enhanced productivity of credit, financial sector initiatives must be harmonized with the real sector initiatives. When the real world is characterized by constraints such as low seed replacement rates, uncertain input quality, yield fatigue, virtually non-existent extension services, problems relating to land laws and tenancy related issues, weak prices, need for better and more affordable productivity risk mitigation initiatives etc., merely enhancing the flow of credit will not yield the expected results. The WG therefore believes that support services including infrastructure, storage, processing, marketing etc., should be reinforced and regulatory mechanisms for ensuring quality of inputs and reorienting extension services to enhance the impact of credit be put in place.

Also, the direction of credit (quality) of credit is equally important. Historically, agriculture growth strategy has been driven by concerns of increasing production and productivity. While in many ways, this strategy may still be relevant, it may be necessary to give lay thrust on the downstream value chain functions, including storage, processing, distribution, marketing, etc.

8.1.2 Development of rural/agri infrastructure

Rural infrastructure, which includes agriculture research and extension, transport, electricity, and storage structures, not only enhances the productivity of physical resources, but also helps in supply chain management and value addition in agriculture [40].

8.2 Institutional strengthening of core credit delivery institutions – cooperatives and banks

PACS in the cooperative credit institutions hold a lot of promise to deliver financial services to the farmers at their doorsteps. Steps therefore must be taken in earnest to revive this short term cooperative credit structure. Some of the steps that need to be ensured are:

a. Enhancing the member shares and deposit safety for the members
b. Member awareness campaigns must be launched to make them aware of their rights and responsibilities. The idea should be to increase their participation in running the PACS. To this end, the business transactions between members and PACS needs to be increased
c. Envision PACS as one stop solution for the farming needs of the members. Some states in India have undertaken measures where the PACS are now able to serve the farmers through a broad range of services. Insurance, leasing together with information products are some of the preferred additions.
d. Measures to improve skills of HR should be undertaken.

In a similar vein institutional strengthening is required for the RRBs and the commercial banks so that their outreach to the rural areas increases. It is recommended to provide a level playing field to the public sector banks, for example, to enable to them to compete more effectively. This can be done by reducing government holding (perhaps by retaining control), bringing independent professionals on the Board, and reducing excessive government oversight (vigilance and parliament). The banks will be able to compete more effectively serve better by use of modern technology, mobile and electronic banking.

8.3 Use of Technology

8.3.1 Bring down the cost of banking services

Despite some progress made, India's poor are still largely excluded from the formal financial system. According to the report '100 Small Steps' (Raghuram Rajan), only 34.3 per cent of the lowest income quartile has savings, and only 17.7 per cent have a bank account. Discussing credit, the report states

[40] RBI's Approach to Agriculture, CAB Calling, April-June, 2008

that the poor borrow predominantly from informal sources, especially moneylenders and relatives/friends. In the lowest income quartile, over 70 per cent of loans taken were from these sources[41].

While the competition needs to be enhanced by creating a level playing field between the banking institutions, the focus should also be on reduction in the cost of banking services which may require improved delivery mechanisms and increasing use of information technology. The costs of banking transactions need to be dramatically reduced as has happened in many other fields such as telecom, after the advent of technology. However, it is observed that, in banking, the transaction costs continue to be high, particularly in agriculture sector, which include costs incurred in appraisal of borrowers, processing, documentation and disbursement charges, loan monitoring/supervision and collection. It is essential to bring down such transaction costs to make available credit at affordable price to the farmers. The transaction costs of borrowers to access banks should be brought down through redesign of processes for dealing with credit proposals.

The banking correspondent model that is currently being pushed by the government is likely to throw some probable solutions to using the technology to provide credit in addition to other financial products

Kisan Call Centre

The Govt. of India launched Kisan Call Centers on January 21, 2004 across the country to deliver extension services to the farming community. The purpose of these call centers is to respond to issues raised by farmers, instantly, in the local language. There are call centers for every state which are expected to handle traffic from any part of the country. Queries related to agriculture and allied sectors are being addressed through these call centers. This call center number is available for help any time in 22 regional languages which will help formers to know how to grow crops depending on the type of soil, monsoon condition, loan arrangement with different Banker, pesticides and insecticides to use according to the season. This is a toll free number and they can call from their mobile as well at free of cost.

