# CHAPTER - I

EXECUTIVE SUMMARY

The works evaluated under Tribal Sub-Plan (TSP) and the results are elaborately discussed and the results are given in the main report.

A. **Distribution of seedlings:** The distribution of seedlings was one of the important activity of the program, the assessment of the   success rate has shown very poor survival rate of seedlings which has not achieved the objective of the program. However the program has done relatively netter in the high rainfall areas as compared to low rainfall areas. Two seedlings per family looks very low as there are not enough seedlings to give minimum success rate. Considering the mortality rate minimum ten seedlings are required to ensure survival of two seedlings.

Table showing the survival rate of seedlings in different divisions:

Year	Division	Survival %	Remarks
2009-10	Raichur	57.72	Results are combined analysis of SCP and TSP
2010-11	Gadag	NS	
2012-13	Haveri	20.62	
2011-13	Gokak	26.9	

**Graph showing the survival rate of seedlings in different divisions:**
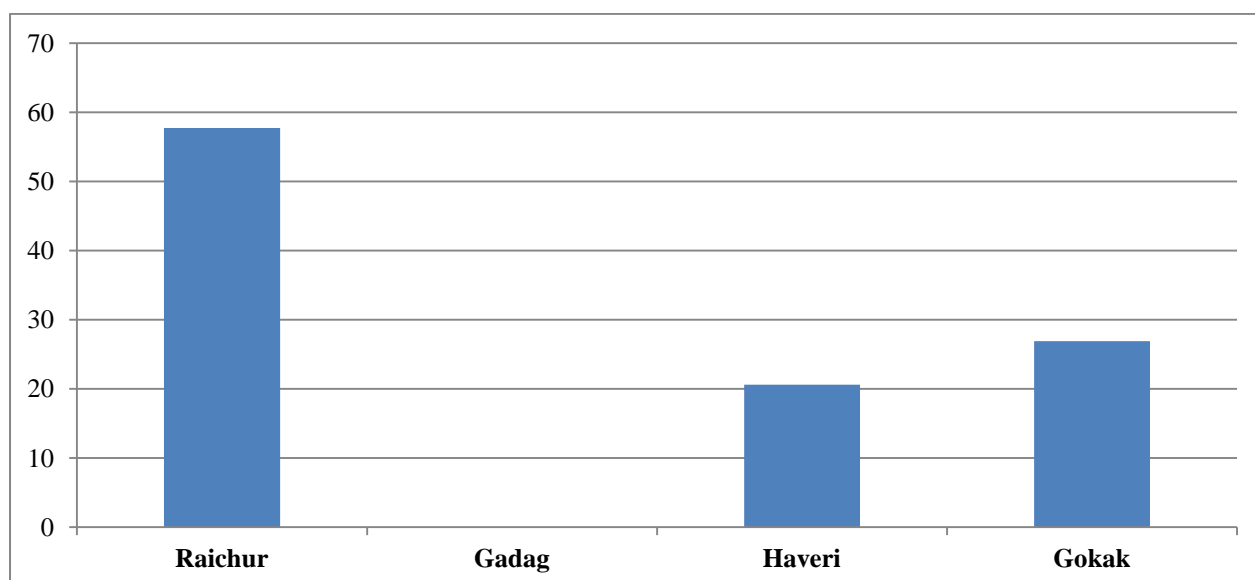
Key findings: The survival rate is very low in Gokak and Haveri divisions. Raichur has recorded more than 50% survival.

B. Sarala valae/ Astra valae/ Smokeless chulla

Physical verification of Assets: The physical verification of assets distributed to beneficiaries was verified by randomly selecting the beneficiaries (10%). The evaluation has shown that the distribution was as per the lists provided by the department.

(a) **Specifications:** The specification and quality of the assets were also evaluated and found that the specifications were as per the approved standards. The size of the stove and the length of the pipes were also verified as part of the exercise.

(b) **Usage pattern of the stove.** The usage pattern was assessed by asking the beneficiaries about the frequency of use and adaptation. The beneficiaries were asked whether the stove is used regularly, occasionally and not used at all to elicit the information. The results are tabulated below in the table and graph.

Division	Regular users %	Occasional users%	Non-users%
Bagalkot	86.66	13.33	0
Bijapur	75	25	0
Gokak	100	0	0
Dharwad	84.61	15.39	0
Gadag	56.25	12.5	31.25
Haveri	58.8	11.76	29.41
Gulbarga	0	33.36	66.5
Bidar	0	33.33	66.6
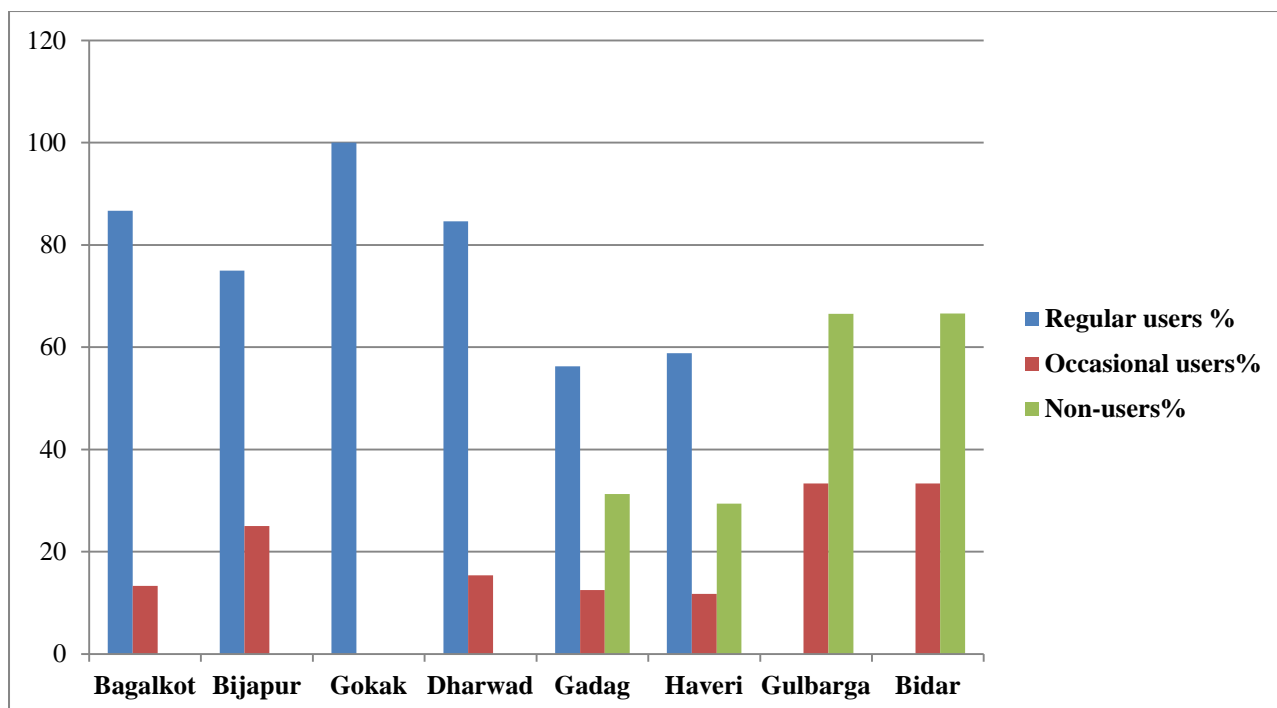
Gadag and Haveri: In Gadag and Haveri the regular users were less than 50% as compared to other divisions.

Bidar: In Bidar there were 66.6% non –users which was highest among all the divisions. The reasons could be lack of awareness among the beneficiaries about the benefits. The quality of the construction was not good in some of the divisions. 17% of the beneficiaries have not received the assets in Bidar.

Gokak and Dharwad. In Gokak and Dharwad more than 90% of the beneficiaries are using the astra valae regularly.

