Report on

Study on Socio, Health & Economic Impacts of Adoption of Improved Cook Stoves (ICS) Under SWITCH Asia II Initiative in Jashpur, Chhattisgarh and in Kandhamal, Odisha

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1. Background of the Study

The project, SWITCH Asia II Project (BACHAT), has been designed with an aim to enable women to switch sustainably to Improved Cook Stoves (ICS) from polluting & health hazardous Traditional Cook Stoves (TCS), which consequentially could result in improving their socio-economic and health conditions. Besides the socio-economic impact, environmental benefits are also expected through reduced consumption of forest fuel and an increased tree and green cover as other long-terms impacts of this project. Under the Project, a sustainable value chain has been developed consisting of different stakeholders like - financiers, ICS manufacturers & suppliers, distributors, retailers & field technicians.

For strengthening the value chain and making it inclusive, grassroot level women/men entrepreneurs participation is being encouraged. The Project is adopting innovative ways by engaging women leaders from existing Self-Help Groups (SHGs) as Sustainable Household Energy (SHE) Champions for peer influence and education on propagating the benefits of ICS through discussions, demonstrations and experience sharing.

2. Objectives of the Study

The specific objectives of the study are mentioned below :

1. To assess the change in workload sharing like sharing of cooking responsibility at household level.
2. To assess the reduction in drudgery related to fuelwood collection, problems faced while cooking, clean kitchen environment in terms of less soot, less blackening of utensils & walls, cleaner fuelwood storing places, flexibility to shift place of cooking, safety of small children, etc.
3. To find out the changes in daily routine activities with the time saved, like how the time saved is utilized, enhancement in undertaking income generation activities, etc.
4. To document women's' empowerment issues due to time saved like – mobility, leadership, decision making.
5. To understand the economic impacts of using Improved Cook Stoves who have adopted ICS like - opportunity costs saved by reduction in time consumed for fuelwood collection & cooking, income earned from undertaking other livelihood activities from the time saved.
6. To understand the health impacts of using Improved Cook Stoves who have adopted ICS alongwith the change in family expenditure on medical treatment of smoke related ailments.
7. To find out key enablers & barriers in adoption of Improved Cook Stoves in the Project area.

3. Approach to the Study

(a) Research Technique

Both quantitative and qualitative data/information from the field was collected. For collecting quantitative data, a Semi-Structured Questionnaire was canvassed to the sampled households. For collecting qualitative information, Focus Group Discussions (FGDs) and Indepth Interviews (IDIs) were conducted with different stakeholders of the Project.

(b) Sample Size

For this impact assessment study, 1 district in each state was selected – district Jashpur in Chhattisgarh and district Kandhamal in Odisha. In Jashpur, Chhattisgarh, interventions have been done in two blocks – Bagicha and Kunkuri. Similarly, in Kandhamal, Odisha, interventions have been done in three blocks – G. Udayagiri, Phiringia and Tikabali. Total 800 families were covered using the household questionnaire.

Interview Questionnaires

Taking both districts together, total 200 such families were covered that lived in the intervention villages and had adopted ICS, while 200 such families were covered that lived in the intervention villages but had not adopted ICS yet. In both districts taken together, total 400 families were covered that lived in non-intervention/control villages and had not adopted ICS.

Indepth Interviews

In each district, among the selected 10 ICS intervention villages, 5 indepth interviews with women/person responsible for cooking in the households that had adopted ICS was conducted and another 10 indepth interviews with women/person responsible for cooking in the households that had not adopt ICS yet was conducted. In each district, among the selected 10 control villages, 5 indepth interviews with women/person responsible for cooking in the households that had not adopt ICS was conducted.

FGDs

In each district, among the selected 10 ICS intervention villages, 5 FGDs with women/person responsible for cooking in the household that had adopted ICS was conducted and another 3 FGDs with women/person responsible for cooking in the household that had not adopt ICS yet was conducted. In each district, among the selected 10 control villages, 2 FGDs with women/ person responsible for cooking in the household that had not adopted ICS was conducted.

4. Major Findings of the Study

Key Enablers in the Adoption of ICS

(A) For ICS Users

4.1 Time Saved in Cooking on ICS

Taking both districts together, around 31 percent persons (females) involved in cooking at home saved upto 30 minutes per day of cooking time when they started using ICS for cooking

food at home, while another 59 percent persons saved upto 60 minutes per day of cooking time. Around 11 percent persons saved more than 60 minutes per day of cooking time.

4.2 Benefits of Portability of ICS

All the persons (females) involved in cooking activities at home said that they found it very convenient to shift the place of cooking food as per their need and convenience. They said that since the ICS was quite handy and portable, they cooked on it at a place convenient to them. Especially during the summer season, the evening food was cooked on the ICS in the open to escape from the heat of the kitchen.

4.3. Involvement of Male Members in Cooking Due to ICS

Taking both districts together, two-third (66 percent) families said that after the adoption of ICS, the male members of the family were more involved in cooking at home than when the family was using TCS.

4.4 Decision Makers on ICS in the Family

Taking both districts together, the decision to purchase ICS was taken by the person involved in cooking at home (female) alongwith her family members in almost all (98 percent) families.

4.5 Change in Behaviour of Family Members

Taking both districts together, in 63 percent families, there was change in the behaviour of the family members towards the person involved in cooking at home after the adoption of ICS.

4.6 Change in Mobility Outside the House

Taking both districts together, in around 63 percent families, there was change in the mobility outside the house of the person involved in cooking at home after the adoption of ICS.

4.7 Change in Leadership Abilities/Qualities in the Society

Taking both districts together, in 63 percent families, there was change in the leadership abilities/qualities of the person involved in cooking at home after the adoption of ICS.

4.8 Change in Participation in Mahila Mandal Meetings/SHE School Sessions

Taking both districts together, in 86 percent families, there was change in the participation in Mahila Mandal Meetings/SHE School Sessions of the person involved in cooking at home after the adoption of ICS.

4.9 Money Saved on Fuelwood Due to Use of ICS

Taking both districts together, 82 percent families said that due to the use of ICS, they have been able to save upto Rs. 300/- per month, while around 12 percent families said that they have been able to save upto Rs. 500/- per month. Similarly, around 4 percent families said that they have been able to save more than Rs. 500/- per month.

4.10 Money Earned/Saved Due to Use of ICS

(a) Money Earned by Doing Income Generation Activity

Taking both districts together, among those persons (females) who were involved in cooking activity at home, utilized the saved time in some income generation activity, more than 80 percent earned upto Rs. 500/- per month, while around 8 percent persons earned upto Rs. 1,000/- per month. There were around 10 percent persons who earned more than Rs. 1,000/- per month. Most of these women who utilized their saved time in some income generation activity used this time to make leaf plates and working in their agriculture fields. These activities were seasonal and were carried out for a period of around 3 months in a year.

(b) Additional Money Earned by Family Due to Support in Income Generation Activity

Taking both districts together, among those families in which the person involved in cooking activity at home utilized the saved time in supporting a family member in his/her income generation activity, more than 31 percent helped him/her earn additional upto Rs. 500/- per month, while another 31 percent helped him/her earn additional upto Rs. 1,000/- per month. There were around 38 percent persons who helped his family member earn additional more than Rs. 1,000/- per month. Most of these women helped their family in agricultural activities of the family. These activities were seasonal and were carried out for a period of around 3 months in a year.

(c) Money Saved by the Family By Utilizing the Time Saved Due to ICS

Taking both districts together, among those families in which the person involved in cooking activity at home utilized the saved time in such activities for which earlier she had to spend money, 23 percent earn upto Rs. 500/- per month, while another around 54 percent earn upto Rs. 1,000/- per month. There were 23 percent persons who earn more than Rs. 1,000/- per month. Most of these women helped their family in agricultural activities of the family. There were only 13 such cases (4 cases in district Jashpur and 9 cases in district Kandhamal). These activities were seasonal and were carried out for a period of around 3 months in a year.

4.11 Facing Health Problems when Using ICS vis-à-vis TCS

(a) Problems Faced When Using TCS

Taking both districts together, irritation in the eyes was reported by almost all (97 percent) persons (females) involved in cooking activities at home, while coughing was reported by around 86 percent such persons. Other health related problems due to smoke emitted as stated by the person involved in cooking activities at home due to TCS include headache (74 percent), breathing problem (69 percent) and chest pain (66 percent).

(b) Problems Faced When Using ICS

In almost all the families, the persons (females) involved in cooking activities at home said that while using ICS, they did not face any smoke related health problem as the smoke emitted by the ICS in comparison to the TCS was negligible.

4.12 Expenses on Treatment of Health Problems when Using ICS vis-à-vis TCS

Taking both districts together, there were 17 cases where it was reported that the family had to spend money on medical treatment of health related problems due to smoke emitted from the TCS. Out of these, in 9 cases, the family had to spend upto Rs. 1,000/- on the medical treatment of the member, while ion the remaining 8 cases, the family had to spend more than Rs. 1,000/-. On the contrary, when the families used ICS, they did not incur any expense on medical treatment of smoke related health problems.

4.13 Benefits of Using ICS

There were many benefits stated by the families including, in ICS the use of fuelwood is less in comparison to TCS was stated by 79 percent families, while ICS emits less smoke and also cooks food fast was stated by 71 percent families. Ability to shift the place of cooking was stated as a benefit of using ICS by 33 percent families.

4.14 Source of Motivation to Adopt ICS

Taking both districts together, the awareness generation programs by the Care India Representatives was stated as the source of motivation by 57 percent families, while self motivation was stated by 26 percent families. Other sources of motivation included – Mahila Mandal (12 percent) and family members (10 percent).

4.15 Reasons that Motivated to Adopt ICS

Consumption of less fuelwood in comparison to TCS was stated as the motivating factor by three-fourth (75 percent) families, while the fact that ICS cooks food faster than TCS was stated by 71 percent families. Some other factors that motivated the families to adopt ICS included - less emission of smoke in comparison to TCS (63 percent) and the ICS is portable unlike the TCS and can be shifted to more convenient location (66 percent).

4.16 Number of Visits to Collect Fuelwood by Adult Males in the Family

(a) After Adopting ICS

Taking both districts together and taking all the three seasons together, after adopting ICS, total 61.30 visits per family were made by the adult males among the families where adult males were going to the forest to collect fuelwood. Overall, in summer season, total 32.74 visits per family were made by the adult males among the families where adult males were going to the forest to collect fuelwood, while in winter season, total 28.44 visits per family were made by the adult males among the families where adult males were going to the forest to collect fuelwood.

(b) Before Adopting ICS

Taking both districts together and taking all the three seasons together, before adopting ICS, total 80.51 visits per family were made by the adult males among the families where adult males were going to the forest to collect fuelwood. Overall, in summer season, total 41.94

visits per family were made by the adult males among the families where adult males were going to the forest to collect fuelwood, while in winter season, total 38.06 visits per family were made by the adult males among the families where adult males were going to the forest to collect fuelwood. The number of visits to the forest to collect fuelwood earlier (before adopting ICS) was slightly higher than when the families have adopted ICS.

4.17 Number of Visits to Collect Fuelwood by Adult Females in the Family

(a) After Adopting ICS

Taking both districts together and taking all the three seasons together, after adopting ICS, total 58.20 visits per family were made by the adult females among the families where adult females were going to the forest to collect fuelwood. Overall, in summer season, total 30.21 visits per family were made by the adult females among the families where adult females were going to the forest to collect fuelwood, while in winter season, total 27.89 visits per family were made by the adult females among the families where adult females were going to the forest to collect fuelwood.

(b) Before Adopting ICS

Taking both districts together and taking all the three seasons together, before adopting ICS, total 75.79 visits per family were made by the adult females among the families where adult females were going to the forest to collect fuelwood. Overall, in summer season, total 39.54 visits per family were made by the adult females among the families where adult females were going to the forest to collect fuelwood, while in winter season, total 35.43 visits per family were made by the adult females among the families where adult females were going to the forest to collect fuelwood. The number of visits to the forest to collect fuelwood earlier (before adopting ICS) was slightly higher than when the families have adopted ICS.

4.18 Average Time Spent in Collecting Fuelwood by Adult Males in the Family

(a) After Adopting ICS

Taking both districts together and taking all the three seasons together, after adopting ICS, total 192 hours time per family was spent by the adult males of the families where adult males of the family were going to the forest to collect fuelwood. Overall, in summer season, total 103 hours time per family was spent by the adult males of the families where adult males of the family were going to the forest to collect fuelwood, while in winter season, total 89 hours time per family was spent by the adult males of the families where adult males of the family were going to the forest to collect fuelwood.