8.3.2 Bridge the information deficit

Information technology has to be used to facilitate information at various levels of value chains. This might for example mean information about crop prices, weather
er information/forecast, use of banking services over mobile through calls or text messages (see for example, Kisan Call Centres in the box). However, it needs to be ensured that the users/famers know about such facilities. As of now, there are very few users of kisan call centres since not many people know of this service.

8.4 Improve productivity

Agricultural inputs and methods such as improved seeds, fertilizers, improved ploughs, tractors, harvesters, irrigations etc. along with appropriate extension service. This will help in transfer of technology from the lab to the field. Field based demonstration on latest technique for production; interaction with experts will help the producer in enhancing the farm productivity.

8.5 Legalising Land lease markets

Legalizing lease markets also protects the interests of the retailer/processor, and enables him to undertake larger investments. In this context, it may be helpful to ensure the registration of land deeds and the computerization of land records for bringing about greater transparency and reliability. Some states have made a beginning in computerizing the land records, but most others have a long way to go.

[41] The study referred to a study by IISS of 2007

9. Lessons for Africa

With extreme poverty levels in African countries as indicated by the fact that more than 239 million people live in poverty in sub-Saharan countries, agriculture is vitally important. Also important it is to remember that over 70% of the employment in Africa countries is from agriculture. According to the World Development Report, growth in agriculture is twice as effective as in other sectors in reducing poverty.

Clearly, India and large parts of Africa share a common starting point as far as agriculture development is concerned. However, there are some good lessons that the African governments can learn from Indian story so as to meet the challenges of agriculture value chain development much more effectively. Discussed below are some of the lessons that can be learnt from India:

1. *Food security should be the first priority*: India focussed on food security in the decades of 60s and 70s and ushered in green revolution which largely focussed on principal food crops; rice and wheat. Finally, India was able to achieve food self-sufficiency. Africa should ideally focus on securing the feed requirements of poor and this should evident from the national food and agriculture policies of African nations.

   However, the above need not be construed as an 'either or' choice between food staples and commercial crops. In fact, as a strategy African nations should select crops that are competitive in the world markets or that have the potential to emerge as the commodities of choice in the international markets. A fine balance between basic food and commercial crops will have to struck so as not to lose focus on developing value chains of commercial crops that have a market potential. Success story of Ghana is worth noting in this context[42]:

   - Ghana's agricultural sector has grown by an average of about 5 percent per year during the past 25 years, making it one of the world's top performers in agricultural growth, according to the Overseas Development Institute.
   - Ghana cut hunger levels by 75 percent between 1990 and 2004.
   - Reforms in the country's most important cash crop, cocoa, along with rising yields in staple crops such as cassava, yam, and sweet potatoes, helped increase incomes in the rural areas, reducing the percentage of the population living in poverty from 52 percent in 1991-92 to 28.5 percent in 2005-06.

2. *Infrastructure development*: India has been and still is far behind in terms of infrastructure required for agriculture development. While, India has made quite some progress in terms of rural road network, other areas such as electricity, storage /warehousing, marketing yards and agro-processing all require significant focus. This is specially important for Africa where a typical farmer is 5 hours away from market area and transport costs are among the highest in the world (as much 77% of the value of exports)[43]. Africa could focus on these vital levers of growth early on since presence of infrastructure itself incentivises investments and establishes good value chains. Affordable physical infrastructure is, in fact, a major source of competitiveness in agricultural value chains[44]. While national and local government could clearly keep this as a focal area, the financing institutions could also significantly participate in creating enabling infrastructure to support agriculture growth

[42] Noting from 'profiles of progress' section of the website of Gates Foundation - http://www.gatesfoundation.org/agriculturaldevelopment/Pages/facts-about-agricultural-development.aspx

[43] Agriculture Sector Strategy 2010 – 2014, African Development Bank Group

[44] Michael Warner and David Kahan, Market-oriented agricultural infrastructure: Appraisal of public–private partnerships, ODI, Project Brief NO 9, 2008

3. *PPP based models*: Indian experience with PPP based models, especially in infrastructure development has been mostly positive. The model is still not widely prevalent in agriculture value chain per se but is gaining ground. For example, many states in India have relaxed the agriculture produce marketing act to involve private sector players to establish infrastructure in wholesale markets. PPP is a widely prevalent model in national highways and logistics parks projects which have immensely reduced the transport costs and time for inter regional trade and movement of commodities meant for export. Africa could adopt these early on and consider private sector participation in areas where possible keeping in view, however, public interest through a balanced regulatory oversight.

