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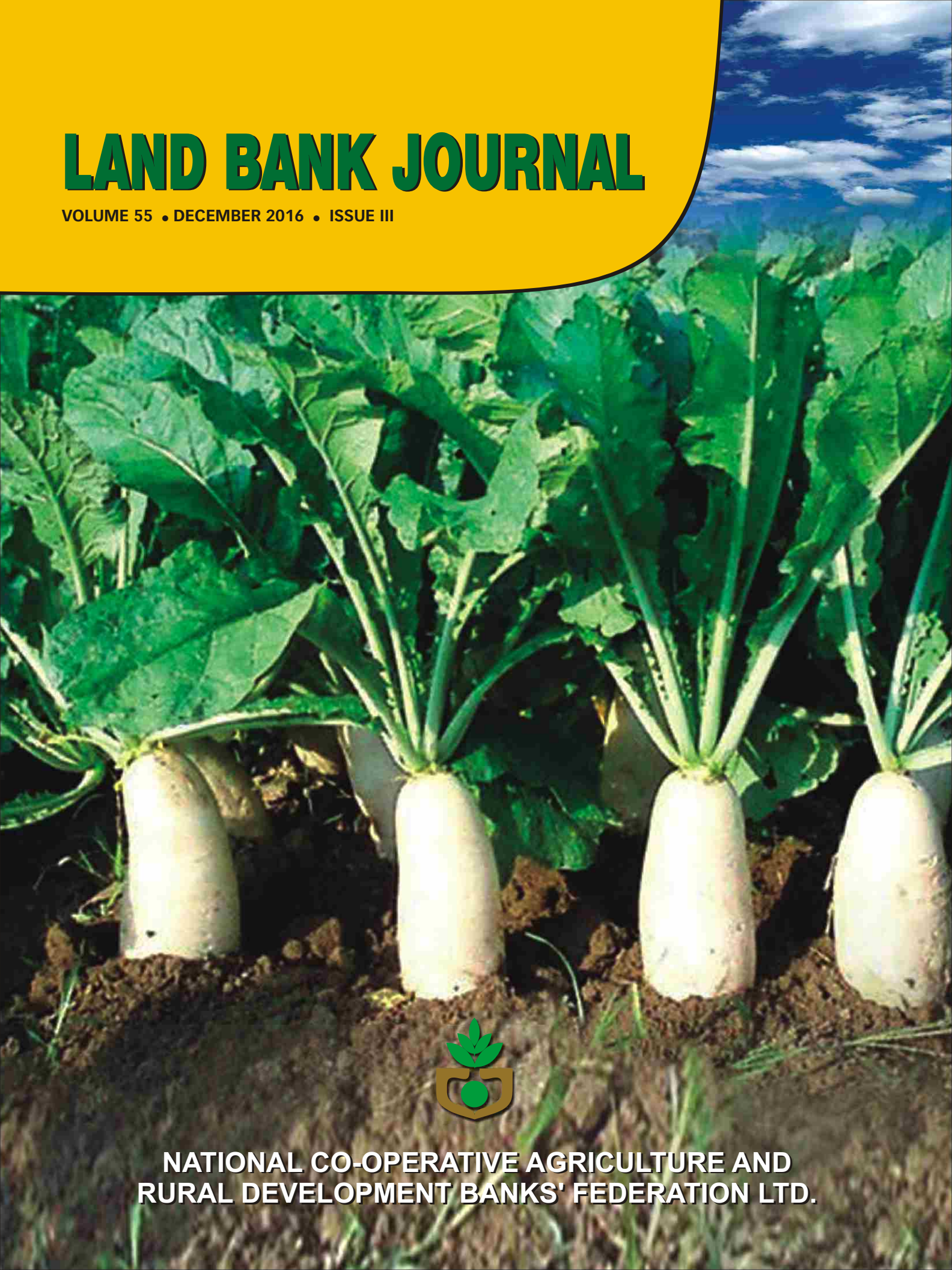

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Demonetisation disrupted normal business cycle in almost every sector in the economy. Cooperative banking and credit sector is probably the most affected one in the demonetisation storm. The set-back to loan recovery and lending activities has been particularly huge in the ARDB sector which are not allowed to accept demonetised currencies towards loan repayment while even private businesses in many sectors were allowed to accept these notes for over a month after demonetisation. In the absence of permission to accept loan repayment in demonetised currencies, ARDBs in some States advised borrowers to remit their dues directly into their bank account. However, this arrangement also did not work after a few days due to restrictions imposed on third party deposits. Loan repayment which came to a standstill after that, has not picked up again in any state so far. Borrowers of ARDBs who are mostly farmers still face difficulties to sell their produce as local markets and dealers of agricultural produce have not started operating as before. Lack of cash support by RBI to District Cooperative Banks in the aftermath of demonetisation severely hit the operations of Primary Agricultural Credit Societies and other rural cooperatives which are the lifeline of rural economy. This also has affected the operations of PCARDBs and branches of SCARDBs which generally maintain bank accounts only with District Cooperative Banks. It is a matter of concern that cash supply to rural cooperatives through District Cooperative Banks has not been restored even after 45 days since demonetisation. Cooperatives, especially ARDBs are going to face a bigger crisis in January when repayment to NABARD is due which many of them are unable to meet due to shortfall in loan repayment by their borrowers. Govt and RBI should take steps to restore cash support to rural cooperatives through District Cooperative Banks without further delay. Similarly, the repayment moratorium and other relief measures such as interest waiver and relaxations in the norms for classifying overdue loans as NPAs announced by the Govt. in respect of crop loans should be extended to the instalments of long term loans payable during 2017. The immediate object of demonetisation is to eliminate unaccounted income and wealth kept in the form of cash. It is hoped that the deposits of cancelled currencies into bank accounts during the period given for the same can be scrutinised to trace and book black money. Govt also declared its intention to use the present situation of cash scarcity in the system to promote cashless transactions using online payment systems like mobile wallets, credit/debit cards, account to account transfers etc. This will bring transparency in financial dealings resulting in better tax compliance and reducing chances of further accumulation of black money in the system. Demonetisation has prompted people to turn to cashless modes of transactions in a big way. Cooperatives also need to take an active part in promoting cashless transactions by sensitising and motivating their members to maximise transactions using online payment modes through their bank accounts. However, there are lot of constraints in widening the use of digital money in the rural sector. High rate of internet penetration and smart phone users among mobile phone subscribers are essential for extensive use of digital money for transactions. As per latest statistics, internet penetration among our population is only 34.8% and only 26.3% of mobile phone subscribers use smart phones with heavy concentration in metropolitan, urban and semi-urban areas. Access to high speed internet and smart phones at affordable costs and sensitising and educating majority of population who are not familiar with smart phones and applications used for online transactions hold the key to transforming rural economy into a less cash mode. This is a big challenge requiring lot of time, resources and coordinated actions by various agencies..

K K. Ravindran
Managing Editor

Cooperative credit institutions in India - Strategic actions to improve the working & management

Dr Amrit Patel

Despite the fact that the cooperative credit institutions [CCI] in India have completed 110 years in 2014 and have extensive network in rural India have not succeeded in creating an operationally viable and financially sustainable CCIs. This can be attributed to the complexities associated with the working of CCIs which have already been precisely identified by several committees including the latest on revival package on short-term [the Vaidyanathan committee] and long-term [the Chaturvedi committee] and appropriate recommendations have been made of which some are under implementation. Against this background, this article attempts to analyse the growth and development of Primary Agricultural Credit Societies [PACS], State Cooperative Banks [SCBs], District Central Cooperative Banks [DCCBs], State Cooperative Agricultural & Rural Development Banks [SCARDBs] and Primary Cooperative Agricultural & Rural Development Banks [PCARDBs] as on 31st March 2014 for which the latest data are available and suggests the strategic actions to enable the CCIs to harness their potential for financial inclusion, agricultural & rural development and rural poverty alleviation.

With the adoption of "Integrated Scheme of Rural Credit" recommended by the All India Rural Credit Survey Committee in 1951-52, the cooperative credit institutions had virtually a monopoly to capture the agricultural credit market in rural India till 1969 when 14 private commercial banks were nationalized and in 1975 Regional Rural Banks were established opening agricultural credit a business-market for multi-agencies. Since 1975-76, the share of cooperatives which was 70.7% in the total agricultural credit progressively commenced declining to 55.7% in 1983-84, 37.9% in 2001-02 and further to 17% in 2010-11 which continues still in 2014-15. Government and the NABARD have initiated several enabling measures based on the recommendations of important committees to improve the capabilities and working of CCIs since early 1990s when financial sector reforms were introduced in commercial banks.

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Enabling measures

The early 1990s witnessed an increasing realization of the disruptive effects of intrusive State patronage and politicization of the financial cooperatives which resulted in unsatisfactory governance and inefficient management leading to impairment of their financial health. The studies of cooperative credit institutions identified problems challenging their growth, development and financial viability viz. inadequate and ineffective coverage, low level of deposits, declining business, mounting chronic overdues, rising losses, declining profitability, deteriorating financial viability, inefficient personnel management, high transaction costs, low lending rates, inadequate financial margin, problems of regional imbalances and governance, among others. Thus, NABARD in particular initiated following enabling measures to improve the working of the CCIs.

- The Co-operative Development Fund(CDF) established in 1992-93 to make available trained manpower to cooperative banks, improve the MIS and contribute to overall operational efficiency and managerial competence of PACS in particular. The CCIs can avail CDF to improve their functional efficiency, such as, training staff, organizing exposure visits, conducting studies, workshops, conferences, seminars, for setting up of PACS Development Cells (PDCs), help desks or computer laboratories in banks that adopt Core Banking Solution [CBS] under the Application Service Provider model supported by NABARD and for accreditation of PACS warehouses by NABARD Consultancy Services (NABCONS).
- Organization Development Initiatives (ODI), being conducted by NABARD since1994-95 is are-engineering process of shared values to achieve change in the organizational structures, staff composition, impart technical skill and facilitate strategic planning that can ultimately lead to improve

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from page no. 3

the effectiveness and efficiency of the organization to fulfil its mission. With the adoption of revival package by short-term cooperatives, the objective, design and methodology of ODIs have been more focused towards financial inclusion and sustainable viability.

- As co-operative banks in different States and geographical regions face different kinds of problems to seize opportunities of economic development institution-specific approaches are being worked. The process of preparing institution-specific Development Action Plans (DAPs) and execution of Memorandum of Understanding (MoU) was initiated during 1994-95. The banks under the guidance of NABARD initiated a detailed exercise of formulating the Development Action Plans [DAP] sharply focusing on business and financial aspects, viz. improving gross margin & net margin available on advances, exploiting business potential, taking measures to reduce/ keep the management costs low or at optimum level, drafting comprehensive action plans to contain over dues & NPAs, reduce accumulated losses and significantly improve recovery in particular. Banks must make a thorough analysis of various parameters having bearing on business and financial viability viz. existing organizational structure, HRD & training, financial management, lending procedures and MIS. The DAPs were executed in three phases, viz. phase-I [1994-95 to 1999-2000], Phase-II [2000-01 to 2003-04] and Phase-III [2004-05 to 2006-07]. PACS were also brought in to the development planning process during the third phase and for the first time were directed to prepare DAP focusing viability of PACS under the guidance of DCCBs and enter into MoUs with the respective DCCBs. The phase-IV of DAP/MoU for both short-term & long-term cooperatives covers the period April 2007 to March 2012 with required revisions & modifications to make the said exercise more institution specific and participative. This phase-IV emphasizes close involvement of the Board of Directors and seeks effective participation of members of PACS to formulate DAPs based on bottom-up planning process, implement and monitor starting from field units. Where necessary, NABARD, RBI and Registrar of Cooperative Societies can act as external facilitators.
- NABARD-GTZ Rural Finance Institutions Program undertook the task of preparing Standard Audit Manual for PACS, developing audit rating tool for PACS and developing a training program for PACS auditors on the revised audit system.

Task Force on Revival Package

The financial sector reforms being a significant component of the overall economic reforms programme initiated by the Government in 1991-92, had envisaged improvement of the efficiency and productivity of the rural credit delivery system so as to accelerate the credit flow to productive sectors of the economy. The major objectives of the reforms in cooperatives credit sector were as under.

- To make the institutions competitive by removing external constraints having bearing on their operations.
- To improve their financial health.
- To ensure transparency in their business operations.
- To improve their profitability.
- Institution building and strengthening.

For this, the Government of India in consultation with the RBI constituted the Task Force chaired by Prof. Vaidyanathan to go into all issues of short-term cooperative credit structure [STCCS] and suggest a Revival Package in the light of competitive role of cooperative credit institutions. The report of the Task Force revealed following stark realities in the working of short-term cooperatives.

- The STCCS never realized the enormous potential opened up by its vast outreach owing mainly to a 'deep impairment of governance'.
- While they were originally visualized as member-driven, democratic, self-governing, self-reliant institutions, cooperatives have, over the years, constantly looked up to the State for several basic functions. In the process, the State Governments have become the dominant shareholders, managers, regulators, supervisors and auditors of the STCCS.
- The concept of mutuality [with savings and credit functions going together] that provided strength to cooperatives, all over the world, has been missing in the country.
- This 'borrower-driven' system is beset with conflict of interest and has led to regulatory, arbitrage, recurrent losses, deposit erosion, poor portfolio quality and a loss of competitive edge for the cooperatives.
- There is an impasse in the laws governing cooperative banking institutions in the country as cooperation is a State subject while banking activities are regulated by a Central Act.
- The cooperatives had poor quality of internal control systems, housekeeping and audit in addition to professionally not qualified human resources manning the CCIs.

Apart from aiming at reviving the STCCS to make it an efficient medium to serve the credit needs of rural India, especially the small and marginal farmers, the package also seeks to [i] provide financial assistance to bring the cooperative credit system to an acceptable health [ii] introduce legal and institutional reforms necessary for its democratic, self-reliant and efficient functioning and [iii] take measures to improve the quality of management. The

Government accepted the Task Force Report submitted in 2006.

Further, the Government of India constituted a Task Force chaired by Shri. G.C. Chaturvedi to review the need for a separate package for Revival of Long Term Cooperative Credit Structure [LTCCS] and the report was submitted on 25 February 2010 to the Government.

Performance of PACS

The performance of cooperatives has been analysed from the base year ended 31st March 2007 as DAP [phase-IV: 2007-12] introduced in 2007 was completed in 2012 and most of the recommendations of the Vaidyanathan committee on short-term revival package were being implemented from 2010.

During the seven years' period from 31st March 2007 to 2014, process of reorganization of PACS continued and number of PACS has declined from 97,224 to 93,042 [95.70%]. With the initiation of Organizational Development Initiative, formulation and implementation of Development Action Plans and Reforms in short-term cooperative credit structure during the said period, 93,042 PACS at the aggregate level exhibited performance in respect of 18 business and financial parameters as under.

The performance of PACS as on 31st March 2014 has been compared with that of 2007 in terms of percentage growth and compound annual growth rate.

- PACS have shown better performance in terms of compound annual growth rate [CAGR] for reserves [10.84%] deposits [23.14%], borrowings [13.98%], loans issued [22.95%] and loan outstanding [14.20%].
- The CAGR for share capital was modest [8.09%]
- PACS have been allowed to deploy 10% of their deposits for lending. Potential for lending is being explored and harnessed by way of borrowings from higher tier. However, the credit-deposit ratio measured in terms of ratio of deposits to loans outstanding improved significantly to 249.62% from 158.86%.
- While there was insignificant or no improvement in terms of membership, number of borrowers, and villages served, the performance in terms of percentage of borrowing members, members per PACS & per village declined.
- Though profit amount improved by 27.50%, percentage of number of PACS in profit declined to 25.00%. Interestingly, loss amount as also percentage of PACS in loss declined to 21.60% and 49.45% respectively.

Table 1
Performance of PACS as on 31st March 2007 & 2014 [% Growth & CAGR] **[₹Million]**

Performance Indicators	31st March 2014 [2007]	% Growth [CAGR%]$	Performance Indicators	31st March 2014 [2007]	% Growth [CAGR%]$
Number	93042 [97224]	[-4.30%]	Loss amount	37662.00 [48078.00]	[-21.67%]
Membership [000]	130119.66 [125792.32]	003.44 [0.57%]	Godowns	55122 [62626]	[-11.98%]
Share capital	97888.00 [61384.10]	59.47% [8.09%]	Villages Covered	664312 [637102]	04.27% [0.70%]
Reserves	91355.00 [49004.30]	86.20 [10.84]	Borrowing Members%	36.95% [38.09%]	[-03.00%]
Deposits	818949.10 [234840.70]	248.72% [23.14%]	Members /PACS	139850 [129384]	[-07.50%]
Borrowings	958358.00 [437144.90]	119.23% [13.98%]	Members/ Village	19587 [19744]	[-00.80%]
Loans Issued	1714195.60 [496127.60]	245.55% [22.95%]	Credit-deposit Ratio	158.80% [249.62%]	
Loans Outstanding	1300538.60 [586201.50]	121.86% [14.20]	% of PACS In profit	46.56% [34.95%]	
Number of Borrowers[000]	48080 [47916]	00.34%	% of PACS In Loss	40.48% [49.45%]	
Profit	43327.00	27.50%			
Amount	[33983.00]	[4.13]			

Figures in parentheses indicate data as on 31st March 2007. Growth % indicates increase or decrease in 2014 over 2007 & $ indicates % CAGR during 2007 to 2014

Region-wise Performance of PACS

During the seven years period, number of PACS increased in four regions [Central, North-Eastern, Southern & Western] as against declining the number of PACS in other two regions [Eastern & Northern]. Following is the region-wise quantitative performance.