(b) Before Adopting ICS

Taking both districts together and taking all the three seasons together, before adopting ICS, total 270 hours time per family was spent by the adult males of the families where adult males of the family were going to the forest to collect fuelwood. Overall, in summer season, total 141 hours time per family was spent by the adult males of the families where adult males of the

family were going to the forest to collect fuelwood, while in winter season, total 127 hours time per family was spent by the adult males of the families where adult males of the family were going to the forest to collect fuelwood.

4.19 Average Time Spent in Collecting Fuelwood by Adult Females in the Family

(a) After Adopting ICS

Taking both districts together and taking all the three seasons together, after adopting ICS, total 184 hours time per family was spent by the adult females of the families where adult females of the family were going to the forest to collect fuelwood. Overall, in summer season, total 95 hours time per family was spent by the adult females of the families where adult females of the family were going to the forest to collect fuelwood, while in winter season, total 89 hours time per family was spent by the adult females of the families where adult females of the family were going to the forest to collect fuelwood.

(b) Before Adopting ICS

Taking both districts together and taking all the three seasons together, before adopting ICS, total 287 hours time per family was spent by the adult females of the families where adult females of the family were going to the forest to collect fuelwood. Overall, in summer season, total 129 hours time per family was spent by the adult females of the families where adult females of the family were going to the forest to collect fuelwood, while in winter season, total 156 hours time per family was spent by the adult females of the families where adult females of the family were going to the forest to collect fuelwood.

4.20 Reasons for Consumption of More Fuelwood in Jashpur than in Kandhamal

There were reasons reported for more use of fuelwood in district Kandhamal than in district Jashpur. In Kandhamal, the villages were located in dense forest areas and hence access to fuelwood was much easier here in comparison to Jashpur, where the villagers had to travel very little distance to reach the forest. Hence, number of visits to the forest in district Kandhamal was higher then in district Jashpur.

Also, the villages in district Kandhamal were situated in hilly terrain with low temperatures in comparison to Jashpur. As a result, almost all the families in Kandhamal used hot/warm water to take bath, where as no such practice was followed in Jashpur. Since TCS was the main chulha in the house, this resulted in higher consumption of fuelwood in Kandhamal in comparison to district Jashpur and thus higher number of visits to the forest.

The fooding habit of people in Kandhamal was also different from the people in Jashpur. In Kandhamal, people preferred to eat boiled rice both in the morning as well as in the night, whereas in Jashpur, people consumed boiled rice only during lunch. People in rural areas use large size vessels to boil rice on the TCS. Since, boiling rice takes more time in comparison to making chapattis, the consumption of fuelwood in Kandhamal is higher then in Jashpur.

Further, it was reported by the villagers in district Jashpur that due to indiscriminate cutting/ collecting of fuelwood by the people, since last one year, the Forest Guard of the Department of Forest, has imposed a restriction on the villagers on the number of visits to the forest to collect fuelwood. Earlier, the villagers went to the forest on any day to collect fuelwood, however, after the imposition of the restriction, the visit to the forest has been fixed on two days of the week – Tuesdays and Fridays. This has reduced the number of visits to the forest in district Jashpur. There is no such restriction in the villages of Kandhamal.

4.21 Change in Time Spent in Collecting Fuelwood

Taking both districts together, around two-third (64 percent) families said that in comparison to TCS, now while using ICS also, the family had to spend lesser time in fuelwood collection.

(B) For ICS Non-Users

4.22 Problems Faced in Using Wood in TCS

Taking both districts together, problems in collecting/transporting fuel wood from the forests due to the effort and harassment involved in traveling long distances, climbing the trees, carrying loads of fuel wood on their head/shoulders was reported by around 77 percent families. Similarly, health related problems like swelling in the legs, bruises on the shoulders and breathlessness was reported by around 69 percent families. There were only 2 percent families that said that they did not face any problem in collecting wood from the forests.

4.23 Problem in Cleaning on Using TCS

Taking both districts together, almost all (96 percent) families stated that they faced problem in cleaning of chulha, cooking utensils, walls of the place of cooking, place of storing wood, soot, spider web, etc. due to excessive emission of smoke.

4.24 Problems Due to Non-Portability of TCS

Taking both districts together, 80 percent families stated that they faced problem due to non-portability of TCS.

4.25 Time Spent on Cooking on TCS

Taking both districts together, around 81 percent persons (females) responsible for cooking at home said that they felt that they had to spend lot of time on cooking on TCS.

4.26 Facing Health Problems When Using TCS

Taking both districts together, irritation in the eyes was reported by almost all (97 percent) persons (females) involved in cooking activities at home, while coughing was reported by around 80 percent such persons. Other health related problems due to smoke emitted as stated by the person involved in cooking activities at home due to TCS include breathing problem (62 percent), headache (58 percent) and chest pain (55 percent).

4.27 Readiness to Switch to an Alternative Chulha

Taking both districts together, around 79 percent families were ready to switch to an alternative chulha to the TCS being presently used by the family.

4.28 Problems in Upkeep & Maintenance of TCS

Taking both districts together, daily slaking the TCS with mud paste and cow dung paste for its upkeep was the problem stated by around 34 percent families, while having to clean the ash daily was the problem stated by around 18 percent families. The TCS was not portable and was fixed at one place was the problem reported by around 9 percent families.

4.29 Problems in Using TCS

The families were asked to state the problems they face while using TCS. Taking both districts together, there were many problems stated by the families including, excessive emission of smoke from the TCS was stated by 71 percent families, while the TCS consumes excessive quantity of fuelwood was stated by around 61 percent families. The TCS takes lot of time to cook food was the problem stated by 44 percent families.

4.30 Likelihood of Adopting ICS in Near Future

Taking both districts together, almost two-third (65 percent) families said that they would like to adopt ICS in the future, while the remaining one-third (35 percent) families said that they would not adopt ICS.

Key Barriers in the Adoption of ICS

(A) For ICS Users and Non-Users

4.31 Average Annual Family Income

Taking both districts together, average annual family income of 62 percent families was below Rs. 60,000/-, while average annual family income of another 29 percent families was between Rs. 60,001/- to Rs. 1,20,000/-.

4.32 Education Status of Adult Females (>=18 yrs.)

Taking both districts together, 26 percent adult females were illiterate; while around 12 percent adult females were literate but had no formal education. Around 11 percent adult females were educated upto primary school level.

4.33 Frequency of Use of Different Chulha in Last 1 Week

(a) Families Using TCS at Home

Among the Project Village Adopters of ICS families, more around 80 percent families using TCS at home reported using it two times a day during the last 1 week.

(b) Families Using ICS at Home

Taking both districts together, around 70 percent families using ICS at home reported using it one time a day during the last 1 week. Only 19 percent families reported using it two times a

day during the last 1 week. Around 12 percent families rarely used the ICS during the last one week.

4.34 Most Affordable Chulha for the Families

Taking both districts together, almost 85 percent families said that for them TCS was the most affordable chulha, while 9 percent families said that ICS was the most affordable chulha. Even among the Project Village Adopters of ICS families, around 62 percent families said that for them, TCS was the most affordable chulha, while only 36 percent families said that ICS was the most affordable chulha.

4.35 Most Efficient Chulha According to the Families

Taking both districts together, almost 47 percent families said that LPG was the most efficient chulha in terms of time taken to cook food, while more than 35 percent families said that TCS was the most efficient chulha. There were only 13 percent families that said that ICS was the most efficient chulha in terms of time taken to cook food.

4.36 Most Convenient Chulha According to the Families

Taking both districts together, more than 48 percent families said that TCS was the most convenient chulha to cook food, while one-third (33 percent) families said that LPG was the most convenient chulha. There were only 16 percent families that said that ICS was the most convenient chulha to cook food.

4.37 Most Economical Chulha According to the Families

Taking both districts together, more than almost 78 percent families said that TCS was the most economical chulha to cook food, while only 20 percent families said that ICS was the most economical chulha.

4.38 Average Annual Maintenance Cost of Chulha for the Families

None of the families said that they incurred any cost on repair & maintenance of their TCS as it was self made at home using bricks and slaking it with mud paste and cow dung paste. Whenever, it required any repair or maintenance, the family would take care of it themselves.

4.39 Problems in Using ICS

Taking both districts together, small pieces of wood has to be used was the problems stated by 18 percent families, while the single pot chulha of the ICS was a problem stated by 13 percent families. The opening where the fuelwood is put in the ICS was small was the problem stated by 13 percent families. Having to sit in front of the ICS while the food was cooking was a problem stated by 12 percent families.

4.40 Suggestions for Increase in Adoption of ICS

The families were asked to give suggestions to increase the number of families adopting ICS. Taking both districts together, creating awareness about the benefits of ICS was the

suggestion to increase its adoption was stated by around 77 percent families, the cost of ICS should be affordable and should be less that its prevailing cost was suggested by 29 percent families.

(B) For ICS Non-Users

4.41 Awareness About Consumption of Lesser Fuelwood in ICS

Taking both districts together, only one-fourth (25 percent) families were aware that an ICS consumes lesser fuelwood than TCS, while the remaining three-fourth (75 percent) families said that they were not aware that an ICS consumes lesser fuelwood than TCS.

4.42 Awareness about Consumption of Lesser Time on Collecting Fuelwood for ICS

Taking both districts together, less than one-fourth (23 percent) families were aware that when using ICS, they will have to spend lesser time on collecting fuelwood than when using TCS, while the remaining three-fourth (77 percent) families said that they were not aware that when using ICS, they will have to spend lesser time on collecting fuelwood than when using TCS.

4.43 Awareness That Cooking on ICS Takes Lesser Time Than on TCS

Taking both districts together, less than one-fourth (23 percent) families were aware that cooking on ICS takes lesser time in comparison to cooking on TCS, while the remaining 77 percent families were not aware that cooking on ICS takes lesser time in comparison to cooking on TCS.

4.44 Benefits of Using TCS

There were many benefits stated by the families including, food cooked on TCS tastes good was stated by around 69 percent families, while it is easy to cook food for large number of persons was stated by 50 percent families. Ability to use thick logs of fuelwood was the benefit stated by around 47 percent families.

4.45 Suggestions for Increase in Adoption of ICS

Among the Project Village Non-Adopters of ICS families, creating awareness about the benefits of ICS was the suggestion to increase its adoption was stated by 68 percent families, while the cost of ICS should be affordable was suggested by around 33 percent families. Among the Control Village Non-Adopters of ICS families, almost all (95 percent) families were not aware about the ICS.

1 Introduction

1.1 Background of the Study

Forests are renewable natural sources, which play a significant role in the maintenance of ecological balance and also contribute substantially to the economic development of the country. They are important source of timber, fuelwood and minor forest products like, cane, resins, lac, fruits, honey, etc., which are of substantial economic value to the rural households. Forests also serve as repositories of wild strains of cultivable crops and medicinal plants. Also, they serve as the major source to meet the rural energy requirements in the country.

The forest resource of the country has to meet the demand of a population of more than 1.3 billion people and around 450 million cattle. As such, the country has to meet the needs of 16 percent of the world's population from 1 percent of the world forest resources. About 2 lakh villages located around forests depend on them for sustenance. One of the major factors responsible for degradation of forest resources is the heavy dependence of rural forest dwelling communities on the forest bio-mass resources for meeting their fuelwood needs. The forests of the country are therefore under tremendous pressure.

Over 145 million Indian households use Traditional Cook Stove (TCS) for daily cooking and depend on biomass (wood, cattle dung & other biomass) as cooking fuel. This has significant adverse implications, especially on women's health due to Household Air Pollution (HAP). A complex combination of factors like cooking traditions, intra-household distribution of incomes and gender dynamics, culture, religion and affordability affect sustained adoption and use of Improved Cook Stove (ICS) in the country. Low demand discourages suppliers from investing in ICS and suitable financing options for consumers and entrepreneurs are unavailable. These limit the transition of poor households to clean cooking energy options.

The socio-economic cost of using TCS is enormous. Exposure to indoor air pollution from cooking can cause lung cancer, cardiovascular diseases, pneumonia and chronic obstructive pulmonary disease (WHO, 2012), as well as ill-health and loss of productivity. Other costs associated with Traditional Cook Stove relates to waste of productive time and loss of energy due to its poor efficiency. As fuelwood usually has to be collected and transported to the home, mostly by women, it increases their workload and a lot of time is spent in collection of fuelwood and in cooking food which takes away women’s productive time and impedes her participation in other economic activities.

