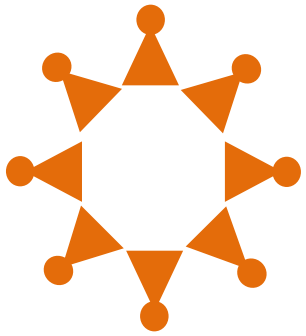
Technology based system to support Self Help Groups of Andhra Pradesh

Guide : Prof. Anirudha Joshi

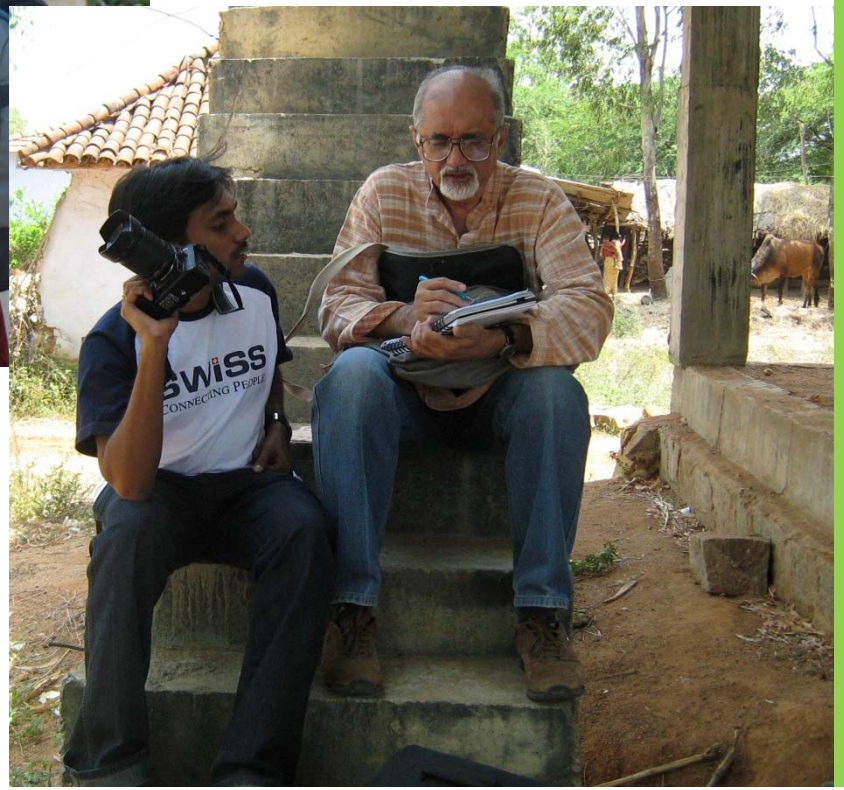


Vijay Pavan
IDC, IITB
June 2009

Idea to take the project

First glimpse of the topic :

May 2008 visit to villages near by Hyderabad along with IDC professors Sri Uday Athavankar and Sri Anirudha Johi



Tasks :

To assist as translator for interviews in Telugu

To help in and around Hyderabad

Idea to take the project

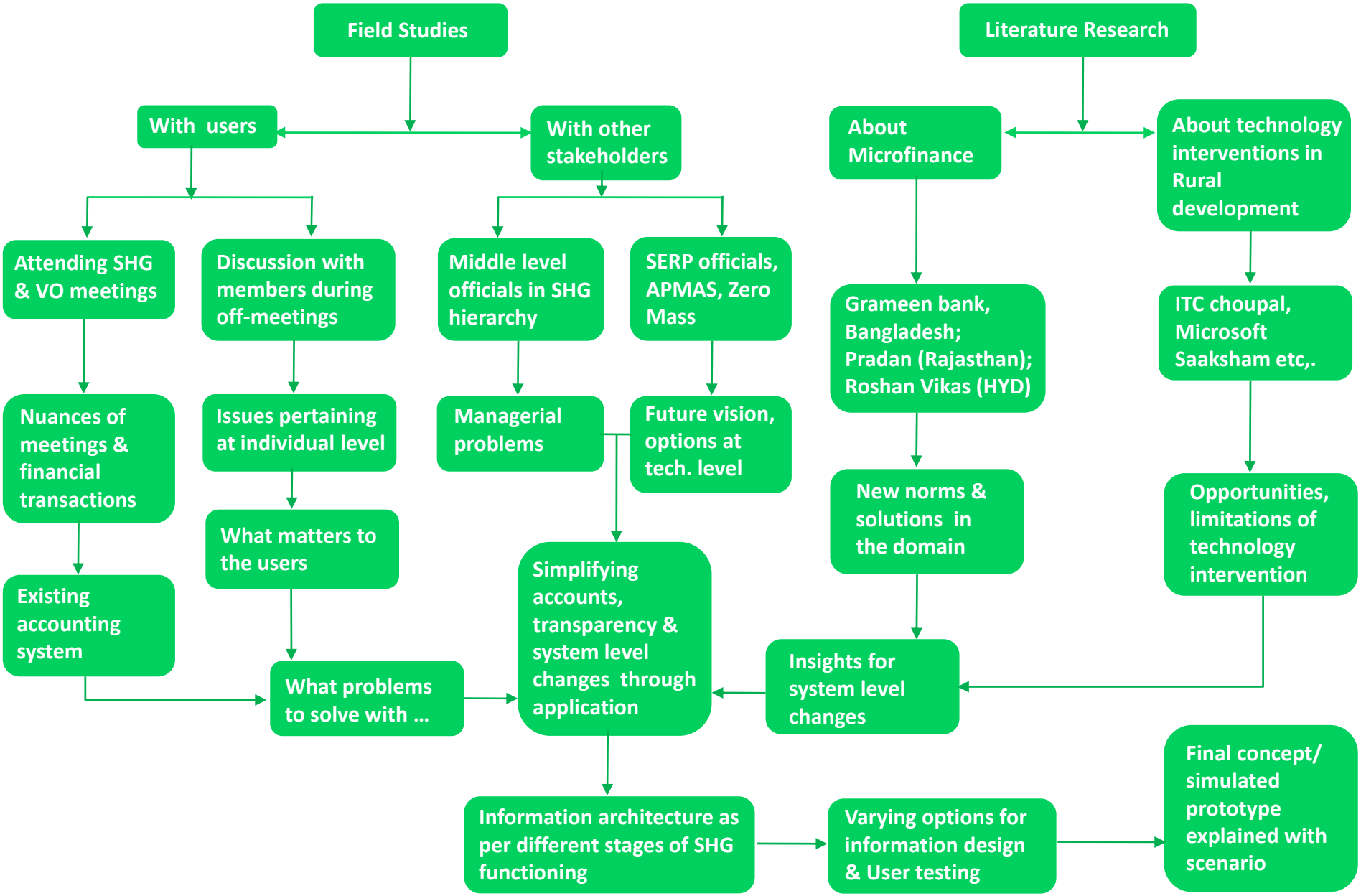
Inspiration :

Velugu anthem and
spirit of self help & mutual trust in completely unknown societies of own land.

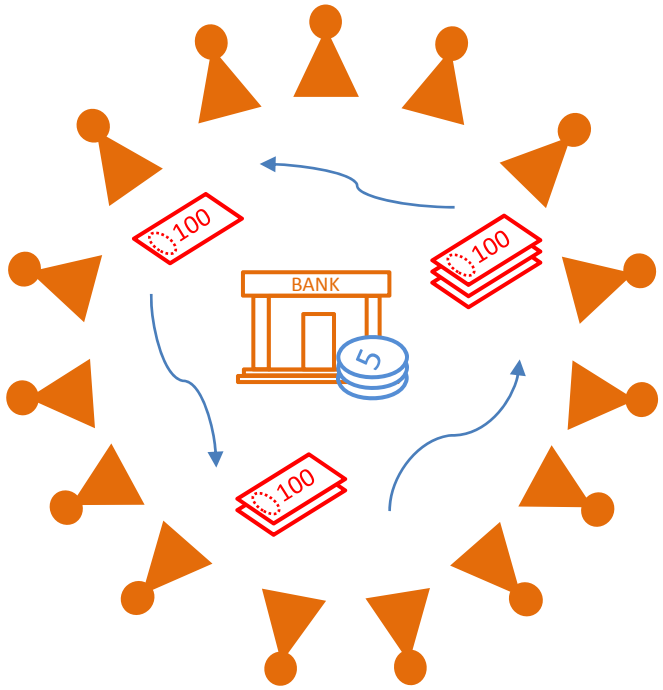
Anthem

Let confidence be instilled
In life that there is light
Let heavens descend,
Wherever it is, to earth bright ……

Methodology



Micro finance – Self Help Group



For people in poverty

Lack of proper financial access is the major problem.