The survey has shown that, around 91% of the beneficiaries are using the stove regularly and rest of them are using occasionally. However, still there are some reservations about its usage pattern which are highlighted here.

Reasons for slow adoption

- The quality of the construction was not good in some places.
- Lack of awareness among the beneficiaries about the benefits of use is another main reason for the lower adoption.
- The training and the service needs to be provided to the beneficiaries for good adoption.
- The bigger sized firewood cannot be used and the time taken to split the firewood is high. It restricts two pots at a time and does not allow the third pot for cooking.

1. **Reduction in the firewood consumption:** To assess the change in the firewood use, the respondents were asked whether the firewood consumption in the smokeless chullas is reduced or remained same. The survey has shown that, more than 90% respondents have said that, there was actual reduction in the firewood consumption. And very little proportion of respondents has not felt the differences in the firewood consumption after adopting the smokeless chullas.

2. **Time savings in the firewood gathering:** The question was framed to assess the time saved by the beneficiaries in firewood gathering due to reduction in the firewood consumption which was another way of confirming the firewood consumption. The survey has shown that, the beneficiaries feel that there has been reduction in the firewood collection time as they do not require same amount of firewood.

3. **Health Impacts.** The use of smokeless chullas and their impact on health was assessed by asking the respondents whether the use of smokeless chullas has helped them in the health condition. The survey has shown that, the users were feeling better and not felt the indoor smoke while using the smokeless chullas.


Key findings:

1. The distribution of smokeless chullas has helped the beneficiaries to efficiently cook and to reduce the use of firewood.
2. The smokeless chullas has helped the beneficiaries to spend less time on the firewood consumption.
3. The smokeless chullas use has reduced the indoor pollution and improved the health conditions of the users.
4. The scheme has both economical and environmental benefit to the society.

C. **Solar lamps.** The solar lamps have been distributed to poorer beneficiaries for house lighting, where there is no grid connected power supply. The solar lamps are supplied with the photovoltaic panels to recharge the cells and use for lighting the house. Each household were given single bulb (40 watts) capacity. The scheme was assessed and the results are tabulated in the table.

Table showing the use pattern of solar lamp:

Year	Division	% Regular users	% Occasional Users	Not used %
2010-11	Bijapur	68.75	31.25	0
2010-11	Dharwad	63.83	9.09	27.27
2012-13	Dharwad	87.5	12.5	0
2010-11	Gadag	100	0	0
2012-13	Gadag	50	40	10
2012-13	Haveri	80	20	0
Overall %		75	19	6

Graph showing the use pattern of solar lamp:
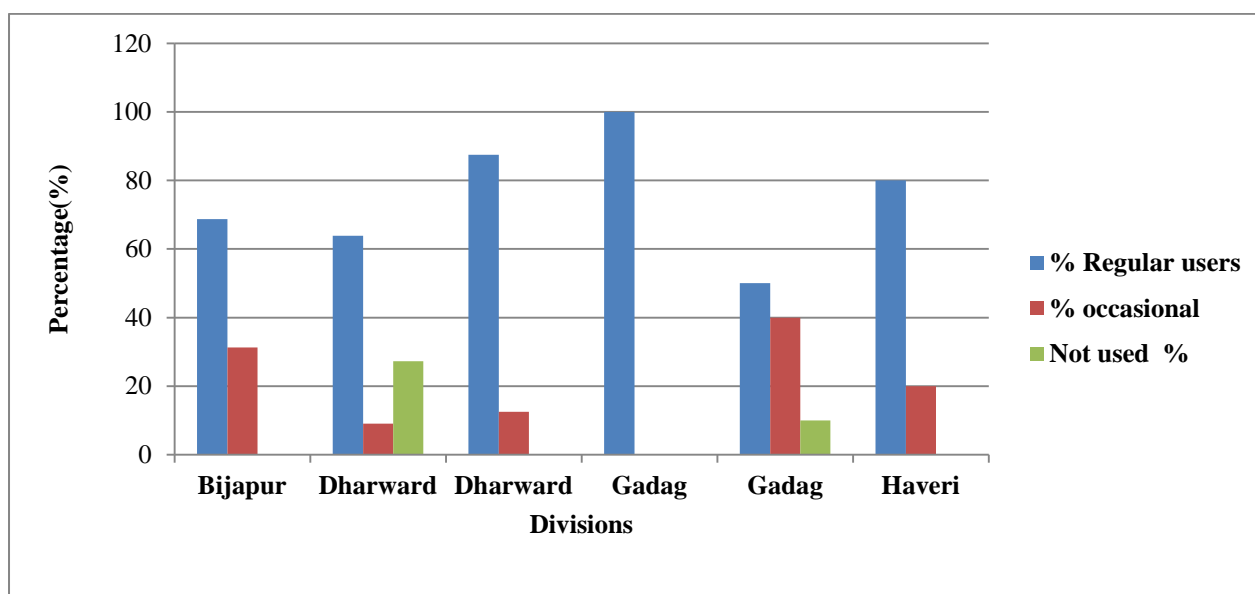
(a) **Results and Analysis**. The distribution of the solar lamps were physically verified in the randomly selected villages and found that the distribution was 100% correct without any discrepancy. The quality was assessed by verifying the specifications and was found that the quality was as per the approved standards.

(b) **Use frequency**. The use frequency was assessed and the results are discussed below.

Gadag: In Gadag , the distribution and use frequency was 100%. However in another financial year the use frequency was around 60%. The quality of the solar lamps supplied in two different years could be the reasons for such vast difference in the use pattern.

Dharwad: Dharwad division has also shown the highest use frequency of 85% in one year and a moderate rate of adoption in another year of about 60%. The quality and the other reasons could be the reasons for differences in the adoption rates.

Haveri: Haveri division had about 80% regular users and rest occasional users.

Bijapur: Bijapur had about 60% regular users and the rests were occasional users. There were no non-users indicating good adoption rate.

Overall adoption: The evaluation has indicated 75% regular users, 19% occasional users and 6% non-users of solar lamp.
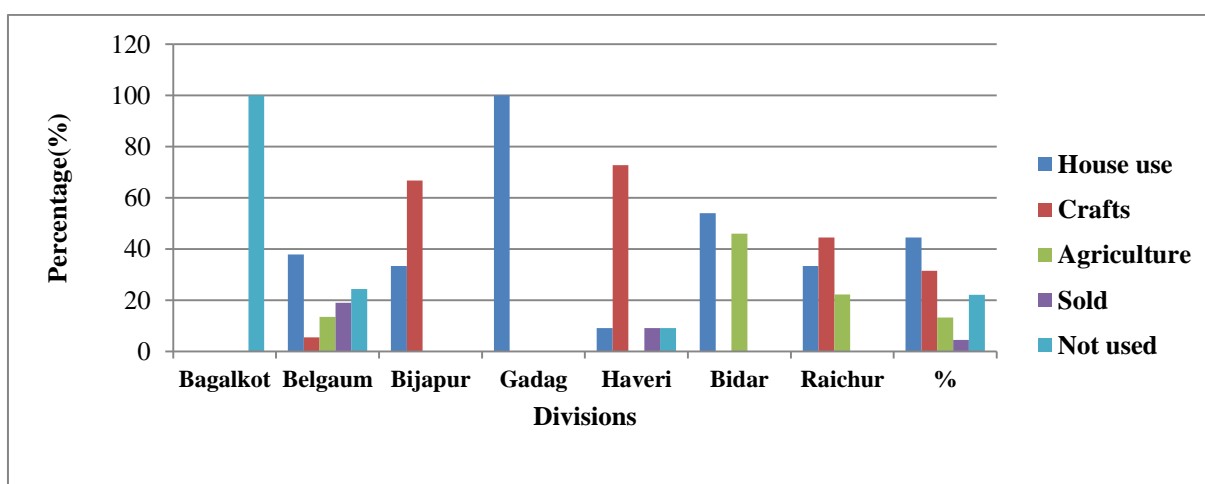
D. **Distribution of Bamboos/poles:** The supply of bamboo and the poles to the beneficiaries has helped the beneficiaries to use the materials for various uses including the value addition; the value addition for making bamboo article has helped some families in earning additional income. The material also has been used for the house use and other agriculture purpose. The pattern of use is represented in the Graphs and table.