The demand for biomass and the pressure on the forests get higher due to poor efficiency of the Traditional Cook Stoves and their higher fuel consumption paving way for increased demand of the forest based biomass, making it unsustainable and contributes to global warming. Further, time saved due to use of Improved Cook Stove can be utilized for other household activities like - taking care of children, spending time with children and involvement in income generating activity and personality development.

The project, SWITCH Asia II Project (BACHAT), has been designed with an aim to enable women to switch sustainably to Improved Cook Stoves (ICS) from polluting & health hazardous Traditional Cook Stoves (TCS), which consequentially could result in improving their socio-economic and health conditions. Besides the socio-economic impact, environmental benefits are also expected through reduced consumption of forest fuel and an increased tree and green cover as other long-terms impacts of this project.

The Project 'Evolving a Women-centered Model of Extension of Improved Cook Stoves for Sustained Adoption at Scale' aims at promoting sustainable adoption of Improved Cook Stoves among Forest Dependent Households (FDHs) in district Jashpur in Chhattisgarh and districts Kandhamal & Kalahandi in Odisha. These districts have substantial tribal population and the tribal's life is majorly dependent on the forest products. The Project is working directly with 10,000 women from FDHs, 200 women's collectives, and 2,000 men from FDHs in these three Project districts.

Under the Project, a sustainable value chain has been developed consisting of different stakeholders like - financiers, ICS manufacturers & suppliers, distributors, retailers & field technicians. For strengthening the value chain and making it inclusive, grassroot level women/men entrepreneurs participation is being encouraged. The Project is adopting innovative ways by engaging women leaders from existing Self-Help Groups (SHGs) as Sustainable Household Energy (SHE) Champions for peer influence and education on propagating the benefits of ICS through discussions, demonstrations and experience sharing.

Under the BACHAT Project, SHE Technicians have been encouraged and trained to provide services related to installation, repairing and maintenance of locally designed stoves. These SHE Technicians have also been affiliated to the National Skill Development Corporation (NSDC), Ministry of Skill Development and Entrepreneurship, Government of India. As a result of the interventions under the BACHAT Project, large number of Forest Dependent Households (FDH) have now adopted ICS. There are 25 different types of ICS undergoing performance assessment by FDH women on parameters like – fuelwood consumption, time taken in cooking, smoke emission, comfortability and convenience to use.

Due to the project's initiatives, a significant number of households in the Project area have adopted ICS. In order to assess and measure the social & economic impacts of using Improved Cook Stoves on the lives of the forest dependent households in the BACHAT Project, Care India had planned to undertake this impact assessment study.

1.2 Objectives of the Study

The objective is to undertake a comparative study to assess & measure the social, economic and health impacts of Improved Cook Stoves on households who have adopted ICS vis-à-vis those households who have not adopted ICS yet. The specific objectives of the study are mentioned below :

8. To assess the change in workload sharing like sharing of cooking responsibility at household level.
9. To assess the reduction in drudgery related to fuelwood collection, problems faced while cooking, clean kitchen environment in terms of less soot, less blackening of utensils & walls, cleaner fuelwood storing places, flexibility to shift place of cooking, safety of small children, etc.
10. To find out the changes in daily routine activities with the time saved, like how the time saved is utilized, enhancement in undertaking income generation activities, etc.
11. To document women's' empowerment issues due to time saved like – mobility, leadership, decision making.
12. To understand the economic impacts of using Improved Cook Stoves who have adopted ICS like - opportunity costs saved by reduction in time consumed for fuelwood collection and cooking, income earned from undertaking other livelihood activities from the time saved.
13. To understand the health impacts of using Improved Cook Stoves who have adopted ICS alongwith the change in family expenditure on medical treatment of smoke related ailments.
14. To find out key enablers and barriers in adoption of Improved Cook Stoves in the Project area.

1.3 Approach to the Study

(A) Research Technique

In this study, both quantitative and qualitative data/information from the field was collected. For collecting quantitative data, a Semi-Structured Questionnaire was canvassed to the sampled households. For collecting qualitative information, Focus Group Discussions (FGDs) and Indepth Interviews (IDIs) were conducted with different stakeholders of the Project.

(B) Sample Size of Target Respondents

Districts & Villages

Under the BACHAT Project, total 107 villages have been selected for ICS intervention, 30 villages in district Jashpur in Chhattisgarh; 40 villages in district Kandhamal and 37 villages in district Kalahandi both in Odisha. For this impact assessment study, 1 district in each state was selected – district Jashpur in Chhattisgarh and district Kandhamal in Odisha.

In each district, total 20 villages were selected (10 ICS intervention villages and 10 non-ICS intervention villages/control villages). To select the 10 intervention villages, the names of all the intervention villages in the district were arranged block-wise in ascending order of number of households that have adopted ICS.

In Jashpur, Chhattisgarh, interventions have been done in two blocks – Bagicha and Kunkuri. In each block, 5 villages that had adopted ICS were selected through simple random sampling method from among the villages having at least 15 households that had adopted ICS. The villages adjacent to the ICS intervention villages but belonging to different Gram Panchayat were selected as non-ICS intervention villages/control villages.

Similarly, in Kandhamal, Odisha, interventions have been done in three blocks – G. Udayagiri, Phiringia and Tikabali. In block G.Udayagiri, there was only 1 village in which there were 15 or more households that had adopted ICS. Hence, in G. Udayagiri, 1 village was selected as intervention village. In Phiringia 4 villages and in Tikabali 5 villages that had adopted ICS were selected through simple random sampling method from among the villages having at least 15 households that had adopted ICS. The villages adjacent to the ICS intervention villages but belonging to differents Gram Panchayat were selected as non-ICS intervention villages/control villages. The number of sample locations covered under the study is summarized below :

Table-1 : Sample Covered under the Study

State	District	Block	Intervention Villages	Control Villages
Chhattisgarh	Jashpur	Kunkuri	5	5
		Bagicha	5	5
Odisha	Kandhamal	G. Udayagiri	1	1
		Phiringia	4	4
		Tikabali	5	5

The list of villages covered under the study is presented in Annexure-1.

Interview Questionnaires

In each selected ICS intervention village, 10 household interviews with women/person responsible for cooking in the household that had adopted ICS was conducted. Another 10

indepth interviews with women/person responsible for cooking in the households that had not adopt ICS yet was conducted. In each selected control village, 20 indepth interviews with women/person responsible for cooking in the households that had not adopted ICS was conducted. In each village, these families were selected through systematic random sampling method. The household interview questionnaire used in the study is presented in Annexure-2.

Indepth Interviews

In each district, among the selected 10 ICS intervention villages, 5 indepth interviews with women/person responsible for cooking in the households that had adopted ICS was conducted and another 10 indepth interviews with women/person responsible for cooking in the households that had not adopt ICS yet was conducted. In each district, among the selected 10 control villages, 5 indepth interviews with women/person responsible for cooking in the households that had not adopt ICS was conducted. These families were identified on the basis of discussions in the villages, SHE-School members and others. These families were such, which had something different to say about the use of ICS.

FGDs

In each district, among the selected 10 ICS intervention villages, 5 FGDs with women/person responsible for cooking in the household that had adopted ICS was conducted and another 3 FGDs with women/person responsible for cooking in the household that had not adopt ICS yet was conducted. In each district, among the selected 10 control villages, 2 FGDs with women/ person responsible for cooking in the household that had not adopted ICS was conducted. The list of FGD issues for households that had adopted ICS is presented in Annexure-3. The list of FGD issues for households that had not adopted ICS is presented in Annexure-4. The sample size covered under the study is presented below :

Table-2 : Sample Size of the Study

Sl.	Classification	Intervention Villages – Families Adopted ICS	Intervention Villages – Families Not Adopted ICS	Control Villages – Families Not Adopted ICS	Total
(A) District Jashpur in Chhattisgarh					
1.	No. of Villages	10		10	**20**
2.	Interviews (per village)	10	10	20	**400**
3.	Indepth Interviews	5	10	5	**20**
4.	Focus Group Discussions	5	3	2	**10**
(B) District Kandhamal in Odisha					
1.	No. of Villages	10		10	**20**
2.	Interviews (per village)	10	10	20	**400**
3.	Indepth Interviews	5	10	5	**20**
4.	Focus Group Discussions	5	3	2	**10**

2
Profile of the Families

2.1 Number of Families Covered

As per the sample, total 800 families were covered using the household questionnaire. The distribution of these families into various categories is presented below :

Table-3 : Number of Families Covered

State	District	Block	Intervention Villages		Control Villages	Total
			Families Adopted ICS	Families Not Adopted ICS	Families Not Adopted ICS	
Chhattisgarh	Jashpur	Kunkuri	50	50	100	**200**
		Bagicha	50	50	100	**200**
Odisha	Kandhamal	G. Udayagiri	10	10	40	**60**
		Phiringia	40	40	80	**160**
		Tikabali	50	50	80	**180**
Total Families			**200**	**200**	**400**	**800**

Taking both districts together, total 200 such families were covered that lived in the intervention villages and had adopted ICS, while 200 such families were covered that lived in the intervention villages but had not adopted ICS yet. In both districts taken together, total 400 families were covered that lived in non-intervention/control villages and had not adopted ICS.

2.2 Average Family Size

Taking both districts together, the average family size was 4.67 persons. In district Jashpur, the average family size was 4.82 persons while in district Kandhamal, the average family size was 4.52 persons.

The average family size among the Project Village Adopters of ICS was 4.81 persons, the average family size among the Project Village Non-Adopters of ICS was 4.84 persons and the average family size among the Control Village Non-Adopters of ICS was 4.51 persons.

Similarly, the average family size of families using TCS, ICS & LPG was 4.88 persons, the average family size of families using only TCS & ICS was 4.75 persons and the average family size of families using TCS only was 4.47 persons.

2.3 Caste Group of the Families

Taking both districts together, more than 61 percent families belonged to the Scheduled Tribes, around 21 percent families belonged to the Scheduled Castes, more than 13 percent families belonged to the Other Backward Castes and the remaining around 5 percent families belonged to the General Castes.

Table-4 : Caste Group of the Families Covered

Classification	Scheduled Castes		Scheduled Tribes		Other Backward Castes		General Castes		Total	
	n	%	n	%	n	%	n	%	N	%
Jashpur	54	13.50	248	62.00	73	18.25	25	6.25	**400**	**100.00**
Kandhamal	110	27.50	243	60.75	33	8.25	14	3.50	**400**	**100.00**
Overall	**164**	**20.50**	**491**	**61.38**	**106**	**13.25**	**39**	**4.88**	**800**	**100.00**
Category of Respondents-										
Project Village:Adopters	35	17.50	151	75.50	10	5.00	4	2.00	**200**	**100.00**
Project Village:Non-Adopters	50	25.00	126	63.00	16	8.00	8	4.00	**200**	**100.00**
Control Village:Non-Adopters	79	19.75	214	53.50	80	20.00	27	6.75	**400**	**100.00**
Category of Users-										
Families Using TCS,ICS,LPG	9	11.84	59	77.63	6	7.89	2	2.63	**76**	**100.00**
Families Using TCS & ICS	25	22.32	81	72.32	4	3.57	2	1.79	**112**	**100.00**
Families Using TCS only	80	22.47	199	55.90	60	16.85	17	4.78	**356**	**100.00**
Members in Family-										
Members in Family<=3	48	25.13	111	58.12	25	13.09	7	3.66	**191**	**100.00**
Members in Family 3-5	88	22.17	239	60.20	48	12.09	22	5.54	**397**	**100.00**
Members in Family>5	28	13.21	141	66.51	33	15.57	10	4.72	**212**	**100.00**

Among the Project Village Adopters of ICS, around 76 percent families belonged to the Scheduled Tribes, among the Project Village Non-Adopters of ICS, 63 percent families belonged to the Scheduled Tribes and among the Control Village Non-Adopters of ICS, around 54 percent families belonged to the Scheduled Tribes.

Among the families using all TCS, ICS & LPG, around 78 percent families belonged to the Scheduled Tribes, while among the families using TCS & ICS, more than 72 percent families belonged to the Scheduled Tribes and among the families using TCS only, around 56 percent families belonged to the Scheduled Tribes.