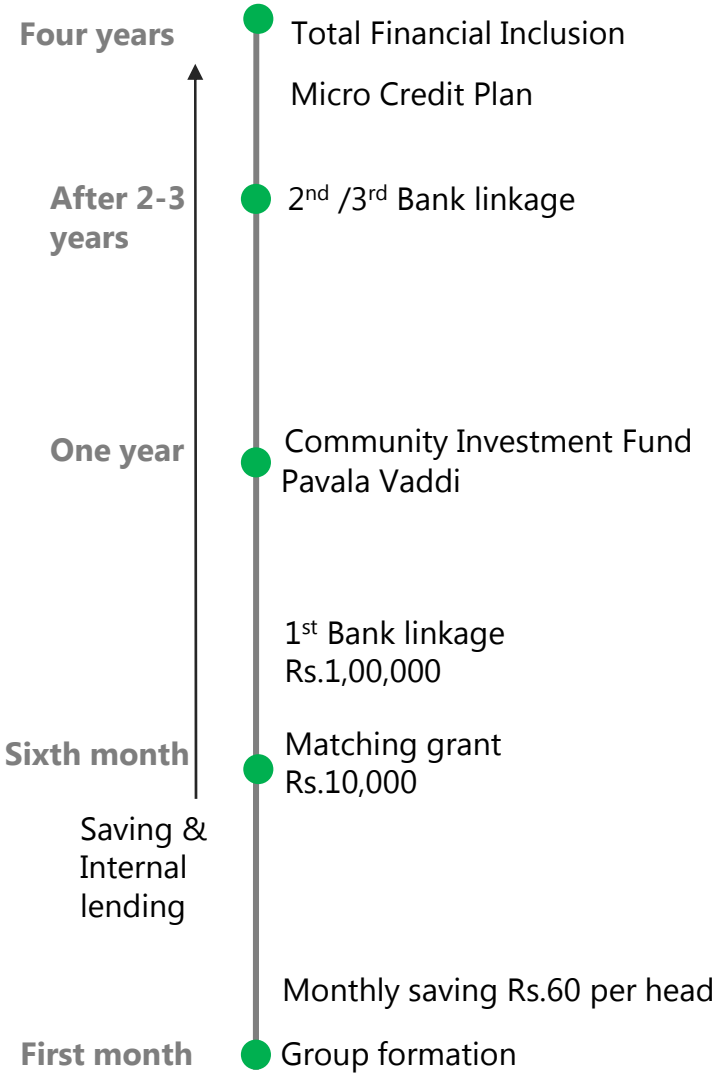
Banking as individual is not possible.

Banking as group became a viable option and hence Self Help Groups emerged

Thrift saving and money rotation in group enhanced the financial access in times of needy.

The Bangladesh model got emulated in AP right from 1995 and continued under successive state governments as a strong movement with women at it's core.

SHG Formation & Growth

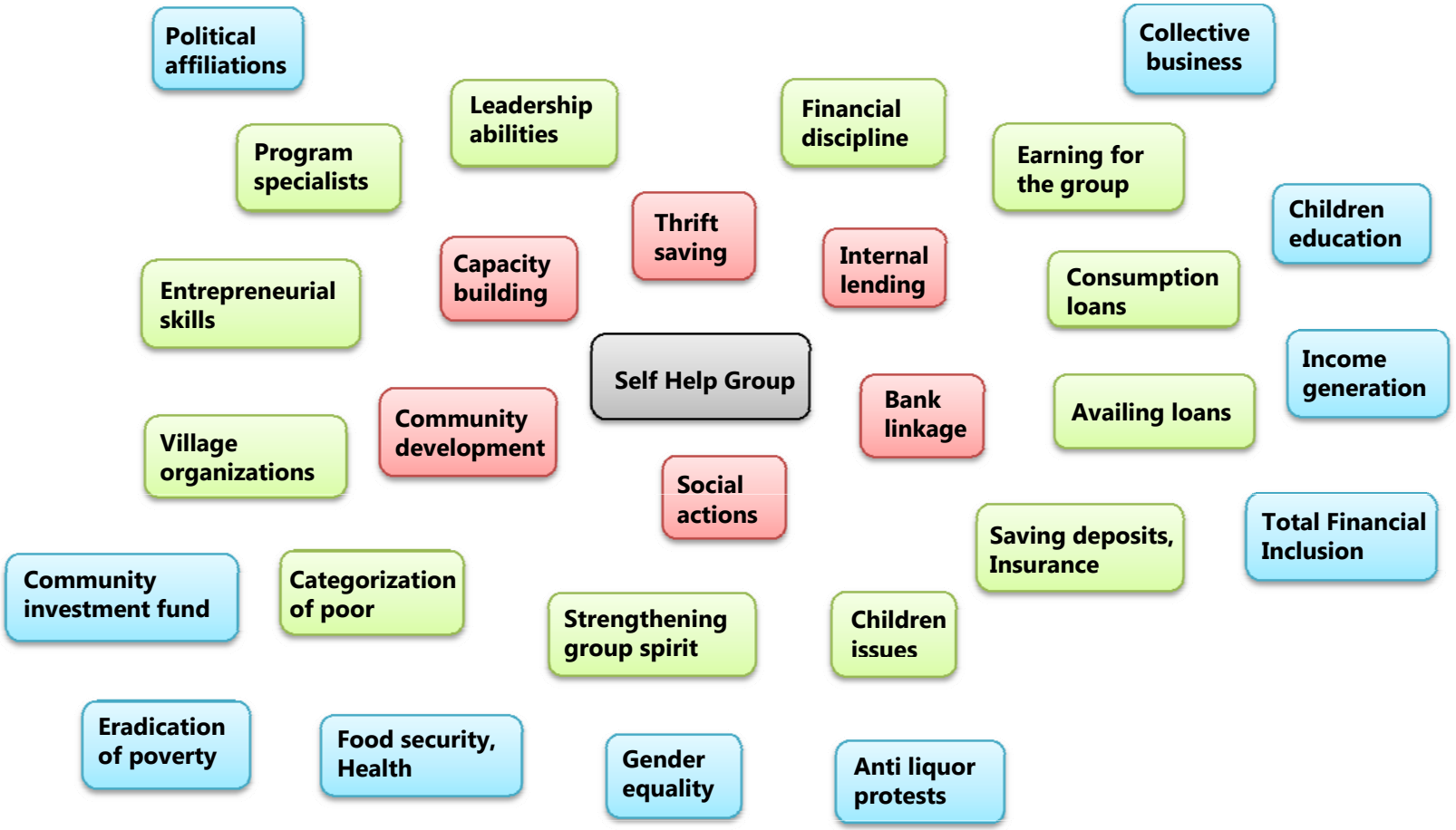


The functioning of SHG becomes complex and diversity increases over the period of time.

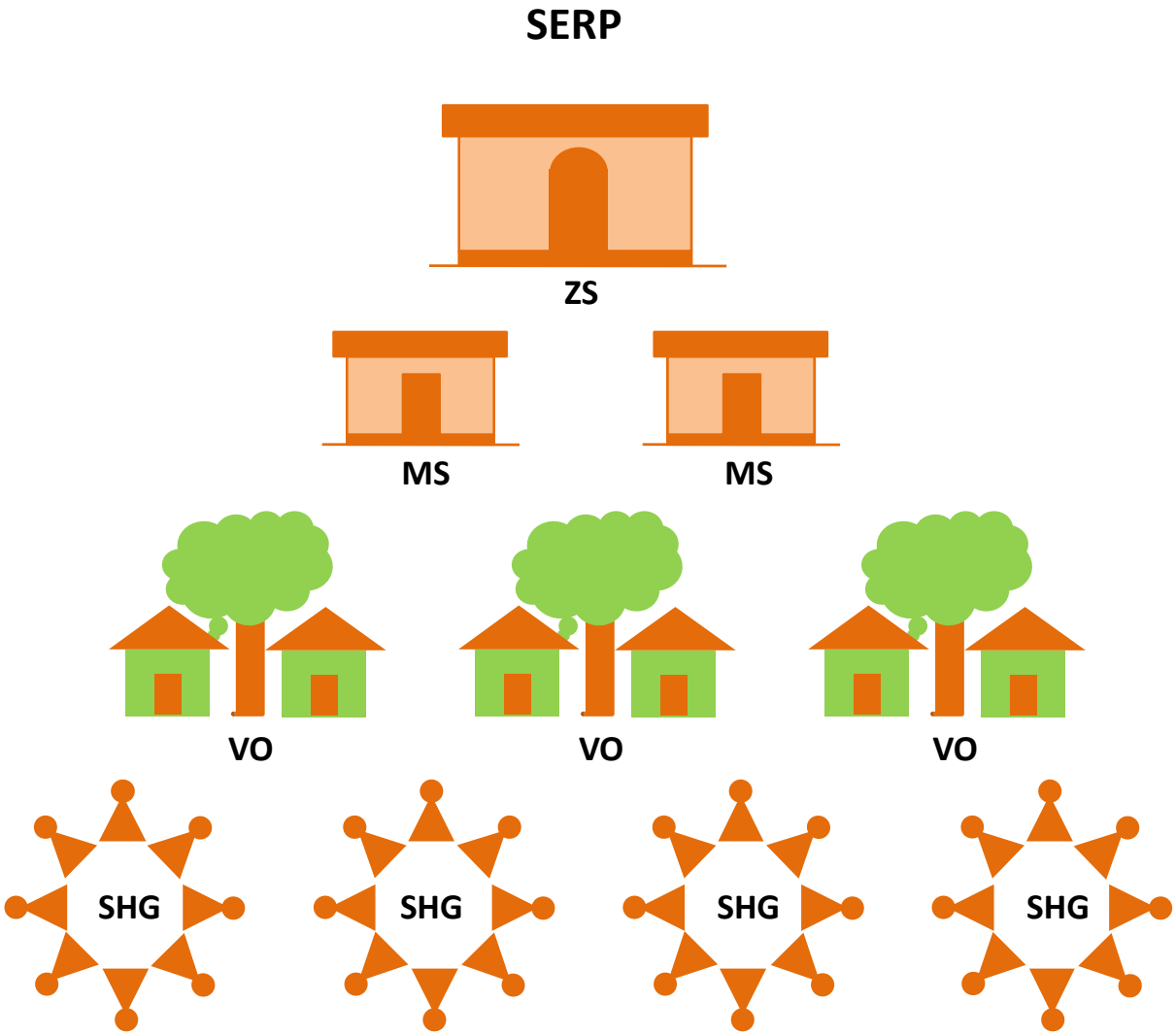
Major chunk of funds are allocated towards livelihoods promotion.