- **Southern region:** The region showed increase in number of PACS, membership, number of borrowers, percentage of borrowing members, number of borrowers per village, number of villages served and number of godowns owned; amount of share capital, deposits, borrowings, loans issued, loans outstanding,

Table 2
Region-wise Status of PACS as on 31st March 2007 & 2014 [₹ Million]

Parameters	Central	Eastern	North-East	Northern	Southern	Western	All India
Number	13386 [13770] {97.21}	18566 [21906] {84.75}	3491 [3540] {98.61}	12899 [14431] {89.38}	15040 [14499] [103.73}	29660 [29078] {102.00}	93042 [97224] {95.70}
Membership ['000]	7997.49 [7853.64] {101.83}	27239.82 [33070.29] {82.37}	3690.42 [3851.37] {95.82}	14707.18 [15720.55] {93.55}	58468.89 [52081.66] {112.26}	18015.86 [13214.81] {136.33}]	130119.66 [125792.32 {103.44}
Share capital	8348.3 [5026.2] {166.09}	7760.2 [6208.6] {124.99}	474.1 [559.9] {84.68}]	17754.0 [12830.3] {138.37}	35748.0 [18563.7] {192.57}	27803.4 [18195.4] {152.80}	97888.0 [61384.1] {159.47}
Reserves	2891.8 [1147.3] {234.62}	9771.8 [10582.7] {92.34}	96.1 [155.2] {61.92}	14579.7 [3099.6] {470.37}	46340.7 [25301.9] {183.15}	17674.9 [8717.6] {202.75}	91355.0 [49004.3] {186.42}
Deposits	8855.1 [5141.6] {172,22}	32479.0 [33571.9] {96.74}	828.0 [1355.9] {61.07}	56372.9 [26810.3] {210.26}	702524.9 [164515.4] {427.03}	17889.2 [3445.6] {519.19}	818949.1 [234840.7] {348.72}
Borrowings	114948.6 [32246.2 {356.47}]	169580.4 [37082.4] {457.31}	645.8 [4512.1] {14.31}	157652.0 [106047.9] {148.66}	343202.1 [143668.2] {238.88}	172329.1 [113588.1] {151.71}	958358.0 [437144.9] {219.23}
Borrowers ['000]	3469 [6582] {52.70}	7851 [12102] {64.87}	211 [316] {66.77}	8023 [5127] {156.48}	23568 [18656] {126.33}	4958 [5133] {96.59}	48080 [47916] {100.34}
Loans issued	55351.3 [25468.1] {217.33}	53193.6 [47279.3] {112.51}	311.4 [3704.3] {08.41}	196656.9 [138403.2] {142.09}	1234095.4 [202324.0] {609.96}	174587.0 [78948.7] {221.14}	1714195.6 [496127.6] {345.55}
Loans O/S	55137.9 [37037.8] {148.87}	49283.9 [49347.6] {99.87}	620.2 [5411.7] {11.46}	161900.4 [115853.6] {139.74}	868598.4 [270425.2] {321.20}]	164997.8 [108125.6] {152.60}	1300538.6 [586201.5] {221.86}
% Recovery	68.80 [58.38]	59.47 [70.91]	16.60 [47.46]	72.27 [77.37]	86.66 [72.87]	72.52 [63.47]	80.99 [70.89]
No. in Profit	6689 [6382] {104.81}	4169 [4898] {85.12}	571 [615] {92.84}	8407 [7822] {107.48}	8207 [3791] {216.49}	15284 [10475] {145.91}	43327 [33983] {127.50}
No. in Loss	4097 [4424] {92.61}	10026 [12379] {80.99}	932 [850] {109.65}	3539 [4112] {86.06}	5708 [9714] {58.76}	13360 [16599] {80.49}	37662 [48078] {78.33}
With Godowns	12007 [12198] {98.43}	11728 [15153] {77.39}	1177 [1040] {113.17}	7306 [12228] {59.75}	11000 [11247] {97.80}	11904 [10760] {110.63}	55122 [62626] {88.02}
Villages covered	167153 [171940] {97.21}	196010 [191460] {102.38}	33880 [33527] {101.05}	112598 [109347] {102.97}	104094 [76871] {135.41}	50577 [53957] {93.73}	664312 [637102] {104.27}
Borrowing Members [%]	43.38 [83.81]	28.82 [36.59]	05.72 [08.20]	54.55 [32.61]	40.31 [35.82]	27.52 [38.84]	36.95 [38.09]
Members/Village	4784 [4568] {104.73}	13897 [17273] {80.45}	10893 [11487] {94.83}	13062 [14377] {90.85}	56169 [67752] {82.90}	35621 [24491] {145.44}	19587 [19744] {99.20}
Borrowers / Village	2075 [3828] {54.20}	4005 [6321] {63.36}	623 [942] {66.13}	61422 [35661] {172.23}	22641 [24269] {93.29}	9803 [9513] {103.04}	7237 [7521] {86.22}
Credit-deposit ratio	622.67 [720.35]	151.74 [146.99]	74.90 [399.12]	287.19 [432.12]	123.64 [164.38]	922.33 [3138.07]	158.80 [249.62]

Figures in parentheses [ ] indicate data as on 31st March 2007 & in { } indicate % change on 31st March 2014 over 31st March 2007

recovery percentage, number of profit-making PACS, reduction in loss-incurring PACS,

- **Western region:** The region showed increase in the number of PACS, membership, members & borrowers per village, number of godowns owned; amount of reserve, deposits, Credit-deposit ratio, number of profit making PACS,
- **Central region:** The region showed increase in the number of PACS, percentage of borrowing members, number of members per village, number of godowns owned ; amount of share capital, reserve, borrowings, Credit-deposit ratio,
- **Northern region:** The region showed increase in the percentage of borrowing members, number of borrowers, number of borrowers per village; amount of reserve, Credit-deposit ratio,
- **North-Eastern region:** The region showed increase in only number of PACS, and number of godowns owned
- **Eastern region:** The region showed increase in borrowings and insignificant increase in recovery percentage

Region-wise performance at a glance

Following Table exhibits region-wise performance of PACS at a glance as on 31st March 2014 over that in 2007 in respect of 18 business & financial parameters. Performance of each region in respect of each parameter is compared with All India average indicating higher [+] or lower [-] than All India average. In general Southern region across six regions showed better performance in case of 15 parameters out of 18 followed by Western region [9], Central region [8] & Northern region [5] whereas the North-Eastern & Eastern region each had performed better only in two parameters.

State Cooperative Banks

During the seven years' period from 2007 to 2014, the number of SCBs increased to 32 from 31. The performance of SCBs measured in terms of compound annual growth rate during the said period was observed as under.

- Performance was better in respect of share capital [24.04%], deposits [13.57%], borrowings [18.28%], loan issued [10.48%] and loans outstanding [13.85%]
- Credit-deposit ratio improved marginally to 98.95% from 97.51% and reserves by 20.25%.
- The CAGR for profit amount was reasonably better [19.64%],
- The CAGR for loss amount was 10.39% but significantly high CAGR [57.16%] for accumulated loss

District Central Cooperative Banks

Number of DCCBs increased to 370 from 369 during the period from 2007 to 2014. The performance in terms of the CAGR was observed as under.

- Performance was better in respect of share capital [12.64%], deposits [16.51%],borrowing [15.97%],loans issued [18.12%] and loan outstanding [14.69%].
- Credit-deposit ratio declined significantly to 85.91% from 94.39%.
- Profit amount increased by 101.99% [CAGR 12.43%].

Table 3
Region-wise Performance of PACS at a Glance compared to All India in 2014 [₹ Million]

Parameters	Central	Eastern	North-East	Northern	Southern	Western	All India
No. of PACS	+	-	+	-	+	+	95.70 %
Membership	-	-	-	-	+	+	103440
Share capital	+	-	-	-	+	-	159.47%
Reserves	+	-	-	+	-	+	186.42%
Deposits	-	-	-	-	+	+	348.72%
Borrowings	+	+	-	-	+	-	219.23%
Borrowers	-	-	-	+	+	-	100.34%
Loans issued	-	-	-	-	+	-	345.55%
Loans O/S	-	-	-	-	+	-	221.86%
% Recovery	-	+	-	+	+	-	80.99%
No. in Profit	-	-	-	-	+	+	127.50%
No. in Loss	-	-	-	-	+	-	78.33%
With Godowns	+	-	+	-	+	+	88.02%
Villages covered	-	-	-	-	+	-	104.27%
Borrowing Members [%]	+	-	-	+	+	-	36.95%
Members / Village	+	-	-	-	_	+	99.20%
Borrowers / Village	-	-	-	+	+	+	86.22%
Credit' Deposit ratio	+	-	-	+	-	+	158.80%
Total : 18	**8 +**	**2+**	**2+**	**6+**	**15+**	**9+**	

- Loss amount significantly declined by 57.80% &accumulated loss by 32.28%.

State Cooperative Agricultural & Rural Development Banks

Number of SCARDBs decreased to 17 from 19 during the period from 2007 to 2014. The CAGR of eight performance indicators during the said period was observed to be as under.

- The performance was better in respect of reserves [18.65%], deposits [16.85%] and loan issued [11.08%].
- The performance was better for deposits [13.86%] and loans issued [11.58%].
- It was modest for share capital [7.95%], reserves [6.20%] and marginal for borrowings [2.10%] & insignificant for loan outstanding [0.95%].
- Credit-deposit ratio substantially declined to 1735.07% from 3571.55%.
- Profit amount significantly declined by 36.82%.

Table 4
Performance of State Cooperative Banks & District Central Banks As on 31st March 2007 & 2014

[Percentage Growth & CAGR] [₹ Million]

State Cooperative Banks			District Central Cooperative Banks		
Performance indicators	31st March 2014 & [2007]	% Growth & [CGAR%] $	Performance Indicators	31st March 2014 & [2007]	% Growth & [CGAR%]$
Number	31 [32]		Number	369	370
Share capital	45376.70 [12460.00]	264.18% [24.04%]	Share capital	111477.60 [54580.00]	104.25% [12.64%]
Reserves	111871.30 [93030.00]	20.25% [03.12%]	Reserves	290445.90 [207220.00]	40.16% [05.79%]
Deposits	1042074.30 [485600.00]	114.59% [13.57%]	Deposits	2359207.60 [943290.00]	150.10% [16.51%]
Borrowings	609389.20 [222560.00]	173.81% [18.28%]	Borrowings	727763.00 [299120.00]	143.30% [15.97%]
Loans Issued	959644.40 [52777.00]	81.83% [10.48%]	Loans Issued	2253190.40 [829630.00]	171.59% [18.12%]
Loans Outstanding	1031166.80 [473540.00]	117.76% [13.85}	Loans Outstanding	2026726.20 [890380.00]	127.62% [14.69%]
Profit Amount	9794.60 [2792.00]	250.81% [19.64%]	Profit Amount	15230.00 [7544.10]	101.99% [12.43%]
Loss Amount	935.50 [39.50]	2268.35% [69.46%]	Loss Amount	3490.00 [7239.90]	[-57.80%]
Accumulated Loss	7039.20 [3890.00]	80.96% [10.39%]	Accumulated Loss	38680.10 [57120.00]	[-32.28%]

Figures in parentheses indicate data for the year 2007. Growth indicates % increase or decrease in 2014 over 2007 & $ indicates % CAGR during 2007 to 2014

- Loan outstanding increased marginally by 9.42% [1.51% CAGR].
- Share capital increased marginally by 14.80% [2.33% CAGR].
- Credit-deposit ratio declined significantly to 132.48% from 308.16% .
- Profit amount declined by 09.43% .
- Loss amount as well as accumulated loss significantly increased by 38.40% & 154.88% reflecting 5.57% & 16.86% CAGR respectively.

Primary Cooperative Agricultural & Rural Development Banks

Number of PCARDBs increased by 2.59% to 714 from 696 during 2007 to 2014 The performance in terms of CAGR for eight business & financial indicators was observed to be as under.

- Loss amount declined only by 10.22%.
- Accumulated loss increased substantially by 78.12% [10.10% CAGR].

Financial Viability: Attempt is made to determine the extent of improvement region-wise in terms of five most critical performance indicators [viz. Recovery percentage, total NPAs, NPA percentage to loan outstanding, loss amount, profit amount and ultimately net profit/loss] which influence significantly the financial viability and in course of time the financial sustainability of each bank, viz. SCBs, DCCBs, SCARDBs and PCARDBs. Performance in respect of recovery and NPA percentage to loan outstanding in each region as on 31st March 2014 is first compared with that in 2007 to assess whether there has been any improvement in seven years and secondly compared with

Table 5
Performance of State Cooperative Agri. & RD Banks and Primary Cooperative Agri.& RD Banks
(As on 31st March 2007 & 2014)

[Percentage Growth & CAGR] [₹Million]

State Cooperative Agri.& RD Banks			Primary Coop. Agri.& RD Banks	
Performance Indicators	31st March 2014 [2007]	% Growth [CAGR] $	31st March 2014 [2007]	% Growth [CAGR] $
Number	19 [17]		696 [714]	02.59%
Share capital	9115.10 [7940.00]	14.80% [2.33%]	145226.10 [9180.00]	58.24% [7.95%]
Reserves	21370.00 [59614.90]	178.96% [18.65%]	38421.90 [26780.00]	43.47% [6.20%]
Deposits	153979.00 [6050.00]	154.51% [16.85%]	7430.60 [3410.00]	117.89% [13.86%]
Borrowings	157510.60 [166620.00]	{-05.47%}	144413.20 [127510.00]	13.26% [2.10%]
Loans Issued	45759.90 [24360.00]	87.85% [11.08%]	38405.20 [19900.00]	92.99% [11.58%]
Loans Outstanding	203996.10 [186440.00]	09.42% [01.51%]	128926.50 [121790.00]	05.86% [0.95%]
Profit Amount	2043.50 [2256.30]	{-9.43}	2647.10 [4189.40]	{-36.82%}
Loss Amount	1881.60 [1359.50]	38.40 [5.57%]	5088.00 [5666.90]	{-10.22%}
Accumulated Loss	24112.00 [9460.00]	154.88% [16.88%]	51120.00 [28700.00]	78.12% [10.10%]

Figures in parentheses indicate data for the year 2007. Growth indicates % increase or decrease in 2014 over 2007 & $ indicates % CAGR during 2007 to 2014.

that of All India average in 2014 to understand the financial status of each bank in the said region among other five regions. For determining the extent of improvement region-wise in respect of other three indicators of financial viability, viz. total NPAs, loss amount and profit amount, attempt is made to compare the change in terms of percentage in each of these three indicators in 2014 over that in 2007 in the same region with that of All India average. Table 10 exhibits region-wise & Bank-wise performance at a glance whereas Table 6 to 9 presents performance of each bank region-wise.

State Cooperative Banks

Recovery: Recovery of SCBs at the aggregate level in 2014 declined to 82.08% from 85.65% in 2007 exhibiting very wide variance from as low as 49.10% to as high as 97.90% in 2014 as compared to from 43.02% to 98.16% in 2007. The recovery in the year 2014 increased over that in 2007 in Southern region [96.87%/87.91%] closely followed by Central [96.39%/80.20%], Western [88.68%/79.06%] and North-Eastern [49.10%/43.02%] regions whereas it insignificantly declined in Northern region [97.90%/98.16%] and significantly in Eastern region [57.97%/70.64%]. During 2014, four regions had higher recovery than national average [82.08%] viz. the Northern [97.90%] Southern [96.87%] and Central region [96.39%] recording the highest and Wester region marginally higher [88.68%] whereas Eastern and North-East regions having significantly lower recovery of 57.97% and 49.10% respectively.

NPA percentage to loan outstanding: At the national level, NPA percentage to loan outstanding for SCBs substantially declined to 5.54% in 2014 from 14.16% in 2007, ranging from 1.93% to 17.12% across six regions in 2014 as compared to from 3.07% to 43.94% in 2007. Interestingly, the NPA percentage to loan outstanding declined in all six regions of the country in 2014 over that in 2007. The significant decline was evident in five regions, viz...North-East [17.12%/43.94%], [Central [2.70%/13.85%], Southern [5.98%/15.51%], Western [10.92%/20.48%] and Eastern region [6.90%/10.82%] and marginal decline in Northern region [1.93%/3.07%] Two regions viz. Northern [1.93%] and Central [2.70%] had lower NPA percentage to loan outstanding than national average [5.54%] in 2014 whereas all other four regions had higher than national average, viz. North-East [17.12%], Western [10.92%], Eastern [6.90%] and Southern [5.98%].

NPA Amount: NPA amount at aggregate level declined to 85.18% in 2014 ranging from declining to 60.39% to increasing to 174.09% across six regions. NPA amount in 2014 was appreciably lower than national average [85.18%] in three regions, viz. Central [60.39%], Western [70.58%] and Southern region [72.13%] whereas it was significantly higher in Eastern [174.69%] Northern [158.62%] and North-Eastern region [127.87%].,

Loss Amount: At aggregate level the loss amount was as high as 935.5 million in 2014 as compared to 39.5 million in 2007 showing variation from no loss to 635.9 million in 2014 and from zero loss to 39.5 million in 2007. Loss amount was the highest in Southern region [635.9 million] followed by North-East [142.78 million], Eastern [129.6 million] and Western region [113.6 million] whereas Central and Northern regions did not report any loss.

Profit Amount: Profit amount of SCBs at the national level increased to 350.81% in 2014 over that in 2007 ranging from as low as 96.01% to as high as 2443.94%. During 2014, three regions had higher profit amount percentage over the national average [350.81%] viz. Southern [2443.94%], Western [765.50%] and North-Eastern region [628.70%] whereas it was significantly lower in Northern [96.01%], Central [195.46%] and Eastern region [153.49%].

District Central Cooperative Banks

Recovery: At national level, recovery in 2014 marginally improved to 74.97% from 71.08% with variation from 67.23% to 83.16%.in 2014 as compared to from 60.34% to 82.82% in 2007 across five regions. Four regions had improved recovery in 2014 over that in 2007, viz. Western [70.86%/60.34%] followed by Southern [81.28%/77.60%], Eastern [67.23%/64.36%] and Northern region [83.16%/82.82%] whereas Central region had declined recovery from 81.57% to 75.20%. During 2014, as compared with 74.97% recovery at All India level, Northern region had higher recovery [83.16%] followed by Southern [81.28%] and Central region [75.20%] whereas Western [70.86%] and Eastern region [67.23%] had lower recovery percentage.

NPA Percentage to Outstanding: Percentage of NPAs to outstanding at aggregate level significantly improved from 18.53% in 2007 to 9.29% in 2014 showing narrow variance from 5.27% to 12.67% in 2014 as against wide variation from 7.14% to 30.16% in 2007 among five regions. Significant improvement in 2014 over that in 2007 was observed in four regions, viz. Central [9.49%/30.16%] followed by Eastern [10.98%/20.75%] Western [12.67%/22.12%] and Southern region [6.98%/16.56%] whereas Northern region had marginal improvement [5.27%/7.14%]. In 2014, across five regions, against All India average [9.29%] the Northern region had the lower percentage of NPAs to loan outstanding [5.27%], followed by Southern region [6.98%] whereas Central [9.49%], Eastern [10.98%] and Western [12.67%] had higher than the national average.

NPA Amount: At national NPA amount in 2014 increased to 114.19%. Among five regions, while NPA amount was

Table 6
Region-wise financial status of State Cooperative Banks (As on 31st March 2007 & 2014) [₹ Million]

Region	Profit Amount	Loss Amount	Total NPAs	NPAs % to O/S	% Recovery
Central	1401.4 [724.4] {193.46}	00.00 [00.00]	4610.5 [7634.7] {60.39}	02.70 [13.85]	96.39 [80.20]
Northern	1087.4 [1132.6] {96.01}	00.00 [00.00]	4788.2 [3018.6] {158.62}	01.93 [03.07]	97.90 [98.16]
Eastern	474.9 [309.4] {153.49}]	129.6 [00.00]	8723.7 [5011.1] {174.09}	06.90 [10.82]	57.97 [70.64]
Western	4144.4 [541.4] {765.50}	113.6 [00.00]	18109.6 [25659.7] {70.58}	10.92 [20.48]	88.68 [79.06]
Southern	2057.8 [084.2] {2443.94}	635.9 [00.00]	15540.5 [21544.9] {72.13}	05.38 [15.51]	96.87 [87.91]
North-Eastern	628.7 [00.00]	56.4 [039.5] {142.78}	5333.7 [4171.0] {127.87}	17.12 [43.94]	49.10 [43.02]
All India	9794.6 [2792.0] {350.81}	935.5 [039.5] {2368.35}	57106.2 [670 39.4] {85.18}	05.54 [14.16]	82.08 [85.65]

Figures in parentheses [ ] indicate data for the year 2007 & in { } indicate percentage of respective indicator in 2014 over that in 2007.

