1.1 INTRODUCTION

Co-operatives account for a relatively small share in the bank-dominated Indian financial system; however, given their geographic and demographic outreach, they hold a key position in the system\(^1\). Geographically, co-operatives have been instrumental in extending formal financial services to villages and small towns in India. Demographically, these institutions have enabled access to financial services to low and middle-income groups in both rural and urban areas\(^2\).

Credit risk stands out as the most detrimental risk to which Banking business is exposed to. Co-operative banks which have proved to be vessels of rural development and financial inclusion, have been susceptible to credit risk throughout their history. The Prudential Norms of Income Recognition and Asset Classification were implemented for Co-operative Banks in India in 1996-1997 in order to strengthen them and improve their quality. Non-performing Assets (NPA) in the loan portfolio affect the operational efficiency which in turn influences profitability, liquidity and solvency position of co-operative banks. This is a theoretical analysis of the effect of Non-performing Assets on the Operational Efficiency of Central Co-operative Banks.

1.2 IMPACT OF NPAS ON THE FINANCIAL STRENGTH OF THE PACS

The present study is related to NPAs and its impact on the financial status of PACS. Therefore, it will be appropriate to find out

\(^1\) [http://www.worldwidejournals.com/ijar/1375511575_1c067_37.pdf](http://www.worldwidejournals.com/ijar/1375511575_1c067_37.pdf)

\(^2\) [www.rbi.org.in](http://www.rbi.org.in)
what is the impact of the NPAs on the PACS. Proper understanding of this concept will be helpful to study the performance of the PACS of the identified PACS from Pune District.

The impact of the Non Performing Assets on financial status of PACS is in several ways. Over a period of time if the NPAs continue to mount naturally it incapacitates the institution. Following are the few areas which are affected by rising NPAs.

**Solvency:** The solvency of a PACS is directly dependent on its Capital Adequacy Ratio. In turn it also reflect on the quality of its loan portfolio. If the NPAs continue to increase naturally the PACS will have to provide for it out of its own resources and to that its capital is depleted. Naturally it adversely affects the solvency of the PACS. Hence to keep its hard core capital the PACS will have to raise its capital which is not easy.

**Profitability:** When the NPAs rise naturally the bank will have to make appropriate provisions as per the RBI/NABARD's direction and therefore the profit gets adversely affected. In fact the NPA affects the profitability in two ways. It does not allow the interest on the NPA account to be booked in profit and at the same time interest earned on other performing assets is required to be apportioned for these accounts.

**Liquidity:** Any financial institution engaged in lending has to do a balancing act. It should maintain a fair balance between the short term resources and its short term uses. If short term resources are utilized for the long term lending or if these funds are blocked in NPA accounts naturally it adversely affects the liquidity of the PACS. In turn, its fresh turn over gets affected.
**Risk taking ability:** As per economic theory profit is the reward for risks undertaken. Therefore high level of NPA level reduces the risk taking ability of the decision makers.

To sum up it will be appropriate to record here as to what the Committee on Banking Sector Reforms (Narasimham Committee II, 1998) stated about NPAs.

"NPAs constitute a real economic cost to the nation in that they reflect the application of scarce capital and credit funds to unproductive uses. The monies locked up in NPAs are not available for productive use and to the extent that banks seek to make provisions for NPAs or write them off, it is a charge on their profits. To be able to do so, banks have to charge their productive and diligent customers a higher rate of interest. It thus becomes a tax on efficiency. It is the customer who uses credit efficiently that subsidizes the inefficiency represented by NPAs. This also raises the transaction costs in the system thus denying the diligent credit customers the benefit of lower rates, which would help them to be more efficient and competitive. NPAs, in short, are not just a problem for banks. They are bad for the economy”.³

### 1.3 RELEVANCE OF THE STUDY

#### 1.3.1 Academic

The concept of prudential norms in banking industry were introduced for the first time in the year 1991. Those were introduced on the recommendations of International Committee on Banking known as Basel Committee. Earlier to this introduction banks were using their own norms for provision which used to facilitate adjustments in their profits. The new concept of introduction of transparency in the functioning in banking was required to be

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³ Committee on Banking Sector Reforms (Narasimham Committee II, 1998)
academically studied and its impact on each bank was expected to be different. Therefore this researcher thought of conducting academic study of this introduction of prudential norms to PACS which are the grass root level credit dispensing outfits of the DCC Banks.

1.3.2 Policy Aspects

The Reserve Bank of India is the central banking authority in India. This bank had taken a policy decision to implement the Basel Committee norms in the banking sector. Since it was a total change in the policy of classification of assets and provisioning which was to have a major impact on the bank’s financial soundness, it adopted a sound policy of introducing this concept in a phased manner. In the first place it was introduced for commercial banks, then in the second phase to the cooperative banks. Even within the norms for classification of assets as well as provision phased manner implementation was undertaken which proved to be a wise decision.

1.3.3 Research Aspect

The introduction of concept of classification of assets and provisioning norms to PACS was right decision. However, it was necessary to introduce it after adequate training to the PACS staff. Usually the quality of the PACS staff (secretary) is relatively inferior to that of the commercial bank. The secretary is the only staff who has to run the society’s day to day affairs. Therefore, this researcher considered it appropriate to study as to how for the concept of NPA and Provisioning has been stabilized in the PACS, although it was introduced in 2009. Therefore the researcher found relevance of this research study and undertook it.