Bamboo:

Table showing the use pattern of Bamboos in different divisions:

Division	House use	Crafts	Agriculture	Sold	Not used
Bagalkot	-	-	-	-	100
Belgaum	37.83	5.40	13.5	18.9	24.32
Bijapur	33.33	66.66	-	-	-
Gadag	100	-	-	-	-
Haveri	9.09	72.72	-	9.09	9.09
Bidar	54	-	46	-	-
Raichur	33.33	44.44	22.22	-	-
%	44.5	31.5	13.2	4.5	22.1

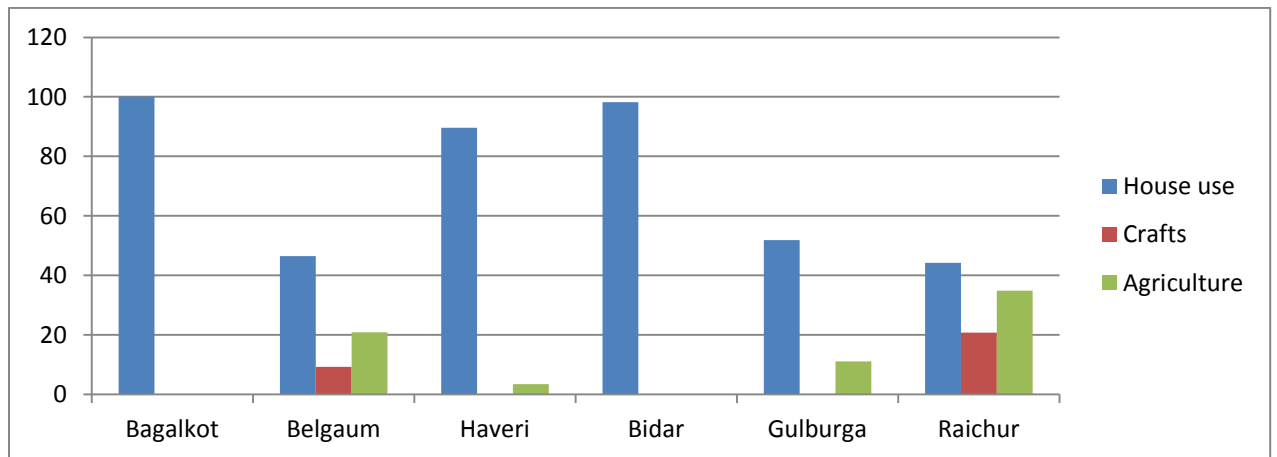**Graph showing the use pattern of Bamboos in different divisions:**

E. **Distribution of poles:** Under Tribal sub-plan, the Eucalyptus poles have been supplied to the beneficiaries in Bidar and Bijapur divisions. The pattern of use is evaluated and the results are presented in the table below.

Table showing the use pattern of Acacia/ Casurina poles in different divisions:

Division	House use	Crafts	Agriculture	Sold	Not used
Bagalkot	100	-	-	-	-
Belgaum	46.5	9.30	20.93	4.65	18.60
Haveri	89.6	-	3.44	3.44	3.44
Bidar	98.24	-	-	-	1.75
Gulburga	51.85	-	11.11	0	37.03
Raichur	44.27	20.83	34.89	-	-
%	71	5.5	10	7.41	7

Graph showing the use pattern of Acacia/ Casurina poles in different divisions:

Environment impacts: The use of efficient chullas has helped to reduce the firewood consumption resulting in the reduced emission. The reduction in the indoor pollution has improved the health of women who were affected by the indoor pollution.

Economic benefits to the beneficiaries. The use of smokekess chulla has saved the time of firewood gathering which is used for the gainful employment.

CHAPTER – II
INTRODUCTION

A. Tribal Sub-Plan (TSP) under this program some of the benefits have been provided to the beneficiaries, like smokeless chullas, bamboo poles and seedlings to improve their livelihood standards. The evaluation was focused on the physical verification of assets and their usage and consequent impacts. The results are tabulated in the annexure

B. Objectives of the program.

    1. To assist Scheduled tribe families to improve their livelihood and living standards.

    2. To help the beneficiaries to grow usufructs seedlings of high nutritional quality for improving livelihood systems.

    3. Smokeless chullas are supplied to the beneficiaries to improve the energy efficiency of stoves which in turn will reduce the firewood consumption and help in reducing carbon dioxide emission.

C. Funding. The funds are shared by state and central government. The states are required to earmark 15% of the state outlay under this program. The details of the funds year wise are presented in the next page.

D. Models and its description:

Components of TSP program: The components of the programs are selected as per the guidelines issued by GOI from time to time and local conditions to enable the beneficiaries to make use of the assistance to develop durable assets. The components of the program implemented during 2009-2013 survey period as follows.

(1) **Social security plantations (SSP):** The social security plantation is a very important component of the TSP, implemented in all most all the division. The component involves raising one hectare of plantation of usufructs and economically valuable species. The degraded forests are selected nearer to the beneficiary's habitations and the plantation is established in consultation with the beneficiary by choosing the species based on silvicultural and economic criteria.

SI. No.	Circle	Division	2009-10 (in lakhs)			2010-11(in lakhs)			2011-12 (in lakhs)			2012-13 (in lakhs)			Total (in lakhs)		
			Fin target	Amount released	Amount spent	Fin target	Amount released	Amount spent	Fin target	Amount released	Amount spent	Fin target	Amount released	Amount spent	Fin target	Amount released	Amount spent
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Gulbarga	Gulbarga	1.870	1.870	1.870	4.000	4.000	4.000	0.000	0.000	0.000	2.075	2.075	2.075	7.945	7.945	7.945
2		Bidar	2.210	2.210	2.210	9.120	9.120	9.120	0.000	0.000	0.000	5.689	5.689	5.484	17.019	17.019	16.814
3		Raichur													0.000	0.000	0.000
4		Yadgir	0.000	0.000	0.000	3.718	3.718	3.718	0.000	0.000	0.000	0.233	0.233	0.233	3.951	3.951	3.951
	Total		4.080	4.080	4.080	16.838	16.838	16.838	0.000	0.000	0.000	7.997	7.997	7.792	28.915	28.915	28.710
5	Belgaum	Belgaum	2.950	2.950	2.950	12.177	12.177	12.177	0.000	0.000	0.000	0.000	0.000	0.000	15.127	15.127	15.127
6		Gokak	0.300	0.300	0.300	1.253	1.256	1.253	0.000	0.000	0.000	2.711	2.711	2.711	4.264	4.267	4.264
7		Bagalkot	6.118	6.118	6.118	3.320	3.320	3.320	0.000	0.000	0.000	2.275	2.275	2.275	11.713	11.713	11.713
8		Bijapur	0.360	0.360	0.360	1.523	1.523	1.523	0.000	0.000	0.000	0.778	0.778	0.778	2.661	2.661	2.661
	Total		9.728	9.728	9.728	18.273	18.276	18.273	0.000	0.000	0.000	5.764	5.764	5.764	33.765	33.768	33.765
9	Dharwad	Dharwad	0.850	0.850	0.850	3.508	3.508	3.489	1.836	1.836	1.836	2.006	2.006	2.006	8.200	8.200	8.181
10		Gadag	0.660	0.660	0.660	2.706	2.706	2.706	0.000	0.000	0.000	2.626	2.626	2.626	5.992	5.992	5.992
11		Haveri	0.000	2.347	2.347	0.000	6.364	6.364	0.000	0.000	0.000	0.000	4.146	4.146	0.000	12.857	12.857
	Total		1.510	3.857	3.857	6.214	12.578	12.559	1.836	1.836	1.836	4.632	8.778	8.778	14.192	27.049	27.030

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(2) Seedling distribution: Distribution of seedling is another major component of the TSP program. In this component seedlings of high quality economically valuable species are selectedand give n o the beneficiaries free of cost. The seedlings are planted on their own farm lands of beneficiaries and protection is given to the plants till their establishment and maturity. During the maintenance stage technical advice is given to the beneficiaries.