> "…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…" *H.R.Khan, Deputy Governor, Reserve Bank of India*.

4. *Market based development clubbed with 'smart subsidies'*: India has been struggling with getting its subsidies to become smart and targeted. In fact, subsidies have been proven to benefit large farmers and input dealers both in India and Africa (for example the case of Zambia referred to in the WDR, 2008). A key lesson for Africa, therefore is to judiciously use subsidies and design them with sharp targeting and result orientation.

5. *Review and revision of regulations*: Developing countries tend to have excessive regulations over a period of time. While, most of the regulations are framed keeping public interest and the priorities in view, there needs to be a review of these regulations keeping in view current economic realities, domestic and international trade, technology and private sector participation. For example, ECA in India made more sense when food security was a major concern, but not in the current context. Today with food security not such a grave concern the Act only discourages the participation of private sector so important for the economy. Similar is the fate of APMC Act which inhibits the free sale/purchase of agricultural commodities. In Africa too, such Acts would have to be reviewed and be done away with or amended in view of current realities.

6. *Financing*: The lessons from India are that affirmative State action is necessary to establish a banking outreach in the rural areas. Policies that influence banks to lend to agriculture sector will be a good starting point. Products should be customised after analysis of demand from the field and nature of value chains. The skills of financing agriculture should be enhanced among bank staff. The political temptation to subsidise credit and distort the credit market should be resisted.

Annexure I: Production of commercial crops[45]

Season											(Million Tonnes/bales)	
		2001-02	**2002-03**	**2003-04**	**2004-05**	**2005-06**	**2006-07**	**2007-08**	**2008-09**	**2009-10**	**2010-11**	**2011-12**
Groundnut	Kharif	5.62	3.09	6.86	5.26	6.30	3.29	7.36	5.62	3.85	6.64	5.35
	Rabi	1.41	1.03	1.27	1.51	1.70	1.57	1.82	1.55	1.58	1.62	1.59
	Total	7.03	4.12	8.13	6.77	7.99	4.86	9.18	7.17	5.43	8.26	6.94
Casterseed	Kharif	0.65	0.43	0.80	0.79	0.99	0.76	1.05	1.17	1.01	1.35	2.34
Nigerseed	Kharif	0.13	0.09	0.11	0.11	0.11	0.22	0.11	0.12	0.10	0.11	0.09
Rapeseed &Mustard	Rabi	5.08	3.88	6.29	7.59	5.13	7.44	5.83	7.20	6.61	8.18	7.50
Linseed	Rabi	0.21	0.18	0.20	0.17	0.17	0.17	0.16	0.17	0.15	0.15	0.15
Safflower	Rabi	0.22	0.18	0.13	0.17	0.23	0.24	0.22	0.19	0.18	0.15	0.10
Sunflower	Kharif	0.16	0.27	0.31	0.43	0.46	0.37	0.46	0.36	0.21	0.19	0.17
	Rabi	0.52	0.60	0.62	0.76	0.98	0.86	1.00	0.80	0.64	0.46	0.39
	Total	0.68	0.87	0.93	1.19	1.44	1.23	1.46	1.16	0.85	0.65	0.56
Soyabean	Kharif	5.96	4.65	7.52	6.88	8.27	8.85	10.97	9.81	9.96	12.74	12.08
Edible Oilseeds	Kharif	12.57	8.55	15.88	13.36	15.78	13.25	19.66	16.64	14.72	20.57	18.46
	Rabi	7.23	5.69	8.32	10.03	11.04	10.11	8.88	9.74	9.00	10.41	9.58
	Total	19.80	14.23	24.19	23.39	26.81	23.36	28.54	26.38	23.72	30.98	28.04
Non Edible Oilseeds	Kharif	0.65	0.43	0.80	0.79	0.99	0.76	1.06	1.17	1.01	1.35	2.34
	Rabi	0.21	0.18	0.20	0.17	0.17	0.17	0.16	0.17	0.15	0.15	0.15
	Total	0.86	0.60	0.99	0.96	1.16	0.93	1.22	1.34	1.16	1.50	2.49
Total Nine Oilseeds	Kharif	13.22	8.98	16.67	14.15	16.77	14.01	20.71	17.81	15.73	21.92	20.80
	Rabi	7.44	5.86	8.51	10.20	11.21	10.28	9.04	9.91	9.15	10.56	9.73
	Total	20.66	14.84	25.19	24.35	27.98	24.29	29.76	27.72	24.88	32.48	30.53
Cotton@	Total	10.00	8.62	13.73	16.43	18.50	22.63	25.88	22.28	24.02	33.00	34.09
Jute$	Total	10.58	10.27	10.25	9.40	9.97	10.32	10.22	9.63	11.23	10.01	10.95
Mesta $	Total	1.09	1.00	0.92	0.87	0.87	0.96	0.99	0.73	0.59	0.61	0.67
Sugarcane	Total	297.21	287.38	233.86	237.09	281.17	355.52	348.19	285.03	292.30	342.38	347.86