1.3.4 Application of NPA norms to PACS

This study envisages the impact of the NPAs on the financial standing of the PACS. Let us understand the process of the introduction of the prudential norms of which NPA is one aspect, it is
necessary to understand as to how these norms have been implemented in the banking sector since 1991. Actually these prudential norms in banking have its origin in the recommendation of the Basel Committee (an international organization). The objective of these norms is to present a transparent picture about the organizations financial soundness. These norms have been accepted by the Reserve Bank of India. Since these norms have a bearing on the financial soundness of the banks the Reserve Bank of India accepted these norms and decided to introduce these norms which, are really stringent, in a phased manner. Therefore, the RBI followed the following path.

Reserve Bank of India in the first place implemented these norms in the Commercial Banking Sector and that too in a phased manner. The classification of accounts as NPA was based on the overdue period and the income generation from the asset created out of bank finance. This was brought down to the present level in a phased manner thereby the concept of the NPA and the remedial measures stabilized in the commercial banking sector.

In the second phase the Reserve Bank of India implemented these NPA norms to cooperative banks in general including District Central Cooperative Banks in the year 1992. Here also the norms were implemented in a phased manner. NABARD also followed it up with the DCC Banks and ensured NPA concept’s smooth implementation by these DCC Banks.

Once the system was stabilized in the DCC Banks in the third phase these NPA norms have been implemented in the PACS which is the grass root level outfit, in 2009. The same style has been followed by the NABARD under the directions of Reserve Bank of India.
As these norms are applied to PACS recently the system is still to be stabilized. The quality of the staff at PACS, the volume of work, manual working style, and inadequacy of the staff at PACS level (usually only one secretary attending to all the work) the system is still in implementation stage. These PACS have still not implemented it in too to the satisfaction of DCC BANK as well as NABARD.

The researcher had undertaken statutory audit of number of PACS in the area of study and therefore the researcher was in the know of the current level of implementation of the NPA and its impact on the PACS’s financial standing. This motivated the researcher to study the subject in greater detail.

On this backdrop, the researcher is of the considered view that the present study is the most relevant.

1.3.5 Performing and Non – Performing Assets

The importance of Performing and Non Performing Assets is increasing day by day from the formation of Shri M. Narsimham Committee or Banking Sector reform in 1991. We can say that it is the second land mark in banking sector in India after nationalization of banks. After nationalization of banks, it has been given much attention on the lending policy of nationalized banks but not much attention was given on the aspects of recovery of the advances of the nationalized banks by Reserve bank of India.

In April, 1992, it was decided to implement the Narshimham Committee’s recommendations on financial sector reforms in a phased manner over a three year period commencing from the accounting year 1992-93. Income Recognition Assets Classification (IRAC) and provisioning norms were introduced in our country with a view to reflecting a true picture of financials of Banks on the basis of their

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booking the income on actual basis than on accrual basis and also to classify assets according to the level of risks attached to them.

The Reserve Bank has issued directives from 31-03-1993 and presented a new concept of “Income Recognition”. This is done on the recommendations of Shri M. Narsimham Committee.

According to this classification, it is stated as to classify their credit facilities into two parts:
(1) Performing Assets.
(2) Non – Performing Assets.

According to this classification, it is stated as to
(i) When the income must be said to recognize.
(ii) What provision for doubtful debts should be made, and
(iii) Full provision should be made for loss assets.

The Banks are required to classify their advances (Assets) into four broad categories:
(1) Standard Assets
(2) Sub standard Assets
(3) Doubtful Assets, and
(4) Loss Assets

A standard asset is one (i) which does not disclose any problems and (ii) which does not carry more than normal risk attached to the business. Such an asset is Performing Asset and not NPA. Sub standard, doubtful and loss Assets are individually and collectively known as Non – Performing Assets (NPA).

1.3.6 Impact of NPAs on the banks/and Credit Societies

The NPAs have blasting impact on the return on assets in the following ways:-
1. The capital adequate ratio is disturbed and cost of capital will go up.
2. The Economic Value Addition (EVA) by banks gets upset.
3. The current profits of banks are eroded.
4. The interest income of banks reduced due to non-receipt basis.
5. Banks profitability is affected adversely because of the provision of doubtful debts and consequent write off as bad debts.
6. Return on Investment (ROI) is reduced.
7. The assets and liability mismatch will widen.
8. It limits recycling of the funds.

This concept of non-performing assets was aptly introduced by the Reserve Bank of India in a phased manner. In the first place it was introduced for the Public Sector Banks as well as Commercial Banks in 1991. Even in these banks the parameters for classification of the account into NPA were gradually tightened. Next was the turn of the Cooperative Banks. Here again every latitude to the banks for stabilization of the system. Finally it has been introduced in the Primary Agricultural Credit Societies since 2009. So the organizations under studied were the last to adopt the concept of NPA.