(3) Supply of Bamboo: Supply of Bamboo to the beneficiaries is done with an objective of providing construction material to the beneficiaries to repair and build the dwellings and cattle sheds. In certain cases the raw material is also used for the value addition.

(4) Supply of Sarala valae/ Smokeless chullas and Astra valae/ LPG: Under the TSP scheme the forest department has been supplying the smoke less chullas to the beneficiaries with an objective of assisting the beneficiaries to use less firewood while improving efficiency in cooking and to reduce the smoke impact on the health of womenfolk who are subjected to environmental hazard.

(5) Supply of Solar lamp: Under TSP, in few places solar lamps have been supplied to beneficiaries for house lightings with single or two bulbs. The scheme is aimed at helping the beneficiaries to have access to better quality of life.

E. Evaluation objectives.

The Evaluation of the program implemented during 2009-2013 was undertaken with the following objectives.

- Survey and Assessment of the physical assets created and the genuineness of the beneficiaries (according to eligibility)
- Evaluation of the Quality of the Assets and durability of the benefits.
- Physical verification of the Assets to assess the cost worthiness.
- Impact assessment of the scheme against the stated objectives.

CHAPTER – III

SAMPLE WORK

Circle	Division	Year	Supply of medri	Distribution of Solar lamp	Construction of Astr Valae	Supply of LPG gas stove	Social Security Plantation	Others	Grand Total
			Beneficiary	Beneficiary	Beneficiary	Beneficiary	Beneficiary	Beneficiary	Beneficiary
Belgaum	Bagalkot	09-10	13	0	0	0	0	0	12
		10-11	34	0	0	0	0	0	34
		11-12	0	0	0	0	0	0	0
		12-13	0	0	30	0	0	0	30
									76
	Belgaum	09-10	33	0	0	0	0	0	33
		10-11	0	0	0	0	0	66	66
		11-12	0	0	0	0	0	0	0
		12-13	0	0	0	0	0	0	0
									99
	Bijapur	09-10	4	0	0	0	0	0	4
		10-11	2	32	0	0	0	0	94
		11-12	0	0	0	0	0	0	0
		12-13	0	0	4	0	0	0	4
									42
	Gokak	09-10	0	0	0	0	4	0	4
		10-11	0	0	0	0	11	0	11
		11-12	0	0	0	0	0	0	0
		12-13	0	0	38	0	38	0	76
Total									91
Dharwad	Dharwad	09-10	0	0	0	0	0	10	10
		10-11	0	8	0	0	0	0	8
		11-12	0	0	0	0	0	0	0
		12-13	0	3	17	0	0	0	20
									38
	Gadag	09-10	8	0	0	0	0	0	8
		10-11	0	4	0	0	4	0	8
		11-12	0	0	0	0	0	0	0
		12-13	0	4	22	0	0	0	26
									42
	Haveri	09-10	15	0	0	0	0	0	15
		10-11	0	0	0	0	0	56	56
		11-12	0	0	0	0	0	0	0
		12-13	0	6	23	0	1	0	30
Total									101
Gulburga	Bidar	09-10	25	0	0	0	0	0	25
		10-11	0	0	0	0	0	92	92
		11-12	0	0	0	0	0	0	0
		12-13	0	10	20	0	0	2	32
									149
	Gulbaraga	09-10	20	0	0	0	0	0	20
		10-11	0	0	0	0	0	40	40
		11-12	0	0	0	0	0	0	0
		12-13	0	0	6	0	0	0	6
									66
	Raichur	09-10	45	0	0	0	0	0	45
		10-11	0	0	0	0	0	166	166
		11-12	0	0	0	0	0	0	0
		12-13	0	15	0	0	2	0	17
Total									228

CHAPTER – IV
MATERIAL AND METHODS

The contact work was split into cluster of circles which are adjacent to each other by the Forest department for the management convenience. Accordingly In each unit there were approximately three to four circles comprising of 11 forest Divisions. In each division there were 800 to 1000 beneficiaries in each year. It was agreed that there should be 10 % sampling intensity covering at least one activity in each division. The probabilistic sampling method was employed to select the samples from each Range with 10% intensity. The samples selected were again checked to ensure the coverage of all the ranges.

Defining the parameters for Evaluation: The following parameters were selected and defined to assess the program uniformly throughout the study:

- **Plantation and seedlings distribution.** The plantation was evaluated using the Performa developed and used for the plantation evaluation by FDA and other centrally sponsored schemes. The following parameters have been used to assess the plantations.

a) Survival %.
b) Vigor of the plantation.
c) Species suitability.

- **Bamboo/ Acacia Casuarinas poles** (physical verification and Usage types and use pattern).
- **Sarala vale/ Astra valae and Smoke less chullas** (Physical verification/use frequency/ Health impacts and fuel wood consumption rate).
- **Solar lamp:** Physical verification/ Use frequency were verified.

CHAPTER - V

ANALYSIS AND EVALUATION RESULTS

Under the Tribal Sub-Plan (TSP) some of the benefits have been provided to the beneficiaries like smokeless chullas, Acacia/Casurina poles and seedlings to improve their livelihood standards. The evaluation was focused on the physical verification of assets and their usage and consequent impacts. The results are tabulated in the annexure

1. Plantations Evaluation

Under the Tribal sub plan program distribution of seedlings to the beneficiaries was an important activity. Its main objective is to supply seedlings of usufruct value to be planted in the vacant back yard and to raise them to get the benefits. The seedlings supplied were mainly mango, Sapota, Drumstick, Jamoon, Amla, and such other fruits. The number of seedlings supplied varied from 2 to 100 depending upon local conditions.

Evaluation of the success of the social security plantation was done by selecting more than 70 beneficiaries in different divisions. For the purpose of presenting the results the circle level pooling of data has been done, the division level results are given in the annexure.

Table showing the pattern of distribution of seedlings:

Year	Division	No. of Beneficiaries	Beneficiaries Sampled	No. of beneficiaries received
2012-13	Raichur	20	2	100%
2010-11	Gadag	40	4	100%
2009-10	Haveri	10	1	100%
2010-13	Gokak	518	52	100%

1. **Evaluation of survival of seedlings**: The evaluation was done by selecting 10% sample from the total number of beneficiaries. House to House survey was done to verify the physical execution of the program. The other important aspect of the evaluation was to assess the quality of the execution and the success of the program.

2. **Physical verification of seedlings planted:** The verification was done by making the door to door visit. The results are tabulated below. Circle level results are presented by pooling the data.

(a) The survey has shown that the all the beneficiaries reported in the data base have actually received the seedlings. The numbers of seedlings received were also found to be correct. (The results are extrapolated from SCP and TSP combined analysis.

3. **Survival rate:** The survival rates were counted by observing the seedlings surviving in the field. The table gives the survival rate for different divisions.

Table showing the survival of 2 seedlings:

Year	Division	Survival %	Remarks
2009-10	Raichur	57.72	Results are combined analysis of SCP and TSP
2010-11	Gadag	NS	
2012-13	Haveri	20.62	
2011-13	Gokak	26.9	

The survey has shown that, the seedlings survival rate varied between 20.62-57.72%. The weighted average is 27.82%.