Table 7
Region-wise financial status of District Cooperative Banks (As on 31st March 2007 & 2014) [₹ Million]

Region	Profit Amount	Loss Amount	Total NPAs	NPAs % to O/S	% Recovery
Central	88 [71] 2950 [1211.6] {243.48}	14 [33] 1480 [1860.0] {79.57}	36580 [31180.4] {117.32}	09.49 [30.16]	75.20 [61.57]
Northern	61 [55] 1270 [1193.9] {106.37}	12 [16] 1010 [440.1] {229.49}	18700 [11283.2] {165.73}	05.27 [07.14]	83.16 [82.82]
Eastern	59 [45] 1300 [427.8] {303.88}	04 [19] 80 [593.9] {13.47}	15700 [12408.0] {126.53}	10.98 [20.75]	67.23 [64.36]
Western	44 [37] 4260 [1669.9] {255.10}	05 [12] 730 [2416.8] {30.20}	65540 [62483.0] {97.12}	12.67 [22.18]	70.86 [60.34]
Southern	79 [63] 5450 [3040.9] {179.22}	01 [17] 190 [1929.1] {09.85}	51830 [47594.2] {108.90}	06.98 [16.56]	81.28 [77.60]
All India	331 [271] 15230 [7544.1 {201.88}	36 [97] 3490 [7239.9] {48.21}	188350 [164948.8] {114.19}	09.29 [18.53]	74.97 [71.08]

Figures in parentheses [ ] indicate data for the year 2007 & in { } indicate percentage of respective indicator in 2014 over that in 2007.

lower than national average in Western region [97.12%] and Southern region [108.90%] in 2014, it was higher in Northern [165.73%], Eastern [125.53%] and Central region [117.32%].

Loss Amount: At national level, loss amount declined to 48.21% in 2014. Among five regions, Southern region had the lowest [9.85%] followed by Eastern [13.47%] and Western region [30.20%] whereas it was substantially higher than national average in Northern [229.49%] and appreciably higher in Central region [79.57%]

Profit Amount: At aggregate level, profit amount in 2014 increased to 201.88%. It increased substantially in Eastern region [303.88%] followed by Central [243.48%] and Western region [225.10%] whereas it was significantly lower than national average in Northern region [106.37%] and moderately lower in Southern region [179.22%].

State Cooperative Agricultural & Rural Development Banks

Recovery: At national level recovery of SCARDBs during the year 2014 significantly declined to 33.25% from already poor recovery [43.89%] in 2007, with a wide variation from 8.91% to 71.36% in 2014 and from 22.92% to 79.06% in 2007 across six regions. Only two regions had substantially improved recovery performance during 2014 over that in 2007 viz. the Southern region [71.36%/48.82%] and the North-East [54.88%/22.92%] as compared to declining recovery in Western [8.91%/52.55%], Central [12.61%/33.77%], Eastern [26.93%/31.33%] and Northern region [48.68%/79.06%]. During 2014, the Southern region recorded the higher recovery percent [71.36%] than national average [33.25%] followed by North-East [54.88%] and Northern [48.68%] whereas other three regions had significantly lower recovery than national average, viz. the Western [8.91%], Central [12.61%] and Eastern region [26.93%].

NPA percentage to loans outstanding: At aggregate level, NPA percentage to loan outstanding increased to 35.57% in 2014 from 30.27% in 2007 exhibiting wider variance across six regions from 9.16% to 79.75% in 2014 than that from 16.91% to 58.73% in 2007. NPA percentage to loan outstanding during 2014 over that in 2007 increased significantly in Western [79.75%/42.36%], Central [71.76%/39.99%] and appreciably in Northern region [29.77%/24.07] whereas they declined in North-East [49.51%/58.73%], Eastern [36.66%/40.70%] and Southern region [9.16%/16.91%]. During 2014, NPA percentage to loan outstanding was substantially higher than national average [35.57%] in Western [79.75%], Central [71.76%], North-East [49.51%] and marginally higher in Eastern region[36.66%] as compared to significantly lower in Southern [9.16%] and marginally lower in Northern region [29.77%].

NPA Amount: NPA amount in 2014 increased to 128.58% with a wide variation from 95.79% to 159.22% across six regions.. NPA amount in 2014 was significantly lower than

Table 8
Region-wise financial status of State Cooperative Agri. & RD Banks (As on 31st March 2007 & 2014) [₹ Million]

Region	Profit Amount	Loss Amount	Total NPAs	NPAs % to O/S	% Recovery
Central	00.00 [00.00]	1254.1 [1214.6] {103.25}	30325.7 [23404.0] {129.57}	71.76 [39.99]	12.61 [33.77]
Northern	00.00 [62.4]	92.7 [00.00]	18150.4 [14093.8] {128.78}	29.77 [24.07]	48.68 [79.06]
Eastern	00.00 [00.00]	472.6 [16.1] {2935.40}	4343.6 [3745.6] {115.96}	36.66 [40.70]	26.93 [31.33]
Western	1812.6 [2184.1] {82.99}	00.00 [00.00]	12959.8 [8139.3] {159.22}	79.75 [42.36]	08.91 [52.55]
Southern	230.9 [00.00]	00.00 [128.8]	6584.7 [6874.1] {95.79}	09.16 [16.91]	71.36 [48.82]
North-Eastern	00.00 [9.8]	62.2 [00.00]	193.9 [174.5] {111.12}	49.51 [58.73]	54.88 [22.92]
All India	2043.5 [2256.3 {90.57}]	1881.6 [1359.5] {138.40}	72558.1 [56431.3] {128.58}	35.57 [30.27]	33.25 [43.89]

national average [128.58%] in Southern [95.79%], North-East [111.12%] and Eastern region [115.96%] as compared to substantially higher in Western [159.22%], and marginally higher in Central [129.57%] and Northern region [128.78%].

Loss Amount: At All India level, loss amount increased to 138.40% ranging from no loss to as high as 2935.40% in 2014 across six regions. Loss amount was substantially higher than national average [138.40%] in Easter region [2935.40%] and significantly lower in Central region [103.25%] and at par in North-Eastern region [138.40%] and declined to 92.7% in Northern region. Interestingly, two regions, viz. Southern and Western did not show loss amount.

Profit Amount: At national level profit amount in 2014 increased to 90.57% ranging from no profit to 230.90% across six regions. Profit amount was substantially higher than national average [90.57%] in Southern region [230.90%] whereas it was significantly lower in North-East [9.80%] and marginally lower in Western region [82.99%] and three regions, viz. Central, Northern and Eastern did not show any profit..

Primary Cooperative Agricultural & Rural Development Banks

Recovery: Recovery percentage of PCARDBs at aggregate level significantly declined to 43.92% in 2014 from the already poor recovery percentage [53.22] in 2007. The recovery mobilized varied considerably among five regions from as low as 8.42% to as high as 72.21% in 2014 as compared with from 23.75% to 57.69% in 2007. During 2014, recovery was considerably higher than that in 2007 in Southern region [72.21%/53.95%] and marginally higher in Eastern region [54.63%/51.01%] whereas it was substantially lower in Central region [9.67%/56.71%] followed by Western [8.42%/23.75%] and Northern region [41.40%/57.69%]. During the year 2014, while two regions had significantly higher recovery than the national average [43.92%] viz. the Southern [72.21%] and Eastern [54.63%], two regions had very poor recovery viz. Western [8.42%] and Central region [9.67%]. Northern region showed marginally lower recovery [41.40%].

NPA percentage to loan outstanding: At All India level, PCARDBs had marginally higher NPA percentage to loan outstanding [37.30%] in 2014 than 35.44% in 2007 exhibiting a very wide variance from 23.95% to 99.84% in 2014 as against moderate variation from 33.00% to 48.00% in 2007. It was substantially higher in 2014 than that in 2007 in Western [99.84%/48.00%] and Central region [69.23%/37.51%] and appreciably higher in Northern [43.06%/34.45%] whereas it was appreciably lower in Eastern region [23.95%/33.62%] closely followed by Southern region [24.22%/33.00%]. During 2014, it was substantially higher than national average [37.30%] in Western [99.84%] and Central region [69.23%], moderately higher in Northern [43.06%] and significantly lower in Eastern [23.95%] and Southern region [24.22%].

NPA Amount: During 2014, NPA amount increased to 111.42% at national level showing wide variance from 63.01% to 121.36%. NPA amount was appreciably higher than national average [111.42%] in Northern region [121.36%], moderately higher in Central [115.60%] and

marginally higher in Southern region [112.06%] whereas it was marginally lower in Eastern [108.52%] and considerably lower in Western region [63.01%}.

Loss Amount: Loss amount of PCARDBs at aggregate level declined to 89.78% in 2014 indicating wide variation from as low as 63.41% to as high as [192.49%]. Loss amount was substantially higher than national average [89.78%] in Central region [192.49%] followed by Northern [163.33%] and Eastern region [146.88%] whereas it was significantly lower in Western [23.60%] and Southern region [63.41%].

Profit Amount: Profit amount for PCARDBs at national level considerably declined to 63.18% in 2014. Profit amount during the year 2014 substantially increased in Western [304.19%] and Northern region [159.63%] whereas it significantly declined in Eastern region [96.46%] moderately in Southern [39.56%] and significantly in Central region [28.46%].

Financial performance at a glance

Following Table exhibits region-wise, bank-wise financial performance at a glance based on concerned bank's higher performance than that of All India average as on 31st March 2014 in terms of increase in profit, reduction in loss & reduction in NPAs. For recovery & NPA percentage to loan outstanding, the performance is based on higher percentage of recovery and lower percentage of NPA to loan outstanding than All India average in 2014.

Category of bank showing better performance has been indicated in each of five indicators in the concerned region. Southern region showed the best performance among six regions with aggregate score of 13 out of 20 followed closely by Western [12/20], Northern [10/20] and Eastern region [9/20] whereas Central [7/20] and North-Eastern region [3/10] had lower scores.

North-Eastern region is having only SCB & SCARDB, whereas each of other five regions has SCB, DCCBS, SCARDB & PCARDB. Thus, financial performance in North-Eastern region has been assessed in respect of two banks under each of five financial indicators as against four banks in other five regions. This makes aggregate score of 10 [2X5] in North-Eastern region and 20 [4X5] in other five regions.

Quality of Assets: Rural financial institutions are exposed to unpredictable risks due to unfavourable environment [both natural & economic] consequent upon which non-recovery of loans on time often results into building up non-performing assets [NPA] and accumulated loss, thereby wiping out their capital & reserves. The intrinsic strength & financial sustainability of financial institution invariably lies in complying with the international prudential norms [capital to Risk Weighted Asset Ratio, income recognition, classification of assets & provisioning for non-performing assets] which commercial banks in India have been complying with since mid-1990s.

Table 9
Region-wise financial Status of Primary Cooperative Agri & RD Banks (As on 31st March 2007 & 2014) [₹ Million]

Region	Profit Amount	Loss Amount	Total NPAs	NPAs % to O/S	% Recovery
Central	07 [20] 11.5 [40.4] {28.46}	43 [30] 1027.7 [533.9] {192.49}	6424.5 [5557.7] {115.60}	69.23 [37.51]	09.67 [56.71]
Northern	91 [85] 507 [317.6] {159.63}	54 [59] 2156.6 [1288.8] {167.33}	24087.6 [19848.3] {121.36}.	43.06 [34.45]	41.4 [57.69]
Eastern	08 [11] 43.6 [45.2] {96.46}	62 [55] 331.5 [225.7] {146.88}	2483.7 [2288.6] {108.52}	23.95 [33.62]	54.63 [51.01]
Western	11 [03] 675 [221.9] {304.19}	18 [26] 432.6 [1832.8] {23.60}	2873.6 [4560.2] {63.01}	99.84 [48.00]	8.42 [23.75]
Southern	255 [213] 1410 [3564.3] {39.56}	163 [172] 1132.4 [1785.7] {63.41}	12221 [10905.5] {112.06}	24.22 [33.00]	72.21 [53.95]
All India	372 [350] 2647.1 [4189.4] {63.18}	340 [342] 5088 [5666.9] {89.78}	48090.4 [43160.3] {111.42}	37.3 [35.44]	43.92 [52.22]

Figures in parentheses [ ] indicate data for the year 2007 & in { } indicate percentage of respective indicator in 2014 over that in 2007.

Table 10
Region-wise Performance of SCBs, DCCBs, SCARDBs & PCARDBs at a Glance (As on 31st March 2014)

Region	Profit Amount	Loss Amount	Total NPAs	NPA % TO Loan O/S	Recovery percentage	Total Score
Central	DCCB	SCB, SCARDB	SCB, DCCB, SCARDB		DCCB	07/20
Northern	PCARDB	SCB, SCARDB	SCARDB	SCB, DCCB, SCARDB	SCB, DCCB, SCARDB	10/20
Eastern	DCCB, PCARDB	SCB, DCCB	SCARDB, PCARDB	PCARDB	SCARDB, PCARDB	09/20
Western	SCB, DCCB, PCARDB	SCB, DCCB, SCARDB PCARDB	SCB, DCCB, PCARDB	PCARDB	SCARDB	12/20
Southern	SCB	DCCB, SCARDB PCARDB	SCB, DCCB SCARDB	DCCB, SCARDB	SCB, DCCB, SCARDB PCARDB	13/20
North-East		SCARDB	SCARDB		SCARDB	03/10
All India						
SCB	350.81%	155.91%	85.18%	5.54%	85.65%	
DCCB	201.88%	48.21%	114.19%	9.29%	74.97%	
SCARDB	90.57%	313.60%	150.00%	35.57%	33.25%	
PCARDB	63.18%	89.78%	111.42%	37.30%	43.92%	

Sub standard: Substandard assets for cooperatives as a group of all SCBs, DCCBs, SCARDBs and PCARDBs at aggregate level increased to 102.90% between 2007 and 2014. DCCBs alone [55.61%] shared more than all other three institutions viz. SCARDBs[18.67%],PCARDBs[13.29%] and SCBs [12.42%[. SCBs [69.87%], SCARDBs [71.95%] and PCARDBs [88.00%] had declined percentage of substandard assets in 2014 over that in 2007 as compared with DCCBs [145.03%].

Doubtful Assets: Doubtful assets at the national level for all cooperatives together increased to 133.49% during 2007 to 2014. DCCBs alone [47.79%] accounted for a little less than all other three institutions, viz. SCARDBs [23.20%], SCBs [14.66%] and PCARDBs [14.36%].Only SCBs had insignificantly declined percentage of doubtful assets [99.61%] in 2014 whereas SCARDBs had the highest percentage of doubtful assets[315.93%] followed by PCARDBs [143.67%] and DCCBs[111.50%].

Loss Assets: Loss assets at All India level for cooperatives declined to 88.90% during the period 2007 to 2014. DCCBs accounted for as high as 66.97% share in loss assets as compared with SCBs [31.54%] and meagre share of SCARDBs [0.35%] and PCARDBs [1.14%]. Only PCARDBs had as high as 170.57% loss assets as compared with SCBs [90.75%] followed by DCCBs [87.52%] and SCARDBs [64.83%].

Total NPAs: Total NPAs for cooperatives at aggregate level during 2007 to 2014 increased to 110.37%.DCCBs [51.46%] had a share of more than other three institutions, viz. SCARDBs [19.82%], SCBs [15.57%] and PCARDBs [13.14%]. While SCBs [85.01%] had declined percentage of total NPAs during the period, SCARDBs [128.58%] had the higher level of total NPAs followed by DCCBs[114.19%] and PCARDBs [111.42%]

Capital to Risk Weighted Asset Ratio [CRAR]: RBI has advised all cooperative banks to attain and maintain CRAR of 7% by March 2015 and 9% by March 2017. As compared to 31st March 2013, none of the SCBs had less than 4.00% CRAR in 2014 whereas number of SCBs having CRAR between 4.00% & 7.00% as also between 7.00% & 9.00% remained at 6 & 7 respectively and number of SCBs increased to 19 with CRAR above 9.00%. In case of DCCBs, as of 31st March 2014 the number of DCCBs having CRAR less than 4.00% declined significantly to 24 from previous year and from 47 to 45 with CRAR between 4.00% &7.00% whereas number of DCCBs with CRAR between 7.00% & 9.00 as also above 9.00% significantly increased to 77 from 70 and to 222 from 208 respectively. This showed better response to RBI's instructions.

Findings

Analysis of the statistical data & information on the business & financial performance indicators of cooperative credit institutions between 31st March 2007 & 2014 reveal as under.

- Significant improvement in financial performance of PACS has been distinctly evident whereas performance in respect of business has been conspicuously absent.
- The Southern region among six regions has performed better in respect of 15 out of 18 business & financial parameters.
- State Cooperative Banks & District Central Cooperative Banks have performed better in most financial parameters.
- State Cooperative Agricultural & Rural Development Banks as also Primary Cooperative Agricultural & Rural Development Banks have yet to show the impact of enabling measures adopted since 1990s. Even though Task Force No. 2 for LTCCS headed by Prof. Vaidyanathan reccomended a revival package for recapitalization of ARDBs in 2006, it has not been operationalized so far.

Table 11 Classification of Assets of Cooperatives as on 31st March 2007 & 2014					[₹ Billion]
Assets	SCBs	DCCBs	SCARDBs	PCARDBs	Total
Substandard	20.6607 [29.5705] {69.87}	92.4634 [63.7513] {145.03}	31.0505 [43.1542] {71.95}	22.1 [25.1129] {88.00}	166.2746 [161.5889] {102.90}
Doubtful	26.1422 [26.2451] {99.61}	85.2767 [76.4834] {111.50}	41.3945 [13.1025] {315.93}	25.62 [17.8325] {143.67}	178.4334 [133.6635] {133.48}
Loss Assets	10.1863 [11.2244] {90.75}	21.6291 [24.7141] {87.52}	0.1132 [00.1746] {64.83}	0.3669 [00.2151] {170.57}	32.2955 [36.3282] {88.90}
Total NPAs	56.9892 [67.0400] {85.01}	188.35 [164.9488] {114.19}	72.5582 [56.4313] {128.58}	48.09 [43.1603] {111.42}	365.9874 [331.5804] {110.37}
Provision required	NA [28.1957]	NA [102.2193]	18.175 [12.8659] {141.26}	12.4376 [07.9913] {155.64}	
Provision made	35.1643 [31.9992] {109.89}	116.7054 [121.6257] [95.95}	21.3802 [12.8659] {166.18}	13.3379 [07.9913] {166.90}	

Figures in parentheses [ ] indicate data for the year 2007 & in {} indicate % of respective indicator in 2014.

Table 12 CRAR of SCBs & DCCBs As on 31st March 2013 & 2014				
Range of CRAR	State Cooperative Banks		District Central Cooperative Banks	
	2012-13	2013-14	2012-13	2013-14
<4.00	02	00	45	24
4.00 to 7.00	06	06	47	45
7.00 to 9.00	07	07	70	77
9.00 & above	17	19	208	222
Total	**32**	**32**	**370**	**368**

- Following Table presents at a glance the comparative performance of SCBs, DCCBs, SCARDBs & PCARDBs in respect of financial parameters [profit & loss amount, total NPAs, percentage of NPAs to loan outstanding, recovery percentage and quality of Assets] at aggregate level between 31st March 2007 & 2014. The SCARDBs & PCARDBs have extremely poor performance in all the eight financial indicators as compared to that of SCBs & DCCBs. Between SCBs & DCCBs, SCBs have better performance in respect of six out of eight parameters [except loss amount & loss assets].

All above findings point to the need for mounting an Action Research Project to better understand the contributory factors for PACS to show better financial performance [and not business performance] & the Southern region among six regions to show the best performance in 15 out of 18 business & financial performance indicators. So is the case for Action Research Project to identify factors inhibiting the growth of SCARDBs & PCARDBs as compared to SCBs & DCCBs. This should help devising area & institution-specific policy & strategy to accomplish the targeted performance of CCIs when specific enabling measures, viz. introduction of CDF, ODI, DAP & undue delay in implementing the revival package affected the ability of the long-term cooperation credit structure to meet the needs of its member.