Now considerable time has been passed the system of classification of accounts under NPA has been stabilized. Now it is high time to analyze as to how far the system has been stabilized, what is the extent of NPAs in PACS, what are their causes and how those can be attended to bring those to bear minimum level or to zero level? This study has attempted to find out the grass root reality and wherever problems have come to surface, remedial measures have also been suggested. Thus it is in this context the research is significant.
1.4 OBJECTIVES OF THE STUDY

Keeping in mind the title of the research, the researcher has formulated the following objectives to be achieved through this research exercise:

a. To analyze the working of Primary Agricultural Cooperative Societies (PACS).

b. To evaluate the performance of Primary Agricultural Cooperative Societies with reference to current level of credit appraisal and post disbursement supervision over credit.

c. To study the causes of Non Performing Assets in Primary Agricultural Cooperative Societies.

d. To study the impact of NPAs on the financial performance of the PACS.

e. To identify possible solutions to overcome these.

Justification for the Objectives

As has been stated in the introduction PACS are the grass root arm of lending to the agriculture sector through cooperative system. The study of Non Performing Assets encompasses the whole gamut of banking as lending is the primary activity of any banking sector. PACS is the extended arm of banking and hence it is essential to study the PACS on the lines of banking working systems. i.e. Pre-sanction appraisal of the credit proposals, post disbursement and supervision over credit are essential ingredients to study the Non Performing Assets. It has therefore been considered necessary to study the working of the PACS under study, the system and level of pre-sanction credit appraisal and the post disbursement supervision over credit needed to be studied in-depth. Hence the objectives (a) and (b) have been formulated. While studying the NPAs naturally it will throw light on the causes for classifying an account under NPA and while doing this it will also throw light on the possible solutions for avoiding NPAs. Therefore, the objective number (c) has been stated. As the NPAs
record increase, naturally the society has to make adequate provisions out of its own income and naturally it has its adverse impact on the financial status of the society. And therefore to study this impact of NPA on the financial status of the society the last i.e. (d) objective has been incorporated.

In nutshell, the justification can well be given as follows:

- Implementation of the prudential norms for the PACS has been of recent origin.
- The system is still to be stabilized in the PACS.
- Implementation of these norms, more specifically the classification of assets and the NPA norms has adversely affected the financial position of the PACS.
- PACS are required to take certain remedial measures in order to improve its financial soundness.

Keeping these vital points the objectives for this research have been stated.

As stated in the title of the thesis the one of the objectives is to study the impact of the NPA on the financial status of the PACS. Here the researcher has used the term Financial Status so as to include impact of NPAs on the growth of capital, reserves, advances portfolio, its profitability etc.

1.5 HYPOTHESES OF THE STUDY

On the basis of the initial study of the subject while preparing the Research Proposal the researcher has taken a bird’s eye view of the subject and in the process has formulated the following hypotheses:

- \( H_1 \) The Primary Agricultural Cooperative Societies are being managed in a traditional way.
H$_2$ Due to rise in the Non Performing Assets of the PACS the societies are incurring losses which in turn adversely affects the overall financial status of the PACS.

H$_3$ The improvement in pre-sanction credit appraisal and post disbursement supervision over credit will improve the NPA position of these societies.

H$_4$ The traditional management of these societies needs to be reoriented to professional one.

The above statements of hypotheses made by the researcher are tested in this research.

**Justification of the Hypotheses**

The researcher has earlier conducted statutory audits of the various Primary Agricultural Cooperative Credit Societies functioning in Pune District. Therefore, he has adequate exposure to the functioning of these PACS. The researcher has observed that these societies are functioning in a traditional manner. Therefore the hypothesis number H$_1$ has been formulated.

It has been observed during the course the researchers visit to few societies that these societies are incurring losses due to mounting nonperforming assets. As per the Reserve Bank of India’s directives on NPAs interest on the NPA is not allowed to be taken to Profit and Loss account as an income. However, at the same time, the societies are under obligation to make provision for these non performing assets at prescribed rates from out of profit earned from performing assets. This is the reason as to why these societies are incurring losses. The researcher wanted to find out the causes of turning accounts into nonperforming assets, and hence this hypothesis H$_2$ has been formulated.
Needless to say that there is a dire need to improve upon the working of the societies in which the prime concern is in arresting the growth of the NPAs and for which there is need to take preventive action in the form of improving the pre-sanction appraisals of the loan proposals and at the same time improving the post disbursement supervision over credit. The societies are required to gear up their recovery machinery on war footing. Hence this hypothesis $H_3$ has formulated and the same has been tested through the primary data collected.

The researcher has through his experience as an auditor of various PACs has observed that there is a need to improve upon the current traditional management and to introduce professional management in managing the business of the society. Therefore, this last hypothesis $H_4$ has been formulated and this has been tested through this research.

1.6 RESEARCH METHODOLOGY

This research deals with “A study of Non Performing Assets and Its impact on Financial Status of Primary Agricultural Co-operative Societies, in Pune District”. The type of research adopted is exploratory, based on exhaustive analysis of primary and secondary data, though the main thrust is upon secondary data.

1.6.1 Significance of the Study

The main focus of the study is to find out the performance of the Primary Agricultural Cooperative Societies on the Non Performing Assets and its impact on their financial status. Though concept of Non Performing Assets has been introduced in Indian Banking industry, it has been introduced in phases. Initially it was introduced in commercial banking, followed by cooperative banks. Now since 2009 the concept of non-performing assets has been applied to Primary Agricultural Cooperative Societies. Even in all these banking
organizations the concept of non-performing assets was introduced in stages. Therefore the study aims at finding out how far the concept of non-performing assets has been understood and is being implemented in PACS. What are the problems these PACS are facing in its implementation? What could the possible solutions to bring down the incidence of NPA and ultimately its impact on profitability and strengthening the cooperative movement.