Graph showing the survival of 2 seedlings:
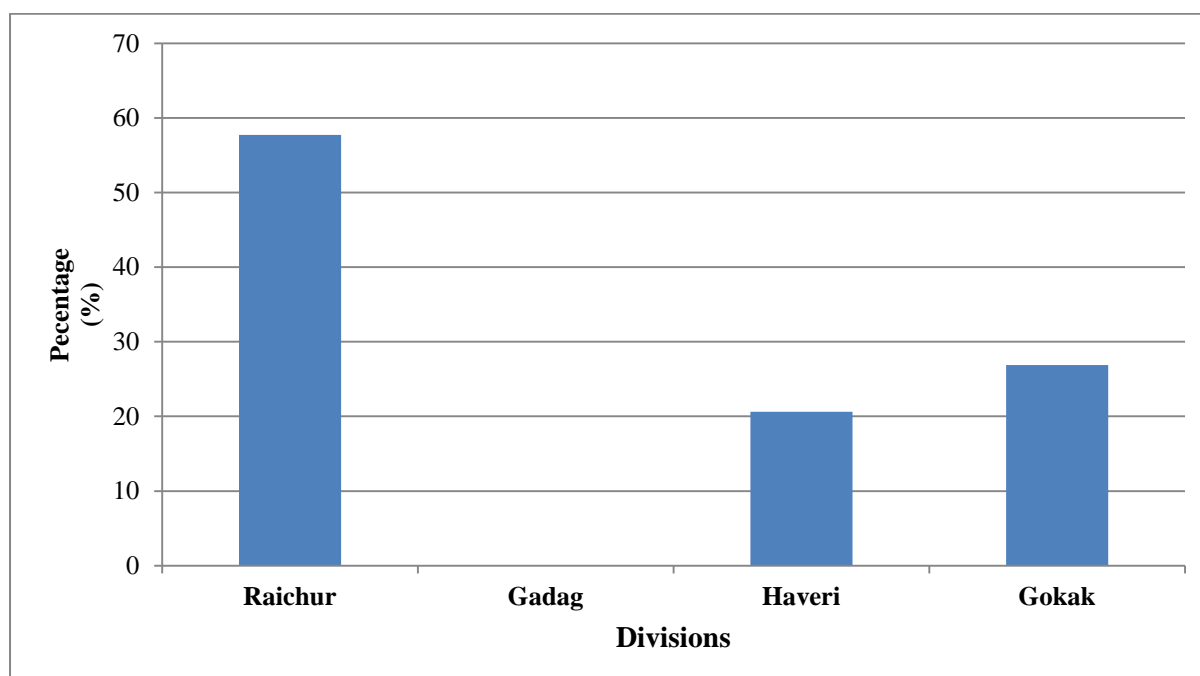
Suitability of species:

The beneficiaries have expressed un-suitability of species to the soil and local climate. Sapota was not suited to drier climate. Similarly Amla and Jackfruit requires good rainfall to establish and survive. Mango was the most preferred species and its survival rate is comparatively higher as compared to other species.

Beneficiary's choice:

Beneficiaries preferred species of different kind than what has been supplied.

Suitability of land:

The suitability of land was another factor that was examined, It appears the land where the social security plantations have been raised are unsuitable for tree cultivation as they are very shallow and lack any organic matter.

Size of the seedlings: Most of the places they were smaller than one meter in height.

Replacement: There were no seedlings for replacement.

No follow-up and after care.

Key findings:

1. **Low survival rates.** The overall survival rate is very poor and does not have any impact on the beneficiaries. The scheme objectives are good but needs a good package and protocol to control the quality of the implementation.
2. **Viability of holdings.** Supplying 2 to 10 seedlings may be avoided as they are not viable for the maintenance.

2. Supply of Energy saving devices.

2.1 Sarala valae, Astra valae and Smokeless chullas:

Under the special component program the supply of smokeless chullas of different types has been undertaken, as part of the evaluation the assessment of the impact of the program and the physical verification of assets distributed have been done and tabulated.

(a) Physical verification of Assets. The physical verification of assets distributed to beneficiaries was verified by randomly selecting the beneficiaries (10%). The results of the survey are tabulated in the table.

Table showing the benefits received by the beneficiaries:

| Division	No. of Beneficiaries	Sample Size	% of Recipients
Bagalkot	300	30	100
Bijapur	40	4	100
Gokak	380	38	100
Dharwad	170	17	100
Gadag	220	22	100
Haveri	230	23	100
Gulbarga	60	6	100
Bidar	200	20	100

(b) Use pattern of Astra valae/ Sarala valae: During the evaluation the pattern of adoption of improved stove by the beneficiaries were evaluated. The results are presented here as regular users, occasional users and non-users.

Table showing the use pattern of Sarala valae/ Astra valae stoves:

Division	Regular users %	Occasional users%	Non-users%
Bagalkot	86.66	13.33	0
Bijapur	75	25	0
Gokak	100	0	0
Dharwad	84.61	15.39	0
Gadag	88.8	11.11	0
Haveri	56.25	12.5	31.25
Bidar	58.8	11.76	29.41
Gulbarga	0	33.33	66.6

Results: It was found that regular user's % varied from 56.25 to 100 from division to division. Gokak had 100% users regularly followed by Bagalkot with 86.66%. The Haveri division had the lowest of 56.25% users.

Graph showing the use pattern of Sarala valae:
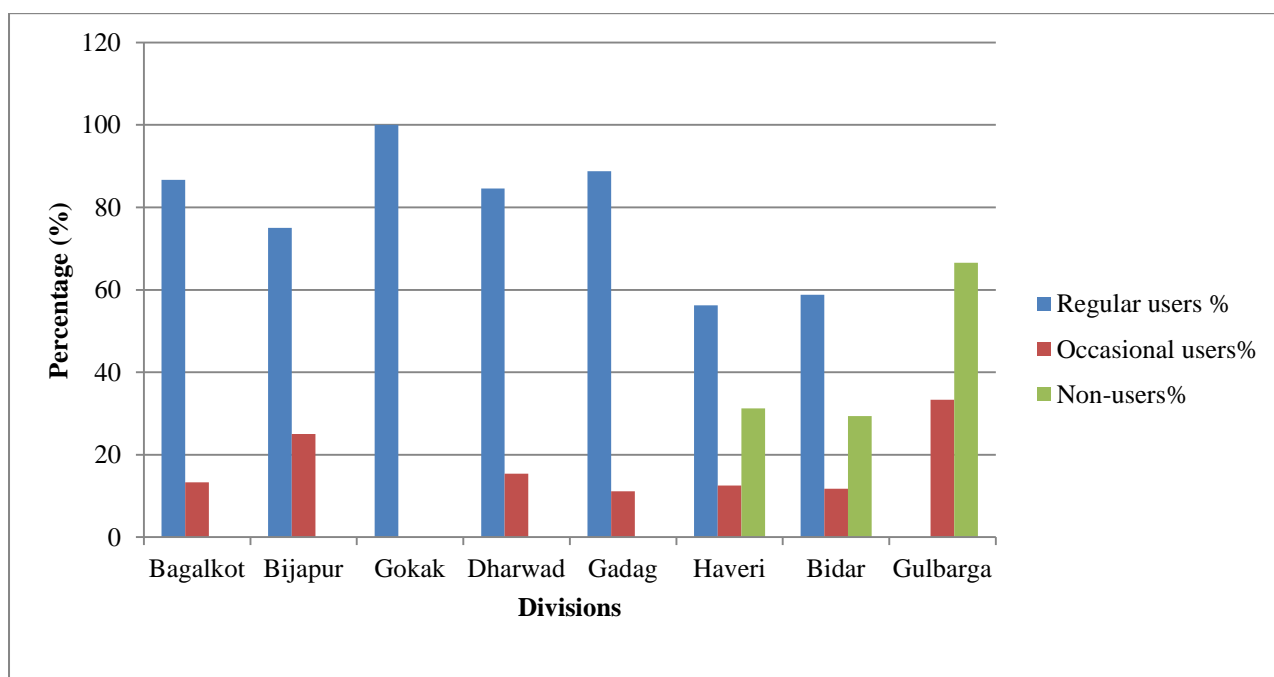
**(c) Reduction of firewood consumption:** During the evaluation the respondents were asked whether there was decrease in the fire wood consumption due to the adoption of efficient stoves. The results are tabulated below.