[45] State of Indian Agriculture, 2012, Department of Agriculture and Cooperation, Credit Division

Annexure II: Priority Sector Lending – Major highlights

A. Agriculture

- Agriculture is classified as a priority sector lending category very specifically
- Total priority sector lending target is 40% for all domestic commercial banks and foreign banks with more than 20 branches. While, total lending target to agriculture is 18% of the adjusted net bank credit. Lending to agriculture effectively constitutes slightly less than 50% of the overall priority sector lending target.
- Under agriculture, there are two types of lending; direct and indirect.
- Direct lending constitutes lending to farmers, self-help groups and joint liability groups for agriculture and allied activities, viz., dairy, fishery, animal husbandry, poultry, bee-keeping and sericulture. This also includes loans to the PACS
- Direct lending includes short term to long term credit for various purposes including for raising crops, harvesting and post harvest operations, purchase of agriculture equipments. This also includes loan to small and marginal farmers to purchase agricultural land and repayment of debt to non-institutional source. Also included under direct lending is credit afforded under the KCC and export credit extended for export of own farm produce.
- Indirect agriculture category includes loans to corporate, partnership firms and institutions engaged in Agriculture and Allied Activities
- Under the above category are also included loans to the producer companies set up exclusively by only small and marginal farmers under Part IXA of Companies Act, 1956 for agricultural and allied activities.
- Indirect category also includes financing to other retail actors in the value chain. This includes:
    a. Loans up to Rs.10 Million per borrower to dealers /sellers of fertilizers, pesticides, seeds, cattle feed, poultry feed, agricultural implements and other inputs.
    b. Loans for setting up of Agri-clinics and Agribusiness Centres.
    c. Loans up to 5 crore to cooperative societies of farmers for disposing of the produce of members.
    d. Loans to Custom Service Units managed by individuals, institutions or organisations who maintain a fleet of tractors, bulldozers, well-boring equipment, threshers, combines, etc., and undertake farm work for farmers on contract basis.
    e. Loans for construction and running of storage facilities (warehouse, market yards, godowns and silos), including cold storage units designed to store agriculture produce/products, irrespective of their location.
    f. Loans to MFIs for on-lending to farmers for agricultural and allied activities as per the conditions specified in paragraph VIII of this circular.
    g. Loans sanctioned to NGOs, which are SHG Promoting Institutions, for on-lending to members of SHGs under SHG-Bank Linkage Programme for agricultural and allied activities. The all-inclusive interest charged by the NGO/SHG promoting entity should not exceed the Base Rate of the lending bank plus eight percent per annum.
    h. Loans sanctioned to RRBs for on-lending to agriculture and allied activities.

B. Micro and Small Enterprises

a. MSE targets are within the overall target of priority sector lending. As regards agriculture value chains, as per RBI, loans for food and agro processing will be classified under Micro and Small Enterprises, provided the units satisfy investments criteria prescribed for Micro and Small Enterprises, as provided in MSMED Act, 2006. Thus, effective credit to the agriculture value chains is more than what is prescribed by the RBI in the guidelines for priority sector lending.