Problems and Challenges

While problems continue since years viz. the absence of truly democratic management, vulnerability of political pressures, lack of concern and earnest actions by the State Governments, lack of inability of the credit institutions to mobilize deposits and continuing depending upon higher tiers, the Herculean challenges have been to improve margin on lending operations, lower cost of transactions, stepping up the level of business, significant improvement in recovery, drastically reducing accumulated losses & non-performing assets, improving climate of recovery [rather than vitiating by wholesale interest waiver & loan write-off] both by massive loan repayment campaigns & by refraining from announcing loan & interest waiver schemes. This suggests immediate actions on the

Table 13 Comparative Financial Performance of SCBs, DCCBs, SCARDBs & PCARDBs at a Glance				
Parameters	SCBs	DCCBs	SCARDBs	PCARDBs
Profit amount	350.81%	201.88%	90.57%	63.18%
Loss amount	2368.35%	48.21%	138.40%	89.78%
Total NPA amount	85.18%	114.19%.	128.58%	111.42%
NPA % to O/S	05.54%	09.29%	35.57%	37.30%
Recovery %	82.08%	74.97%	33.25%	43.92%
Standard Assets	69.87%	145.03%	71.95%	88.00%
Doubtful Assets	99.61%	111.50%	315.93%	143.67%
Loss Assets	90.75%	87.52%	64.83%	170.57%

need for formulating a strategic action plan for 2016-2021 with focused attention on following.

- Cooperative institutions as a group should have a Mission Statement and "Vision-2025 document" accompanied by a comprehensive strategy to accomplish the vision by formulating a strategic action plan to be implemented on an annual basis duly supported by built-in monitoring/review system and a robust Management Information System.
- DCCBs and District Development Managers of NABARD can formulate district-wise perspective Business Plan for five years for all PACS in each district and develop strategy to achieve targeted business on an annual basis.
- The quality of leadership accompanied by the ability to harness financial inclusion technology to the customers' advantage and customer-centric banking practices can help banks reach to all members of PACS and make PACS financially viable.
- Cooperatives' access to financial resources including liberal refinance facilities and access to Financial Inclusion Fund and Financial Inclusion Technology Fund can facilitate them to improve exploiting business opportunities by implementing Prime Minister Jan Dhan Yojana and enhance their income through government's Direct Benefit Transfer Scheme.
- The Cooperative Development Fund can help cooperatives invest adequately in technology and staff training to enrich them with skills and knowledge of bank-related developments, more particularly, the electronic payment system.
- A comprehensive review, more importantly the effectiveness of actions taken on the accepted recommendations of the Vaidyanathan Committee on the revival of short-term cooperative credit institutions and of the Task Force on long-term cooperative credit structure should enable cooperatives to accelerate the progress and performance.
- A comprehensive planning exercise can streamline the business activities and human resource development initiatives more importantly in SCARDBs & PCARDBs
- Completion of computerization program of PACS in States in which it has started and in other States in a year or two
- Completion of the process of adoption of Common Accounting System [CAS] and MIS for PACS and making operative in a year or two
- Application of modern technology in business activities to improve the operational and administrative efficiency of cooperatives
- Appropriate orientation training programs for the Board members and employees of cooperatives in order to familiarize them with the new technology as well as capacity building training program for employees for business development as envisioned in the Vision-2025 document.

Conclusion

Potential of CCIs to achieve financial inclusion, promote agricultural & rural development and alleviate rural poverty can be harnessed by progressively converting selected PACS in larger size villages as full-fledged branches of DCCBs, establishing some Credit Unions in key villages on lines of that promoted by the World Council of Credit Unions in most developing countries, and training the staff by Institute of Rural Management, Anand and managed on sound principles of business.

In the transforming rural India positioning of Primary Agriculture Credit Societies (PACS) as viable economic unit - An Approach Paper

Mr. Anil Kumar Tiwary

I Background & objectives

This paper will provide an overall changing business approach to PACS for its urgent need of viability transformation in the rural environment of states like Bihar, Uttar Pradesh, Uttrakhand, Madhya Pradesh, Jharkhand, Chhattisgarh (Northern & Central India). Networking and coverage of PACS in these states are 100% in each village and each family, however the business approach is directed by the State Govt. and focused merely on business of agricultural inputs and loan distribution. In the post Vidhyanathan Era and emerging competitiveness in the rural environment still could not force the PACS to integrate its services to cater to the multiple need gap of its members. As a consequence each PACS having 8-10 villages in its fold 1000-1200 enrolled members, but the active members are only 35-40%, remaining converted into dormant members due to lack of focus on members need.

NABARD's approach to assist the PACS to convert into viable unit is excellent in its conceptual frame-work and CPEC (Centre for Professional Excellence in co-operatives) performing well to revive the PACS but as co-operative is a state subject and whatever reform package designed to transform the potentially viable PACS into democratically governed, efficiently managed, financially sustainable, self-reliant business entities, that can provide a wider range of services to its members, all these action-oriented issues down the line when virtually reaches to the base level, gets ineffective.

II Submission to the Stakeholders

Since, PACS is a member driven movement and associated stakeholders involve in the helm of the affairs to support the economic and social cause of rural people. It is high time and an alarming issue to review the role of all the stakeholders and make a humble submission to them to rejuvenate the PACS current status and convert them into the pride venture of rural people. It is an age old self-driven movement where people come together, think together and work together for their economic and social empowerment.

Following submission to the stakeholders are based on serious realization prevailed in the management of PACS:-

Faculty Member, IGICM, Lucknow

Members

Members still consider PACS as Govt. Institution and for limited reasons only connect themselves to the PACS. Since, after enrolment they are the consumers so they need the treatment as satisfied customer. If they are 55-60% a dormant members absolutely the reason is limited services of the PACS to them. The submission to the members is to become aware and sensitise, so that the other stakeholders keep themselves on their toes.

Board of Directors (BOD)

BOD an play a crucial role in the decision making process and introducing new products and new services in the PACS but unfortunately the autonomy and freedom still not realised by them. They are not properly supported by the Co-operative Department and DCCB due to their lack of awareness and understanding. To make the PACS a successful venture, proper orientation of BOD with due recognition is an important issue needs to be addressed in earnest. Functional gap created by the C.E.O make the BOD virtually isolated in the development of PACS.

The submission to the BOD is to support the Chairman and take the functional decision by organising regular meetings of the BOD and proper monitoring and evaluation of the directive measures as well harness the constructive support of the Co-operative Department and DCCB.

The Chairman

The Chairman of PACS can provide his guidance to the C.E.O and other staff on daily basis. He has local influence in the operational area of the PACS. He can do the miracle in the makeover and effective performance of PACS.
The submission to the Chairman is to take interest in the affairs of PACS on routine basis. He should popularise the services of PACS and built confidence in the members. The Chairman by his able guidance can win the confidence and force the local government as well the DCCB in introducing new products and services at regular interval.

The DCCB

It is a nerve centre for all kind of co-operative movement in the district. It has direct relationship with PACS for credit linkages. The current continuous revolutionary initiative in the credit field must urge to both these two co-operative institutions to realise the graveness of their identity/utility in the market and what may be the means

of improvement, they must co-ordinate and co-operate for the positive result. The submission to the DCCB is to treat the PACS as their business partner and ensure the strength of co-operative credit structure by exploiting the potential of PACS considering its outreach to every family of the village.

The Co-operative Department

The Co-operative Department is above all to support the PACS. Since, the State Govt. has its developmental agenda linked to the democratic institution viz. PACS at grass-root level. Till date, the PACS is not well utilised by the State Govt. to benefit the rural consumers by a well networked rural institution only available in the co-operative fold.

The submission to the Co-operative Department is to allow the PACS to function under the control of the BOD. PACS must get the confidence of the department to take decision based on local need identification of the members/consumers. To make the PACS comfortable, a regular encouraging written communication with all the PACS regarding their autonomy and freedom is desperately needed in the process of improvement.

III Developing PACS as Integrated Rural Service Centre (IRSC)

Promoting PACS as Integrated Rural Service Centre (IRSC) will allow members/consumers to look at PACS for daily, short and long-term need through multi-offerings including Agriculture Technology Management Services, Marketing Services, Consumer Services (FMCG Products), Agro Advisory & Market Information and Educational & Support Services. This approach would attract the members/consumers and village community to PACS. As an outlet (Village Services Centre) for multiple services, it will develop a deep loyalty in the members. Gradually, a rural consumer would become less influenced by other channels known as middlemen who generally exploit both the producer and consumer.

PACS in the new business format should adopt required strategy for development of no-credit/non-fund/agency business/new diversification alternatives for its IRSC operation. Undertaking business activities will be in the following areas:

Major Non-Credit Activities

- Input supply (Seeds, Fertilisers, Pesticides, etc.
- Agro-processing and storage activities (Rice-mill, Ginning unit, Seed processing unit, Storage services, etc.)
- Custom hiring (Tractor, Power tiller, Threshers, etc.)

Non-Fund Based Activities

- Selling insurance product
- Selling mutual funds
- Working as facilitator for other banks

New Diversification Alternatives

- Supplying mid-day meal to school/anganwadis
- Providing artificial insemination services for live-stocks development
- Soil health testing centre
- Transport services from village to nearby towns
- Consumer/FMCG products/Medicinal products

Diagram - 1

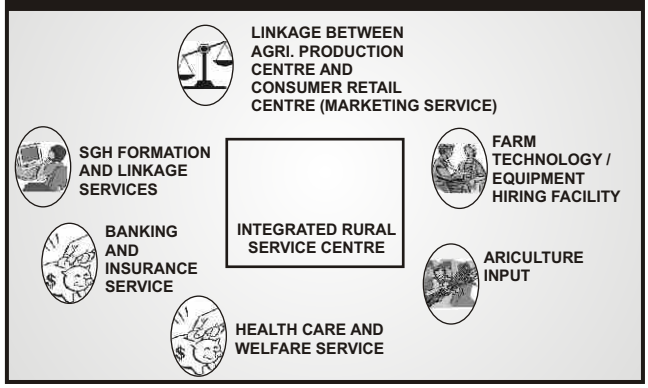
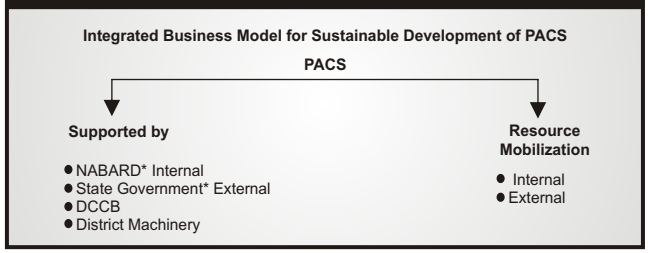


Diagram - 2



IV PACS as Integrated Rural Service Centre Operational Guidelines

The objective of motivating PACS to convert itself into an IRSC is to ensure its survival in the current competitive environment. In the Central and Northern India approximately 70-80% PACS are in accumulated losses. IRSC approach can strengthen its business portfolio to cope-up with the losses in one business by profit making in another business and maximum promotion of cross-selling among the available members/consumers.

Sources of Funds to PACS

Internal Resources

PACS generally generate internal funds through share capital contribution, reserve fund & other services, undisbursed profit and deposit mobilisation.

External Resources

Borrowing dependency mostly by DCCB in the recent-past hindered the growth and viability due to inadequate limit sanction, untimely lending and weak drawing power of PACS.

Need for Resource Mobilisation

PACS must strive for self-sufficiency by multiple

resource mobilisation initiative to qualify for following accomplishment:

- To meet credit requirement of members-adequately and timely.
- To reduce dependence on external funding.
- To become self-dependent.
- To reduce fund cost for better spread and more profit.
- To get operational freedom in resource deployment.
- To increase business volume.
- To provide deposit services and to promote thrift habit.
- To increase outreach.

Desirable Resource Mix

PACS has to ensure its desirable mix of resources by generating cost free resources like share capital, reserves, surplus profit and other liabilities. Deposit mobilisation mix, where low cost deposits in form of saving a/c and current a/c more than the fixed deposits and term deposits. Now, it's needed for PACS to rely less on DCCB for external borrowing from DCCB or other sources.

Ground Work for Marketing Strategy of IRSC

- Conduct household survey
- Identify uncovered families
- Form sub-committee
- Motivate uncovered families through village level meeting, personal conatacts and create awareness through publicity.
- Promote Farmers Clubs and take their help
- Promote SHGs and establish business linkages with them
- Promote tenant Farmers Groups and JLGs to cover landless, tenant farmers, agricultural labourers etc.
- Take the help of Board Members
- Improve quality of service to once-again infuse confidence in the members/consumers
- Integrate all kind of needs to one-step purchasing by providing all types of services & product
- Introduce new loan products and provide adequate credit services
- Cover more and more new members

PACS-A dream outline for immediate adaptability

As the infrastructure/space for infrastructure already exists in the PACS, they can be evolved as model centre for transformation of rural economy. By adopting this approach, it will make PACS highly independent commercial business centre offering multiple services apart from banking and financial services. The outline for infrastructure and space utilisation depicted below, the need of the hour is to adopt it immediately along with adoption of information technology/services and other functional support services.

The Key Benefits Expected from above Approach are as follows:

Benefits to Customers

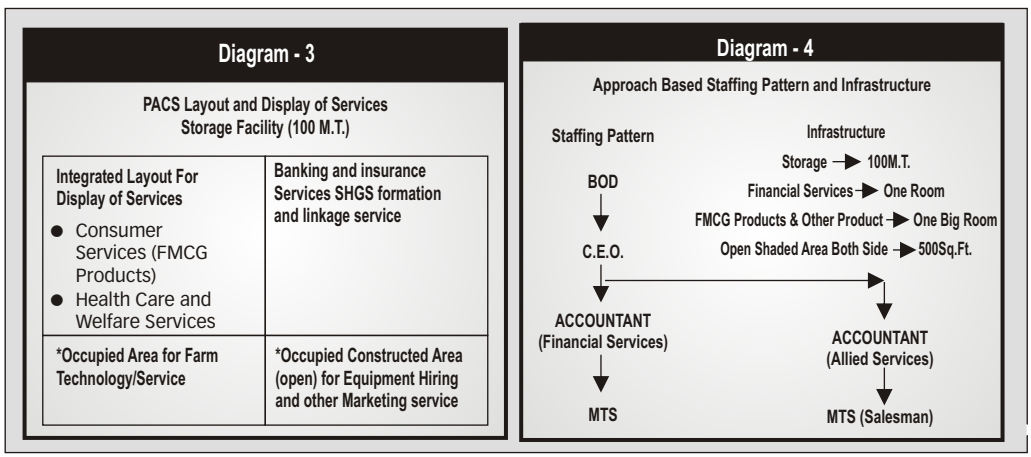
- Access to multiple services at single location.
- Reasonable price and quality services.
- Ownership of the enterprise in itself a pride (Unique business proposition)
- On-line/Mobile services at doorsteps.
- Integrated Rural Services Centres as rural Economic Growth Centre.

Benefits to PACS

- 70-75% loss making PACS will convert into profit by strong business portfolio.
- 55-60% dormant members will convert into active members.
- Due to stiff competition, future chances of elimination can be averted.
- Inclusive growth and business centre.
- A democratically, locally formed, locally operated, members/consumer operated business institution, will strongly defend the fast emerging private owned businesses.

Conclusion

The approach suggested above, is particularly recommended for Central and North India reeling through chances of future abolition due to suffering from marketing myopia as a result of internal weakness/conflict and heavy dependence on external resources. In general, it can become a suitable business model across the nation for 92,432 PACS. This year at full scale, the Prime Minister of India has announced to launch the scheme for Start-up and Stand-up India, therefore, it is high time for the PACS to reinvent and revamp itself for becoming an economic hub in the rural environment.



Technology business incubators (TBIs) – Engines of sculpturing & moulding of agripreneurs

Dr. G. Prasad Babu*
S. Bhavana**
K.Mohan Reddy***

After the economic reforms, liberalization, opening up of our economy during 1991 in general and with the evolution of WTO (World Trade Origination) in particular during 1995, subsistence agriculture has been transferred into commercial agriculture in the country. In India about 52% of the population depend on agriculture for their livelihood. Contribution of agriculture sector in the Gross Domestic Product (GDP) of the country is merely 13%. On the other hand only 20% of the population is depending on service sector which is contributing 55% share in countries GDP. This means that 20% population earning 55% income and 52% population earning 13% of the income of the country with disguised unemployment. Under such circumstances central and state governments in the country have been initiated many measures to overcome the problems in agriculture sector and develop on par with the other sectors of the economy. Among all, one of the initiatives is "Technology Business Incubators (TBIs).Though these kinds of TBIs are abundantly established in Information Technology (IT) and Health sectors, their appearance in agriculture is becoming prominent of late.

What are meant by TBIs?

TBIs are the organizations or centres established either solely by public organization or private organization or both public private partnership (PPP) mode that seeks to give form and substance that is structure and credibility to start-ups or emerging ventures to innovative ideas of individuals in agriculture and allied disciplines that have high growth potential to become competitive agribusinesses by serving, adding value or linking to farm producers to transform them into agripreneurs. In simple terms TBIs are engines which sculpture & manufacture entrepreneurs in agriculture and allied disciplines that are called "agripreneurs". Some of these TBIs functions on service motto and some other on profit motto.

A Business Incubator nurtures the development of technology based and knowledge driven companies / individuals / groups helping them to survive and grow during the start up period (2-3 years) by providing an integrated package of technology, work space, shared office services, access to specialized equipment and value added services like management assistance, business planning, access to finance, technical assistance and networking support. The primary goal of a business incubator is to produce successful businesses that are able to operate independently and financially viable.

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***Teacher (PGT), Economics, A.P. Model School

Time line of TBIs globally

1942	In USA when Student Agencies Inc., in Ithaca, began incubating student companies
1946	First incubator outside the student community was created by American Research Development (ARD), started by several MIT alumni, to supply risk capital to entrepreneurs.
1959	Charles Mancuso and his family purchased the Batavia Industrial Centre (BIC) in New York State and used this former factory warehouse to create jobs in an economically depressed small town.
1960-90	In the 1960s that incubators began to develop. Growth accelerated in the 1970s and 1980s largely as a result of the need to revitalize regions suffering from job losses in basic industries.
1998	New kind of incubator, variously called an "Internet incubator", "accelerator" or "venture catalyst", made its appearance.

Emerging scenario of TBI's in India

- Department of Science & Technology (DST) a nodal department for organizing, coordinating and promoting science & technology activities in the country started as early as 1982.
- National Science & Technology Entrepreneurship Development Board (NSTEDB) was established in 1982 with the major objective of promoting knowledge based and innovation driven enterprises and facilitate generation of entrepreneurship, self-employment and employment opportunity.