1.6.2 Scope of the Study

(i) Geographical Scope and selection of the sample area

The geographical scope of study is limited to Primary Agricultural Cooperative Societies functioning in seven talukas of Pune District. There are 14 Talukas (including Pune City) in the Pune District. The table below depicts the talukas of Pune district with number of villages, population as per 2011 census, and the number of PACS functioning in those Talukas.

Table 1.1 : Taluka Wise Number of Villages, Gender Wise Population and PACS in Pune District as on 31.3.2013

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of the Taluka</th>
<th>No. of villages</th>
<th>Population as per 2011 census</th>
<th>No. of PACS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ambegaon</td>
<td>143</td>
<td>119226</td>
<td>116746</td>
</tr>
<tr>
<td>2</td>
<td>Baramati</td>
<td>117</td>
<td>221094</td>
<td>208506</td>
</tr>
<tr>
<td>3</td>
<td>Bhor</td>
<td>195</td>
<td>94158</td>
<td>91958</td>
</tr>
<tr>
<td>4</td>
<td>Daund</td>
<td>103</td>
<td>196283</td>
<td>184213</td>
</tr>
<tr>
<td>5</td>
<td>Haveli</td>
<td>108</td>
<td>1316346</td>
<td>1119235</td>
</tr>
<tr>
<td>6</td>
<td>Indapur</td>
<td>143</td>
<td>198801</td>
<td>184382</td>
</tr>
<tr>
<td>7</td>
<td>Junnar</td>
<td>183</td>
<td>202360</td>
<td>196942</td>
</tr>
<tr>
<td>8</td>
<td>Khed</td>
<td>188</td>
<td>237868</td>
<td>212248</td>
</tr>
<tr>
<td>9</td>
<td>Maval</td>
<td>187</td>
<td>198487</td>
<td>179072</td>
</tr>
<tr>
<td>10</td>
<td>Mulshi</td>
<td>144</td>
<td>90053</td>
<td>80953</td>
</tr>
<tr>
<td>11</td>
<td>Pune City</td>
<td>–</td>
<td>1700867</td>
<td>1604021</td>
</tr>
<tr>
<td>12</td>
<td>Purandhar</td>
<td>108</td>
<td>119906</td>
<td>115753</td>
</tr>
<tr>
<td>13</td>
<td>Shirur</td>
<td>117</td>
<td>201152</td>
<td>184262</td>
</tr>
<tr>
<td>14</td>
<td>Velhe</td>
<td>130</td>
<td>27504</td>
<td>27012</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1866</strong></td>
<td><strong>4924105</strong></td>
<td><strong>4505303</strong></td>
<td><strong>4505303</strong></td>
</tr>
</tbody>
</table>
Table 1.2: Taluka wise position of PACS and its overall profit & loss position and the amount involved in Overdue Assets as on 31.3.2013

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of the Taluka</th>
<th>No. of Villages</th>
<th>No. of PACs.</th>
<th>No. of societies showing Profit</th>
<th>No. of societies showing Losses</th>
<th>Amount of Overdue (‘000)</th>
<th>% of Overdue with O/S</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ambegaon</td>
<td>143</td>
<td>49</td>
<td>42</td>
<td>7</td>
<td>181511</td>
<td>48.68</td>
</tr>
<tr>
<td>2</td>
<td>Baramati</td>
<td>117</td>
<td>193</td>
<td>154</td>
<td>39</td>
<td>630475</td>
<td>65.71</td>
</tr>
<tr>
<td>3</td>
<td>Bhor</td>
<td>195</td>
<td>75</td>
<td>60</td>
<td>15</td>
<td>414095</td>
<td>56.62</td>
</tr>
<tr>
<td>4</td>
<td>Daund</td>
<td>103</td>
<td>123</td>
<td>60</td>
<td>63</td>
<td>2849778</td>
<td>76.08</td>
</tr>
<tr>
<td>5</td>
<td>Haveli</td>
<td>108</td>
<td>135</td>
<td>93</td>
<td>40</td>
<td>452639</td>
<td>63.10</td>
</tr>
<tr>
<td>6</td>
<td>Indapur</td>
<td>143</td>
<td>235</td>
<td>121</td>
<td>63</td>
<td>314485</td>
<td>66.33</td>
</tr>
<tr>
<td>7</td>
<td>Junnar</td>
<td>183</td>
<td>66</td>
<td>53</td>
<td>13</td>
<td>220244</td>
<td>65.62</td>
</tr>
<tr>
<td>8</td>
<td>Khed</td>
<td>188</td>
<td>98</td>
<td>79</td>
<td>19</td>
<td>210924</td>
<td>43.10</td>
</tr>
<tr>
<td>9</td>
<td>Maval</td>
<td>187</td>
<td>55</td>
<td>44</td>
<td>11</td>
<td>150881</td>
<td>53.94</td>
</tr>
<tr>
<td>10</td>
<td>Mulshi</td>
<td>144</td>
<td>46</td>
<td>37</td>
<td>9</td>
<td>135950</td>
<td>58.11</td>
</tr>
<tr>
<td>11</td>
<td>Pune City*</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>12</td>
<td>Purandhar</td>
<td>108</td>
<td>95</td>
<td>76</td>
<td>19</td>
<td>228151</td>
<td>48.02</td>
</tr>
<tr>
<td>13</td>
<td>Shirur</td>
<td>117</td>
<td>128</td>
<td>105</td>
<td>23</td>
<td>1148234</td>
<td>57.67</td>
</tr>
<tr>
<td>14</td>
<td>Velhe</td>
<td>130</td>
<td>24</td>
<td>19</td>
<td>5</td>
<td>82311</td>
<td>67.44</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1866</strong></td>
<td><strong>1322</strong></td>
<td><strong>933</strong></td>
<td><strong>324</strong></td>
<td></td>
<td><strong>7019678</strong></td>
<td><strong>64.24</strong></td>
</tr>
</tbody>
</table>