Table showing the firewood consumption pattern after adapting to Sarala valae/ Astra valae:

Division	Reduced	Same
Bagalkot	57.14	42.85
Bijapur	100	0
Gokak	100	0
Dharwad	100	0
Gadag	100	0
Haveri	91.66	8.33
Gulbarga	100	0
Bidar	56.52	43.47

Results: The respondents were asked whether there was reduction in the fuel wood consumption. It was found that Dharwad, Gokak and Gadag beneficiaries feeling reduced fire wood consumption. About 57.14% Bagalkot respondents felt that there was reduction in the firewood consumption.

Table showing the firewood consumption pattern after adapting to Sarala valae/ Astra valae:
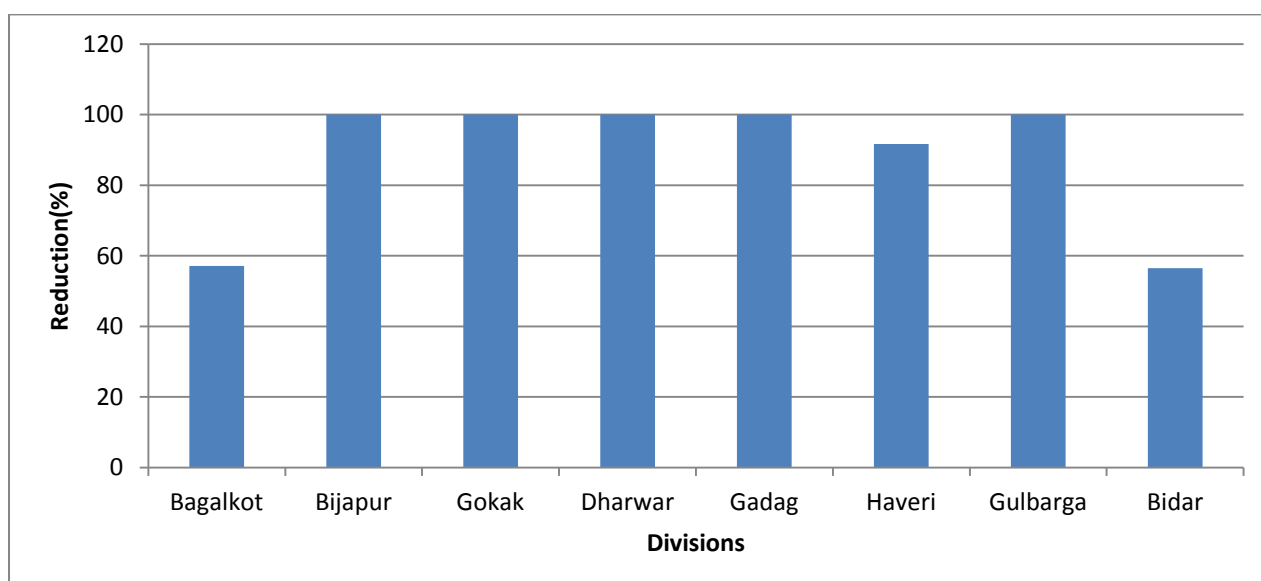
(d) Health impacts: The use of efficient stove is expected reduce the indoor pollution and thus reducing the health risks to women engaged in house hold cooking. The survey was conducted to assess the impact of the stove on the health and the results are tabulated.

Table showing the health impacts:

| Division	Improved	Same
Bagalkot	64.28	35.72
Bijapur	100	00
Gokak	100	00
Dharwad	100	00
Gadag	100	00
Haveri	100	00
Gulbarga	100	00
Bidar	100	00

Results: The health impact study has shown that in most of the divisions the beneficiaries have felt that there is improvement in the health after adopting the efficient stoves. However Only Bagalkot had 64.28% beneficiaries agreeing with improvement in health.

(e) Time savings: The survey was also done to find out the time saved due to use of smokeless chullas. The efficient heat generated by the stove is expected to reduce the time of cooking due to efficient management of energy. The survey has indicated some interesting results.

Table showing time savings after using the assets (SaralaValae/ Astra valae):

Division	Decreased (%)	Same (%)
Bagalkot	57.46	45.23
Bijapur	100	0
Gokak	100	0
Dharwad	91.66	8.33
Gadag	100	0
Haveri	91.66	0
Gulbarga	100	0
Bidar	52.17	47.82

Graph showing the time saving percentage after using Sarala valae/ Astra valae:
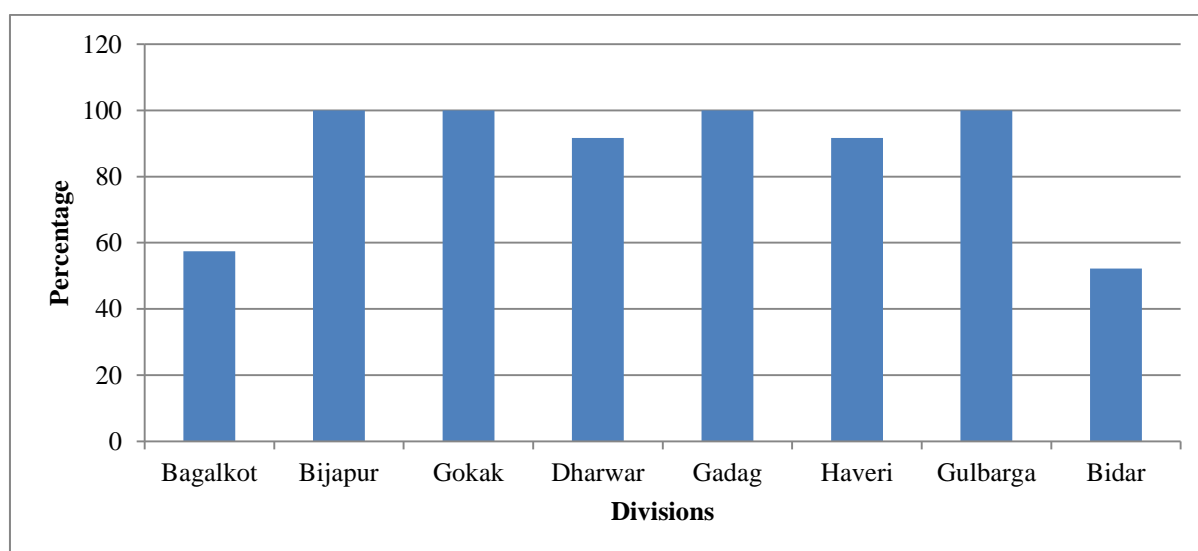
Results:

The survey has shown that the 100 % respondents have responded by saying that the time has been saved from the firewood collection in Gulbarga Gokak and Bijapur. The time saved varies from 25 to 50% of the original time spent on the firewood.

Reasons for low adoption in some places: In Haveri and Belgaum divisions the beneficiaries have complained that the quality of construction was not good as a result the Sarala valae could not be used by the beneficiaries. In Raichur the Astra vale was not properly designed which had the size problem to place the cooking pots. Some of the metal used was found burnt.

2.2 Solar lamp: Solar lamp has been distributed in four divisions Bijapur, Dharwad, Gadag and Haveri.

Table showing the physical verification of the assets:

Year	Division	No Beneficiaries (sample)	% Received
2010-11	Bijapur	32	100
2010-11	Dharwad	8	100
2012-13	Dharwad	3	100
2010-11	Gadag	4	100
2012-13	Gadag	4	100
2012-13	Haveri	6	100
2012-13	Bidar	10	100
2012-13	Raichur	15	100

(a) Results of Physical verification: All the beneficiaries have received the assets in all the divisions as shown in the table above.