Among the small size families (<=3 members), 58 percent families belonged to the Scheduled Tribes, while among the medium size families (3-5 members), 60 percent families belonged to the Scheduled Tribes. Among the large size families (> members), around 67 percent families belonged to the Scheduled Tribes.

2.4 Main Occupation of the Adult Males (>=18 yrs.)

Taking both districts together, main occupation of more than 49 percent adult males (>=18 yrs. age) was agriculture, while main occupation of more than 17 percent adult males was non-agriculture labour.

Table-5 : Main Occupation of Adult Males (>=18 yrs.)

Classification	Jashpur		Kandhamal		Overall	
	n	%	n	%	N	%
Agriculture	349	51.47	293	46.81	**642**	**49.23**
Non-Agriculture Labour	100	14.75	127	20.29	**227**	**17.41**
Student	59	8.70	61	9.74	**120**	**9.20**
Agriculture Labour	47	6.93	39	6.23	**86**	**6.60**
Pensioner	26	3.83	48	7.67	**74**	**5.67**
Service	31	4.57	23	3.67	**54**	**4.14**
Business	17	2.51	4	0.64	**21**	**1.61**
Professional	3	0.44	2	0.32	**5**	**0.38**
No Work	46	6.78	29	4.63	**75**	**5.75**
Total	**678**	**100.00**	**626**	**100.00**	**1304**	**100.00**

Further, overall, more than 9 percent adult males were students, while main occupation of around 7 percent adult males was agriculture labour. Around 6 percent adult males had no work. Details are presented in Annexure-5.

2.5 Main Occupation of the Adult Females (>=18 yrs.)

Taking both districts together, main occupation of half (50 percent) adult females (>=18 yrs. age) was household work, while main occupation of around 13 percent adult females was agriculture.

Table-6 : Main Occupation of Adult Females (>=18 yrs.)

Classification	Jashpur		Kandhamal		Overall	
	n	%	n	%	N	%
Household Work	348	53.29	287	46.44	**635**	**49.96**
Agriculture	149	22.82	10	1.62	**159**	**12.51**
Student	65	9.95	49	7.93	**114**	**8.97**
Agriculture Labour	8	1.23	96	15.53	**104**	**8.18**
Non-Agriculture Labour	9	1.38	74	11.97	**83**	**6.53**
Pensioner	30	4.59	52	8.41	**82**	**6.45**
Service	14	2.14	14	2.27	**28**	**2.20**
Business	4	0.61	0	0.00	**4**	**0.31**
No Work	26	3.98	36	5.83	**62**	**4.88**
Total	**653**	**100.00**	**618**	**100.00**	**1271**	**100.00**

Further, overall, another 9 percent adult females were students, while main occupation of another 8 percent adult females was agriculture labour. Around 5 percent adult females had no work. Details are presented in Annexure-6.

2.6 Average Annual Family Income

Taking both districts together, average annual family income of 62 percent families was below Rs. 60,000/-, while average annual family income of another 29 percent families was between Rs. 60,001/- to Rs. 1,20,000/-.

Table-7 : Average Annual Family Income

Classification	Jashpur		Kandhamal		Overall	
	n	%	n	%	N	%
Below Rs. 60,000/-	270	67.50	226	56.50	**496**	**62.00**
Between Rs. 60,001/- to Rs. 1,20,000/-	95	23.75	137	34.25	**232**	**29.00**
Between Rs. 1,20,001 to Rs. 1,80,000/-	16	4.00	21	5.25	**37**	**4.63**
Between Rs. 1,80,001/- to Rs. 2,40,000/-	5	1.25	8	2.00	**13**	**1.63**
Above Rs. 2,40,000/-	14	3.50	8	2.00	**22**	**2.75**
Total	**400**	**100.00**	**400**	**100.00**	**800**	**100.00**

The average annual family income of around 5 percent families was between Rs. 1,20,001 to Rs. 1,80,000/-. The average annual family income of 4 percent families was above Rs. 1,80,000/-. Details are given in Annexure-7.

2.7 Sources of Family Income

Taking both districts together, more than 42 percent family income comes from agriculture, while more than 25 percent family income comes from non-agriculture labour.

Table-8 : Sources of Family Income

Classification	Jashpur		Kandhamal		Overall	
	n	%	n	%	N	%
Agriculture	11709400	46.25	11200000	39.17	**22909400**	**42.49**
Non-Agriculture Labour	4274400	16.88	9468200	33.11	**13742600**	**25.49**
Service	5635000	22.26	3855420	13.48	**9490420**	**17.60**
Agriculture Labour	1666200	6.58	2087700	7.30	**3753900**	**6.96**
Pension	835500	3.30	1569500	5.49	**2405000**	**4.46**
Business	848500	3.35	336000	1.17	**1184500**	**2.20**
Professional	348000	1.37	80000	0.28	**428000**	**0.79**
Total	**25317000**	**100.00**	**28596820**	**100.00**	**53913820**	**100.00**

Further, overall, around 18 percent family income comes from service and 9 percent family income comes from agriculture labour. Details are given in Annexure-8.

2.8 Education Status of Adult Males (>=18 yrs.)

Taking both districts together, 11 percent adult males were illiterate, while 7 percent adult males were literate but had no formal education. More than 11 percent adult males were educated upto primary school level and 20 percent adult males were educated upto middle school level.

Table-9 : Education Status of Adult Males (>=18 yrs.)

Classification	Jashpur		Kandhamal		Overall	
	n	%	n	%	N	%
Illiterate	96	14.16	48	7.67	**144**	**11.04**
Literate but No Formal Edu.	32	4.72	60	9.58	**92**	**7.06**
Primary School Pass	67	9.88	79	12.62	**146**	**11.20**
Middle School Pass	150	22.12	111	17.73	**261**	**20.02**
High School Pass	158	23.30	207	33.07	**365**	**27.99**
Intermediate Pass	132	19.47	79	12.62	**211**	**16.18**
Graduate & Above	43	6.34	42	6.71	**85**	**6.52**
Total	**678**	**100.00**	**626**	**100.00**	**1304**	**100.00**

Further, overall, 28 percent adult males were educated upto high school level and 16 percent adult males were educated upto intermediate level. Around 7 percent adult males were graduate or above. Details are given in Annexure-9.

2.9 Education Status of Adult Females (>=18 yrs.)

Taking both districts together, 26 percent adult females were illiterate; while around 12 percent adult females were literate but had no formal education. Around 11 percent adult females were educated upto primary school level and around 13 percent adult females were educated upto middle school level.

Table-10 : Education Status of Adult Females (>=18 yrs.)

Classification	Jashpur		Kandhamal		Overall	
	n	%	n	%	N	%
Illiterate	166	25.42	165	26.70	**331**	**26.04**
Literate but No Formal Edu.	49	7.50	101	16.34	**150**	**11.80**
Primary School Pass	63	9.65	76	12.30	**139**	**10.94**
Middle School Pass	110	16.85	53	8.58	**163**	**12.82**
High School Pass	124	18.99	129	20.87	**253**	**19.91**
Intermediate Pass	106	16.23	60	9.71	**166**	**13.06**
Graduate & Above	35	5.36	34	5.50	**69**	**5.43**
Total	**653**	**100.00**	**618**	**100.00**	**1271**	**100.00**

Further, overall, there 20 percent adult females were educated upto high school level and 13 percent adult females were educated upto intermediate level. More than 5 percent adult females were graduate or above. Details are given in Annexure-10.

3
Types of Chulha Available, its Use & Perception

3.1 Types of Chulha Available in the House

Taking both districts together, all families had TCS at home, while around 67 percent families had LPG connection at home. In district Jashpur, more than 71 percent families had LPG connection, while in district Kandhamal, more than 62 percent families had LPG connection.

Table-11 : Types of Chulha Available in the House

Classification	Families Having TCS		Families Having ICS		Families Having LPG		Total	
	n	%	n	%	n	%	N	%
Jashpur	400	100.00	100	25.00	285	71.25	**400**	**100.00**
Kandhamal	400	100.00	100	25.00	249	62.25	**400**	**100.00**
Overall	**800**	**100.00**	**200**	**25.00**	**534**	**66.75**	**800**	**100.00**
Category of Respondents-								
Project Village:Adopters	200	100.00	200	100.00	158	79.00	**200**	**100.00**
Project Village:Non-Adopters	200	100.00	0	0.00	132	66.00	**200**	**100.00**
Control Village:Non-Adopters	400	100.00	0	0.00	244	61.00	**400**	**100.00**

Among the Project Village Adopters of ICS, 79 percent families had LPG connection, among the Project Village Non-Adopters of ICS, 66 percent families had LPG connection and among the Control Village Non-Adopters of ICS, 61 percent families had LPG connection. Almost all the families possessing LPG connection had got it under the Ujjwala Scheme of the Government.

3.2 Use of Chulha by the Family

(A) Families Using TCS at Home

Taking both districts together, almost Aall (98 percent) families having TCS at home were using the TCS for cooking food, while remaining 2 percent families having TCS at home were not using it. Such families were using either LPG or ICS or both. In district Jashpur, 99 percent families having TCS were using it for cooking food, while in district Kandhamal, more than 96 percent families having TCS were using it for cooking food.

Among the Project Village Adopters of ICS families, 94 percent families having TCS were using it for cooking food, among the Project Village Non-Adopters of ICS families and the Control Village Non-Adopters of ICS families, almost all (99 percent) families having TCS were using it for cooking food.

Table-12 : Families Using TCS at Home

Classification	Families Using TCS		Families Not Using TCS		Total	
	n	%	n	%	N	%
Jashpur	395	98.75	5	1.25	**400**	**100.00**
Kandhamal	385	96.25	15	3.75	**400**	**100.00**
Overall	780	97.50	20	2.50	**800**	**100.00**
Category of Respondents-						
Project Village:Adopters	188	94.00	12	6.00	**200**	**100.00**
Project Village:Non-Adopters	197	98.50	3	1.50	**200**	**100.00**
Control Village:Non-Adopters	395	98.75	5	1.25	**400**	**100.00**

(B) Families Using ICS at Home

Taking both districts together, all the families having ICS at home were using the ICS for cooking food.

(C) Families Using LPG at Home

Taking both districts together, almost 62 percent families having LPG connection at home were using the LPG stove for cooking food, while remaining 38 percent families having LPG connection at home were not using it. In district Jashpur, more than 71 percent families having LPG connection at home were using it for cooking food, while in district Kandhamal, 51 percent families having LPG connection at home were using it for cooking food.

As stated above, most of the families that possessed an LPG connection had got it under the Ujjwala Scheme of the Government and after using the first LPG cylinder which they had got free of cost alongwith the connection, did not get it refilled, primarily due to paucity of money.

Table-13 : Families Using LPG at Home

Classification	Families Using LPG		Families Not Using LPG		Total	
	n	%	n	%	N	%
Jashpur	203	71.23	82	28.77	**285**	**100.00**
Kandhamal	127	51.00	122	49.00	**249**	**100.00**
Overall	**330**	**61.80**	**204**	**38.20**	**534**	**100.00**
Category of Respondents-						
Project Village:Adopters	88	55.70	70	44.30	**158**	**100.00**
Project Village:Non-Adopters	82	62.12	50	37.88	**132**	**100.00**
Control Village:Non-Adopters	160	65.57	84	34.43	**244**	**100.00**

Among the Project Village Adopters of ICS families, around 56 percent families having LPG connection were using LPG stove for cooking food, among the Project Village Non-Adopters of ICS families, 62 percent families having LPG connection were using LPG stove for cooking food. Similarly, among the Control Village Non-Adopters of ICS families, almost 66 percent families having LPG connection were using LPG stove for cooking food.

3.3 Time Since Chulha being Used by the Family

(A) Families Using TCS at Home

Taking both districts together, almost 94 percent families using TCS were using it for cooking food since more than 12 months time, while more than 3 percent families using TCS at home were using it since last 6 to 12 months time. The remaining 3 percent families were using it since last less than 6 months. In fact, all these families have been using TCS for generations, but they keep repairing & rebuilding it by slaking it with mud and cow-dung. District-wise, there was no difference.