**Source:** Data Collection from Statistics section, District Deputy Registrar of Co-op. Societies, Pune

* Since these are fully urban areas there is no presence of Primary Agri. Co-op. Societies.

For the purposes of administrative convenience Pune revenue district has been divided into six sub-divisions detailed hereunder:

- Baramati Sub Division
- Bhor Sub Division
- Pune Sub Division
- Khed Sub Division
- Maval Sub Division
- Pimpri Chinchwad Sub Division

The researcher has identified 2 Talukas from each of the sub-division. The talukas and the number of societies (Audit class wise) are shown in the following table.
### Table 1.3: Position of Primary Agri. Coop. Societies as on 31st March 2013

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Taluka Names</th>
<th>Total No. of Societies (Functional)</th>
<th>Audited Societies</th>
<th>Audit Class Awarded</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td><strong>Baramati Sub-Division</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Baramati</td>
<td>193</td>
<td>165</td>
<td>17</td>
<td>118</td>
</tr>
<tr>
<td></td>
<td>Identified Societies</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>Indapur</td>
<td>235</td>
<td>183</td>
<td>23</td>
<td>127</td>
</tr>
<tr>
<td></td>
<td>Identified Societies</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td><strong>Bhor Sub-Division</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Purandar</td>
<td>95</td>
<td>95</td>
<td>4</td>
<td>84</td>
</tr>
<tr>
<td></td>
<td>Identified Societies</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>4</td>
<td>Velhe</td>
<td>24</td>
<td>24</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Identified Societies</td>
<td>-</td>
<td>3</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td><strong>Pune Sub-Division</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Haveli</td>
<td>135</td>
<td>111</td>
<td>0</td>
<td>83</td>
</tr>
<tr>
<td></td>
<td>Identified Societies</td>
<td>-</td>
<td>3</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td><strong>Khed Sub-Division</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Khed</td>
<td>98</td>
<td>95</td>
<td>1</td>
<td>94</td>
</tr>
<tr>
<td></td>
<td>Identified Societies</td>
<td>1</td>
<td>3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>7</td>
<td>Ambegaon</td>
<td>49</td>
<td>39</td>
<td>2</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Identified Societies</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>8</td>
<td>Junner</td>
<td>66</td>
<td>61</td>
<td>9</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>Identified Societies</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td><strong>Maval Sub-Division</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Maval</td>
<td>55</td>
<td>51</td>
<td>0</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>Identified Societies</td>
<td>-</td>
<td>3</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>10</td>
<td>Mulshi</td>
<td>46</td>
<td>46</td>
<td>0</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td>Identified Societies</td>
<td>-</td>
<td>3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Pimpri – Chinchwad</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>996</td>
<td>870</td>
<td>56</td>
<td>647</td>
<td>149</td>
</tr>
<tr>
<td><strong>Total Identified Societies</strong></td>
<td>15</td>
<td>30</td>
<td>24</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*Source: Field survey data collected from District Deputy Registrar of Coop. Societies, Pune.*

### ii) Operational Scope

**Parameters decided for selection of the Talukas**

1) Two talukas from each sub Division. However, as Khed Sub Division has four talukas in it, the researcher has identified 3 talukas from this sub-division.

2) Since Pune sub-division has only one rural taluka i.e. Haveli, the researcher has identified only one taluka from this sub division.
3) In Maval sub division as there are only two talukas, both have been identified for this study.

4) The total audited PACs are 870

5) The societies were selected on the basis of the audit class awarded as on 31.3.2013.

6) Initially the researcher had contemplated to cover 3 societies from each audit class category. However, during the field study it was observed that in some talukas particular audit class societies are not available and hence the number has changed. These changes have taken place in the following talukas

7) In Ambegao Taluka only two societies were having Audit Class A. Therefore, both the societies have been covered and the deficit remained to be one.

8) In Haveli there was not a single society having Audit Class A. Therefore, no society from A category was taken up.

9) In Khed taluka there was only one society having audit class A. Therefore, there is a deficit of two societies in this class. So also in this taluka there was not a single society from C category audit class. Therefore, none of the society from this C class has been covered by this study.

10) In Maval taluka there was not a single society having Audit Class A. Therefore, there the deficit is of 3 societies.

11) In Mulashi taluka there were no societies having A and C audit class therefore 6 societies have not been covered by this study.