Scope of SHGs start entering into Social, political and cultural aspects of village life.

SHG scope expansion



SHG administration hierarchy



State level authority over 9,00,000 groups (1.2 crore women members

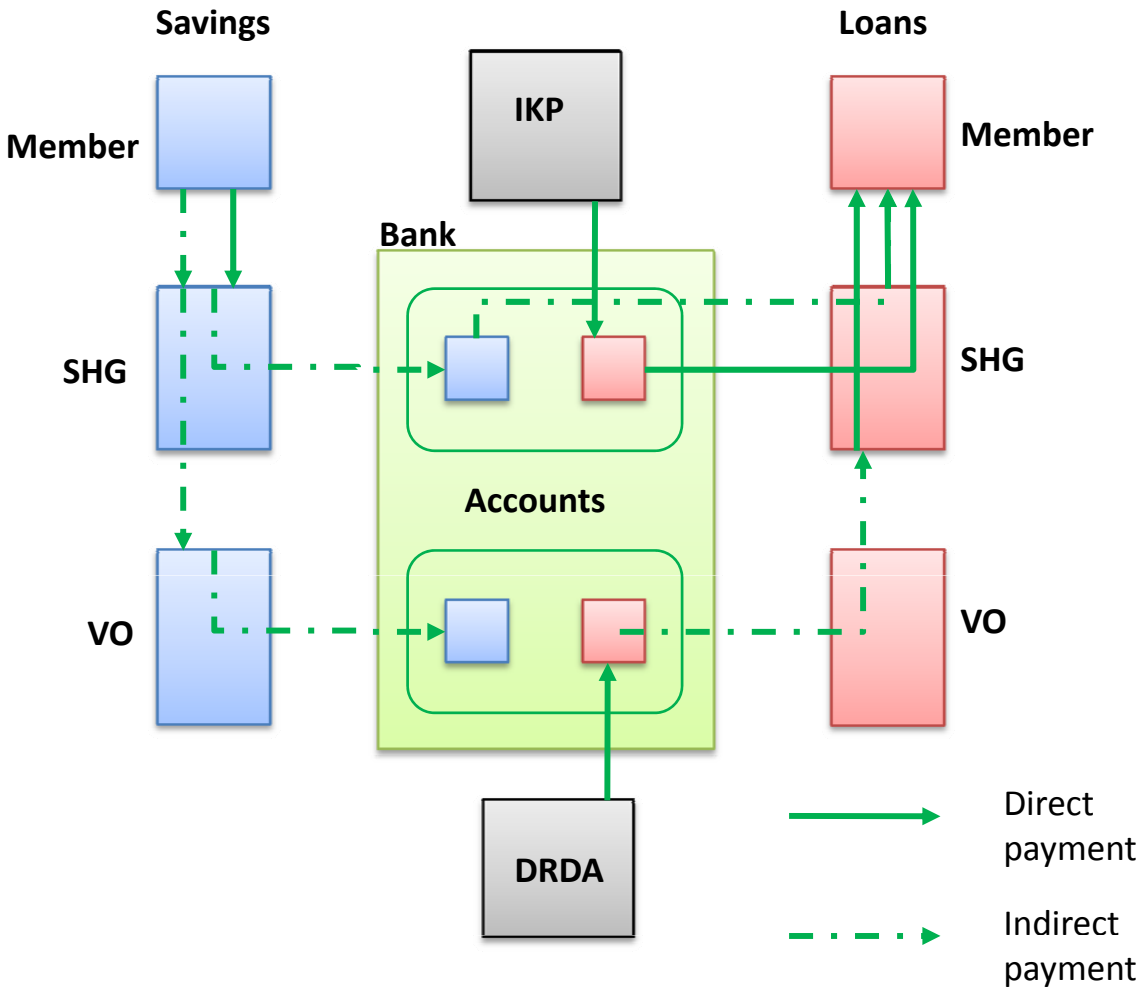
2,00,000 – 4,00,000 members per Zilla Samakhya

4000 – 6000 members per Mandal Samakhya

300 – 500 members per Village Organization

10 -15 members per Self Help Group

Money flow in the system



Two points of saving

1. With Bank
2. With VO

Three points of taking loans

1. SHG Internal lending
2. Bank linkage
3. From VO

Field study

The functioning methods of SHGs differ from district to district and hence monthly meetings of two groups with diverse demographics were attended.

Group A,
Kandi village,
Sangareddy mandal, Medak district.
70km west from Hyderabad.

Group B,
Korutla village,
Chandampeta mandal, Nalgonda district.
150km east from Hyderabad.

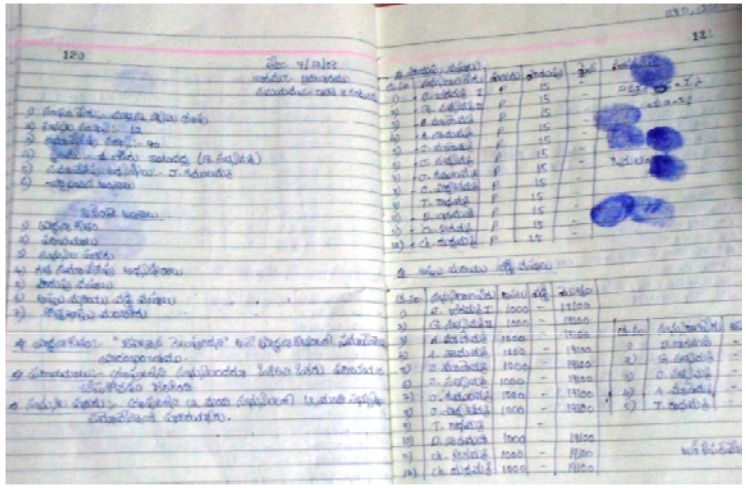
Field study

Group A

All transactions, discussions are recorded in five common books of group.