Table-14 : Time Since Families Using TCS at Home

Classification	Using TCS Since <6 Months		Using TCS Since 6-12 Months		Using TCS Since >12 Months		Families Using TCS	
	n	%	n	%	n	%	N	%
Jashpur	10	2.53	18	4.56	367	92.91	**395**	**100.00**
Kandhamal	10	2.60	9	2.34	366	95.06	**385**	**100.00**
Overall	**20**	**2.56**	**27**	**3.46**	**733**	**93.97**	**780**	**100.00**
Category of Respondents-								
Project Village:Adopters	2	1.06	4	2.13	182	96.81	**188**	**100.00**
Project Village:Non-Adopters	10	5.08	4	2.03	183	92.89	**197**	**100.00**
Control Village:Non-Adopters	8	2.03	19	4.81	368	93.16	**395**	**100.00**

(B) Families Using ICS at Home

Taking both districts together, 44 percent families using ICS at home were using it for cooking food since more than 12 months time, while almost 22 percent families using ICS at home were using it since last 6 to 12 months time. The remaining 35 percent families were using it since last less than 6 months.

Table-15 : Time Since Families Using ICS at Home

Classification	Using ICS Since <6 Months		Using ICS Since 6-12 Months		Using ICS Since >12 Months		Families Using ICS	
	n	%	n	%	n	%	N	%
Jashpur	51	51.00	11	11.00	38	38.00	**100**	**100.00**
Kandhamal	18	18.00	32	32.00	50	50.00	**100**	**100.00**
Overall	**69**	**34.50**	**43**	**21.50**	**88**	**44.00**	**200**	**100.00**

In district Jashpur, more than half (51 percent) families using ICS at home were using it for cooking food since less than 6 months time. Another 38 percent families using ICS at home were using it for cooking since last more than 12 months time, while the remaining 11 percent families were using it since last 6 to 12 months time.

In Kandhamal, half (50 percent) families using ICS at home were using it for cooking food since last more than 12 months time. Around one-third (32 percent) families using ICS at

home were using it for cooking since last 6 to 12 months time, while the remaining 18 percent families were using it since last less than 6 months time.

(C) Families Using LPG at Home

Taking both districts together, more than 82 percent families using LPG connection at home were using it for cooking food since more than 12 months time, while almost 10 percent families using LPG connection at home were using it since last 6 to 12 months time. The remaining around 8 percent families were using it since last less than 6 months. District-wise, there was no major difference.

Table-16 : Time Since Families Using LPG at Home

Classification	Using LPG Since <6 Months		Using LPG Since 6-12 Months		Using LPG Since >12 Months		Families Using LPG	
	n	%	n	%	n	%	N	%
Jashpur	11	5.42	18	8.87	174	85.71	**203**	**100.00**
Kandhamal	15	11.81	14	11.02	98	77.17	**127**	**100.00**
Overall	**26**	**7.88**	**32**	**9.70**	**272**	**82.42**	**330**	**100.00**
Category of Respondents-								
Project Village:Adopters	3	3.41	7	7.95	78	88.64	**88**	**100.00**
Project Village:Non-Adopters	9	10.98	6	7.32	67	81.71	**82**	**100.00**
Control Village:Non-Adopters	14	8.75	19	11.88	127	79.38	**160**	**100.00**

3.4 Frequency of Use of Different Chulha in Last 1 Week

(A) Families Using TCS at Home

Taking both districts together, around 81 percent families using TCS at home reported using it two times a day during the last 1 week, while 18 percent families reported using it one time a day during the last 1 week. In the rural areas, food is generally cooked two times a day – one in the morning and second in the evening. This shows that the TCS is the primary stove for cooking food in the area.

In district Jashpur, around 84 percent families using TCS at home reported using it two times a day during the last 1 week, while around 14 percent families reported using it one time a day during the last 1 week. Similarly, in district Kandhamal, more than 74 percent families using TCS at home reported using it two times a day during the last 1 week, while around 23 percent families reported using it one time a day during the last 1 week.

Among the Project Village Adopters of ICS families, more around 80 percent families using TCS at home reported using it two times a day during the last 1 week, while around 24 percent families reported using it one time a day during the last 1 week. Among the Project Village Non-Adopters of ICS families, more than 80 percent families using TCS at home reported using it two times a day during the last 1 week. Similarly, among the Control Village

Non-Adopters of ICS families, 81 percent families using TCS at home reported using it two times a day during the last 1 week.

Table-17 : Frequency of Use of TCS in Last 1 Week

Classification	Three Times a Day		Two Times a Day		One Time a Day		Rarely		Total	
	n	%	n	%	n	%	n	%	N	%
Jashpur	3	0.76	331	83.80	54	13.67	7	1.77	**395**	**100.00**
Kandhamal	0	0.00	298	77.40	87	22.60	0	0.00	**385**	**100.00**
Overall	**3**	**0.38**	**629**	**80.64**	**141**	**18.08**	**7**	**0.90**	**780**	**100.00**
Category of Respondents-										
Project Village:Adopters	0	0.00	150	79.79	31	16.49	7	3.72	**188**	**100.00**
Project Village:Non-Adopters	1	0.51	158	80.20	38	19.29	0	0.00	**197**	**100.00**
Control Village:Non-Adopters	2	0.51	321	81.27	72	18.23	0	0.00	**395**	**100.00**
Category of Users-										
Families Using TCS,ICS,LPG	0	0.00	52	68.42	18	23.68	6	7.89	**76**	**100.00**
Families Using TCS & ICS	0	0.00	98	87.50	13	11.61	1	0.89	**112**	**100.00**
Families Using TCS only	2	0.56	288	80.90	66	18.54	0	0.00	**356**	**100.00**
Members in Family-										
Members in Family<=3	1	0.53	140	74.47	44	23.40	3	1.60	**188**	**100.00**
Members in Family 3-5	2	0.52	308	79.59	74	19.12	3	0.78	**387**	**100.00**
Members in Family>5	0	0.00	181	88.29	23	11.22	1	0.49	**205**	**100.00**

Among the small size families, more than 74 percent families using TCS at home reported using it two times a day during the last 1 week, while among the medium size families, around 80 percent families reported using it two times a day during the last 1 week. Among the large size families, more than 88 percent families using TCS at home reported using it two times a day during the last 1 week.

(B) Families Using ICS at Home

Taking both districts together, around 70 percent families using ICS at home reported using it one time a day during the last 1 week, while 19 percent families reported using it two times a day during the last 1 week. Around 12 percent families rarely used the ICS during the last one week.

In district Jashpur, 72 percent families using ICS at home reported using it one time a day during the last 1 week, while 12 percent families reported using it two times a day during the last 1 week. Similarly, in district Kandhamal, 67 percent families using ICS at home reported using it one time a day during the last 1 week, while 26 percent families reported using it two times a day during the last 1 week.

Table-18 : Frequency of Use of ICS in Last 1 Week

Classification	Two Times a Day		One Time a Day		Rarely		Total	
	n	%	n	%	n	%	N	%
Jashpur	12	12.00	72	72.00	16	16.00	**100**	**100.00**
Kandhamal	26	26.00	67	67.00	7	7.00	**100**	**100.00**
Overall	**38**	**19.00**	**139**	**69.50**	**23**	**11.50**	**200**	**100.00**
Category of Respondents-								
Project Village:Adopters	38	19.00	139	69.50	23	11.50	**200**	**100.00**
Project Village:Non-Adopters	0	0.00	0	0.00	0	0.00	**0**	**0.00**
Control Village:Non-Adopters	0	0.00	0	0.00	0	0.00	**0**	**0.00**
Category of Users-								
Families Using TCS,ICS,LPG	13	17.11	57	75.00	6	7.89	**76**	**100.00**
Families Using TCS & ICS	23	20.54	76	67.86	13	11.61	**112**	**100.00**
Families Using TCS only	0	0.00	0	0.00	0	0.00	**0**	**0.00**
Members in Family-								
Members in Family<=3	10	25.00	25	62.50	5	12.50	**40**	**100.00**
Members in Family 3-5	16	15.84	74	73.27	11	10.89	**101**	**100.00**
Members in Family>5	12	20.34	40	67.80	7	11.86	**59**	**100.00**

Among the small size families, around 63 percent families using ICS at home reported using it one time a day during the last 1 week, while among the medium size families, more than 73 percent families reported using it one time a day during the last 1 week. Among the large size families, around 68 percent families using ICS at home reported using it one time a day during the last 1 week.

(C) Families Using LPG at Home

Taking both districts together, more than half (51 percent families) using LPG at home reported using it one time a day during the last 1 week, while more than 31 percent families reported using it two times a day during the last 1 week.

In district Jashpur, half (50 percent) families using LPG at home reported using it one time a day during the last 1 week, while 31 percent families reported using it two times a day during the last 1 week. Similarly, in district Kandhamal, around 54 percent families using LPG at home reported using it one time a day during the last 1 week, while around 31 percent families reported using it two times a day during the last 1 week.

Among the small size families, around 57 percent families using LPG at home reported using it one time a day during the last 1 week, while among the medium size families, around 53 percent families reported using it one time a day during the last 1 week. Among the large size families, 45 percent families using LPG at home reported using it one time a day during the last 1 week.

Table-19 : Frequency of Use of LPG in Last 1 Week

Classification	Three Times a Day		Two Time a Day		One Time a Day		Rarely		Total	
	n	%	n	%	n	%	n	%	N	%
Jashpur	3	1.48	63	31.03	101	49.75	36	17.73	**203**	**100.00**
Kandhamal	0	0.00	40	31.50	68	53.54	19	14.96	**127**	**100.00**
Overall	**3**	**0.91**	**103**	**31.21**	**169**	**51.21**	**55**	**16.67**	**330**	**100.00**
Category of Respondents-										
Project Village:Adopters	1	1.14	27	30.68	17	19.32	43	48.86	**88**	**100.00**
Project Village:Non-Adopters	1	1.22	33	40.24	43	52.44	5	6.10	**82**	**100.00**
Control Village:Non-Adopters	1	0.63	43	26.88	109	68.13	7	4.38	**160**	**100.00**
Category of Users-										
Families Using TCS,ICS,LPG	1	1.32	16	21.05	16	21.05	43	56.58	**76**	**100.00**
Families Using TCS & ICS	0	0.00	0	0.00	0	0.00	0	0.00	**0**	**0.00**
Families Using TCS only	0	0.00	0	0.00	0	0.00	0	0.00	**0**	**0.00**
Members in Family-										
Members in Family<=3	1	1.54	19	29.23	37	56.92	8	12.31	**65**	**100.00**
Members in Family 3-5	2	1.20	48	28.74	88	52.69	29	17.37	**167**	**100.00**
Members in Family>5	0	0.00	36	36.73	44	44.90	18	18.37	**98**	**100.00**

3.5 Most Affordable Chulha for the Families

Taking both districts together, almost 85 percent families said that for them TCS was the most affordable chulha, while 9 percent families said that ICS was the most affordable chulha. There were 4 percent families that said that LPG was the most affordable chulha for them.

Table-20 : Most Affordable Chulha for the Families

Classification	Most Affordable Chulha is TCS		Most Affordable Chulha is ICS		Most Affordable Chulha is LPG		Total	
	n	%	n	%	n	%	N	%
Jashpur	360	90.00	9	2.25	16	4.00	**400**	**100.00**
Kandhamal	318	79.50	63	15.75	17	4.25	**400**	**100.00**
Overall	**678**	**84.75**	**72**	**9.00**	**33**	**4.13**	**800**	**100.00**
Category of Respondents-								
Project Village:Adopters	123	61.50	72	36.00	5	2.50	**200**	**100.00**
Project Village:Non-Adopters	190	95.00	0	0.00	8	4.00	**200**	**100.00**
Control Village:Non-Adopters	365	91.25	0	0.00	20	5.00	**400**	**100.00**
Category of Users-								
Families Using TCS,ICS,LPG	55	72.37	17	22.37	4	5.26	**76**	**100.00**
Families Using TCS & ICS	62	55.36	49	43.75	1	0.89	**112**	**100.00**
Families Using TCS only	338	94.94	0	0.00	2	0.56	**356**	**100.00**
Members in Family-								
Members in Family<=3	164	85.86	14	7.33	8	4.19	**191**	**100.00**
Members in Family 3-5	337	84.89	36	9.07	15	3.78	**397**	**100.00**
Members in Family>5	177	83.49	22	10.38	10	4.72	**212**	**100.00**

In district Jashpur, 90 percent families said that for them, TCS was the most affordable chulha, while 4 percent families said that LPG was the most affordable chulha. There were 2 percent families that said that ICS was the most affordable chulha for them. Similarly, in district Kandhamal, around 80 percent families said that for them, TCS was the most affordable chulha, while 16 percent families said that ICS was the most affordable chulha. There were 4 percent families that said that LPG was the most affordable chulha for them.