(b) Use pattern: The use pattern was evaluated by asking the respondents whether they are using the solar lamps occasionally or regularly. The results are tabulated below.

Table showing the use pattern of solar lamps

Year	Division	% Regular users	% occasional	Not used %
2010-11	Bijapur	68.75	31.25	0
2010-11	Dharwad	63.83	9.09	27.27
2012-13	Dharwad	87.5	12.5	0
2010-11	Gadag	100	0	0
2012-13	Gadag	50	40	10
2012-13	Haveri	80	20	0

Results: The solar lamp was use varied from division to division between 50-100%. Gadag had the highest users of 100% for the year 12-13 and lowest of 50% for the year 2010-11.

Graph showing the use pattern of solar lamp in different divisions:
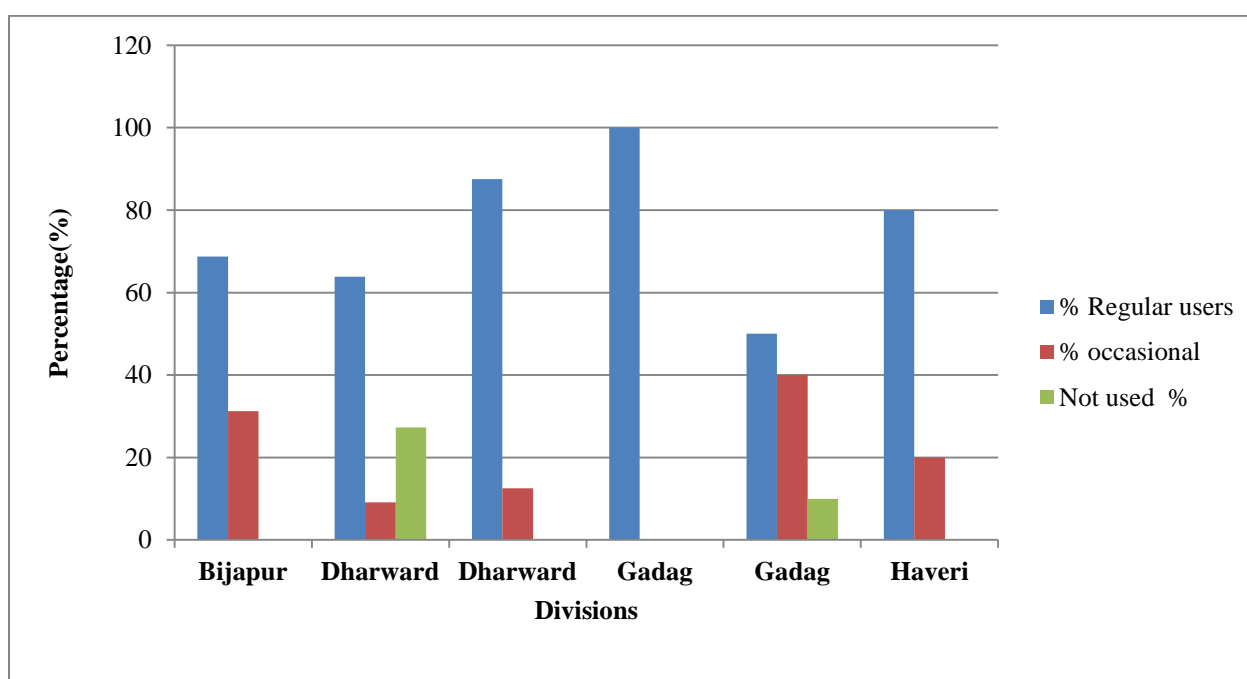
3.1 Bamboo and poles (Acacia/Casurina and Eucalyptus) distribution:

The bamboo and poles distribution to beneficiaries was assessed for verifying the correctness of the distribution and further the use pattern was also assessed. The results are tabulated and discussed below.

(a) **Physical verification of assets:** The evaluation has shown that there was 100 percent beneficiaries had received the assets except Haveri and Bidar. The results are presented in the table below.

Table showing sampled beneficiaries receiving/ not receiving Bamboo.

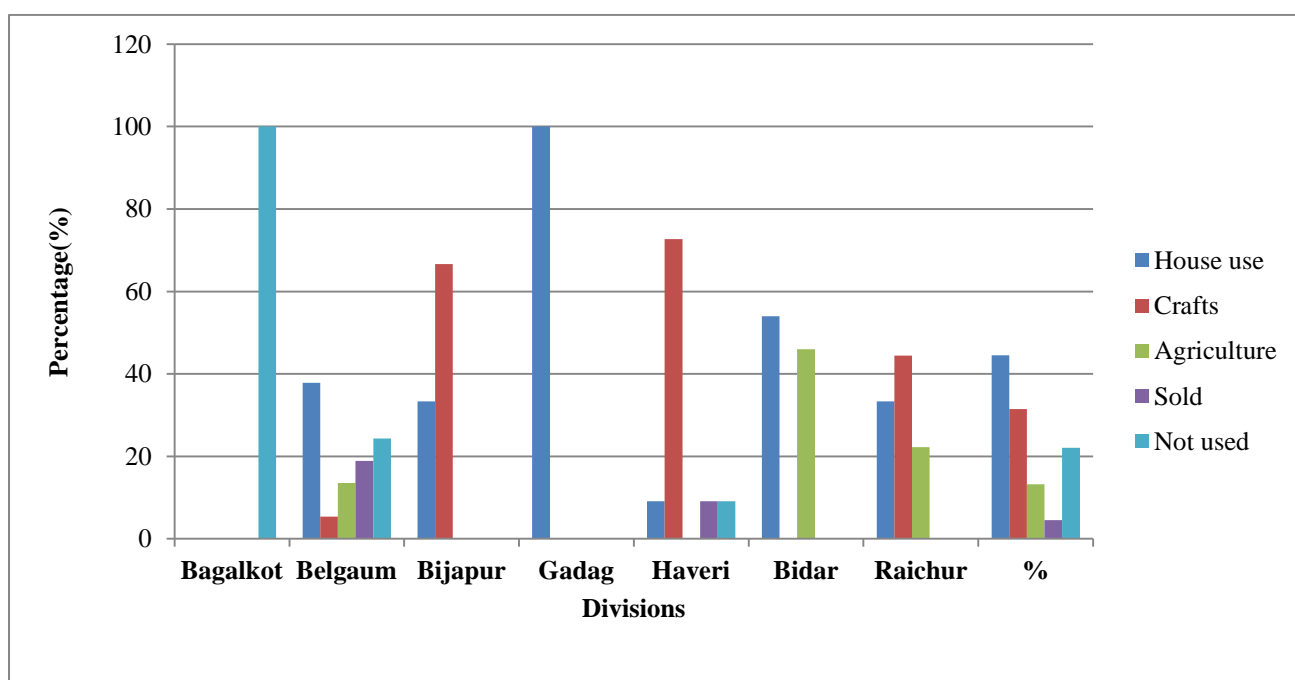| Division	Bamboo		Poles (Acacia/ casurina)	
	% Receiving	% not received	% Receiving	% not received
Bagalkot	100	0	100	0
Belgaum	100	0	100	0
Bijapur	100	0	100	0
Gadag	100	0	100	0
Haveri	74.34	26.66	91.1	8.9
Bidar	100	0	97.88	2.12
Raichur	100	0	100	0

Results: In all the divisions 100% beneficiaries have received the assets except in Haveri where 74% have received the benefit. Similarly the Acacia and casuarinas poles were received with 100% in all divisions except in Bidar and Haveri where 2.12 and 8.9 beneficiaries have not received the assets respectively.

(b) **Value addition of Bamboo:** The survey was done to ascertain the value addition efforts made by the beneficiaries. The results are tabulated below.