12) In Velhe taluka there was not a single society having audit class A. Therefore, three societies from this category remained in deficit.

13) Thus in all from Audit Class A = 15 societies and for C class = 6 societies are in deficit.

14) Talukas identified are 10 and the total identified PACs are 69.
1.7 PRIMARY DATA

1.7.1 Parameter for identifying the class of societies for the study

It has been seen from the table that there are various audit classifications of the societies based on their performance on various facets of functioning. These classes are A, B, C & D. Keeping in view the audit classification criterion for awarding D categorization, these are the societies which are defunct and are on the brink of closure. Usually this situation arises either because of a large size fraud in the society or because of the wrong credit policy followed which has resulted in the overdue position. So far as this research is concerned the researcher has decided to exclude these D class societies as there is no chance of revival of it. So also in case of such societies no cooperation for soliciting data is available. Therefore the researcher has identified primary societies which have

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Taluka</th>
<th>PACS on the basis of audit classification as of 31.3.2013</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ambegaon</td>
<td>2 3 3</td>
<td>8</td>
</tr>
<tr>
<td>2</td>
<td>Baramati</td>
<td>3 3 3</td>
<td>9</td>
</tr>
<tr>
<td>3</td>
<td>Haveli</td>
<td>- 3 3</td>
<td>6</td>
</tr>
<tr>
<td>4</td>
<td>Indapur</td>
<td>3 3 3</td>
<td>9</td>
</tr>
<tr>
<td>5</td>
<td>Junner</td>
<td>3 3 3</td>
<td>9</td>
</tr>
<tr>
<td>6</td>
<td>Khed</td>
<td>1 3 -</td>
<td>4</td>
</tr>
<tr>
<td>7</td>
<td>Maval</td>
<td>- 3 3</td>
<td>6</td>
</tr>
<tr>
<td>8</td>
<td>Mulshi</td>
<td>- 3 -</td>
<td>3</td>
</tr>
<tr>
<td>9</td>
<td>Purandar</td>
<td>3 3 3</td>
<td>9</td>
</tr>
<tr>
<td>10</td>
<td>Vehle</td>
<td>- 3 3</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>15 30 24</td>
<td>69</td>
</tr>
</tbody>
</table>

The societies were selected on the basis of the audit class awarded as on 31.3.2013.

Initially the researcher had contemplated to cover 3 societies from each audit class category. However, during the field study it was observed that in some talukas particular audit class societies are not
available and hence the number has changed. These changes have taken place in the following talukas:

In **Ambegao Taluka** only two societies were having Audit Class A. Therefore, both the societies have been covered and the deficit remained to be one.

In **Haveli Taluka** there was not a single society having Audit Class A. Therefore, no society from A category was taken up.

In **Khed Taluka** there was only one society having audit class A. Therefore, there is a deficit of two societies in this class. So also in this taluka there was not a single society from C category audit class. Therefore, none of the society from this C class has been covered by this study.

In **Maval Taluka** there was not a single society having Audit Class A. Therefore, there the deficit is of 3 societies.

In **Mulashi Taluka** there were no societies having A and C audit class therefore 6 societies have not been covered by this study.

In **Velhe Taluka** there was not a single society having audit class A. Therefore, three societies from this category remained in deficit.

Thus in all from Audit Class A = 15 societies and for C class = 6 societies are in deficit.

**Basis of selection of societies for the study**

While identifying the societies according to the audit class awarded the reference date was 31st March 2013. However, this does not mean that such identified societies were enjoying the same audit
class throughout the 6 years period under study. Therefore the researcher listed out audit class wise societies during the period and counted the A, B, C and D class societies during the 6 years under study and arrived at the number of societies in each class which revealed A – 57, B – 238, C-114 and D – 5 respectively which is shown as count in the following table. Therefore, in order to have more realistic picture of the data the researcher accorded weightage to the audit class of each society in year under study and then the following data has been arrived at which represents the identified variables which have got bearing on the overall financial status of the society.

**1.7.2 Criteria for identification of the beneficiaries availing credit facilities from the society**

1) Ten respondents from each identified audit class A, B and C. Thus there will be 30 borrowers from each Society. Thus the total respondents would have been 900 borrowers. However, as there were only 69 societies available according to the criteria the total number of borrowers should have been 690. However in respect of certain categories of types of advances no borrowers were available and hence the number has been reduced to 573.

2) While selecting these borrowers the researcher has also paid attention to the type of credit facility availed i.e. Short term, medium term loan.

3) While selecting borrowers from medium term loans care has been taken to identify the various sub sectors of agriculture i.e irrigation / farm mechanization / activities allied to agriculture i.e. dairy, poultry, horticulture etc. This will take care of the cross section of the overall agriculture financing by the PAC.
While selecting the type of borrowers the following parameter was used

Three borrowers were selected from Short term loans and 7 from medium term loans. Even in Medium Term loans care was taken to select borrowers from different purposes i.e. dairy, irrigation, farm mechanization etc. Thus the category wise total borrowers identified were as under:

- **Short Term Loans: 187**
- **Medium Term Loans : 386**

**Under Irrigation heading there are again sub categories of purposes**

1) Dug well
2) Bore well
3) Pump set / Electric motor
4) Drip irrigation
5) Pipe line