Among the Project Village Adopters of ICS families, around 62 percent families said that for them, TCS was the most affordable chulha, while 36 percent families said that ICS was the most affordable chulha. Among the Project Village Non-Adopters of ICS, 95 percent families said that for them TCS was the most affordable chulha. Similarly, among the Control Village Non-Adopters, more than 91 percent families said that TCS was the most affordable chulha.

3.6 Most Efficient Chulha According to the Families

Taking both districts together, almost 47 percent families said that LPG was the most efficient chulha in terms of time taken to cook food, while more than 35 percent families said that TCS was the most efficient chulha. There were 13 percent families that said that ICS was the most efficient chulha in terms of time taken to cook food.

Table-21 : Most Efficient Chulha According to the Families

Classification	Most Efficient Chulha is TCS		Most Efficient Chulha is ICS		Most Efficient Chulha is LPG		Total	
	n	%	n	%	n	%	N	%
Jashpur	108	27.00	43	10.75	211	52.75	**400**	**100.00**
Kandhamal	173	43.25	62	15.50	164	41.00	**400**	**100.00**
Overall	**281**	**35.13**	**105**	**13.13**	**375**	**46.88**	**800**	**100.00**
Category of Respondents-								
Project Village:Adopters	7	3.50	104	52.00	89	44.50	**200**	**100.00**
Project Village:Non-Adopters	91	45.50	1	0.50	103	51.50	**200**	**100.00**
Control Village:Non-Adopters	183	45.75	0	0.00	183	45.75	**400**	**100.00**
Category of Users-								
Families Using TCS,ICS,LPG	4	5.26	28	36.84	44	57.89	**76**	**100.00**
Families Using TCS & ICS	3	2.68	74	66.07	35	31.25	**112**	**100.00**
Families Using TCS only	241	67.70	1	0.28	76	21.35	**356**	**100.00**
Members in Family-								
Members in Family<=3	74	38.74	24	12.57	82	42.93	**191**	**100.00**
Members in Family 3-5	142	35.77	59	14.86	174	43.83	**397**	**100.00**
Members in Family>5	65	30.66	22	10.38	119	56.13	**212**	**100.00**

Among the Project Village Adopters of ICS families, 52 percent families said that ICS was the most efficient chulha in terms of time taken to cook food, while around 45 percent families said that LPG was the most efficient chulha.

Among the families using all TCS, ICS & LPG, 58 percent families said that LPG was the most efficient chulha in terms of time taken to cook food, while among the families using TCS & ICS, 66 percent families said that ICS was the most efficient chulha.

Among the small size families, around 43 percent families said that LPG was the most efficient chulha in terms of time taken to cook food, while among the medium size families around 44 percent families said that LPG was the most efficient chulha. Among the large size families also, more than 56 percent families said that LPG was the most efficient chulha.

3.7 Most Convenient Chulha According to the Families

Taking both districts together, more than 48 percent families said that TCS was the most convenient chulha to cook food, while one-third (33 percent) families said that LPG was the most convenient chulha. There were more than 16 percent families that said that ICS was the most convenient chulha to cook food.

Table-22 : Most Convenient Chulha According to the Families

Classification	Most Convenient Chulha is TCS		Most Convenient Chulha is ICS		Most Convenient Chulha is LPG		Total	
	n	%	n	%	n	%	N	%
Jashpur	143	35.75	47	11.75	188	47.00	**400**	**100.00**
Kandhamal	243	60.75	83	20.75	74	18.50	**400**	**100.00**
Overall	**386**	**48.25**	**130**	**16.25**	**262**	**32.75**	**800**	**100.00**
Category of Respondents-								
Project Village:Adopters	13	6.50	130	65.00	57	28.50	**200**	**100.00**
Project Village:Non-Adopters	120	60.00	0	0.00	73	36.50	**200**	**100.00**
Control Village:Non-Adopters	253	63.25	0	0.00	132	33.00	**400**	**100.00**
Category of Users-								
Families Using TCS,ICS,LPG	4	5.26	39	51.32	33	43.42	**76**	**100.00**
Families Using TCS & ICS	9	8.04	84	75.00	19	16.96	**112**	**100.00**
Families Using TCS only	292	82.02	0	0.00	46	12.92	**356**	**100.00**
Members in Family-								
Members in Family<=3	102	53.40	29	15.18	54	28.27	**191**	**100.00**
Members in Family 3-5	194	48.87	64	16.12	130	32.75	**397**	**100.00**
Members in Family>5	90	42.45	37	17.45	78	36.79	**212**	**100.00**

In district Jashpur, more than 47 percent families said that LPG was the most convenient chulha to cook food, while around 36 percent families said that TCS was the most convenient chulha and around 12 percent families said that ICS was the most convenient chulha to cook food. In district Kandhamal, almost 61 percent families said that TCS was the most convenient chulha to cook food, while 21 percent families said that ICS was the most convenient chulha and around 19 percent families said that LPG was the most convenient chulha to cook food.

Among the Project Village Adopters of ICS families, 65 percent families said that ICS was the most convenient chulha to cook food, while among the Project Village Non-Adopters of ICS families, 60 percent families said that TCS was the most convenient chulha and among the Control Village Non-Adopters of ICS families, more than 63 percent families said that TCS was the most convenient chulha to cook food.

3.8 Most Economical Chulha According to the Families

Taking both districts together, more than almost 78 percent families said that TCS was the most economical chulha to cook food, while around 20 percent families said that ICS was the most economical chulha. There were 1 percent families that said that LPG was the most economical chulha to cook food.

In district Jashpur, around 83 percent families said that TCS was the most economical chulha to cook food, while around 17 percent families said that ICS was the most economical chulha. There were 1 percent families that said that LPG was the most economical chulha to cook food. In district Kandhamal, 74 percent families said that TCS was the most economical chulha to cook food, while 23 percent families said that ICS was the most economical chulha. There were 2 percent families that said that LPG was the most economical chulha to cook food.

Table-23 : Most Economical Chulha According to the Families

Classification	Most Economical Chulha is TCS		Most Economical Chulha is ICS		Most Economical Chulha is LPG		Total	
	n	%	n	%	n	%	N	%
Jashpur	331	82.75	66	16.50	3	0.75	**400**	**100.00**
Kandhamal	296	74.00	93	23.25	7	1.75	**400**	**100.00**
Overall	**627**	**78.38**	**159**	**19.88**	**10**	**1.25**	**800**	**100.00**
Category of Respondents-								
Project Village:Adopters	42	21.00	157	78.50	1	0.50	**200**	**100.00**
Project Village:Non-Adopters	194	97.00	2	1.00	3	1.50	**200**	**100.00**
Control Village:Non-Adopters	391	97.75	0	0.00	6	1.50	**400**	**100.00**
Category of Users-								
Families Using TCS,ICS,LPG	15	19.74	60	78.95	1	1.32	**76**	**100.00**
Families Using TCS & ICS	26	23.21	86	76.79	0	0.00	**112**	**100.00**
Families Using TCS only	349	98.03	1	0.28	3	0.84	**356**	**100.00**
Members in Family-								
Members in Family<=3	156	81.68	32	16.75	2	1.05	**191**	**100.00**
Members in Family 3-5	311	78.34	79	19.90	6	1.51	**397**	**100.00**
Members in Family>5	160	75.47	48	22.64	2	0.94	**212**	**100.00**

Among the Project Village Adopters of ICS families, around 79 percent families said that ICS was the most economical chulha to cook food, while among the Project Village Non-Adopters of ICS families, 97 percent families said that TCS was the most economical chulha and among the Control Village Non-Adopters of ICS families, almost 98 percent families said that TCS was the most economical chulha to cook food.

Among the families using all TCS, ICS & LPG, almost 76 percent families said that ICS was the most economical chulha to cook food, while among the families using TCS & ICS, around 77 percent families said that ICS was the most economical chulha. Among the families using TCS only, almost all (98 percent) families said that TCS was the most economical chulha.

3.9 Average Life of Chulha According to the Families

(A) About TCS

Taking both districts together, around 65 percent families said that the average life of their TCS was 2-5 years time, while 17 percent families said that the average life of their TCS was less than 2 years. There were more than 18 percent families that said that the average life of their TCS was long (beyond 5 years) and that they could not specify the exact duration.

In district Jashpur, 78 percent families said that the average life of their TCS was 2-5 years time, while around 20 percent families said that the average life of their TCS was less than 2 years. There were 2 percent families that said that the average life of their TCS was long (beyond 5 years) and that they could not specify the exact duration.

In district Kandhamal, more than 51 percent families said that the average life of their TCS was 2-5 years time, while around 15 percent families said that the average life of their TCS was less than 2 years. There were more than 34 percent families that said that the average life of their TCS was long (beyond 5 years) and that they could not specify the exact duration.

Table-24 : Average Life of TCS According to the Families

Classification	Less than 2 Yrs.		2-5 Yrs.		Don't Know		Total	
	n	%	n	%	n	%	N	%
Jashpur	79	19.75	312	78.00	9	2.25	**400**	**100.00**
Kandhamal	58	14.50	205	51.25	137	34.25	**400**	**100.00**
Overall	**137**	**17.13**	**517**	**64.63**	**146**	**18.25**	**800**	**100.00**

(B) About ICS

Taking both districts together, more than 78 percent families said that they have only recently started using the ICS hence, were not in a position to specify the expected life of their ICS. However, more than 20 percent families said that they expected that the average life of their

ICS was 2-5 years time, while around 2 percent families said that the average life of their TCS was expected to be less than 2 years. District-wise there was no difference.

Table-25 : Average Life of ICS According to the Families

Classification	Less than 2 Yrs.		2-5 Yrs.		Don't Know		Total	
	n	%	n	%	n	%	N	%
Jashpur	10	2.50	68	17.00	322	80.50	**400**	**100.00**
Kandhamal	2	0.50	94	23.50	304	76.00	**400**	**100.00**
Overall	**12**	**1.50**	**162**	**20.25**	**626**	**78.25**	**800**	**100.00**

(C) About LPG

Taking both districts together, 64 percent families said that they had no idea of the expected life of the LPG stove. However, 33 percent families said that the expected average life of their LPG stove was 2-5 years time, while 3 percent families said that the expected average life of their LPG stove was less than 2 years.

In district Jashpur, 48 percent families said that they had no idea of the expected life of the LPG stove. However, 46 percent families said that the expected average life of their LPG stove was 2-5 years time, while 6 percent families said that the expected average life of their LPG stove was less than 2 years.

In district Kandhamal, 80 percent families said that they had no idea of the expected life of the LPG stove. However, 20 percent families said that the expected average life of their LPG stove was 2-5 years time.

Table-26 : Average Life of LPG Stove According to the Families

Classification	Less than 2 Yrs.		2-5 Yrs.		Don't Know		Total	
	n	%	n	%	n	%	N	%
Jashpur	24	6.00	184	46.00	192	48.00	**400**	**100.00**
Kandhamal	0	0.00	80	20.00	320	80.00	**400**	**100.00**
Overall	**24**	**3.00**	**264**	**33.00**	**512**	**64.00**	**800**	**100.00**

3.10 Average Annual Maintenance Cost of Chulha for the Families

None of the families said that they incurred any cost on repair & maintenance of their TCS as it was self made at home using bricks and slaking it with mud paste and cow dung paste. Whenever, it required any repair or maintenance, the family would take care of it themselves. In case of ICS, all the families said that they had started using the ICS only recently (most of them for less than one year) and there was no case of need for repair & maintenance of their ICS.

In case of LPG chulha, out of the total 800 families, only 330 families were using LPG. Out of these 330 LPG using families, only 7 families said that they incurred money on sundry repair & maintenance of their LPG stove. All such families spent an amount below Rs. 500/- on the repair & maintenance of their LPG stove in the last one year.

4
Place of Cooking & Cooking Practices

4.1 Type of Kitchen in the House

Taking both districts together, in around 56 percent homes, the kitchen had no ventilation, while in the remaining 44 percent homes, the kitchen had ventilation. In district Jashpur, in 68 percent homes, the kitchen had no ventilation, while in the remaining 32 percent homes, the kitchen had ventilation. On the contrary, in district Kandhamal, in more than 43 percent homes, the kitchen had no ventilation, while in the remaining 57 percent homes, the kitchen had ventilation.