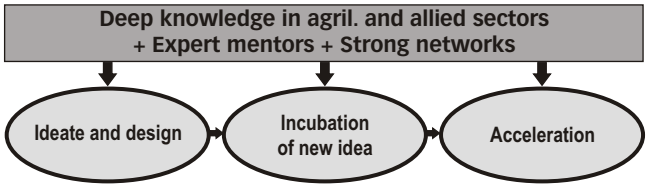
NSTEDB carries out two major programs

1. Science and Technology Entrepreneurs Park (STEP)
2. Technology Business Incubator (TBI).

Mechanism of sculpturing and moulding of start-ups into agripreneurs by TBIs

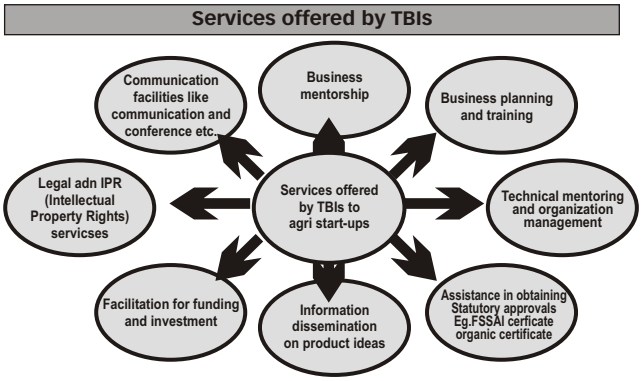
Those who would like to become entrepreneurs in agriculture and allied disciplines like horticulture, Animal Husbandry, Dairying, Fisheries, agricultural engineering, ICT services, farm mechanization etc. with innovative ideas can approach TBIs of their interested field. Facilitators/ experts of TBI conduct counselling on technical feasibility and economic viability of the new idea, whether it is demand driven, investors come forward to invest on new idea etc. and try to transform their idea into reality to become agripreneurs. Experts in TBI would also cater the needs of those who have already been established their ventures on small scale and would like to expand their business in terms of volume, network, area, use of technology etc. to expand their wings towards forward and backward integration.

Strenths of TBIs



Who can approach TBIs?

- Smart farmers
- Youth
- Students
- Women entrepreneurs
- Anyone interested in agri and allied businesses
- Budding agripreneurs
- Established agripreneurs to boost their business



Uses of TBIs to budding agripreneurs or start-ups in agriculture

1. To give form, substance, structure and shape to new idea and transforming it into a business venture.
2. Assisting the farmers,agripreneurs to practice agriculture on commercial lines.
3. Creating demand driven self employmnet in agriculture and allied sectors.
4. Linking up of technology, business and market.
5. Promoting start-ups in agriculture. Research studies have shown that survival rate of start-ups through TBIs are 30-70%.
6. Initiation of technology led entreprises.
7. facilitate speedy commercialization of results of research outputs.

Focus areas of TBIs in the country

1. Post harvest value addition and food processing
2. Mechanization in agriculture
3. Precision Farming
4. Soil and water resource management
5. Farm retailing
6. ICT in agriculture and allied sectors
7. Dairying
8. Supply chain management
9. Agriculture inputs
10. Biotechnology
11. Food for human health and value chain
12. Agricultural education
13. Agri and agri health services
14. Sustainable agriculture
15. Farm fresh retail
16. Innovative food technology
17. Others

TBIs working in agriculture and allied disciplines in India under different organizations

ICAR: The **Indian Council of Agricultural Research** (ICAR) through the World Bank funded National Agricultural Innovation Project (NAIP) is giving a renewed boost to the agricultural research scenario through agribusiness promotion. As a part of Intellectual Property Management and commercialization drive of the ICAR, five Zonal Technology Management Centres & Business Planning and Development Units (ZTM-BPD) are being set up in India under the NAIP at Indian Agricultural Research Institute, New Delhi, Indian Veterinary Research Institute, Izatnagar , Central Institute for Research on Cotton Technology, Mumbai, National Institute of Research on Jute and Allied Fibres Technology, Kolkata and Central Institute of Fisheries Technology, Kochi. The Business Planning & Development Unit will nurture the development of small scale entrepreneurs for the emergence of successful business ventures by providing technological back up, access to specialized equipment and workspace and other facilities in the fields of agriculture, horticulture, dairying and animal husbandry, fisheries etc.

NSTEDB: The National Science & Technology Entrepreneurship Development Board (NSTEDB), established in 1982 by the Government of India under the aegis of Department of Science & Technology (DST), is an

Article Continues to page no. 26

from page no. 23

institutional mechanism to help promote knowledge driven and technology intensive enterprises. The Board, having representations from socio-economic and scientific Ministries/Departments, aims to convert "job-seekers" into "job-generators" through Science & Technology (S&T) interventions.

NIF: The National Innovation Foundation (NIF) - India was set up in March 2000 with the assistance of Department of Science and Technology, Government of India. It is India's national initiative to strengthen the grassroots technological innovations and outstanding traditional knowledge. Its mission is to help India become a creative and knowledge-based society by expanding policy and institutional space for grassroots technological innovators. NIF scouts, supports and spawns grassroots innovations developed by individuals and local communities in any technological field, helping in human survival without any help from formal sector. NIF helps grassroots innovators and outstanding traditional knowledge holders get due recognition, respect and reward for their innovations. It also tries to ensure that such innovations diffuse widely through commercial and/or non-commercial channels, generating material or non-material incentives for them and others involved in the value chain. NIF has also filed applications for 38 plant varieties developed by farmers at the Protection of Plant Varieties & Farmers' Rights Authority. Of these, five have successfully been registered. Micro Venture Innovation Fund (MVIF) at NIF, with support from Small Industries Development Bank of India (SIDBI), has provided risk capital of more than ₹3.84 crore to 193 projects, some of which are at different stages of incubation. Majority of these have already been closed after receiving full repayment. As of 31st March 2016, NIF has received over 950 product inquiries from 108 countries for various technologies. It has also succeeded in commercialising products across countries in six continents, apart from being successful in materialising 89 cases of technology licensing, many with the support of Grassroots Innovation Augmentation Network (GIAN). Some of the TBIs established in agriculture and allied sectors in the country are listed below.

Sn	Name of TBI	Established by	Contact details
1	Centre for agri-innovation (a-iDEA)	National Academy of Agricultural Research and Management (NAARM -ICAR), Hyderabad	NAARM, Hyderabad, Telangana Email:naarmtbi.aidea@gmail.com Tel: +91 40 24581427 Mobile: +91 99899 28773 website:http://www.naarm.ernet.in/
2	Agri Business Incubator (ABI)	ICRISAT Hyderabd	International Crop Research Institute for semi arid tropics (CGIAR), Patancheruvu - 5023224 Tel.no.: 040 30713071 Website: http://www.agri-sciencepark.icrisat.org Email: k.sharma@cgiar.org karuppanchetty@cgiar.org
3	Society for innovation and entrepreneurship in dairying (SINED-TBI) in Dairying.	NDRI, Karnal, (ICAR), Haryana-132001	National Dairy Research Institute, (ICAR) Email:ndritbi@gmail.com Mobile: +91 9416292406 website:http://www.ndritbi.com/
4	Arise - by Zonal Technology Management-Business Planning and Development (ZTM-BPD) of Agriculture	IARI, (ICAR), New Delhi	East patel nagar, Pusa campus, New Delhi.110012 Email:ndritbi@gmail.com Tel: 01125843553/ 25843542 Website:http://www.ztmbpd.iari.res.in Email:ariselaunchpad@gmail.com
5	Zonal Technology Management-Business Planning and Development (ZTM-BPD) of Veterinary	IVRI (ICAR), Uttar Pradesh	Izatnagar, Bareli, Uttar Pradesh Email:drpuneet@ivri.up.nic.in rupasi@ivri.up.nic.in Mobile: 09319097484
6	Zonal Technology Management-Business Planning and Development (ZTM-BPD) of Horticulture	IIHR (ICAR) - Karnataka	Hassargatta, Bengaluru, Karnataka-560089 website:www.agriincubator.com/php/iihr.php

7	Zonal Technology Management-Business Planning and Development (ZTM-BPD) of Fisheries in the name of "Entrepreneur ready'	CIFE (ICAR) - Mumbai	Central Institute of Fisheries Technology, Matshya puri, wellington island, Cochin, Kerala-682029 Tel.no.:+91 484 2666 845 to 848 (Extension: 332 / 414) Mobile: +91 9633028796 Email: southztmc@gmail.com , ciftbpdu@gmail.com
For more details :	http://www.agriincubator.com/, http://ivri.nic.in/ztmbpd/, http://www.nstedb.com/institutional/tbi-center.htm	http://ztmbpd.iari.res.in/, http://nirjaftbpd.in/bpd.html,	

Some of the successful agripreneur ventures through TBIs in the country

- Auxin crop consultants
- Cheermap foods
- Living green organics Pvt. Ltd.
- Karna candy
- Innovation agro
- Inner Being
- Flybird innovations
- Kinetic machines
- Rock Bonsai
- Saro Organic farm fresh
- Bharat Rohan

Challenges to TBIs in the country:

Very few ABIs in the country are present to support agriculture start-ups. ABIs in general have a limited funding support from the supporting organizations and largely work as not for profit organizations, limiting their own sustainability and scalability. Most of the ABI's in the country are relying on the debt format to support start-ups and equity based funding support to start-ups is largely not available in the ABI's in the country. There is a need to establish more ABIs to promote agricultural start-ups in the country. But at the same time, the existing ABIs need to be strengthened. By doing so, we can overcome problems in agriculture sector and make it competent enough to grow on par with industry and service sectors of the country. This would also help in improving the exports, finding alternatives to imports in agriculture sector to save valuable foreign exchange reserves, providing employment in agriculture sector and to make our country a powerful nation in the world.

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Customer satisfaction in new generation Banks: (A case study of HDFC bank in district Ludhiana, Punjab)

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Introduction

The Indian economy has marked as one of the fastest economies in the world irrespective of non conducive economic headwinds blowing globally. It has registered faster than expected recovery from the slowdown in growth witnessed in the aftermath of the global financial crisis owing to factors lie expansionary policy stimulus, visible signs of strong industrial recovery along with the core infrastructure sector, revival in capital flows, revival and stock market and improving overall global economic and financial conditions. This revival calls for equally strong support from the financial banking sector.

Liberalization has opened the gates to number of foreign banks and private sector banks increasing the competition for the banking sector. Post liberalization era rendered Indian Banks exposed to free market competition which demanded strategic need for customer retention. Higher cost of acquisition of new customers, the cost of customer retention drives banks to emphasis on the latter option. Intense competition, continuously evolving customer demands and a high level of customer turnover, have led Indian Banks to identify drivers of customer satisfaction and loyalty, to compete and be the best in their respective sector. Financial liberalization has led to intense competitive pressures and private banks dealing in retail banking are consequently directing their strategies towards increasing service quality level which fosters customer satisfaction and loyalty through improved service quality.

In order to remain competitive and meet the rising expectations of the customer's banks are enhancing their role from the traditional as accepting the deposits and lending to that of becoming comprehensive Financial Services providers. Banks are now offering a host of the financial products architected to meet the customer aspiration and increasing needs. It is the customer who is direct beneficiary of this evolution. Customers are the major decision makers in any marketing effort. Customer's satisfaction leads to their loyalty that helps in realizing economic success of the firm in terms of profitability, market share and return on investment. Customer's assessment about the service quality of a firm depends on their service encounter. Service quality can be assessed in terms of interaction with service personnel, technology interface and physical evidence. Customer perceives service on the basis of the attributes of services and contraceptives available to clients, the quality of the information provided to the clients and quality of the counseling skills, the promotions, etc.

The service sector has assumed greater economic importance over the past decade. India is fifteenth in services output. Quality is increasingly being seen as a key strategic differentiator within the financial services sector, with most major players undertaking some form of quality initiative. In terms of quality of assets and capital adequacy, Indian banks are considered to have clean, strong and transparent balance sheets relative to other banks in comparable economies in its region. Meeting customers' expectations is the major challenge facing managers these days in the service sector. This is why quality improvement is vital concern for all service organizations. The primary aim of this paper is to enhance understanding of service quality on customer satisfaction with respect to the banking industry.

Customers' satisfaction is a combination of their cognitive and affective response to service encounters. Service quality is the overall evaluation of a firm's delivery system. Service quality is the managerial delivery of services while satisfaction is customers' experiences with those services. Improved service quality will result in more customer satisfaction.

Customer Satisfaction

Customer satisfaction has been considered a key to success in today's highly competitive business environment. The importance of customer satisfaction in strategy development for customer and market oriented firms cannot be underestimated. It has increasingly become a goal for organizations to see to deliver satisfaction with their products and services. Danaher and Haddrell (1996) stated that there was an increase in conducting customer satisfaction surveys by many service

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industries. Increased research into customer satisfaction has been influenced dramatically by the variety of measurement scales used in customer satisfaction instruments tests (Devlin, Dong & Brown 1993). Customer satisfaction is defined generally as the feelings or judgments of the customer towards products or services after they have been used (Jamal & Nasar 2003). Customer satisfaction in services industries has been approached differently by equity theory, attribution theory, the confirmation/disconfirmation paradigm provides the grounding for the vast majority of satisfaction studies (Parker & Mathews 2001) . The confirmation / disconfirmation paradigm views customer satisfaction judgments as the result of the customer's perception of the gap between their perceptions of performance and their prior expectations (Parsuraman, Zeithaml & Berry 1994). However, the disconfirmation theory has been increasingly criticized by many marketing scholars (for example, Teas 1994). In particular, Teas (1994) argued that the different definitions of expectation and the difficulties with measurement operationalisation have undermined these models which used expectation concepts. However, to avoid the debate surrounding the nature of the expectation concepts in measuring customer satisfaction, this research has followed an alternative approach. This approach initially depended on customers' actual evaluations of satisfaction, rather than on the gap between perception and expectations (Cronin & Taylor 1994; Teas 1994).

The relationship between Service Quality and Customer Satisfaction

Service quality has remained one of the important issues in both the marketing literature generally, and the service marketing literature specifically (Jamal & Naser 2003). It has been considered to be critical measure of organizational performance. Practitioners and academics often tried to develop a measure of service quality in order to better understand its essential antecedents and consequences and to achieve a competitive advantage and build customer loyalty (Alexandris, Dimitriadis & Markata 2002). Excellent service quality has been considered an important prerequisite for establishing and having a satisfying relationship with customers (Lassar, Manolis and Winsor 2000). Achieving customer satisfaction has also been considered a vital target for most service firms today.

Increasing the level of customer satisfaction has been found to lead to improved profits, word of mouth recommendation and less marketing expenditure (Beerli, Martin & Quintana 2004). As a result the relationship between service quality and satisfaction was therefore considered as important topic and strategic concern in this research (Lee, Lee & Yoo 2000). In general, the research in this area suggested that service quality should be considered an important indicator of customer satisfaction. Therefore, it is expected that all service quality factors have a positive influence on customer satisfaction.

Human element of service quality

It refers to all aspects of staff/customer interaction in service delivery. The importance of the human element in forming the customer's perception of service quality has been identified by many marketing scholars (Jabnoun & Al-Tamimi 2003, Yavas, Bilgin & Shemwell 1995). Employees have an important effect on customer service because customers today are better educated than ever before (Mouawad & Kleiner 1996). Further, frontline employees play a vital role in representing the firm in integrations with outside parties, and influencing the cognitions, attitudes and evaluations formed by customers (Scheider & Bowen 1995). Thus frontline employees were considered to be a main driver of customer satisfaction and favorable service quality perceptions. Finally, four out of the five SERVQUAL dimensions were about human elements, reliably, responsiveness, empathy and assurance (Sureshchandar, Rajendran and Anantharaman 2002).

Consistency of service delivery

It refers to the processes, procedures, and systems that would make service delivery a seamless experience (Sureshchandar, Rajendran and Anantharaman 2002). It highlights whether the service delivery process is standardized, streamlined, and simplified, so customers can receive the service without any problems. The structural content of the service delivery process is considered important in service quality evaluation (Danaher and Mattson 1998). The relative degree and intensity of activities such as waiting and delays in delivering the service have a significant effect on service quality (Danaher and Mattson 1998).

Tangibles of service

It is one of the few dimensions that have been consistently used by different researchers (Bahia and Nantel 2000). Tangibles refers to physical facets of the service facility; equipment, machinery, signage, communication materials etc. (Bahia and Nantel 2000; Parasuraman, Zeithamal and Berry 1985). It includes the physical evidence of the service; expect the personal appearance of staff which is included in the human element dimension. Employees and customers are usually influenced by the tangible facets of service in physiological, psychological, emotional, and cognitive ways (Bitner 1992). The intangible aspects of the staff customer interface has a considerable influence both negative and positive on service quality (Johnston 1995) tangibles are associated with the impact on the customers' interferences about what service should be like and therefore influence the evaluation of service quality

(Parasuraman, Zeithamal and Berry 1993). Customer perception of tangibles is generally considered more important in case of banks than other service industries such as securities, brokerage, and product repairs and maintenance (Parasuraman, Zeithamal and Berry 1998).

In a competitive market place where businesses compete for customers, customer satisfaction is seen as a key differentiator and increasingly has become a key element of business strategy. Customers' satisfaction is an ambiguous and abstract concept and the actual manifestation of the state of satisfaction will vary from person to person and product/service to product/service. The state of satisfaction depends on a number of both psychological and physical variables which correlate with satisfaction behaviors such as return and recommend rate. The level of satisfaction can also vary depending on other options the customer may have and other products against which the customer can compare the organization's products.

The banking industry is highly competitive, with banks not only competing among each other; but also with non-banks and other financial institutions. Most bank product developments are easy to duplicate and when banks provide nearly identical services, they can only distinguish themselves on the basis of price and quality.

Therefore, customer satisfaction is potentially an effective tool that banks can use to gain a strategic advantage and survive in today's ever-increasing banking competitive environment. The argument for customer retention is relatively straightforward. It is more economical to keep customers than to acquire new ones. The costs of acquiring customers to “replace” those who have been lost are high. This is because the expense of acquiring customers is incurred only in the beginning stages of the commercial relationship. In addition, longer-term customers buy more and, if satisfied, may generate positive word-of mouth promotion for the company. Additionally, and are less sensitive to price changes. These findings highlight the opportunity for management to acquire referral business, as it is often of superior quality and inexpensive to obtain. Thus, it is believed that reducing customer defections by as little as five percent can double the profits. This study is small step towards getting insight of influential determinants of customer satisfaction. Hence the following objectives have been framed as under:

- To assess the different aspects of services quality provided by bank that affects customer satisfaction.
- To measure the customer preferences regarding human, technical and the tangible aspect of service quality.
- To suggest the suitable strategy to overcome the gap between services offered and services expected by the customers.

Literature Review

Major reason for customers to choose banks for investment funds is because of the dependability and reputation of banks. Banks always promise customers a high level of security during transactions. Banking service can increase customers' confidence and trust if employees are able to provide appropriate service to each customer. For instance, understanding the needs of each individual customer, such as knowing the customers' expected retirement age, annual income, and hobbies are required to help provide a good match of insurance and fund products for customers. Responsiveness and reliability were the most important dimensions, followed by the empathy and tangible dimensions; assurance appeared to be the least important. It was concluded that SERVQUAL is the best model to measure service quality in the banking industry (Mei Mei Lau et al2013).10 dimensions transcending different types of services that customers use forming expectations about and perceptions of services received: Reliability, Responsiveness, Competence, Access, Courtesy, Communication, Credibility, Security, Understanding / knowing the customer and Tangibles. But, in their 1988 work, these components were collapsed into five dimensions: Reliability, Assurance, Tangibles, Empathy and Responsiveness (RATER dimensions) (Dzemal Kulasin and Jordi Fortuny 2005).The SERVQAL instrument measures service quality of a firm on customer's perception and expectation using separate scales but it didn't considers the technical aspects (Brown et al.1993). That information technology improves customer service as it is convenient to access and use(Bitner et al 2000). That satisfaction is the customers' evaluation of a product or service in terms of whether that product or service has met their needs and expectations(Bitner et al. 2003). That a favorable interpersonal interaction between customers and employees based on these attributes i.e. reliability, responsiveness, assurance and empathy can improve customer satisfaction. Tangibles - physical facilities, equipment and appearance of personnel. Empathy caring, individualized attention. Assurance knowledge and courtesy of employed and their ability to convey confidence. Reliability - ability to perform the promised service dependably and accurately. Responsiveness- willingness to help customers to provide prompt service (Parasuraman et.al1985). The service quality model highlights the main requirements for delivering high service quality. It identifies five gaps that cause unsuccessful delivery. Gap between customer expectation and management perception- management always does not correctly perceive what customers want. Gap between management perception and service quality specification- management might correctly perceive customers wants but not set a performance standard. Gap between service

quality specifications and service delivery- personnel might be poorly trained, or incapable of or unwilling to meet the standard or they may be held to conflicting standards, such as taking time to listen to customers and serving them fast. Gap between service delivery and external communications- customer expectations are affected by statements made by company representatives and ads. Gaps between perceived and expected service- the gap occurs when the consumers misperceives the service quality (Parasuraman et al 1988).