**Under farm mechanization following purposes are covered**

1) Purchase of tractor / trailers /
2) Purchase of harvester combines
3) Purchase of agriculture implements / equipments

**Under Dairy farming the following sub heads are accounted**

1) For construction of Gothas
2) For purchase of cross breed milch animals
3) For purchase of deshi milch animals
4) For purchase of dairy equipment/s

The researcher will be taking care to ensure to cover all these varieties of purposes while identifying the borrowers to have a broad idea of the NPAs.
1.7.3 Temporal Scope

For detailed study, 6 years period from 2007-08 to 2012-13 is selected. The Indian Banking sector witnessed introduction of banking sector reforms. Various prudential norms were introduced to Indian Banking. In the beginning in 1991 onwards these norms were made applicable to the Commercial Banking and gradually these norms were introduced to cooperative banks from 1996-97 in a phased manner. Thus these cooperative banks and in turn the PACS have also been brought in the main stream from 2009. For the purpose of calculating growth rates, data of 2007-08 is used as base year.

1.7.4 Sources of Data

Researcher has used the data sources, primary as well as secondary, though the main thrust is placed on secondary data relating to financial performance and problems of PACS in the identified sample area i.e. three talukas of Pune District. The researcher has also obtained primary data from the identified PACS, their secretary / directors, Pune Dist. Central Coop. Bank’s managers, agricultural borrowers from PACS. In order to understand the approach of the board of directors of the identified societies the researcher has interacted with some of the board members of the PACS and get himself acquainted their style of working, approach towards financing as well as recovery efforts, use of modern technology in the PACS.

1.8 Secondary Data

It was obtained from annual reports of the 69 PACS from the 10 talukas for 6 years i.e., from 2007-08 to 2012-2013. The period-wise performance in respect of NPA growth by using the financial performance parameter according to Audit class of the society is studied. At the same time, information was collected from various published literature, reports of the Committees appointed by Reserve Bank of India, Government of India, Government of Maharashtra and
Maharashtra State Co-operative Banks and various reference books, research journals and periodicals available in the following libraries and research centers. The researcher has visited various libraries and research centers to collect the secondary data viz. Gokhale Institute of Politics and Economics, Pune, SVPM’s College of Commerce, Science and Computer Education, Malgaon (Bk), Jaikar Library, Pune, office of the Commissioner for Cooperation & Registrar of Cooperative Societies, Pune, Reserve Bank of India’s College of Agricultural Banking – Pune, District Statistical Office, Pune.

1.9 TECHNIQUE USED FOR SELECTION OF SAMPLE

1.9.1 Sample size calculation

In order to arrive at representative sample size the researcher has used the below detailed scientific process and the logic applied has also been narrated in the following table.

| Margin of errors can accepted | 5 % | The margin of error is the amount of error that you can tolerate. If 90% of respondents answer yes, while 10% answer no, One may be able to tolerate a larger amount of error than if the respondents are split 50-50 or 45-55. Lower margin of error requires a larger sample size. |
| Confidence level expected. (*Typical choices are 90%, 95%, or 99*) | 95 % | The confidence level is the amount of uncertainty one can tolerate. Suppose that you have 20 yes-no questions in your survey. With a confidence level of 95%, you would expect that for one of the questions (1 in 20), the percentage of people who answer yes would be more than the margin of error away from the true answer. The true answer is the percentage one would get if you exhaustively interviewed everyone. Higher confidence level requires a larger sample size. |

5 Source: http://www.raosoft.com/samplesize.html
Population size? (If you don’t know, use 20000)

Around 43083 ('000)

How many people are there to choose one’s random sample from? The sample size doesn’t change much for populations larger than 20,000.

Response distribution

50 %

For each question, what do one expect the results will be? If the sample is skewed highly one way or the other, the population probably is, too.

Recommended sample size is

384

This is the minimum recommended size of this survey. If you create a sample of this many people and get responses from everyone, the researcher is more likely to get a correct answer than one would from a large sample where only a small percentage of the sample responds to your survey.

Alternate scenarios

<table>
<thead>
<tr>
<th>With a sample size of</th>
<th>100</th>
<th>200</th>
<th>300</th>
<th>With a confidence level of</th>
<th>90</th>
<th>95</th>
<th>99</th>
</tr>
</thead>
<tbody>
<tr>
<td>Margin of error</td>
<td>9.80%</td>
<td>6.93%</td>
<td>5.66%</td>
<td>The sample size would need to be</td>
<td>271</td>
<td>384</td>
<td>663</td>
</tr>
</tbody>
</table>

In terms of the numbers the researcher selected above, the sample size $n$ and margin of error $E$ are given by

$$x = Z \left( \frac{c}{100} \right)^2 r (100-r)$$

$$n = \frac{N x}{((N-1)E^2+x)}$$

$$E = \sqrt{\frac{(N-n)x}{n(N-1)}}$$

Where $N$ is the population size, $r$ is the fraction of responses that you are interested in, and $Z(c/100)$ is the critical value for the confidence level $c$. 
1.10 TECHNIQUE OF DATA COLLECTION

Entire primary data was collected through interview schedules and through structured questionnaires. Researcher has prepared a detailed and comprehensive questionnaire and interview schedules of different types to collect primary data.