Table-27 : Type of Kitchen in the House

Classification	Kitchen With Ventilation		Kitchen With No Ventilation		Total	
	n	%	n	%	N	%
Jashpur	128	32.00	272	68.00	**400**	**100.00**
Kandhamal	227	56.75	173	43.25	**400**	**100.00**
Overall	**355**	**44.38**	**445**	**55.63**	**800**	**100.00**

4.2 Adult Males Present in Kitchen when Food is Cooking

Taking both districts together, around 90 percent adult males were never present in the kitchen when food was cooking, while remaining 10 percent adult males were reported to be present in the kitchen when food was cooking.

Table-28 : Adult Males (>=18 yrs.) Present in Kitchen when Food is Cooking

Classification	Present in Kitchen		Not Present in Kitchen		Total	
	n	%	n	%	N	%
Jashpur	84	12.39	594	87.61	**678**	**100.00**
Kandhamal	49	7.83	577	92.17	**626**	**100.00**
Overall	**133**	**10.20**	**1171**	**89.80**	**1304**	**100.00**
Category of Respondents-						
Project Village:Adopters	38	11.55	291	88.45	**329**	**100.00**
Project Village:Non-Adopters	38	11.88	282	88.13	**320**	**100.00**
Control Village:Non-Adopters	57	8.70	598	91.30	**655**	**100.00**

4.3 Adult Females Present in Kitchen when Food is Cooking

Taking both districts together, around 79 percent adult females were present in the kitchen when food was cooking, while remaining 21 percent adult females were reported not to be present in the kitchen when food was cooking.

In district Jashpur, around 83 percent adult females were present in the kitchen when food was cooking, while 17 percent adult females were reported not to be present in the kitchen when food was cooking. In district Kandhamal, 75 percent adult females were present in the kitchen when food was cooking, while remaining 25 percent adult females were reported not to be present in the kitchen when food was cooking.

Table-29 : Adult Females (>=18 yrs.) Present in Kitchen when Food is Cooking

Classification	Present in Kitchen		Not Present in Kitchen		Total	
	n	%	n	%	N	%
Jashpur	539	82.54	114	17.46	**653**	**100.00**
Kandhamal	464	74.96	155	25.04	**619**	**100.00**
Overall	**1003**	**78.85**	**269**	**21.15**	**1272**	**100.00**
Category of Respondents-						
Project Village:Adopters	251	76.52	77	23.48	**328**	**100.00**
Project Village:Non-Adopters	265	80.06	66	19.94	**331**	**100.00**
Control Village:Non-Adopters	487	79.45	126	20.55	**613**	**100.00**

4.4 Minor Males Present in Kitchen when Food is Cooking

Taking both districts together, almost all (98 percent) minor males were not present in the kitchen when food was cooking. District-wise there was no difference.

Table-30 : Minor Males (<18 yrs.) Present in Kitchen when Food is Cooking

Classification	Present in Kitchen		Not Present in Kitchen		Total	
	n	%	n	%	N	%
Jashpur	8	2.91	267	97.09	**275**	**100.00**
Kandhamal	5	1.68	293	98.32	**298**	**100.00**
Overall	**13**	**2.27**	**560**	**97.73**	**573**	**100.00**
Category of Respondents-						
Project Village:Adopters	5	3.33	145	96.67	**150**	**100.00**
Project Village:Non-Adopters	4	2.60	150	97.40	**154**	**100.00**
Control Village:Non-Adopters	4	1.49	265	98.51	**269**	**100.00**

4.5 Minor Females Present in Kitchen when Food is Cooking

Taking both districts together, 88 percent minor females were not present in the kitchen when food was cooking, while remaining 12 percent minor females were reported to be present in the kitchen when food was cooking.

Table-31 : Minor Females (<18 yrs.) Present in Kitchen when Food is Cooking

Classification	Present in Kitchen		Not Present in Kitchen		Total	
	n	%	n	%	N	%
Jashpur	46	16.03	241	83.97	**287**	**100.00**
Kandhamal	19	7.42	237	92.58	**256**	**100.00**
Overall	**65**	**11.97**	**478**	**88.03**	**543**	**100.00**
Category of Respondents-						
Project Village:Adopters	23	16.08	120	83.92	**143**	**100.00**
Project Village:Non-Adopters	21	14.00	129	86.00	**150**	**100.00**
Control Village:Non-Adopters	21	8.40	229	91.60	**250**	**100.00**

4.6 Adult Males who Cook Food at Home

Taking both districts together, half (51 percent) adult males were reported to sometimes cook food at home, while remaining half (49 percent) adult males were reported to never cook food at home.

In district Jashpur, more than 36 percent adult males were reported to sometimes cook food at home, while remaining 64 percent adult males were reported to not cook food at home. On the contrary, in district Kandhamal, almost 66 percent adult males were reported to sometimes cook food at home, while remaining 34 percent adult males were reported to not cook food at home.

Table-32 : Adult Males (>=18 yrs.) Who Cook Food at Home

Classification	Sometimes Cook Food		Never Cook Food		Total	
	n	%	n	%	N	%
Jashpur	247	36.43	431	63.57	**678**	**100.00**
Kandhamal	412	65.81	214	34.19	**626**	**100.00**
Overall	**659**	**50.54**	**645**	**49.46**	**1304**	**100.00**
Category of Respondents-						
Project Village:Adopters	149	45.29	180	54.71	**329**	**100.00**
Project Village:Non-Adopters	160	50.00	160	50.00	**320**	**100.00**
Control Village:Non-Adopters	350	53.44	305	46.56	**655**	**100.00**

4.7 Adult Females who Cook Food at Home

Taking both districts together, almost three-fourth (73 percent) adult females were reported to always cook food at home, while around 17 percent adult females were reported to sometimes cook food at home. There were 10 percent adult females who were reported not to cook food at home.

Table-33 : Adult Females (>=18 yrs.) Who Cook Food at Home

Classification	Always Cook Food		Never Cook Food		Never Cook Food		Total	
	n	%	n	%	n	%	N	%
Jashpur	497	76.11	84	12.86	72	11.03	**653**	**100.00**
Kandhamal	437	70.71	126	20.39	55	8.90	**618**	**100.00**
Overall	**934**	**73.49**	**210**	**16.52**	**127**	**9.99**	**1271**	**100.00**
Category of Respondents-								
Project Village:Adopters	230	70.34	57	17.43	40	12.23	**327**	**100.00**
Project Village:Non-Adopters	243	73.41	49	14.80	39	11.78	**331**	**100.00**
Control Village:Non-Adopters	461	75.20	104	16.97	48	7.83	**613**	**100.00**

4.8 Minor Males who Cook Food at Home

Taking both the districts together, 8 percent minor males were reported to sometimes cook food at home, while remaining 92 percent minor males were reported to not cook food at home.

Table-34 : Minor Males (<18 yrs.) Who Cook Food at Home

Classification	Sometimes Cook Food		Never Cook Food		Total	
	n	%	n	%	N	%
Jashpur	16	5.82	259	94.18	**275**	**100.00**
Kandhamal	31	10.40	267	89.60	**298**	**100.00**
Overall	**47**	**8.20**	**526**	**91.80**	**573**	**100.00**
Category of Respondents-						
Project Village:Adopters	10	6.67	140	93.33	**150**	**100.00**
Project Village:Non-Adopters	21	13.64	133	86.36	**154**	**100.00**
Control Village:Non-Adopters	16	5.95	253	94.05	**269**	**100.00**

4.9 Minor Females who Cook Food at Home

Taking both the districts together, around 7 percent minor females were reported to always cook food at home, while around 19 percent minor females were reported to sometimes cook food at home. There were almost three-fourth (74 percent) minor females who were reported to not cook food at home.

Table-35 : Minor Females (<18 yrs.) Who Cook Food at Home

Classification	Always Cook Food		Sometimes Cook Food		Never Cook Food		Total	
	n	%	n	%	n	%	N	%
Jashpur	31	10.80	43	14.98	213	74.22	**287**	**100.00**
Kandhamal	6	2.34	59	23.05	191	74.61	**256**	**100.00**
Overall	**37**	**6.81**	**102**	**18.78**	**404**	**74.40**	**543**	**100.00**
Category of Respondents-								
Project Village:Adopters	9	6.29	25	17.48	109	76.22	**143**	**100.00**
Project Village:Non-Adopters	13	8.67	31	20.67	106	70.67	**150**	**100.00**
Control Village:Non-Adopters	15	6.00	46	18.40	189	75.60	**250**	**100.00**

5
Fuelwood Collecting Practices

5.1 Adult Males Going to Collect Fuelwood from the Forest

Taking both districts together, around half (49 percent) adult males were going to the forest to collect fuelwood, while remaining half (51 percent) adult males were not going to the forest to collect fuelwood.

In district Jashpur, one-third (34 percent) adult males were going to the forest to collect fuelwood, while remaining two-third (66 percent) adult males were not going to the forest to collect fuelwood. On the contrary, in district Kandhamal, two-third (66 percent) adult males were going to the forest to collect fuelwood, while remaining one-third (34 percent) adult males were not going to the forest to collect fuelwood.

Table-36 : Adult Males Going to Collect Fuelwood from the Forest

Classification	Adult Males Going to Collect Fuelwood		Adult Males Not Going to Collect Fuelwood		Total Adult Males	
	n	%	n	%	N	%
Jashpur	229	33.78	449	66.22	**678**	**100.00**
Kandhamal	413	65.97	213	34.03	**626**	**100.00**
Overall	**642**	**49.23**	**662**	**50.77**	**1304**	**100.00**
Category of Respondents-						
Project Village:Adopters	150	45.59	179	54.41	**329**	**100.00**
Project Village:Non-Adopters	165	51.56	155	48.44	**320**	**100.00**
Control Village:Non-Adopters	327	49.92	328	50.08	**655**	**100.00**
Category of Users-						
Families Using TCS,ICS,LPG	56	43.08	74	56.92	**130**	**100.00**
Families Using TCS & ICS	88	49.44	90	50.56	**178**	**100.00**
Families Using TCS only	315	55.65	251	44.35	**566**	**100.00**
Members in Family-						
Members in Family<=3	130	62.20	79	37.80	**209**	**100.00**
Members in Family 3-5	313	51.40	296	48.60	**609**	**100.00**
Members in Family>5	199	40.95	287	59.05	**486**	**100.00**

Among Project Village Adopters of ICS families, 46 percent adult males were going to the forest to collect fuelwood, while remaining 54 percent adult males were not going to the forest to collect fuelwood. Among Project Village Non-Adopters of ICS families, around 52 percent adult males were going to the forest to collect fuelwood, while remaining 48 percent adult males were not going to the forest to collect fuelwood.

Among Control Village Non-Adopters of ICS families, half (50 percent) adult males were going to the forest to collect fuelwood, while remaining half (50 percent) adult males were not going to the forest to collect fuelwood.

Among families using TCS, ICS & LPG, 43 percent adult males were going to the forest to collect fuelwood, while remaining half 57 percent adult males were not going to the forest to collect fuelwood. Among families using TCS & ICS, more than 49 percent adult males were going to the forest to collect fuelwood, while remaining 51 percent adult males were not going to the forest to collect fuelwood. Among families using TCS only, around 56 percent adult males were going to the forest to collect fuelwood, while remaining 44 percent adult males were not going to the forest to collect fuelwood.

Among small size families, more than 62 percent adult males were going to the forest to collect fuelwood, while remaining 38 percent adult males were not going to the forest to collect fuelwood. Among medium size families, more than 51 percent adult males were going to the forest to collect fuelwood, while remaining 49 percent adult males were not going to the forest to collect fuelwood. Among large size families, around 41 percent adult males were going to the forest to collect fuelwood, while remaining 59 percent adult males were not going to the forest to collect fuelwood.

5.2 Adult Females Going to Collect Fuelwood from the Forest

Taking both districts together, around 72 percent adult females were going to the forest to collect fuelwood, while remaining 28 percent adult females were not going to the forest to collect fuelwood.

In district Jashpur, two-third (68 percent) adult females were going to the forest to collect fuelwood, while remaining one-third (32 percent) adult females were not going to the forest to collect fuelwood. Similarly, in district Kandhamal, three-fourth (75 percent) adult females were going to the forest to collect fuelwood, while remaining one-fourth (25 percent) adult females were not going to the forest to collect fuelwood.