1) Minutes book.
2) Savings & Attendance book
3) General ledger
4) Loan ledger
5) Deposits & Payments book

And an individual pass book for every member

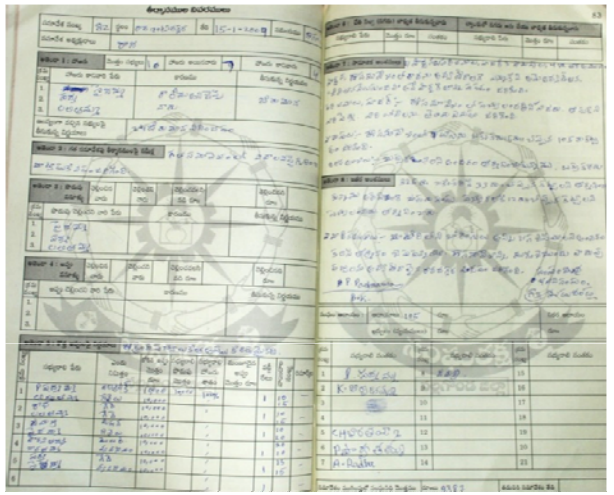


Group B

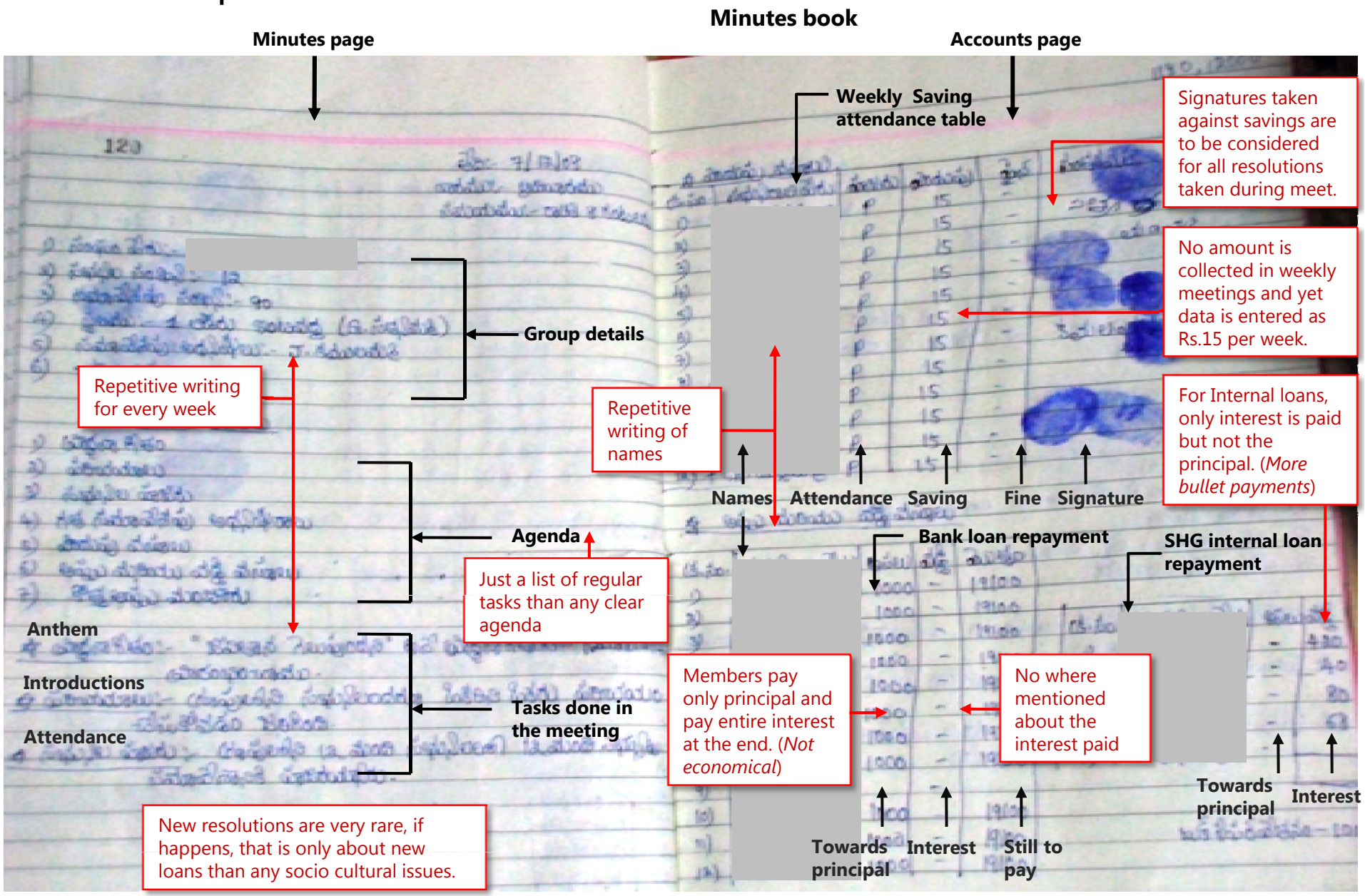
This group still follows the old system comprises of

1) Book of resolutions
2) Loan ledger

Plus an individual pass book for every member



Group A

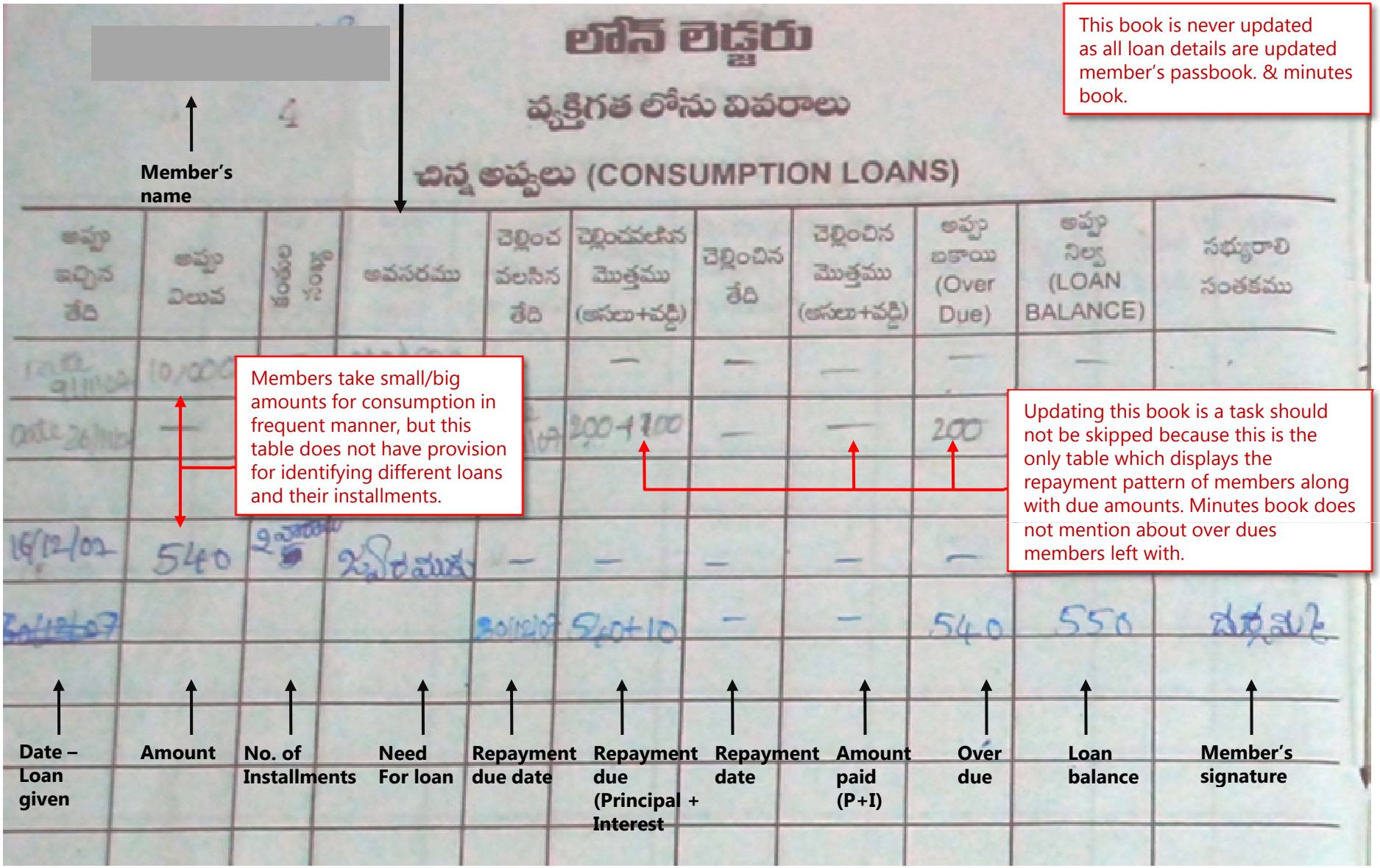


Names have been covered to protect the privacy of users

Group A

Loan Ledger

Individual's loan details



Member's name

This book is never updated as all loan details are updated member's passbook. & minutes book.

Members take small/big amounts for consumption in frequent manner, but this table does not have provision for identifying different loans and their installments.

Updating this book is a task should not be skipped because this is the only table which displays the repayment pattern of members along with due amounts. Minutes book does not mention about over dues members left with.