Annexure III: Statewise Number of KCCs issued and amount sanctioned up to October 2011[46]

Sr. No.	Name of State /Uts	Cooperative Banks		Regional Rural Banks		Commercial Banks		Total	
		Cards Issued (No.)	Amount Sanctioned (Rs. Crore)	Cards Issued (No.)	Amount Sanctioned (Rs. Crore)	Cards Issued (No.)	Amount Sanctioned (Rs. Crore)	Cards Issued (No.)	Amount Sanctioned (Rs. Crore)
1	Andhra Pradesh	4169364	6750.97	2443981	3144.37	11170501	18949.80	17783846	28845.14
2	Assam	18271	11.66	235406	270.67	490906	337.21	744583	619.54
3	Arunachal Pradesh	980	1.47	3354	2.11	22169	20.25	26503	23.83
4	Bihar	854683	798.54	1511378	1805.98	2209023	2605.22	4575084	5209.74
5	Gujarat	1362270	17608.59	276689	2258.95	1770160	4557.26	3409119	24424.8
6	Goa	5221	16.92			13824	106.97	19045	123.89
7	Haryana	1284995	7629.58	437912	2907.46	967430	5398.58	2690337	15935.62
8	Himachal Pradesh	209824	234.36	77997	121.83	292752	602.82	580573	959.01
9	Jammu and Kashmir	54001	66.67	37313	107.20	22953	29.31	114267	203.18
10	Karnataka	2060453	6809.11	1478165	5144.12	2995531	9617.31	6534149	21570.54
11	Kerala	1660308	3181.33	513231	1320.83	1718194	3202.01	3891733	7704.17
12	Madhya Pradesh	4014022	13293.52	703456	2154.48	2109955	7350.11	6827433	22798.11
13	Maharashtra	5699510	30249.44	380052	1068.67	3678961	7478.38	9758523	38796.49
14	Meghalaya	11661	10.91	22201	28.3	61554	44.39	95416	83.6
15	Mizoram	2134	1.28	9603	39.37	18910	16.23	30647	56.88
16	Manipur	13532	33.64	2082	2.66	30796	30.16	46410	66.46
17	Nagaland	3470	0.67	1841	2.41	27438	24.98	32749	28.06
18	Orissa	4143054	8110.49	821836	1064.3	1461764	1352.88	6426654	10527.67
19	Punjab	949657	5595.41	174157	1079.33	1551468	8970.66	2675282	15645.4
20	Rajasthan	3498318	8373.43	630062	2746.3	2166355	6913.99	6294735	18033.72
21	Sikkim	3466	5.65			9304	10.00	12770	15.65
22	Tamil Nadu	1889966	5228.89	360268	485.91	4984771	7560.83	7235005	13275.63
23	Tripura	14236	5.03	76282	39.66	79127	59.72	169645	104.41
24	Uttar Pradesh	6880106	5910.01	4565538	11024.46	7849706	18143.36	19295350	35077.83
25	West Bengal	1657268	5054.74	565307	1307.3	1759538	1994.2	3982113	8356.24
26	A & N island	3727	7.42			3352	3.58	7079	11.00
27	Chandigarh					7382	2.01	7382	2.01
28	Daman & Diu					1781	3.02	1781	3.02

[46] State of Indian Agriculture, 2012, Department of Agriculture and Cooperation, Credit Division

29	New Delhi	2279	8.77			25521	79.63	27800	88.4
30	D & N Haveli					3323	5.44	3323	5.44
31	Lakshdweep					775	1.81	775	1.81
32	Pondicherry	7691	34.15	133		70930	94.01	78754	128.16
33	Jharkhand	278892	544.33	474051	279.27	621549	503.01	1374492	1326.61
34	Chhattisgarh	1344371	2008.11	391708	495.77	367985	734.73	2104064	3238.61
35	Uttaranchal	359689	600.11	58607	152.86	371927	1039.12	790223	1792.09
36	Other States					47	0.12	47	0.12
	Breakup not available for CBs (1998-99)					188005	266.04	188005	266.04
	TOTAL	42457419	128185.20	16252610	39054.57	49125667	108109.2	107835696	275348.9

This Background Paper is prepared