Research methodology

The research was focused for pertinent information on specific topic therefore descriptive research design was adopted for the study as the research describes the various factors that contribute to service quality and analysis for the chosen bank. The secondary data was collected from books, Government sources, journals, magazines and web portals. The primary data was obtained from the existing customers of the bank. For the collection of primary data interviews was conducted and questionnaires was filled by customers containing both open and closed ended question. Ludhiana City of Punjab was selected for the study. The sampling units comprised of bank and its customers.

Sample	Size
Bank branches	15
Customers	150

100% branches of HDFC bank were covered. Judgmental Sampling was used to select the customers to furnish the objective of the study. Customers were selected on the basis of Judgmental sampling. Interviews of High Net worth individual customers were taken. As maximum business to the bank is given by HNI customers therefore they were chosen for this study. Direct interviews and structured questionnaire with both open and close ended questions was used as a research tool for conducting the survey of bank's customers. The data was analyzed by using Servqual model and likert scale in the SERVQUAL instrument, it measures the performance across five dimensions of tangibles, reliability, responsiveness, empathy and assurance using seven point likert scale measuring both customer expectation and perception.

Products/Services awareness and usage pattern of the Respondents

The exhibit below indicates the level of awareness of the respondents and the extent of usage of different products and services with respect to bank.

Exhibit 1.1 Awareness Pattern of the Products and Services by bank's customer

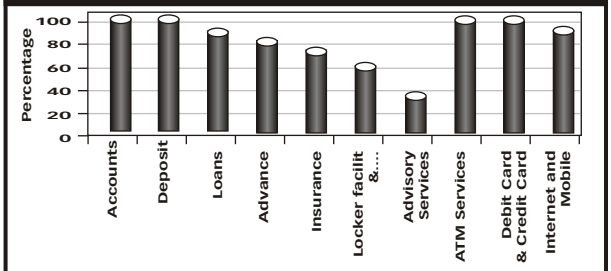
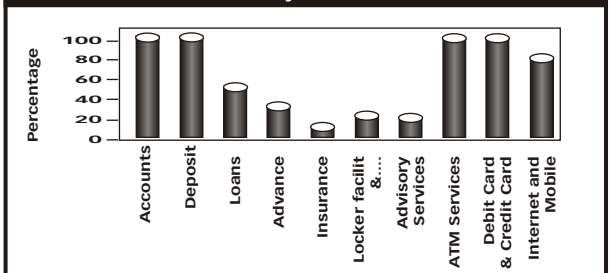


Exhibit 1.2 Usage Pattern of the Products and Services by HDFC customers



It was seen that majority of the respondents had awareness about different products and services offered by the bank, but there were variation in the pattern of usage of different parameters as shown above in Exhibit 4.2 100% of respondents were using HDFC accounts and deposit facilities but at the same time only 48% of the respondents have ever used the facility of loan. There were around 30% of respondents who availed advances. 10% of the respondents were insured by the bank. 20% of respondents were availing locker Facility from the bank. 20% of the respondents availed advisory services of the ban. 100% customers of bank made use of ATM facilities.100% respondents made use of debit/credit card facilities of the Bank. 80% of the respondents made use of internet and mobile facilities provided by the bank.

It was seen that the majority of the respondents had awareness about different products and services offered by the bank, 100% of the respondents were aware about the accounts and deposits facilities. 90% of the respondents were aware of the different kinds of the loans provided by the bank. 80% of the respondents had awareness about the advances facility of the bank. 70% of the respondents were aware about various insurance services offered by the bank. 56% of the respondents were aware of the locker facility and safe custody provided by the bank to its customers. Only 30% of the respondents were aware that bank provides advisory services to its customers.100% of the respondents were aware about the ATM and debit/credit card facility offered by the bank.

Table 1.2 SERVQUAL SCORE					
SERVQUAL SCORES					
Dimension	Expectations	Perception	Gap scores	Weightage (%)	Weighted average
Tangibles	5.32	4.26	-1.06	10	-0.11
Reliability	5.98	4.68	-1.30	22	-0.29
Responsiveness	6.24	5.12	-1.12	30	-0.34
Assurance	6.28	5.14	-1.14	18	-0.21
Empathy	5.90	4.70	-1.20	20	-0.24

About 90% of the respondents were aware of the internet and mobile banking facilities of the bank.

Servqual Scores of HDFC

The study was done by calculating the expectation and perception scores for all the 5 dimensions of the Servqual model. Negative gap scores materialized in all the parameters as the expectations were not met. The gap scores were analyzed for each individual statement and aggregated to give an overall gap score for each dimension.

The gap score for tangibles was found to be -1.06 which signifies that customers' expectations of the factors like physical facilities ,equipment and appearance of personnel were not perceived as expected but at the same time the weightings received by the dimension was less as compared with the other dimensions, so the overall weighted average is least for this parameter.

The reliability dimension was marked down with a gap score of -1.30 .this dimension was rated as the second most important dimension by the customers and received a weightage of 22. This proved that the dimension of reliability which includes factors like promises to do something by a certain time, performs the service right the first time, error free records etc. has been fairly important to the customers for them to be satisfied by the bank in all terms but the same has also amounted to dissatisfaction as the expectation have not been fulfilled.

The overall weighted average SERVQUAL Score = -1.19

Regarding servqual scores, respondents reported negative results for all dimensions, meaning that expectations are greater than performance, and perceived quality is less than satisfactory and a service quality gap materializes. This shows that bank should improve its service quality in order to overlap with clients' expectations. Knowing how customers perceive the service quality and being able to measure service quality can benefit industry professionals in quantitative and qualitative ways.

First of all based on the analysis. The gap (P - E) as shown in the table, is negative for all the factors indicating dissatisfaction of the customers. Further, component- wise analysis indicates that the higher level of dissatisfactions are observed in factors like; i) promises to do something by a certain time; ii) performs the service right the first time, iii) Employees in the bank are too busy to respond to your request, iv) give customers individual attention, v) give customers personal attention. Also from table it can be understood that highest gap exists for reliability factor i.e. -1.30 and next comes the empathy factor with a score of -1.20.

An overall weighted SERVQUAL SCORE of -1.19, indicating a significant shortfall in meeting customer expectations across all service areas and dimensions. The summary scores for each dimension, with the weighted average scores per dimension having totaled to achieve the overall SERVQUAL score. Highest gap was found in the dimension of reliability and empathy. The bank has to reduce this gap giving individual personal attention to understand customer specific needs. The customers trust the public sector banks. These banks have existed in the market for a longer period than the private sector banks. The reliability factor is a positive factor for these banks. Therefore private bank such as HDFC should position itself in the market on the basis of this dimension and promote itself aggressively. The customer base of the public sector banks is very big as compared to the private sector banks, therefore it is important to retain them with the banks. It becomes imperative for the private sector bank to train their employees to treat the customers with empathy. The relatively low importance of Tangibles could be attributable to the fact that customers are aware of the prevailing conditions in the private sector bank and their expectation also matches. Customers generally give more importance to the delivery aspects of the service. Hence weighted this dimension the lowest.

Banks customers rated assurance one of the least important to them, yet they expect most from this service dimension. This apparent anomaly is probably due to the fact that customers expect staff to be knowledgeable about the services and therefore they can see no reason for this dimension not to be achieved. It is assumed that for this reason, customers have weighted this dimension second lowest.

On the basis of research following strategies to overcome gaps services offered and services expected by

the customers

1) Banks should have a strong customer relationship management system that would indicate the worth of the customer and the ability to understand his needs while interacting with him, so as to cross sell their products.
2) Skill sets of employees need up gradation so as to make them more comfortable with the latest technology that will increase their comfort level, while educating customers to use the same in their day to day dealings.
3) Banks may follow a feedback system to know the customers expectations for improving the level of customer satisfaction to the maximum level. Responses on service reliability should be continuously obtained from customers.
4) In order to improve the reliability factor the bank should try not to appear as money mongers as they should be clear and precise about their terms and conditions. They should not have hidden meanings and hidden terms in their documents.

Recommendations for action

Based on the analysis of the empirical data, interview with the respondents and personal observations, the following findings were obtained. In the light of findings, few observations were given for improving service quality in HDFC bank.

1) The bank should develop a service climate that would leave a majority of customers satisfied. The findings of service quality attributes reveal that much needs to be done by the bank for improving their performance by revamping the service marketing strategies.
2) The bank management attention should be centered on all factors included under the five dimensions as they are vital and most important for the success of the bank, as these are what together contribute to create Customer Delight which ultimately retains a customer, rendering him loyal.
3) Banks should have precise terms and conditions to improve reliability factor they should not have hidden meanings and hidden terms in their documents.
4) Employee service quality seems to be another important factor in drawing customer satisfaction. Bankers need to develop of the employees' service skills consistently so banks enjoy a high level of customer satisfaction.

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If rural cooperative banks sink, so will farmers

Farmers accustomed to decades of government policy failure are willing to bear the pain caused by the government's decision to recall ₹500 & 1000 bills, but engineering a systematic failure of the rural cooperative banking sector would be an unpardonable desecration. Earlier rural bank branches were given a step motherly treatment: Rural cooperative bank branches were not replenished with lower denomination currency, while the newer higher denomination notes were issued to bank branches in cities. Now all district cooperative banks have been directed not to exchange or even accept ₹500 & 1000 bills from account holders. It will have a multiplier impact. Most small farmers deal with such banks and primary agriculture cooperative societies (PACS). Farmers receive most direct credit for farm inputs from PACS. Possibly the establishment did not fully grasp the extent of the implications of the notification.

Farmers operate through these institutions for their kisan credit card. New rules won't allow them to deposit money in their own accounts, but they will continue to be charged interest by the bank for the loan availed. Cooperative banks will start to collapse as they fail to recover loans. Being the sowing season, PACS stores are filled with fertilisers, they will be unable to supply these to their own farmers as per rules because past loans remain unpaid. Many farmers have also availed of revolving cash credit limit which needs to be deposited at harvest time. People are starting to withdraw deposits from cooperative banks and good capital will flow to private or public sector banks, never to return again. In one stroke, all rural banking transactions have been brought to a stand still. Problems were inevitable but the extent of mismanagement is astounding. The ideal window for sowing wheat is about 21 days. Resourceful farmers may manage but at a higher cost. Delayed sowing can reduce yield drastically. Furthermore, farmers who take perishable fruits and vegetables to the wholesale market are being squeezed. Traders reason small street vendors and shopkeepers do not have money to purchase perishables. Truck drivers get paid on delivery for their transport cost by the commission agent where delivery of perishables is made. Now traders at sabzi mandi insist on paying with old denomination currency which truck drivers refuse to accept. This is having a cascading effect.

Possibly over a third in rural areas don't operate a bank account in a cash-based rural economy. The secret stash however small took years to build. Additionally moneylenders & traders are making dependent gullible farmers to deposit old currency on their behalf. This will create interesting statistics which will be interpreted as proof of black money hoarded by farmers and make a case for taxing farmer incomes.

RBI eases norms to fight cash crunch

Reserve Bank of India (RBI) relaxed a set classification norms for banks, which will allow borrowers more time to repay. The central bank has given an additional 2 months of time before lenders need to classify a loan as non-performing, provided the value of the loan is less than ₹1 crore. In addition, the relaxation is meant for repayments which are due between November 1 and December 31, 2016. "It has been represented to us that consequent upon withdrawal of the legal tender status of the existing ₹500 and ₹1,000 notes, small borrowers may need some more time to repay their loan dues," RBI said in a notification.

"It has been decided to provide an additional 60 days beyond what is applicable for the concerned regulated entity (RE) for recognition of a loan account as sub-standard," it added. Borrowers working capital accounts or crop loans, with any bank where the sanctioned limit whereof is ₹1 crore or less will be eligible for the relaxation, RBI said. In addition, term loans, both business and personal, including home loans, loans to non-banking companies and micro-lenders by banks, are eligible for the relaxation. Both banks and NBFCs will get the additional 60 days before they need to classify the loan as NPA.

RBI has clarified that the move is a short-term deferment of classification and should not be seen as restructuring of a loan. Banks need to increase provisioning if a loan is restructured. Separately, RBI has also said holders of overdraft and cash credit accounts, which are operational for the last three months or more, can withdraw up to ₹50,000 in cash, in a week in line with current account holders. "Such withdrawals may be disbursed predominantly in ₹2000 denomination bank notes," RBI said.

Ensure cash for RBI crop: RBI to banks

The RBI has directed banks with currency chests to ensure adequate cash supply to District Cooperative Central Banks (DCCBs) and Regional Rural Banks (RRBs) and rural branches of all commercial banks, including RRBs

in an effort to make cash available to farmers ahead of the rabi sowing season. The Central bank said in a notification that branches of banks located in APMCs may be given adequate cash to facilitate smooth procurement.

The regulator estimated that around ₹35,000 crore would be needed by the District Cooperative Central Banks (DCCBs) for sanction and disbursement of crop loans to farmers at the rate of ₹10,000 crore per week. NABARD would be utilising its own cash credit limits up to about ₹23,000 crore to enable DCCBs to disburse the required crop loans to Primary Agriculture Credit societies (PACS) and farmers" the central bank said in its notification.

The announcement came after the apex bank decided to relax cash withdrawal norms for traders registered with APMCs. These farmers can now withdraw as much as ₹50,000 per week, similar to any current account holder.

Officials from the RBI, NABARD and various banks met officials from the finance ministry and were directed to make adequate cash available with the cooperative banks through currency chests attached to them, as most cooperative banks do not have their own currency chests. After taking stock of the situation in the rural sector, the government also directed lenders to give these cooperative banks complete access to their deposits in commercial banks to meet their cash requirements.

District co-op banks must get tech - savvy

Demonetisation is an eye-opener for district central co-operative banks (DCCBs), which need to join the digital bandwagon and offer customers additional services using technology, a Nabard official said. Although DCCBs, so far out of the currency swap, have implemented the core banking system (CBS), they have a long way to go when it comes to offering digital services such as Internet or mobile banking. "In the long run, demonetisation is an eye-opener for DCCBs. They have to be on digital platforms. They should ensure their customers are also digitally savvy," Nabard Chairman Harsh Kumar Bhanwala told.

Nabard has put in a monitoring mechanism under its deputy managing director and a few chief general managers to monitor the fund requirements of DCCBs on a daily basis. There are nearly 400 DCCBs and around 92,000 village-level primary agricultural co-operative societies (PACs) under them. DCCBs provide funds to PACs and farmers, and are a critical part of the agri credit chain, contributing around 17% to the crop loan segment. After the November 8 announcement of decommissioning ₹500 and ₹1,000 banknotes, RBI barred DCCBs from exchanging or depositing these scrapped bills. The move brought the cooperative sector to a standstill at a time when the rabi (winter) crop season has just begun.

The regulator, however, allowed DCCB customers to withdraw money from their accounts up to ₹24,000 per week. Bhanwala said Nabard has supported DCCBs to issue RuPay Kisan Credit Cards. However, the efforts from DCCBs in issuing such cards was not much as only 63 of these lenders have been able to issue such a card. "Somewhere, the initiative at the DCCB level could have been better towards issuing RuPay Kisan Credit Cards. If these cards were adequately issued to farmers before demonetisation, then to some extent, the cash misery of their customers could have been reduced," Bhanwala noted. "Farmers could have at least been able to withdraw ₹2,000 daily through these cards for meeting their day-to-day nominal expenses."

He said only 260 DCCBs have so far installed ATMs and they need to put up more cash-dispensing machines, along with additional point of sale (PoS) terminals. "Some of these DCCBs have been authorised for mobile banking and Internet banking, but the number is small. To use these channels, there is need to bring in a lot of digital literacy," Bhanwala said.

To make DCCBs part of the ongoing digital revolution, a lot of financial literacy efforts are required and Nabard has been supporting these co-operative institutions since the beginning, Bhanwala said. "At all block levels, we have financial literacy centres, supported and funded by us, that are assisting co-operatives in this literacy endeavour," Bhanwala added.

A note - Swipe, press, click and pay

The government has followed up its decision to discontinue older high-denominations currency notes with a strong push towards fostering a digital payments ecosystem. A committee of secretaries led by Niti Aayog CEO Amitabh Kant was instructed to come up with the tools that could be used to make financial transactions without the involvement of cash. While most of these tools were already rolled out previously, banks and other financial services firms have started prioritising their expansion.

These tools are meant to facilitate transactions not only for the payee, but also for merchants both small and big. Small merchants and businessmen involved in the informal sector were pegged to be the worst hit, but the committee of secretaries, which also comprises IT ministry secretary Aruna Sundararajan and the CEO of Unique Identification Authority of India (UIDAI) Ajay Bhushan Pandey, has identified tools that could bring anybody with a bank account on board for cashless payments.

Cards, Point of Sale machines

According to data provided by the Reserve Bank of India, there were around 75 crore debit and credit cards

in the country, and almost 72 crore of these are debit cards. A senior government official said that most of these debit cards are used for the purpose of withdrawing money from ATMs. Most basic payments can be made via debit and credit cards to merchants that have a Point of Sale (PoS) machine.

A merchant can acquire a PoS machine from a bank in which he or she holds an account. Banks provide a PoS terminal free of cost to their account holders, but they charge a merchant discount rate (MDR) as prescribed by the RBI. Different lenders have different eligibility criteria for deciding whether a terminal should be provided to a merchant or not. For example, the Union Bank has prescribed that the turnover of the merchant through cards should be over ₹50,000 per month.

The MDR, or the commission that a bank charges the merchant, has a cap decided by the Reserve Bank. However, some banks take lower commission from businesses with high transactional volumes. For a debit or credit card holder, this commission, which the banks charge, is sometimes passed on to the customer and results in a nominal 1-2% additional charge on card payments. Temporarily, the banks have waived off the MDR to encourage card payments.

Traditionally, the idea of a PoS terminal was a bulky machine connected to a telephone line. This equipment would set back a bank by almost ₹15,000 to ₹16,000 per machine. These are called PSTN-based PoS terminals. Nowadays, several other models of PoS terminals have come to the market. These include desktop GPRS, which gets connectivity through a SIM card but is connected to a power source, and portable GPRS, which also gets connectivity through a SIM, but is powered by an inbuilt battery. Mobile PoS terminals are also available for ₹3,000 to ₹6,000 and are mostly used by e-commerce companies to collect payment by credit and debit cards upon delivery of the orders.