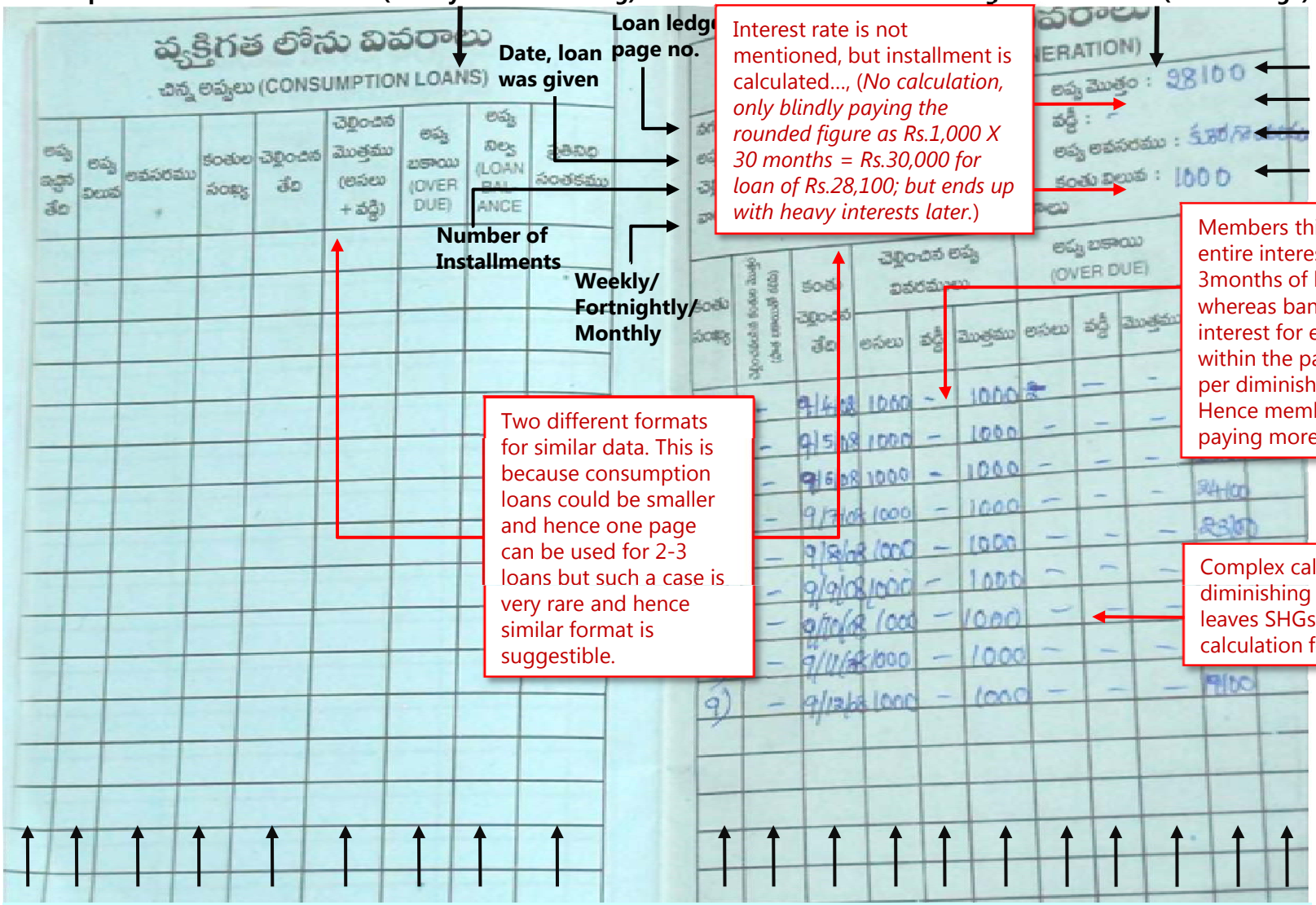
Date – Loan given | **Amount** | **No. of Installments** | **Need For loan** | **Repayment due date** | **Repayment due (Principal + Interest** | **Repayment date** | **Amount paid (P+I)** | **Over due** | **Loan balance** | **Member's signature**

Group A

Individual passbook

Consumption loans – Small amounts (Mostly internal lending)

Income generation loans (Bank linkage)



No. of Instl.	Number of Installments
Sign.	Signature
blnce.	Balance
P	Principal
I	Interest
OD	Over due

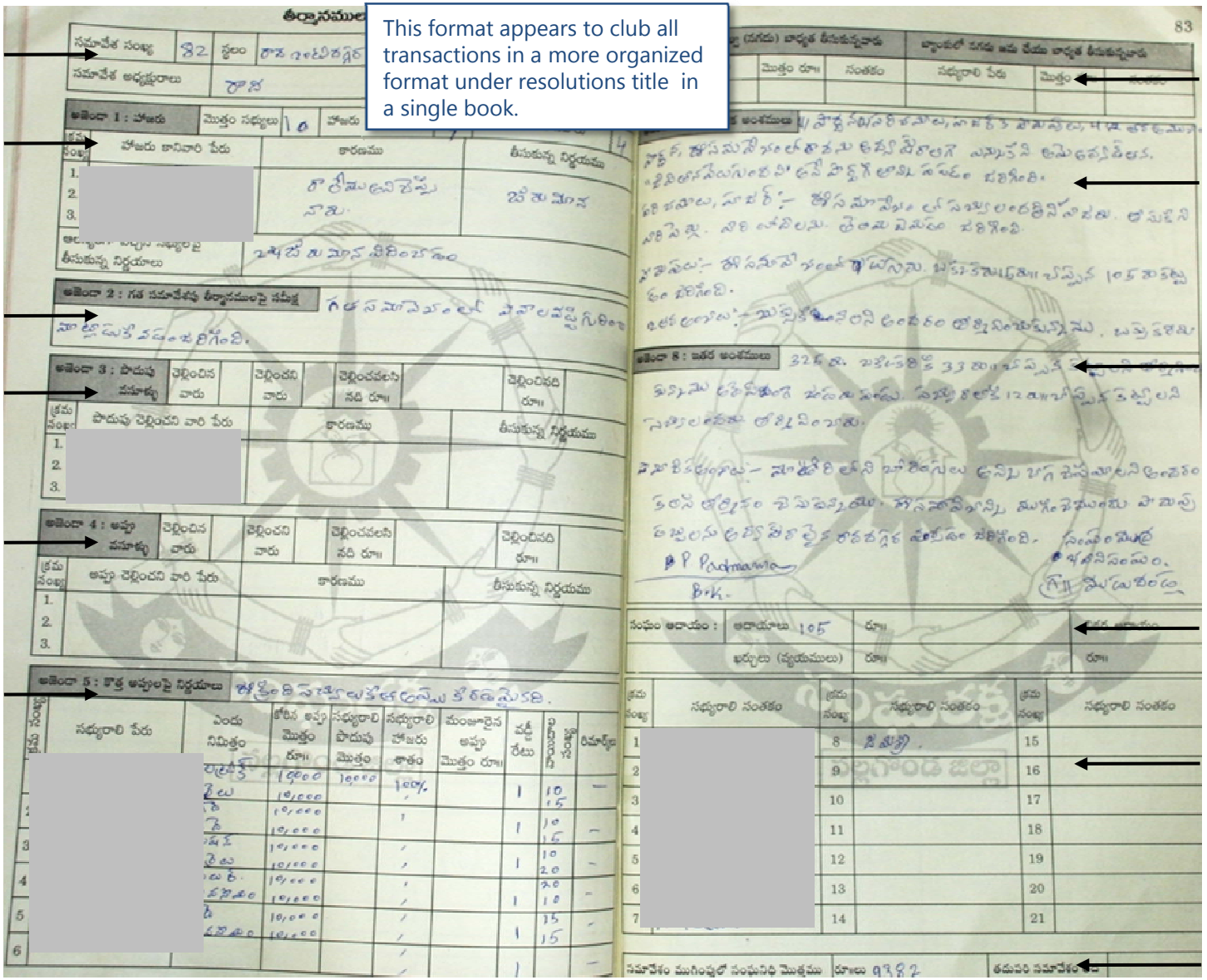
EMI calculation as per diminishing balance

EMI No.	INTEREST COMPONENT	PRINCIPAL COMPONENT	MONTHLY EMI	OUTSTANDING RS.
0	Rs.	Rs.	Rs.	28,100.00
1	327.83	787.69	1,115.52	27,312.31
2	318.64	796.88	1,115.52	26,515.43
3	309.35	806.18	1,115.52	25,709.25
4	299.94	815.58	1,115.52	24,893.67
5	290.43	825.10	1,115.52	24,068.57
6	280.80	834.72	1,115.52	23,233.85
7	271.06	844.46	1,115.52	22,389.38
8	261.21	854.31	1,115.52	21,535.07
9	251.24	864.28	1,115.52	20,670.79
10	241.16	874.36	1,115.52	19,796.42
11	230.96	884.57	1,115.52	18,911.86
12	220.64	894.89	1,115.52	18,016.97
13	210.20	905.33	1,115.52	17,111.65
14	199.64	915.89	1,115.52	16,195.76
15	188.95	926.57	1,115.52	15,269.18
16	178.14	937.38	1,115.52	14,331.80
17	167.20	948.32	1,115.52	13,383.48
18	156.14	959.38	1,115.52	12,424.10
19	144.95	970.58	1,115.52	11,453.52
20	133.62	981.90	1,115.52	10,471.62
21	122.17	993.36	1,115.52	9,478.27
22	110.58	1,004.94	1,115.52	8,473.32
23	98.86	1,016.67	1,115.52	7,456.65
24	86.99	1,028.53	1,115.52	6,428.13
25	74.99	1,040.53	1,115.52	5,387.60
26	62.86	1,052.67	1,115.52	4,334.93
27	50.57	1,064.95	1,115.52	3,269.98
28	38.15	1,077.37	1,115.52	2,192.60
29	25.58	1,089.94	1,115.52	1,102.66
30	12.86	1,102.66	1,115.52	0.00

Group B

Book of resolutions

This format appears to club all transactions in a more organized format under resolutions title in a single book.