Table showing the value addition of Bamboo in different divisions

Division	House use	Crafts	Agriculture	Sold	Not used
Bagalkot	-	-	-	-	100
Belgaum	37.83	5.40	13.5	18.9	24.32
Bijapur	33.33	66.66	-	-	-
Gadag	100	-	-	-	-
Haveri	9.09	72.72	-	9.09	9.09
Bidar	54	-	46	-	-
Raichur	33.33	44.44	22.22	-	-
%	44.5	31.5	13.2	4.5	22.1

**Graph showing the value addition of Bamboo in different divisions.**

Results of Bamboo use pattern: The bamboo was used for number of purposes including agriculture, households, crafts and sales. The House hold use was maximum with 44.5 uses. Agriculture and crafts were the next best use with 13.2and 31.5% respectively. Craft was the least used purpose with 4.31.5. Rest 4.5% was sold without any use. About 22.21 beneficiaries did not use the assets.

Poles pattern of use: The results of the poles used for different purpose is tabulated and presented in the table below.

Table showing the pattern of use of poles (Acacia, Casurina and Eucalyptus)

Division	House use	Crafts	Agriculture	Sold	Not used
Bagalkot	100	-	-	-	-
Belgaum	46.5	9.30	20.93	4.65	18.60
Haveri	89.6	-	3.44	3.44	3.44
Bidar	98.24	-	-	-	1.75
Gulburga	51.85	-	11.11	0	37.03
Raichur	44.27	20.83	34.89	-	-
%	71	5.5	10	7.41	7

Graph showing the pattern of use of poles (Acacia, Casurina and Eucalyptus):
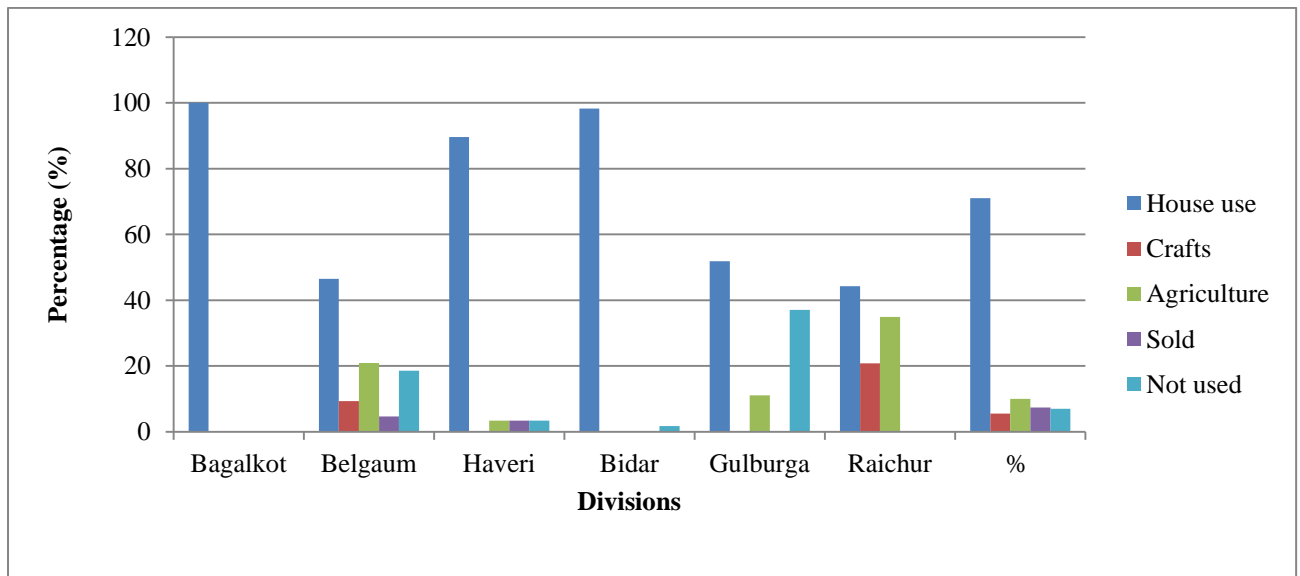
Results: The survey has shown that, the use of bamboo was put to multiple uses like housing, crafts and agriculture. The major use was found for Housing followed by agriculture and crafts. 71% of the beneficiaries are using the bamboo for housing followed by 5.02% using for crafts and 10% for agriculture and 7.41 % beneficiaries sold to secondary users. About 7% did not use it for any purpose.

Economic impacts: The survey was done to ascertain the economic impact of the program.

Results: The survey has shown that all respondents have responded by stating that they felt derived the economic benefits. The economic benefits range from using the poles and bamboo as raw material for crafting and selling it for the higher rates to other users.

CHAPTER – VI
OBESERVATIONS AND IMPACT ANALYSIS

The activities undertaken under the special component program were analysed for their impact on the objectives of the scheme.

1. **Distribution of seedlings**: The distribution of seedlings was one of the important activities of the program; the assessment of the success rate has shown very poor survival of seedlings which has not achieved the objective of the program. However the program has done relatively netter in the high rainfall areas as compared to low rainfall areas. Two seedlings per family looks very low as there are not enough seedlings to give minimum success rate. Considering the mortality rate minimum ten seedlings are required to ensure survival of two seedlings.

2. **Smokeless chullas**: The distribution of smoleless chullas and its usage has shown very encouraging results with more beneficiaries showing interest to use them due to their efficiency factor. This is also well demonstrated as the assets are well maintained and retained without any damage.

3. **Environment impacts**: The use of efficient chillas has helped to reduce the firewood consumption resulting in the reduced emission. The reduction in the indoor pollution has improved the health of women who were affected by the indoor pollution.

4. **Economic benefits to the beneficiaries**: The use of smokekess chulla has saved the time of firewood gathering which is used for the gainful employment.

5. **Distribution of Bamboos/poles**: The supply of bamboo and the poles was given to the beneficiaries has helped the beneficiaries to use the materials for various uses including the value addition, The value addition for making bamboo article has helped some families in earning additional income. The material also has been used for the house use and other agriculture purpose.

CHAPTER – VII
RECOMMENDATIONS

Seedling Distribution: The activity covering supply of two usufructs seedlings has not fared well due to inherent problems in the concept of the program. Supplying of two seedlings assuming 100% survival is a false notion. Further why only two seedlings, as there are many schemes within the department, where supply is free and unrestricted. Under the newly started program "Krishi Protsaha", incentives are given to encourage farmers to grow more trees, which is better conceptualized and structured than the "two seedlings" concept under SSP. Similarly 100 seedlings program may be linked to incentives as done in Krishi Protsaha program.

1. Supply of Improved stoves: LPG kit linked to societies organizing gas procurement is doing well in some divisions. Similar structured and organized supplying LPG Kit with assured gas supply may be effective.
    - Sarala valae/Smokeless Chullas: These activities need good servicing and maintenance support to improve the program. Better monitoring and training should be liked to this program.
    - Supply of Bamboo: only artisans who can add value to the raw material should be encouraged. Training, skill development and marketing must be linked under this program

2. Demand based assets/ Benefits: KFD should have package of activities/ programs/ assistance linked to site specific needs and demand. Beneficiaries may be given range of options to choose the benefit.

3. Evaluation of Program:
    - The activities like seedlings / social security plantations must be evaluated after 5 years to assess the success rate. Further evaluation at 10th year would be useful to know the impact of the program.
    - Smokeless Chullas / Bamboo: These activities must be evaluated annually to verify the assets.

4. Concurrent monitoring: Concurrent monitoring of the program is very helpful to take up mid-course correction of the program

   Methodology:

   - 10% sampling intensity is too high: The robust statistical design must be adopted to determine the sample size and a statistical package (methodology) must be part of TOR. All the out sourced agencies doing evaluation should adopt the same method.
   - Questionnaires/ Formats: Data formats and Questionaries' and Statistical tools must be standardized and adopted.
   - Evaluation against standards or Base lines: To assess the components of the programs, it is better to fix standards and base line indicators against which evaluation must be done.
   - Data Formats: The data formats at division level must be entered in a uniform format, so that classification and assessment and adoption of filters are easier.