I. Questionnaire for Secretary / Board of Directors of PACS
II. Questionnaire for borrowers of PACS

The questionnaires and interview schedule were prepared in Marathi language. Copies of the questionnaires and interview schedules duly translated into English are given at the end of the thesis in Annexure.

1.10.1 Statistical Techniques for analysis of Data

The researcher has used simple statistical techniques to analyze the data collected for the purpose of the study. The following statistical tools have been used:

- **Percentage:** This is a special kind of ratio which will be used to compare variables. Percentages will be used to condense data and express in relation to 100.

- **Diagrams and Graphs:** The diagrams and graphs will be used as an aid in interpretation of data and drawing conclusions.

- **Descriptive Statistics (Mean, Standard Deviation):** Statistical method is often necessary to represent a set of data in terms of one single number. Descriptive statistics are used to designate the basic structures of the data in a study. They provide simple extractions about the sample and the measures.

- **CHI-squared Test:** This test is used to determine whether hypothesized results are verified by an experiment. This approach
consists of four steps: (1) state the hypotheses, (2) formulate an analysis plan, (3) analyze sample data, and (4) interpret results.

Every hypothesis test requires the analyst to state a null hypothesis (H₀) and an alternative hypothesis (H₁). The hypotheses are stated in such a way that they are mutually exclusive. That is, if one is true, the other must be false; and vice versa.

**Karl Pearson Coefficient of Correlation:** The Pearson product-moment correlation coefficient is a measure of the strength of the linear relationship between two variables. It is referred to as Pearson's correlation or simply as the correlation coefficient. If the relationship between the variables is not linear, then the correlation coefficient does not adequately represent the strength of the relationship between the variables.

The test gives a value between +1 and −1 inclusive, where 1 is total positive correlation, 0 is no correlation, and −1 is total negative correlation. It is widely used in the sciences as a measure of the degree of linear dependence between two variables.

<table>
<thead>
<tr>
<th><strong>Pearson's Value</strong></th>
<th><strong>Meaning about correlation</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>+1</td>
<td>Perfect +ve correlation</td>
</tr>
<tr>
<td>+0.75 to +1</td>
<td>High degree +ve correlation</td>
</tr>
<tr>
<td>+0.50 to +0.75</td>
<td>Moderate degree +ve correlation</td>
</tr>
<tr>
<td>Below +0.5</td>
<td>Low degree +ve correlation</td>
</tr>
<tr>
<td>0</td>
<td>No Correlation</td>
</tr>
<tr>
<td>-1</td>
<td>Perfect -ve correlation</td>
</tr>
<tr>
<td>-0.75 to -1</td>
<td>High degree -ve correlation</td>
</tr>
<tr>
<td>-0.50 to -0.75</td>
<td>Moderate degree -ve correlation</td>
</tr>
<tr>
<td>Below -0.5</td>
<td>Low degree -ve correlation</td>
</tr>
</tbody>
</table>
1.11 LIMITATIONS OF STUDY

Following are the limitations of this study:

1) The study is limited for the period of 2007-08 to 2012-13.
2) Present study is restricted only to Primary Agricultural Credit Societies in Ten Talukas of Pune District.
3) This study is limited mainly to Non Performing Assets and its impact on the financial standing of the PACS.
4) The general limitations applicable to the sample survey method are also applicable to present research work.

On account of above limitations, researcher feels that the findings of this work relating to PACS in Seven Talukas of Pune Districts may or may not be generalized. However, researcher has kept himself away from bias with a view to make analysis subjective.

1.12 CHAPTER SCHEME

Chapter I – Research Methodology

This chapter deals with significance of the study, research problem, objectives of the study, hypotheses, research universe, sample selection, sample size, primary and secondary sources of data, statistical tools used for analyzing the data, analysis and interpretation of primary data collected, scope of the study, limitations of the study and finally chapter scheme adopted for presenting this research.

Chapter II – Review of Literature

In this chapter the researcher has reviewed previous research in this area, reports of committees, books, journals and periodicals, new paper reports etc.
Chapter III – Concepts in Banking

This chapter covers the introduction to the research subject, historical perspective of banking industry in India, evolution of cooperative movement, establishment of District Central Cooperative Banks, Growth of DCCBs, formation of Primary Agricultural Coop. Societies, introduction to the functioning of PACS, Importance of PACS, introduction to the concept of Non Performing Assets, National level statistics relating to NPAs in banking sectors of all types, NPA of DCCB, etc.

Chapter IV – Profile of Pune District

In order to understand this thesis in right perspective it is considered necessary to present a brief profile of the study area. It will facilitate easy understanding of the observations and suggestions, these profiles have been incorporated in this chapter.

Chapter V – Analysis and Interpretation of the Data

The primary data collected has been analyzed using various statistical tools and has been presented in this chapter. Comments on each of the item presented have also been incorporated in this chapter.

Chapter VI – Conclusion and Suggestions/ Recommendations

In this chapter the researcher has recorded his observations on the analyzed data and has also offered suggestions/recommendations wherever possible. The researcher has also presented substantiation/validation of the hypotheses formulated, and has also incorporated scope for further research and conclusion.

Bibliography

It gives the details of the books / periodicals / reports / newspapers / websites referred in this research.
Annexure

All important forms/latest master circular of Reserve Bank of India on NPAs, Interview Schedules, Questionnaires administered to various respondents are presented in this section.