Meeting details

Agenda 1: Attendance

Agenda 2: Discussion on previous resolution

Agenda 3: Savings

Loan repayments

Decision about new loans

Members taking responsibility of depositing in bank and for cash in hand

Social activities

Other matters

Group's revenue & spending

Members' signatures

Total group amount received at meeting

Issues came out during personal interactions

We don’t know how much we are paying, what for we are paying, how much is interest, how much is for loan ….. ?
Neither leaders are telling us, nor book keepers

Why don't they (leaders & their friendly members) give loans to us?
Why do they only consume them among themselves?

Many instances of leader deceiving members by not giving interest over saving and loans etc.

Path towards real progress

- ***Simplifying the account maintenance and therefore enhancing group's freedom.***
  1) Total group account
  2) Individual account
  3) Ledger wise visualization for higher authorities

- ***Making every member aware of her financial situation.***
  Financial statement at the start/end of meeting.

- ***Reducing dependency over leaders.***
  Information open for all members to view.
  Provision to enter/edit accounts should be made with both member and group leader.

- ***Information dissemination regarding available opportunities.***
  Message directly to group / member.

- ***Encouraging productive investment.***
  Tracking the Micro credit plan and related spending.

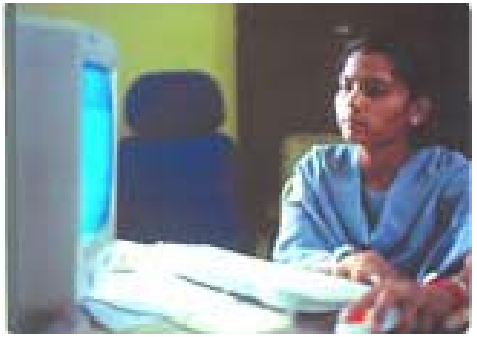
- ***Motivating the members to perform better***
  Comparing between the groups & members in terms of Saving, loans, repayments etc

Which technology to use …

1. Handheld device for every group and with a smart card for every member
   - To register
   - To identify
   - To print etc… all at one go

2. Laptop for every VO to be shared across groups.
   - To record transactions in detail
   - To develop interactions among groups

Which technology to use …



3. Through a paid accountant at Mandal level by regularly obtaining groups accounts through posts.
   - To use the existing IT infrastructure
   - To generate employment

4. Shared mobile per group with extended individual/networked access & a finger printer
   - To replicate the existing passbook system
   - To utilize the existing penetration of mobiles in rural AP
   - To record and recognize the member's identity.

Which technology to use …

- Already few mobile based welfare schemes like Pension disbursement & NREGS are in place in AP villages.
- And it is also observed during the study that every group has at least one mobile under use either by leader or their close relatives.
- **Hence mobile based system is suggested to record the transactions of group meetings.**

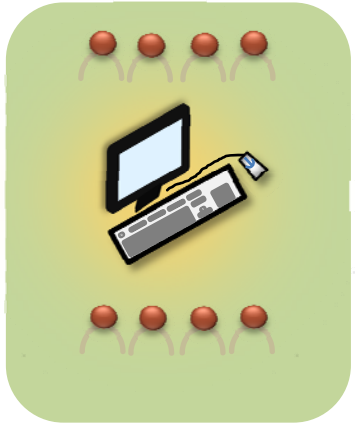
***The system is named as Pragathi which means progress in Telugu, local language*.**

Pragathi at member level

Every women member will be given a locket which is fitted with microchip for her identification using RFID/NFC mechanism over mobile.

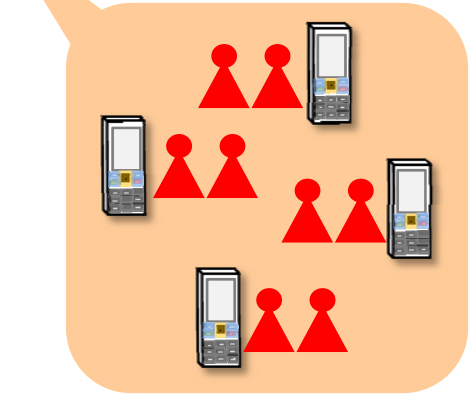
Each group to have a mobile coupled with finger printer for verifying the user's identity for enhanced security and to print receipts.

Pragathi - The system architecture



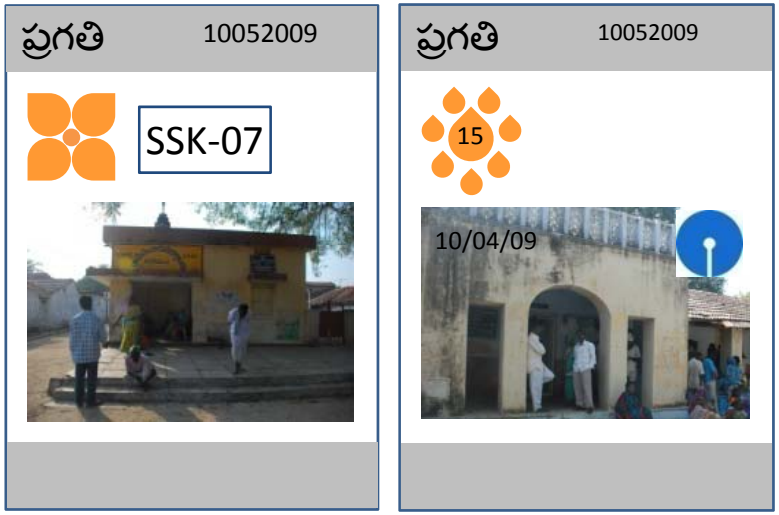
Through computers at MS,
ZS and State levels

Through same shared mobile
phones of SHG leaders
representing at VO level



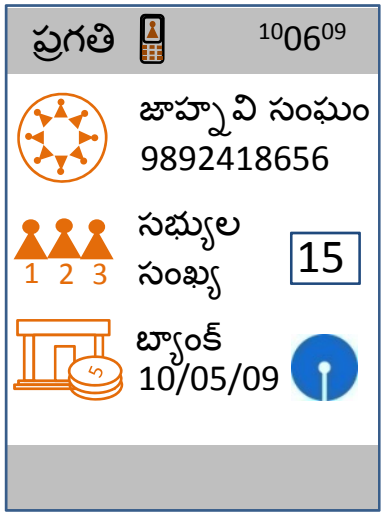
Through a shared mobile phone for group
and RFID/ NFC based personal micro chip fo
individual's identification.