Electronic Wallets

Electronic wallets, or mobile wallets, have seen a manifold growth of usage since the November 8, 2016-18 announcement, which was spread throughout the country, and not only the urban centres. These wallets actually play the part of a physical wallet in the daily lives of people in a sense that money is pulled out of the banking system when it circulates in the system of a wallet operator. From a consumer perspective these wallets, or prepaid payment instruments, such as Paytm, Mobikwik, FreeCharge, Oxigen, etc can primarily be used for making payments for mobile recharges, utility bills, etc but are now expanding to be accepted at toll plazas, metro train stations, and petrol pumps.

With the immense success of these wallets post the discontinuation of old notes, it is important for customers of these wallets, especially the first time users, to ensure that the wallet apps are downloaded on mobile phones from trusted sources such as Google Play Store, App Store, or the authentic websites of the wallet issuers. Some of these wallets are also available in multiple regional languages.

To use these wallets, all one needs is a smartphone with an active internet connection. Several banks, both public and private, have also launched wallets like SBI Buddy, ICICI Pockets, etc for payment purposes. To open a wallet, a customer needs to fill up the basic details like mobile phone number and e-mail ID. Once open, it can be loaded with money through debit card, credit card, net banking. If one is using a wallet issued by a bank, loading money is simpler if the account and the wallet are connected. As per the latest RBI notification, a maximum of ₹20,000 can be put into a wallet per month. However, if KYC details are provided to the wallet issuer, the ₹20,000 limit is removed. The money in the wallet can also be transferred back to a bank account at a 1% charge.

Unified Payments Interface (UPI)

The National Payments Corporation of India (NPCI) rolled out the UPI platform in April, but it failed to gain traction with several large banks coming on board only post November 8. Fundamentally, UPI uses the Immediate Payment Service (IMPS) platform to transfer money between two bank accounts. The UPI is a better universal option than electronic wallets in terms that interoperability within wallets is not yet allowed in India. As it stands, for example, a user cannot transfer money from his Paytm wallet to a FreeCharge wallet. That is not the case with UPI.

The user has to download the bank's UPI application, which is currently only available for Android devices, and create a virtual payment address. The virtual payment address is like an e-mail ID. As per the availability of an address it can simply be yourname@icici or yourname@hdfc, etc. Once this is done, the user will need to generate an MMID, or Mobile Money Identifier, which is a seven digit random number issued by the bank upon registration. The payee will need to identify the recipient on the basis of the MMID and the virtual address.

The MMID generation can be a bit complicated depending on the bank's application. It can also be generated by sending a simple SMS to a number stipulated by the bank. There are other methods to use UPI as well.

Unstructured Supplementary Service Data (USSD)

While most of the cashless methods of financial transactions mandate use of a smartphone, the USSD method works on the voice network and can work on a feature phone without an internet connection as well. As far as the functionality to check a bank account balance is concerned, it is as simple as checking the phone's prepaid balance.

The service, which works only if a mobile phone number is registered with one or multiple bank accounts, works upon dialing *99# from the phone keypad. The phone sends a USSD message asking for the first three letters of the bank or its short name, or the first four letters of the IFSC code. For example the account holder of State Bank of India should enter 'sbi', that of State Bank of Bikaner and Jaipur should enter 'sbj', ICICI Bank account holder should enter 'ici', and so on.

The phone then fires a message with options to check account balance or transfer money of the bank account that is selected. Checking balance is simple, but transferring money requires a UPI-like method, which needs the MMID. Apart from English, the USSD banking service, also known as National Unified USSD Platform, is also available in 11 other languages. The short codes to access the languages are *99*22# for Hindi, *99*23# for Tamil, *99*24# for Telugu, *99*25# for Malayalam, *99*26# for Kannada, *99*27# for Gujarati, *99*28# for Marathi, *99*29# for Bengali, *99*30# for Punjabi, *99*31 for Assamese, and *99*32# for Odia.

Aadhaar Enabled Payment System (AEPS)

The AEPS is a tool that can be used by 36 crore Aadhaar card holders that have linked their unique identification numbers to their respective bank accounts. UIDAI CEO Pandey has pegged that going ahead, an Aadhaar card can virtually become a users debit card. The payment system uses a simple finger-print reader, which is available at a retail price ranging from ₹2,000 to ₹4,000. It also requires a software that is supported by a bank, which is used by a merchant to take payments.

Pandey said that Aadhaar was working on a common platform that could be used to conduct transactions across banks. He added that 118 banks were on board with the AEPS. Even as a merchant would need a smartphone, a customer can make payments with just the Aadhaar card number and one of his two biometrics finger-print, or iris scan. Through this mobile application, the handset will be used for authenticating biometrics of customers making Aadhaar enabled payment. UIDAI will eventually increase its biometric authentication capacity to 40 crore. There are some third-party applications also in the market that have tied up with banks to use their access to Aadhaar database to enable the payment services. This method of payment is particularly being pushed by the government in the hinterlands of the country where access to mobile and data services is restricted to a very few. In AEPS, the operational part is to be dealt with by the merchant, and the customer only needs to have a bank account connected to an Aadhaar number. People can link their Aadhaar with their bank accounts and use AEPS for funds transfer, balance enquiry, cash deposits or withdrawals and inter-banking transactions.

Punjab allows farmers to buy inputs via post-dated cheques

In a bid to deal with cash crunch, the Punjab government has allowed farmers, who are affiliated to Primary Agricultural Credit Societies (PACS), to buy inputs like fertilisers using post-dated cheques. Farmers could buy agricultural inputs worth ₹7,000 per acre for wheat from respective PACS using post-dated cheques. This amount would be adjusted against the loan availed by the farmers. However, those farmers who have not paid back their loan installments would not be eligible for this benefit.

A state government official said most of the farmers in the state have banks accounts and around 16 lakh bank accounts are held by farmers with Punjab State Cooperative Bank and 22 District Cooperative Central Banks (DCCBs) which are KYC compliant. However, the RBI's refusal to allow DCCBs to accept or exchange old ₹500 and ₹1000 currency notes have aggravated the cash crunch faced by farmers.

As per data released by the ministry of agriculture, the rabi crops wheat, rice, pulses, coarse cereals and oilseeds have been sown in 41.5 million hectare (mh) which is marginally lower than average sowing of last five years during the same period. The normal rabi sowing area in the country is around 63.8 mh. However, wheat, a key rabi crop has been sown in 17.3 mh till now which is lower by more than 8% than the normal sown area. However, sowing of all other crops have exceeded normal sown area significantly. "In Punjab because of cash crunch, sowing has been delayed by a couple of weeks which is likely to impact the yield," an official said.

Meanwhile, the Centre has directed the states to ensure that farmers do not face difficulties in purchasing fertilisers due to cash crunch. "States have been directed to ensure that all the cooperative societies, private retailers or wholesalers provide fertilisers to farmers through all modes of payments like on credit as well as through credit card, debit card, cheque etc," fertiliser minister Ananth Kumar had said. He said the government has directed fertiliser companies to see that in case any kind of problem is noticed anywhere in the country due to non-availability of cash or banking services, farmers should be provided fertilisers on credit basis.

For ensuring that sowing of rabi crops is not hampered due to cash crunch, fertiliser companies have decided to provide credit facilities to retailers so that farmers get vital agricultural inputs on time despite facing cash crunch. Besides allowing the farmers to buy seeds from state-owned companies using old ₹500 notes, the government last week announced that it will provide ₹21,000 crore to DCCBs through NABARD to provide loans to farmers to meet their credit requirements during the winter crop season.

Banning DCCBs from accepting demonetised notes unjustified

The ban on depositing the demonetised ₹1,000 and ₹500 notes in district central cooperative banks (DCCBs) may have been "a trifle unjustified". Activists in the cooperative sector argue that out of the 370 DCCBs in 20 States, as many as 367 are licensed under the Banking Regulation Act, 1949. Only three from Jammu and Kashmir have not fulfilled the licensing criteria prescribed by the RBI. All the licensed 367 make themselves available for inclusion in the post-demonetisation phase.

The DCCBs are supervised by the National Bank for Agriculture and Rural Development (Nabard) and regulated by the RBI. They also submit regulatory returns to the RBI. A perusal of the data in public domain indicates that the old notes held by the DCCBs all over the country was ₹7,946.9 crore during November 8-14. This forms less than 1% (0.96%) of the total specified bank notes (SBNs) of ₹8.25 lakh crore collected by all banks as on November 14, 2017 and 2.7% of the total deposit base of ₹2.9 lakh crore, data sourced from the RBI reveal.

And since cash at DCCBs is considered for the purpose of calculating cash reserve ratio, the effective cash level with these banks ranges between 1 and 2%. This should go to rule out any 'alarming or disproportionate' collections of the banned notes by the DCCBs during the five days leading up to November 14. On the contrary, the DCCBs are being made to bear the cost of carrying these deposits at 4% on savings bank accounts and 6 - 7.25% on fixed deposits. Available data also suggest that the DCCBs are familiar with a computerised environment. Core banking facility is available in more than 95% of these banks.

Fake note detecting machines are available in 10,339 branches of DCCBs which constitute at least 75% of a total of 13,339 branches, data maintained by DCCBs and Nabard show. Cash disbursement of loans to farmers has almost come to a standstill during a time when rabi crop sowing is apace. They find it increasingly tough to carry out day-to-day operations. They could even lose the standing crops due to non-payment of harvest charges to labourers. This might force them to increasingly access money-lenders and unscrupulous middlemen for hard cash.

Tepid response to e-platform of agri market

The Digital India initiative might be a game-changer in many aspects, but when it comes to agri marketing, the e-platform of the National Agriculture Market (NAM), launched by Prime Minister Narendra Modi, has seen only tepid response. NAM is yet to provide farmers' choice of buyers within states, let alone allowing inter-state trade, which would have boosted agricultural income. Only 250 regulated wholesale markets (the country has 585 such mandis) spread across 12 states under the respective agricultural produce marketing committees (APMCs) have so far been integrated with the NAM platform. However, trading is being carried out at present only in 220 mandis.

NAM has achieved a trade turnover of only ₹1,825 crore so far. Of this, Haryana's 54 mandis have achieved a trading volume of ₹1,521 crore. Telangana's 44 mandis integrated with NAM have reported a trading of ₹218 crore. The remaining mandis integrated with NAM have seen a lower trading volume. Only 3.6 lakh farmers of an estimated 14 crore in the country and less than 50,000 traders and 27,000 commission agents have got registered with NAM. Even among these NAM-linked mandis, electronic trade is limited to very few commodities.

"The idea of a pan-Indian agriculture market is really progressive for ensuring better returns for the farmers. However, a huge amount of groundwork needs to be done to translate NAM into reality," Ashok Gulati, former chairman, Commission for Agricultural Costs and Prices (CACP) and chair professor for agriculture, ICRIER, had said. He had noted that the bigger challenge is to put in place a system of scientific grading of agricultural commodities at the market yards, transparent price settlement mechanism and, above all, rationalisation and imposition of uniform mandi taxes across the states. Though agriculture minister Radha Mohan Singh had earlier announced that 400 APMCs would be integrated with NAM by March 2017, few are convinced that this is

achievable unless the process is accelerated.

As many as 18 states and UTs, including Andhra Pradesh, Gujarat, Maharashtra, Karnataka, Rajasthan, Madhya Pradesh and Uttar Pradesh, have fully or partially modified their APMC laws for allowing electronic trade within the mandi premises. The states that are yet to do so include Odisha, Tamil Nadu, West Bengal and Assam, while eight other states and UTs, including Bihar, Kerala and Manipur, do not have any APMC laws, and farmers in these states are deprived of the NAM facility. Under NAM, quality parameters for 69 agricultural and horticultural commodities, including cereals, pulses, oilseeds, spices, fruits and vegetables, have been notified for trading. In April, 2016, Prime Minister Modi had launched NAM with an aim to integrate 585 APMCs under one electronic platform by March 2018. After integration of all the mandis, agriculture ministry officials say NAM would increase the choice for a farmer after he brings in his produce to a mandi.

Bank credit to NBFCs highest in three years: RBI

Bank credit to non-banking finance companies (NBFCs) has touched the highest in three years. According to Reserve Bank of India's (RBI) latest data, credit to NBFCs grew at 25% year-on-year to an outstanding Rs.3.7 lakh crore in September 2016 according to Reserve Bank of India's data.

At a time when growth in disbursements to industries has remained in single digits for the last two and half years, banks find lending to NBFCs more attractive. For the month of September, bank credit to industries grew by a marginal 0.9% after a decline of 0.2% in the previous month. "Demand from corporates continues to remain weak with no pick up in greenfleld projects. Banks therefore prefer lending to NBFCs which continues to show strong asset quality and profitability," said Karthik Srinivasan, senior vice-president, ICRA Ltd.

RBI's deputy governor S.S. Mundra in his speech delivered on 30 September, 2016 had advised banks to monitor their growing exposure to NBFCs. According to Mundra, NBFCs saw their loan book expand by 37% between FY14 and FY16, which is twice the pace of the about 19% growth that banks reported. NBFCs are therefore gaining market share in loan market when the PSU banks have slowed lending because of the fear of accumulating bad loans. According to Mint data, loan growth reported by PSU banks in 2016 was 2.4% against the industry average 12.2%. In 2015, it was 7.2%, again lower than the industry average, 10.7%. In 2014, growth was faster at 14.6% against the industry's growth of 13.4%. While the bank lending to NBFCs has picked up, these companies also remain the largest borrowers in the debt market. According to primary market tracker Prime Database, NBFCs borrowed about ₹86,000 crore through private placement in the first half of the financial year. That's nearly 29% of the overall debt private placement that happened during the same period

Farm Policy: The political economy of why reforms elude agriculture

It is a well-known fact that unlike in the industrial, financial or other services sectors, reforms have mostly bypassed agriculture. The rigid and illiberal policies that continue to exist in agriculture severely restrict its potential to contribute to employment generation and poverty reduction. It, then, raises the question: why does reform elude agriculture? The answer may lie in the political economy of agriculture, which, in turn, is a product of the interplay of three major forces: a) the situation in the factor markets (land, labour and capital); b) the role of rural commercial capital; and c) globalisation.

The factor markets in agriculture represent some of the most frozen parts of our economy, where time seems to have stood still since roughly the first decade after Independence. In the case of land, tenancies were abolished along with dismantling of the zamindari system in practically all states by the 1950s. But the result is that informal tenancies flourish and with no legal protection to tenants. There is data showing that the majority of farmers leasing in land now are small and marginal cultivators, who together constitute some 85% of all holdings. The absence of a legal land lease market has hurt these cultivators the most. Lack of tenancy documentation deprives them of access to subsidised formal crop credit, insurance, power and other inputs, while restricting their ability to absorb new productivity enhancing technologies.

Coming to labour, while this is an area generally seen to be fraught with high risks for reform, the situation of rural labour markets is all the more primitive. While governments have promoted the use of modern

technology in seeds and other inputs, they have shied away from unleashing the full power of farm mechanisation. While the underlying motive may be the fear of displacing labour not borne out on the ground, where the reality is one of growing scarcity and non-availability during the peak agricultural season the ultimate cost has been farm productivity: Our yields in most crops are around half of China's. Small and marginal cultivators have again been the worst sufferers. They cannot hope to own modern farm equipment and are also unable to access these in the absence of custom hiring centres. With regard to capital, the Situational Survey of Agriculture for 2013 revealed that only 60% farmers could avail of credit from formal financial institutions, whether banks or cooperative credit societies. In the case of small and marginal farmers, about 85% are still dependent on the village moneylender and informal credit markets, where interest rates start at 24% per annum. No wonder, the survey also showed 52% of all agricultural households in India to be indebted, with Andhra Pradesh (92.9%), Telangana (89.1%) and Tamil Nadu (82.5%) topping the charts.

Linked to these is the role of the other two elements. The stark reality is that rural commercial capital personified by the large landowner, the moneylender and the mandi commission agent/trader still dominates the farm credit sector. This form of capital is inherently risk-averse, only seeking to reproduce itself. It courts political patronage to resist any reform or entry of competitors. The entrenched power of rural commercial capital probably explains how even the most tentative and limited of marketing reforms, initiated now and then, have got thwarted in most states.

The impact of globalisation, too, needs to be looked at against this backdrop of rigid factor markets and primitive rural commercial capital. Integration of a few commodities such as cotton, soyabean, rice and high-value fruits and vegetables into global value chains has exposed large number of farm households to price volatility and risks, which they can neither understand nor control. More importantly, the safeguards and instruments available to producers in more developed markets futures, hedging or even risk insurance aren't accessible to farmers here. The result can be widespread distress (as in the case of cotton when it went through a global downturn after 2013), fuelling the notion that all reform in agriculture is risky and dangerous.

China's example shows that reforms in the primary sector have to begin with the basic factor markets. The farming community must taste the benefits of reforms first in its immediate neighbourhood through easier land leasing laws, affordable and timely credit and other financial services, and also access to inputs, mechanisation and transparent markets. That would help build a constituency to support a larger and longer term agenda for reform in agriculture, including rationalisation of subsidies.

Now, a ₹20 trap to save cotton from pink bollworms

As the dreaded pink bollworm pest starts developing resistance to the Bt cotton seed across various parts of the country, a low-cost pheromone trap that helps curb the spread of the pest is seen coming to the rescue of beleaguered cotton growers.

A pheromone trap with a chemical fomulation, consisting of gossyplure and some other natural ingredients, is set to hit markets soon in key growing regions of the fibre crop, where the pink bollworm has surfaced in recent years. It has been developed by the Nagpur-based Central Institute for Cotton Research (CICR), under the aegis of the Indian Council for Agricultural Research (ICAR), with Innovative Biosciences Pvt Ltd. "We, at CICR, made a new formulation by using a few natural ingredients to enhance the effect of the lure. The lure has a long-term effect and lasts for about 60-70 days, if not more, depending on temperatures during the period. The formulation is effective and inexpensive," said KR Kranthi, Director, CICR.

The trap and the lure cost ₹20 plus taxes and a farmer ideally has to deploy about 40 such traps per acre for effective control of the pink bollworm. The solution, developed last year, has been tested at CICR farms and validated extensively. Innovative Biosciences Pvt Ltd, a Nagpur-based manufacturer of Bt seed diagnostic kits and insect traps, is manufacturing the pheromone trap and the formulated lures. "We will be launching the pheromone traps in pink bollworm-affected States soon" said Satish Rehpadde, Director, Innovative Biosciences.

Gossyplure, a pheromone, attracts the male moths of the pink bollworm. When set up in cotton fields infested with pink bollworm, the trap competes with the female pink bollworm moths for the male's attention, disrupting mating and curbing population growth of the dreaded pest. The male moth lured by the pheromone, once trapped into the funnel-shaped trap, gets killed in the polythene cover attached to it after two days for want of food, Reaphade said. Bollgard II, the second generation transgenic or Bt cottonseed, introduced by Monsanto, was supposed to be resistant to pink bollworm. But, has it has, of late, developed resistance to the pest, especially in major cotton producing States such as Gujarat, Andhra Pradesh, Maharashtra and Karnataka, inflicting major losses on growers in recent years. CICR estimates that at least 20 lakh hecatres in Gujarat and about 6-8 lakh hectares in Maharasthra, Andhra Pradesh and Karnataka have been impacted by the pink bollworm.

While pheromone traps are being used by growers in some areas to curb pink bollworm, they were found to be ineffective in reducing boll damage at the recommended mass trapping set-up of 10-20 traps per hectare. Also, the lures used in the traps were effective only for 10-20 days, Kranthi said. Besides, they were priced at ₹50-60 a trap.