Ideation to represent information



Using photographs of village landmarks for easy memory

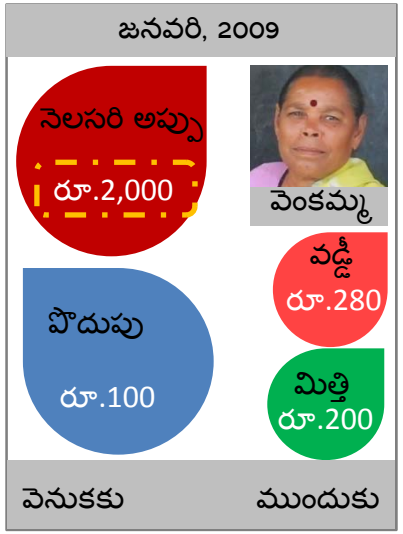
Less dependence on text



Icons with bright colours using the existing metaphors

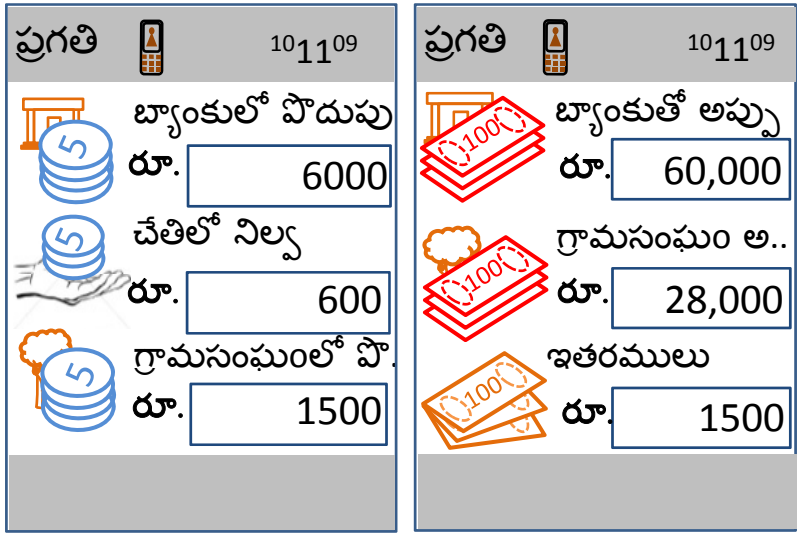
Supported by text and numbers

Ideation to represent information



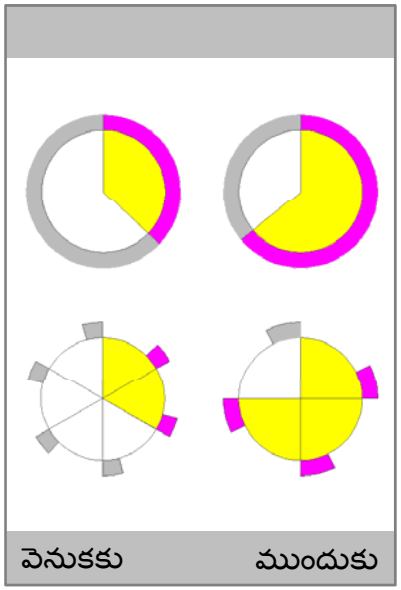
Leaf shapes with different Orientations and colours.

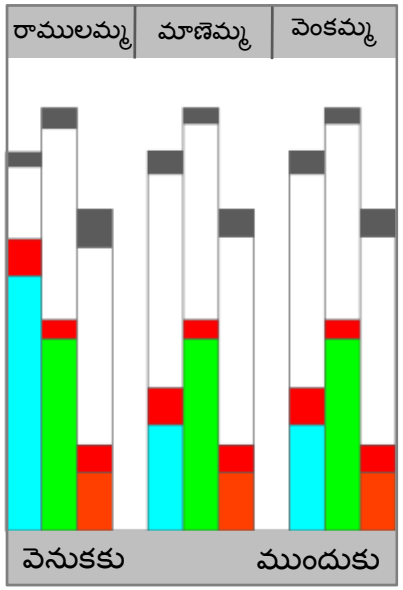
Colour & Orientation to denote the flow of money

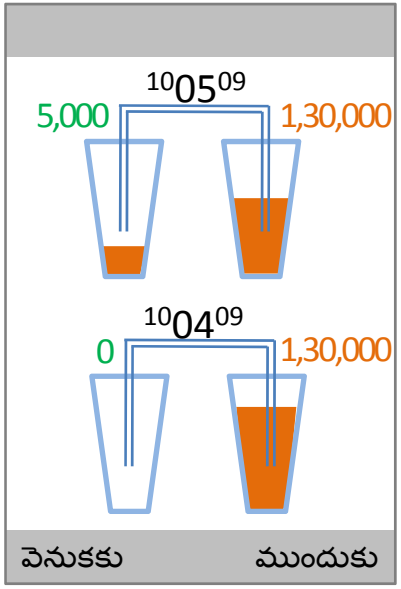


Banking on existing habits of users in arranging money and banks practice of colour differentiation between loans and savings.

Ideation to represent information







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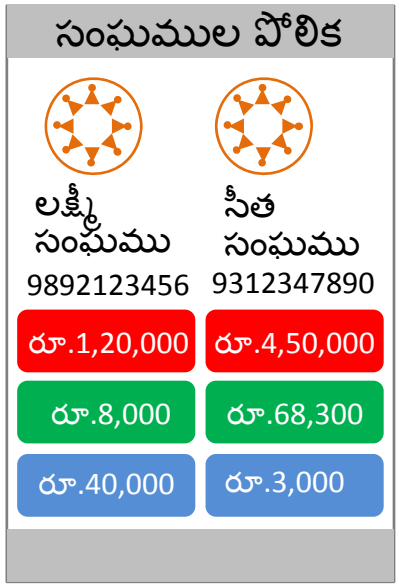
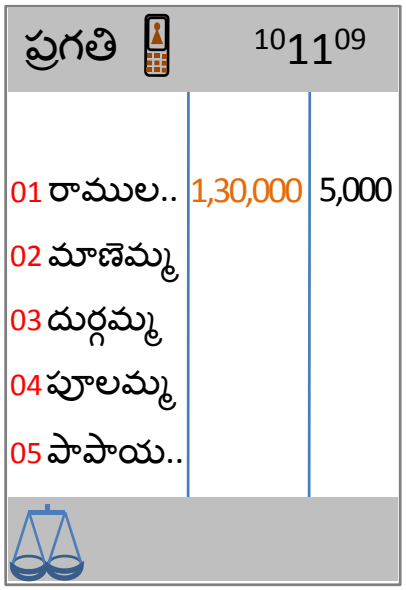




Mobile screen size print outs were taken and tested with available Telugu speaking labour in IIT campus and near by Marble cutting shops.

Graphs were found unusable but users were able to identify icons over retention.

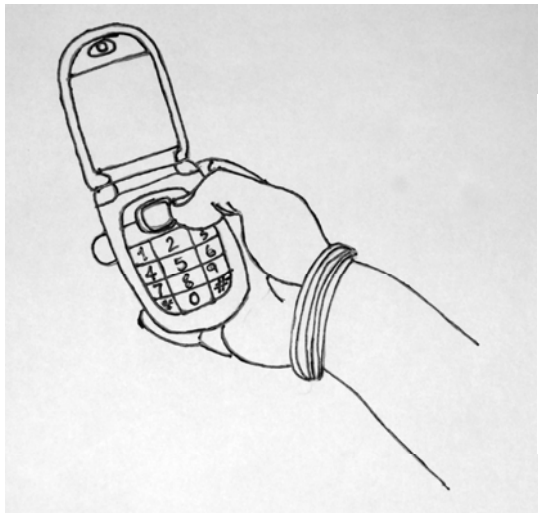
Usage of colour to differentiate the financial concepts also helped them to remember.

Scenario 1 : Enrolment

Akkamma, Madamma and Bhanumathi of Kalivemula village have formed a group Durgabai Sangham and have informed Suresh of IKP for enrolment.

Suresh attends the first meeting of the group to enroll into Pragathi.

He informs IKP server about the assigned mobile number for the group.



The mobile receives the Pragathi application online and Suresh gets started with the enrolment.

Scenario 1 : Enrolment

Opening the application

Only enrolment option is active during the first interaction

First screen shows basic details to be entered

Scenario 1 : Enrolment

Recording Group name and Leaders' names

Entering Number of members, Monthly saving

Enrolling members names by recording and registering with NFC & Finger print

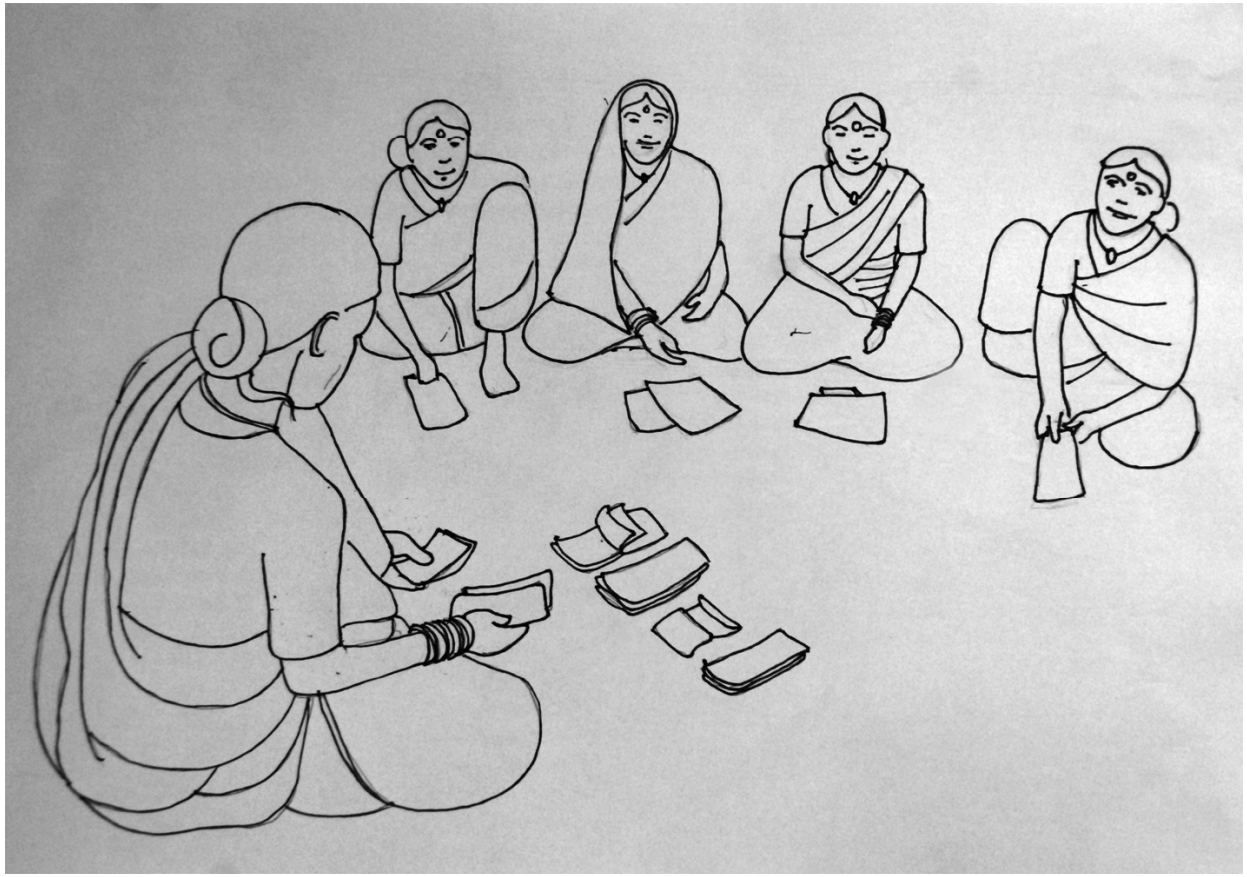
Scenario 1 : Enrolment

Enrolment of the members and these details will be entered by IKP server side in a week.

After the enrolment is done, screen shows the basic details and can only be activated after receiving Bank's account number.

Bank awards the account number in a week and these details will be shown as first screen for the application.

Scenario 2 : Group meeting



Alivelu group of Kanipakam village have been an active group from last 5 years. It is a12 member group and have taken several loans from Bank and VO before.

Recently they got enrolled into the Pragathi system and this is how their group meeting happens.

Scenario 2 : Group meeting

Group's details

Group name & enrolled date

Number of members

Monthly saving per head

Bank account details

Pragathi
Group's mobile no.

Group enrolment

Meeting

To see accounts

News

Scenario 2 : Group meeting

Attendance list

Through locket & fingerprint

Name of each member

Scenario 2 : Group meeting

Group Meeting

Financial status

Savings register

Loans register

Other expenses

Financial status
At group level

Savings in bank

Amount in hand

Interest over savings

Savings in VO

Scenario 2 : Group meeting

Financial status
At group level

Bank loan to pay

VO loan to pay

Establishment expenditure

Group Meeting

Financial status

Savings register

Loans register

Other expenses

Scenario 2 : Group meeting

Savings register

Total savings &
Savings in bank

To be paid by
each member

Savings register

Total savings &
Savings in bank

Amount paid by
each member

Scenario 2 : Group meeting

Savings register

Fine, Savings with VO and All savings to do for next month

To be paid by each member

Group Meeting

Financial status

Savings register

Loans register

Other expenses

Scenario 2 : Group meeting

Loans register
At group level

Bank loan to pay

VO loan to pay

SHG Internal loan to pay

Go to members

Bank loan register
For a member (name & no.)

Total loan value

This month's installment to be paid

Break up of amount
Principal + Interest

Next month's installment

Scenario 2 : Group meeting

Bank loan register

For a member (name & no.)

Total loan value

This month's installment to be paid *(blinks)*

Break up of amount to be paid as Principal + Interest

Next month's installment

Total loan value

Amount paid

Break up of amount Principal + Interest

Next month's installment

Scenario 2 : Group meeting

Bank loan register
For a member
Interest rate
Remaining loan to pay
No. of installments remaining

Bank loan register
For a member (name & no.)
Total loan value
This month's installment to be paid *(blinks)*
Break up of amount
Principal + Interest
Next month's installment

Scenario 2 : Group meeting

VO loan register
For a member (name & no.)

Total loan value

This month's installment to be paid *(blinks)*

Break up of amount to be paid as Principal + Interest

Next month's installment

SHG loan register
For a member
(name & no.)

Scenario 2 : Group meeting

Loans register

Installments paid for bank loan, VO loan and SHG loan

Member by member particulars

Loans register At group level

Bank loan to pay

VO loan to pay

SHG Internal loan to pay

Scenario 2 : Group meeting

Financial status
At group level

Savings in bank

Amount in hand

Interest over savings

Savings in VO

Financial status
At group level

Bank loan to pay

VO loan to pay

Establishment expenditure

Scenario 2 : Group meeting

Approval

Through fingerprint

Approval by each members

Group's details

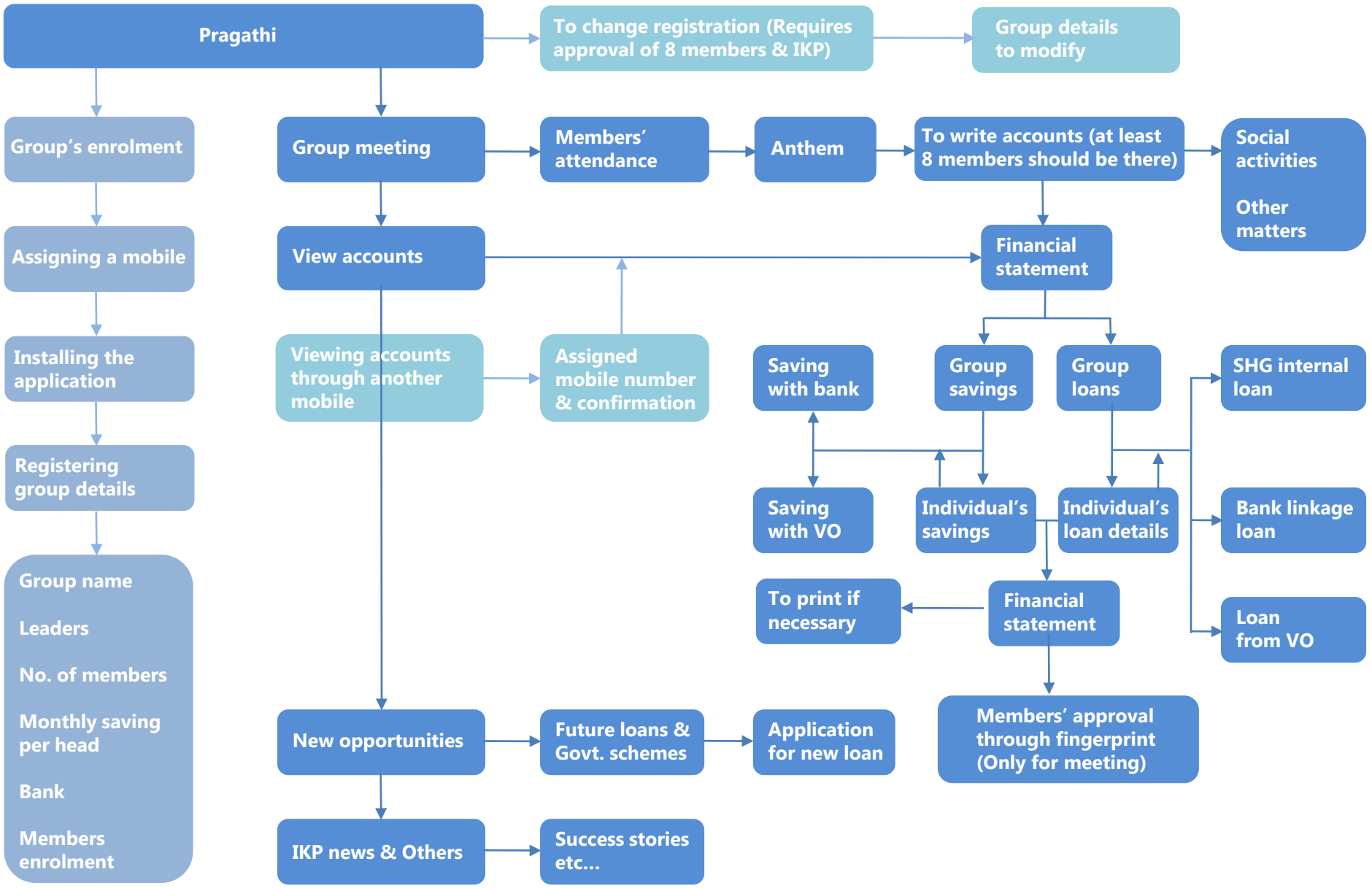
Group enrolled date

Number of members

Monthly saving per head

Bank account details

Pragathi - Information Architecture



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Thank You

Let confidence be instilled
In life that there is light
Let heavens descend,
Wherever it is, to earth bright …