Kerala rubber growers bounce back on Rambutan

Rubber price fluctuations may have dented the prospects of farmers in Kerala's Central Travancore belt but most have switched to cultivation of Rambutan, a high-quality exotic fruit that has fetched a decent income to offset their losses. Shifas Sulaiman, an Erumely-based marketing professional, is one such farmer who shifted to Rambutan cultivation from rubber on his two-acre plantation due to non-remunerative prices. Today he is earning around ₹2 lakh on a yield of 1.5 tonnes from 75 trees planted on 60 cents. Last year, his production was around one tonne with an income of ₹120-130 per kg.

The fruit, he says, is well-suited for rubber growing areas with its similar climate and soil needs. A farmer will get a minimum yield of 60-80 kg per year from a tree aged 8-10 years, thanks to the hybrid N-18 variety, developed by Kanjirappilly-based Home Grown Nursery and Farms. This bud variety finds more acceptance among farmers as it begins yielding in the third year after planting, giving 6-10 kg a tree. Today, this special fruit grade is fetching a farmgate price of ₹200/kg, on an average.

A product of South-East Asia, Rambutan is a single seed juicy red/yellow fruit. Besides Kerala, the crop is cultivated in parts of Karnataka, Mangaluru with varied seasons stretching to 6-8 months in tropical climates. However, Jose Jacob, Managing Partner of Home Grown Nursery, is of the view that lack of awareness on the commercial importance of the fruit has affected its widespread farming. It can compete with North Indian Lychee whose estimated annual production stands at five lakh tonnes; Rambutan is only a meagre 5,000 tonnes. Of this, production of the N-18 variety accounts for about 1,000 tonnes.

Modern techniques like pruning and rejuvenation as followed in South-East Asian countries can further enhance productivity. With a focussed farming approach,

Jacob said the company is taking efforts to increase the sale of N-18 grades to ensure availability for at least nine months in a year. The high Ranges of Idukki, Wayanad and other hilly terrains in the State are ideally suited for Rambutan farming, he said, adding that the N-18 variety's shelf life of 5-6 days can definitely cater to the growing demand in domestic and overseas markets.

Agriculture spurs GDP growth to 7.3%

GDP growth accelerated in the second quarter of this financial year to 7.3 % on the back of a stronger performance in the agriculture sector, official data released showed. Gross value added for the second quarter grew by 7.1 %. While GDP growth quickened in the second quarter from the 7.1 % seen in the April-June quarter, GVA growth slowed from the 7.3 % registered in that period. Both GDP and GVA growth were slower in the second quarter of this financial year as compared with the same period in the previous year, having registered a growth of 7.6 % and 7.3 % respectively.

Chief Economic Advisor Arvind Subramanian, however, highlighted some cause for optimism. "Nominal GDP growth picked up a fair amount, accelerating from 10.4 % in the first quarter to 12.1 % in the second quarter, showing some signs of the underlying strength of the economy," Mr. Subramanian said while speaking to reporters at North Block. The agriculture sector buoyed overall growth, registering a 3.3 % GVA growth rate in Q2 of this financial year as compared with 1.8 % in the previous quarter and 2 % in Q2 of 2015-16. "Agriculture did a little better than last year, largely due to the improved monsoon," Chief Statistician TCA Anant said while announcing the data. "Sown area has improved and therefore the first advance estimate for agriculture has led to a rise in the second quarter estimate of GDP." The manufacturing sector saw a significant slowdown in the growth of its gross value added, registering a growth of 7.1 % in Q2 of this financial year as compared with 9.1 % in the first quarter, and 9.2 % in Q2 of 2015-16.

Bumper soyabean and crashing prices!

Gujarat's groundnut farmers aren't the only ones facing the heat from crashing realisations. Soyabean growers in neighbouring Madhya Pradesh are facing a similar situation, with prices in mandis currently at ₹2,700-2,900 per quintal. Not only are these below last year's ₹3,400-3,500 levels at this time, but perilously near the minimum support price of ₹2,775/quintal a rare phenomenon in soyabean where open market rates have tended to rule much higher.

For every quintal (100 kg) of soyabean crushed, processors recover roughly 18 kg of crude oil. The balance 82 kg comprises protein-rich de-oiled cake and other solid extractions, also called meal. Ex-factory meal prices are now around ₹24.50 per kg, down from the average ₹34.25 for October 2015. Realisations on crude soyabean oil are a tad better, at ₹63.5/kg, against the average ₹60.60 levels of October 2015.

The gross revenue from 82 kg meal and 18 kg oil at current ex-factory rates, then, works out to ₹3,152. Deducting processing costs of ₹150 both variable (hexane/solvent, fuel, electricity, contract labour) and fixed (wages/salaries, financial charges, other overheads) would translate into a price of ₹3,000 per quintal for soyabean delivered at the factory.

"If you further take out 5-5.5 % towards transport and mandi-level costs (market fee, middleman/arhatiya commission, labour expenses), the price works out to roughly ₹2,850/quintal. That is what farmers are realising in the mandis today," noted Jain, Chairman of Soyabean Processor Association of India (indore). By comparison, the gross revenues at October 2015 meal and oil realisations would have been ₹3,900, corresponding to a mandi price of ₹3,550 per quintal for soyabean. "It is a steep fall for farmers. Some are holding back their produce in the expectation of prices improving, but the smaller ones cannot obviously do this. They need money to purchase fertiliser, seed and other inputs for planting wheat or chana in the rabi season," pointed out P S Vijay Shankar of Ram Rahim Pragati Producer Company Ltd, a Bagli (Dewas)-based organisation that aggregates and markets the soyabean and maize of 2,000-plus farmer-members.

Many farmers also seek temporary three-phase electricity connection for irrigating their fields. These, typically for four months, entail upfront payment at the rate of ₹3,000 per horsepower or ₹15,000 for a 5-hp connection. Generating that money again requires selling soyabean, putting further pressure on prices. "In 2013, we had untimely and excess rains flooding the fields. In 2014 and 2015, there was delayed rains and drought. This year, the monsoon has been good and evenly distributed, resulting in a bumper soyabean crop. Unfortunately, even that hasn't helped farmers, who have only seen their realisations collapse," added Vijay Shankar.

Tackling a burning problem with technology

There is virtual unanimity — at least among scientists and aware farmers — that the ultimate solution to the recurrent problem of paddy stubble burning lies in the 'Happy Seeder' developed by the Punjab Agricultural University (PAU) in 2002. But more than a decade later, the tractor-operated machine, which allows wheat seeds to be directly drilled in fields even with standing stubble or loose straw from combine-harvested paddy, is yet to find broad acceptance among farmers.

"The adoption of the Happy Seeder is low and farmers are not adopting this technology on a large scale," a recent research proposal note from the PAU seeking funds for undertaking more field-level demonstrations has admitted. According to Gursahib Singh Manes, head of the Ludhiana-based varsity's department of farm machinery and power engineering, only around 6,400 hectares out of the total 35 lakh hectares area under wheat in Punjab last year was sown using Happy Seeder. Also, just 620 such machines are operating in the state, despite a government subsidy of ₹48,000 against its purchase cost of around ₹1.30 lakh.

"The issue isn't of price alone. Why should anybody, especially a small farmer, buy a machine for use just for a single crop once a year? This is unlike, say, a rotavator that is used in field preparation for all types of crops," says Rajmohan Singh Kaleka, a 20-acre PAU award-winning farmer from Bishanpur Chhana village in Patiala. "When we started selling it in 2006, the cost was ₹90,000, which has since gone up ₹1.30 lakh. Ironically even after a decade, farmers do not know what Happy Seeder really is. We ourselves have sold a mere 500 units all these years," says Joginder Singh of the Ajnala (Amritsar)-based Kamboj Mechanical Works, the largest manufacturer of the machine and a research partner of PAU in the project. "The state government has done little to promote it. Even the subsidy isn't paid on time and that further discourages the farmer who, in any case, has the option to simply burn the left-over paddy stubble in his field. Why should we produce and stock the machines if there's no demand?" he asks.

Harvesting paddy using combines leaves behind 14-15 inch long stalks, which farmers find uneconomical. With a Happy Seeder, the farmer can actually harvest paddy and plant wheat the same day, without the need for clearing the left-over stubble. There have been issues relating to uniform spreading of loose straw, which is a precondition for the machine's smooth operation. To solve this, PAU developed a separate straw management system (SMS) as an attachment to the combine harvesters: As the combine harvests and threshes the paddy, the attached machine behind it evenly distributes the crop residue in the field. The university has recently also modified the Happy Seeder itself by attaching a 'press-wheel' to the machine, which again helps information of uniform rows as the stubble gets settled and enabling the wheat seeds to be neatly sown. "When you sow wheat directly in paddy stubble, the germinated plants aren't visible for a few days. As a result, farmers get worried and they develop a misconception that the seeds haven't been sown properly. But that again calls for creating awareness, which is the job of the government", notes a PAU scientist.

Navdeep Singh, a farmer from Samrai village in Gurdaspur's Fatehgarh Churian tehsil, has been sowing wheat with Happy Seeder on his 35-acre land for the past four years. He is literally 'happy' with the results. "I paid ₹55,000 for this machine then, after availing the Punjab government's 50 % subsidy. After my paddy is combine-harvested, I use a straw reaper to cut and spread the left-over stubble. Once that is done, I go for direct sowing of wheat with my Happy Seeder", he explains. The biggest advantage here this is the saving in field preparation, as in the traditional method the farmer has to undertake at least a couple of tillages, disc plough operations and plankings. In addition, the field has to be irrigated once and left for ten days for the seed bed to have optimum moisture. "The Happy Seeder does away with all these operations and I save up to ₹2,000 in production costs per acre", he adds.

HS Sidhu, senior research engineer with the Borlaug Institute for South Asia at Ludhiana, feels that the adoption of Happy Seeder is low only because of poor enforcement of the ban on burning paddy stubble. "The benefits, in terms of better yield and improved soil fertility, take time to show up. A way to force farmers to think long term is through effective implementation of the law against crop residue burning", he observes. Sidhu, who was earlier with PAU and involved in developing the Happy Seeder, also believes that there is no necessity for the farmer himself to invest in the machine: "We already have the model of custom hiring in combine harvesters. What stops the combine owner to also have an SMS attachment along Happy Seeders? Just as farmers are now paying ₹1,200 per acre for getting their paddy harvesting and threshed, the combine owner can charge a similar amount for also doing the job of wheat sowing using two tractor-mounted Happy Seeders," he says.

Kerala farmers win four plant genome saviour awards

Kerala farmers have won four plant genome saviour awards (2014) declared by the Protection of Plant Varieties & Farmers' Rights Authority. While two farmers, N.A. Chandran and K. Arvindakshan, have been selected for the plant genome saviour recognition, N.M. Benny has got the plant genome saviour reward, and the Changalikodan group, Erumapetty, Thrissur, the plant genome saviour community award.

The farmers were nominated by Kerala Agricultural University (KAU). Last year, the Indian Council of

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THE HARYANA STATE COOPERATIVE AGRICULTURE & RURAL DEVELOPMENT BANK LTD

Sahkarita Bhawan, Bay No. 31-34, Sector 2, Panchkula
Phone: 0172-2587040 Fax: 0172-2587069

The Haryana State Cooperative Agriculture and Rural Development Bank Ltd., is the specialised institution in the State, which caters to the Long Term credit needs of the farmers for the upliftment of the economic position of the agriculturists and allied fields.

The bank advances Long Term loans to the farmers for the following purposes: -

Scale of finance and periodicity of Major Sectors

Farm Sector

Sr. No.	Name of the Scheme	Period	Scale of finance
1	Minor Irrigation	9 Years	₹0.75 to 4.00 lacs
2.	Land Development	--do--	90% of the project cost
3	Farm Mechanisation	5-9 Years	85% of the cost of the Machinery
4	Purchase of Agriculture Land	10 Years	Upto ₹12.00 lacs
5	Horticulture/Plantation	5-9 Years	₹0.25 to 3.55 per Ha.
6	Animal Husbandry	5-7 Years	₹0.70 to 3.50 lacs per 5 unit
7	Rural Godowns	Upto 9 Years	90% of the project cost

Non Farm Sector

Sr. No.	Name of the Scheme	Period	Scale of finance
1	Rural Housing	Upto 9 years	Upto ₹6.00 lacs
2	Marriage Palaces	Upto 6-9 years	90% of the Project Cost
3	Community Halls	Upto 6-9 years	90% of the Project Cost
4	Village Cottage Industry	Upto 6-9 years	90% of the Project Cost
5	Public Transport Vehicles	Upto 6-9 years	85% of the Project Cost
6	Rural Educational Infrastructure	Upto 6-9 years	90% of the Project Cost
7	Other SSI units	Upto 6-9 years	90% of the Project Cost

Rate of Interest

The Rate of Interest @ 13 % p.a. w.e.f. 21.01.2016 is being charged from the ultimate borrowers for all type of loans advanced by the DPCARDBs in the state of Haryana.

NOTE:

For further details, kindly contact The Haryana State Coop. Agri. & Rural Dev. Bank Ltd., Panchkula or the District Coop. Agri. and Rural Dev. Banks at District level and its branches at Tehsil & Sub-Tehsil level in the State.

RAJNI SEKHRI SIBBAL, IAS
Chairman

SATBIR SHARMA
Managing Director

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Agriculture Research honoured the KAU for consistent support to the farm community, which ensured presence of Kerala farmers on the list of awardees every year. Mr. Chandran from Vemballur, Thrissur, maintains a collection of 10 varieties of coconut, 20 mango types, 33 bamboo varieties, 10 heliconia types, and animal breeds from within and outside India. He cultivates Pokkali rice and a traditional rice variety (Mundakan). He has adopted organic farming methods. Mr. Arvindakshan from Pombra, Palakkad, maintains an organic fruit and vegetable garden on 2.5 hectares. He has a collection of 159 types of fruit plants, 54 types of medicinal and aromatic plants, 47 types of vegetables, plantation crops, and farm animals. He is a proponent of "natural living" and "biodiversity conservation."

Mr. Benny of Edavaka grama panchayat in Wayanad cultivates many varieties of tuber crops and turmeric along with plantation crops, native orchids, vegetables, and medicinal plants. The Erumapetty Banana Growers Association has won the plant genome saviour community award for its sustained efforts in conserving and promoting Chengalikodan, a nendran banana variety with unique taste, shape, and colour. It was accorded the Geographical Indication status in 2015.

A more muscular rice variety takes on wheat

A rice variety that packs more protein to match wheat has been released by Karnataka's University of Agricultural Sciences - Bengaluru. The rice strain, which offers an option to those who are not comfortable switching over to wheat for supplementary protein, is now available for commercial cultivation. The high-protein variety has been under development at UAS-B for nearly 10 years, with ₹92 lakh in funding from the Union Department of Biotechnology.

Dr. Shailaja Hittalmani, who headed the research team that worked on it, told that the strain has 12 to13 % protein content, which is higher than the 6 to 7.5 % in normal rice. Wheat has about 14 % of protein. Using conventional breeding, researchers raised the amount of lysine, an amino acid that helps synthesize proteins, by about 20 %, among other benefits. "The higher protein leads to a decrease in starch, benefiting diabetics," Dr. Hittalmani, who heads the Genetics and Plant Breeding Department of the University, said.

Moreover, the rice protein is easier to digest compared to what comes from non-vegetarian sources. "It is particularly good for children and the elderly," she says. For the farmer, the new entrant is a lucrative option that can be grown like any other cereal, without extra costs. The health benefits of a 'stronger' rice, however, are not widely known and there is a need to create awareness. The same research team has also released high-zinc and high-iron types, which have double the normal level of the two elements.

Whiteflies plaguing coconut plantations in south India

The Rugose Spiraling Whitefly *(Aleurodicus rugioperculatus)*, native to Belize, Guatemala and in the swamps of Florida in southern United States, has been discovered for the first time in the plantations of Tamil Nadu and Kerala. "It damaged most of the plantations in Pollachi district (near Coimbatore) and Kerala. If not contained, there is a high chance it can spread towards Karnataka, Andhra Pradesh and Goa," said K. Selvaraj, scientist, Division of Molecular Entomology, National Bureau of Agricultural Insect Resources (NBAIR), Bengaluru, who was part of the team that surveyed and identified the insect.

Farmers reported the insect first in July in Palakkad and Pollachi. In November, after morphological and molecular identification by researchers from NBAIR and the Institute of Wood Science and Technology, it was proved that it was a previously unseen insect, Rugose Whitefly. The Whitefly, which has a lifespan of barely 40 days, was discovered in 2004 in Latin America. Since then, it has rapidly spread to Florida, where researchers have found that over 100 species of plants — ornamental and edible — can host the insect. NBAIR director Chandish R. Ballal believes the fly may have entered the country through the seedling of ornamental plants, and judging by the severity of damage, it perhaps experienced its first outbreak in Palakkad. Around the region, it is found to have damaged more than 25 hectares of plantations.

Biopesticides and natural weather changes may be the best chance now to contain the spread of the destructive insects. Initial observations show that the insect spreads rapidly when the weather is warm and humid — aggravated this year owing to failed monsoons. The northeast rain bringing down temperatures and the imminent arrival of winter may help contain the insect. Moreover, researchers say there has been marked improvement in the fight against the pest in plantations

that have not been sprayed with chemicals. "When they spray pesticides, it kills the Green lacewing (Chrysoperla zastrowi sillemi), which is a natural predator of the whitefly. We have told farmers to use only biological agents such as starch powder or neem spray instead of chemicals," said Dr. Ballal.

Centre eases cash flow for rabi crop loans

Acknowledging that farmers have been among the hardest hit by the cash crunch due to demonetisation, the Union government announced a special window of ₹21,000 crore to district central cooperative banks to ensure smooth agriculture-related operations during the current rabi season. Significantly, it also began a new phase of its demonetisation policy and efforts to make India a less-cash economy by shifting focus to measures aimed at boosting digital transactions.

The government said National Bank for Agriculture & Rural Development (NABARD) has made available a special limit of ₹21,000 crores to the DCCBs through State Cooperative Banks for rabi agricultural operations. Economic Affairs Secretary Shaktikanta Das told that the amount will enable the DCCBs to sanction and disburse crop loans to farmers through the network of primary agricultural cooperative societies (PACS).

This will benefit over 40% of the small and marginal farmers who avail institutional credit/crop loans. However additional limits over and above the ₹21,000 crore will be provided by NABARD as per requirement, Mr. Das said. He said around 82,000 of the 2.2 lakh ATMs in the country had been recalibrated to dispense new currency, adding that within a few days the remaining ATMs will also be recallibarated.

To promote greater usage of payment through e-wallets the RBI has decided to increase the monthly transaction limit for individuals from ₹10,000 to ₹20,000. Similar enhancements have also been announced by the RBI for merchants. On another measures to boost digital transactions, Mr Das said the telecom regulator TRAI has decided to reduce the USSD (Unstructured Supplementary Service Data) charges from the current ₹1.50 per session to 50 paise per session for transactions relating to banking and payments. He said the telecom companies have also agreed to waive the above 50 paisa USSD charges per session for the period up to December 31, 2016.

In addition all government organisations, agencies, authorities as well as public sector undertakings have been advised to use only digital payment methods such as internet banking, unified payment interfaced, cards and Aadhar-enabled payment system to make payments to all stakeholders and employees. At the point of disbursing the payments, it will be necessary for the authorities to provide the option of payments through cards, Interest banking, unified payment interface, cards and Aadhar enabled payment system, Mr. Das said.