Among Project Village Adopters of ICS families, 69 percent adult females were going to the forest to collect fuelwood, while remaining 31 percent adult females were not going to the forest to collect fuelwood. Among Project Village Non-Adopters of ICS families, around 70 percent adult females were going to the forest to collect fuelwood, while remaining 30 percent adult females were not going to the forest to collect fuelwood.

Among Control Village Non-Adopters of ICS families, three-fourth (75 percent) adult females were going to the forest to collect fuelwood, while remaining one-fourth (25 percent) adult females were not going to the forest to collect fuelwood.

Table-37 : Adult Females Going to Collect Fuelwood from the Forest

Classification	Adult Females Going to Collect Fuelwood		Adult Females Not Going to Collect Fuelwood		Total Adult Females	
	n	%	n	%	N	%
Jashpur	443	67.84	210	32.16	**653**	**100.00**
Kandhamal	467	75.44	152	24.56	**619**	**100.00**
Overall	**910**	**71.54**	**362**	**28.46**	**1272**	**100.00**
Category of Respondents-						
Project Village:Adopters	227	69.21	101	30.79	**328**	**100.00**
Project Village:Non-Adopters	231	69.79	100	30.21	**331**	**100.00**
Control Village:Non-Adopters	452	73.74	161	26.26	**613**	**100.00**
Category of Users-						
Families Using TCS,ICS,LPG	90	71.43	36	28.57	**126**	**100.00**
Families Using TCS & ICS	126	69.61	55	30.39	**181**	**100.00**
Families Using TCS only	409	76.88	123	23.12	**532**	**100.00**
Members in Family-						
Members in Family<=3	184	85.19	32	14.81	**216**	**100.00**
Members in Family 3-5	429	73.58	154	26.42	**583**	**100.00**
Members in Family>5	297	62.79	176	37.21	**473**	**100.00**

Among families using TCS, ICS & LPG, 71 percent adult females were going to the forest to collect fuelwood, while remaining half 29 percent adult males were not going to the forest to collect fuelwood. Among families using TCS & ICS, around 70 percent adult females were going to the forest to collect fuelwood, while remaining 30 percent adult females were not going to the forest to collect fuelwood. Among families using TCS only, around 77 percent adult females were going to the forest to collect fuelwood, while remaining 23 percent adult females were not going to the forest to collect fuelwood.

Among small size families, more than 85 percent adult females were going to the forest to collect fuelwood, while remaining 15 percent adult females were not going to the forest to collect fuelwood. Among medium size families, around 74 percent adult females were going to the forest to collect fuelwood, while remaining 26 percent adult females were not going to the forest to collect fuelwood. Among large size families, around 63 percent adult females were going to the forest to collect fuelwood, while remaining 37 percent adult females were not going to the forest to collect fuelwood.

5.3 Minors Going to Collect Fuelwood from the Forest

Taking both districts together, around 5 percent minors were going to the forest to collect fuelwood, while remaining 95 percent minors were not going to the forest to collect fuelwood.

In district Jashpur, 3 percent minors were going to the forest to collect fuelwood, while remaining 97 percent minors were not going to the forest to collect fuelwood. Similarly, in district Kandhamal, 6 percent minors were going to the forest to collect fuelwood, while remaining 94 percent minors were not going to the forest to collect fuelwood.

Table-38 : Minors Going to Collect Fuelwood from the Forest

Classification	Minors Going to Collect Fuelwood		Minors Not Going to Collect Fuelwood		Total Minors	
	n	%	n	%	N	%
Jashpur	17	3.02	545	96.98	**562**	**100.00**
Kandhamal	35	6.32	519	93.68	**554**	**100.00**
Overall	**52**	**4.66**	**1064**	**95.34**	**1116**	**100.00**
Category of Respondents-						
Project Village:Adopters	8	2.73	285	97.27	**293**	**100.00**
Project Village:Non-Adopters	22	7.24	282	92.76	**304**	**100.00**
Control Village:Non-Adopters	22	4.24	497	95.76	**519**	**100.00**
Category of Users-						
Families Using TCS,ICS,LPG	2	1.87	105	98.13	**107**	**100.00**
Families Using TCS & ICS	6	3.53	164	96.47	**170**	**100.00**
Families Using TCS only	29	6.09	447	93.91	**476**	**100.00**
Members in Family-						
Members in Family<=3	3	5.66	50	94.34	**53**	**100.00**
Members in Family 3-5	25	4.38	546	95.62	**571**	**100.00**
Members in Family>5	24	4.88	468	95.12	**492**	**100.00**

Under the study, the average number of visits per week to the forest to collect fuelwood, made by each individual of the family was recorded. This information was recorded for the three major seasons – summer season, rainy season and winter season. For calculating total number of visits by each individual in 1 year, the following method has been followed –

Summer Season : 4 months or 16 weeks – March, April, May, June;
Rainy Season : 3 months or 12 weeks – July, August, September;
Winter Season : 3 months or 12 weeks – October, January, February

In November and December, people generally do not go to the forest to collect firewood as they were engaged in harvesting Kharif crop. It was observed that the families usually go to the forest in the summer season and in the winter season to collect fuelwood. During the rainy season, the families generally do no go to the forest to collect fuelwood as during this time, it is difficult and dangerous to climb trees and the wood is also wet. For use of fuelwood in the rainy season, the people generally store the wood in their house that they collect during the other seasons.

5.4 Number of Visits to Collect Fuelwood by All Members in the Family

(A) After Adopting ICS

Taking both districts together and taking all the three seasons together, after adopting ICS, total 114.31 visits per family were made by all the family members of the families going to the forest to collect fuelwood. Overall, in summer season, total 60.96 visits per family were made by all the family members of the families going to the forest to collect fuelwood, while in winter season, total 53.19 visits per family were made by all the family members of the families going to the forest to collect fuelwood.

In Jashpur, taking all the three seasons together, after adopting ICS, total 67.22 visits per family were made by all the family members of the families going to the forest to collect fuelwood. Overall, in summer season, total 31.92 visits per family were made by all the family members of the families going to the forest to collect fuelwood, while in winter season, total 35.07 visits per family were made by all the family members of the families going to the forest to collect fuelwood.

In Kandhamal, taking all the three seasons together, after adopting ICS, total 144.54 visits per family were made by all the family members of the families going to the forest to collect fuelwood. Overall, in summer season, total 79.60 visits per family were made by all the family members of the families going to the forest to collect fuelwood, while in winter season, total 64.82 visits per family were made by all the family members of the families going to the forest to collect fuelwood.

Table-39 : Number of Visits to Collect Fuelwood by All Members in the Family After Adopting ICS

Classification	Summer Season	Rainy Season	Winter Season	Total
	n	n	n	N
Jashpur	31.92	0.23	35.07	**67.22**
Kandhamal	79.60	0.11	64.82	**144.54**
Overall	**60.96**	**0.16**	**53.19**	**114.31**
Category of Respondents-				
Project Village:Adopters	59.59	0.26	50.26	**110.12**
Project Village:Non-Adopters	59.59	0.17	57.39	**117.16**
Control Village:Non-Adopters	62.47	0.10	52.49	**115.06**
Category of Users-				
Families Using TCS,ICS,LPG	56.51	0.77	52.60	**109.87**
Families Using TCS & ICS	60.61	0.00	48.00	**108.61**
Families Using TCS only	65.17	0.19	56.31	**121.67**
Members in Family-				
Members in Family<=3	56.40	0.00	46.53	**102.94**
Members in Family 3-5	58.97	0.32	51.45	**110.74**
Members in Family>5	70.32	0.00	64.35	**134.68**

There were reasons reported for more use of fuelwood in district Kandhamal than in district Jashpur. In Kandhamal, the villages were located in dense forest areas and hence access to fuelwood was much easier here in comparison to Jashpur, where the villagers had to travel very little distance to reach the forest. Hence, number of visits to the forest in district Kandhamal was higher then in district Jashpur.

Also, the villages in district Kandhamal were situated in hilly terrain with low temperatures in comparison to Jashpur. As a result, almost all the families in Kandhamal used hot/warm water to take bath, where as no such practice was followed in Jashpur. Since TCS was the main chulha in the house, this resulted in higher consumption of fuelwood in Kandhamal in comparison to district Jashpur and thus higher number of visits to the forest.

The fooding habit of people in Kandhamal was also different from the people in Jashpur. In Kandhamal, people preferred to eat boiled rice both in the morning as well as in the night, whereas in Jashpur, people consumed boiled rice only during lunch. People in rural areas use large size vessels to boil rice on the TCS. Since, boiling rice takes more time in comparison to making chapattis, the consumption of fuelwood in Kandhamal is higher then in Jashpur.

Further, it was reported by the villagers in district Jashpur that due to indiscriminate cutting/ collecting of fuelwood by the people, since last one year, the Forest Guard of the Department of Forest, has imposed a restriction on the villagers on the number of visits to the forest to collect fuelwood. Earlier, the villagers went to the forest on any day to collect fuelwood; however, after the imposition of the restriction, the visit to the forest has been fixed on two days of the week – Tuesdays and Fridays. This has reduced the number of visits to the forest in district Jashpur. There is no such restriction in the villages of Kandhamal.

Among Project Village Adopters of ICS families, taking all the three seasons together, after adopting ICS, total 110.12 visits per family were made by all the family members of the families going to the forest to collect fuelwood. In summer season, total 59.59 visits per family were made by all the family members of the families going to the forest to collect fuelwood, while in winter season, total 50.26 visits per family were made by all the family members of the families going to the forest to collect fuelwood.

Since large number of families has only recently adopted ICS and its use is also not regular by the families, Among Project Village Non-Adopters of ICS families and among the Control Village Non-Adopters of ICS families, the number of visits was only slightly higher in comparison to Project Village Adopters of ICS families.

(B) Before Adopting ICS

Taking both districts together and taking all the three seasons together, before adopting ICS, total 129.94 visits per family were made by all the family members of the families going to the forest to collect fuelwood. Overall, in summer season, total 67.60 visits per family were made by all the family members of the families going to the forest to collect fuelwood, while in winter season, total 61.20 visits per family were made by all the family members of the families going to the forest to collect fuelwood. The number of visits to the forest to collect fuelwood earlier (before adopting ICS) was slightly higher than when the families have adopted ICS.

In district Jashpur taking all the three seasons together, before adopting ICS, total 71.80 visits per family were made by all the family members of the families going to the forest to collect fuelwood. In summer season, total 36.64 visits per family were made by all the family members of the families going to the forest to collect fuelwood, while in winter season, 34.32 visits per family were made by all the family members of the families going to the forest to collect fuelwood. The number of visits to the forest to collect fuelwood earlier (before adopting ICS) was slightly higher than when the families have adopted ICS.

Similarly, in district Kandhamal taking all the three seasons together, before adopting ICS, total 188.08 visits per family were made by all the family members of the families going to the forest to collect fuelwood. In summer season, total 98.56 visits per family were made by all the family members of the families going to the forest to collect fuelwood, while in winter season, 88.08 visits per family were made by all the family members of the families going to the forest to collect fuelwood. The number of visits to the forest to collect fuelwood earlier (before adopting ICS) was slightly higher than when the families have adopted ICS.

Table-40 : Number of Visits to Collect Fuelwood by All Members in the Family Before Adopting ICS

Classification	Summer Season		Rainy Season		Winter Season		Total	
	n	%	n	%	n	%	N	%
Jashpur	3664	36.64	84	0.84	3432	34.32	**7180**	**71.80**
Kandhamal	9856	98.56	144	1.44	8808	88.08	**18808**	**188.08**
Overall	**13520**	**67.60**	**228**	**1.14**	**12240**	**61.20**	**25988**	**129.94**
Category of Users-								
Families Using TCS,ICS,LPG	4384	57.68	36	0.47	4248	55.89	**8668**	**114.05**
Families Using TCS & ICS	8256	73.71	192	1.71	7164	63.96	**15612**	**139.39**
Members in Family-								
Members in Family<=3	2912	72.80	84	2.10	2364	59.10	**5360**	**134.00**
Members in Family 3-5	6400	63.37	144	1.43	5712	56.55	**12256**	**121.35**
Members in Family>5	4208	71.32	0	0.00	4164	70.58	**8372**	**141.90**

5.5 Number of Visits to Collect Fuelwood by Adult Males in the Family

(A) After Adopting ICS

Taking both districts together and taking all the three seasons together, after adopting ICS, total 61.30 visits per family were made by the adult males among the families where adult males were going to the forest to collect fuelwood. Overall, in summer season, total 32.74 visits per family were made by the adult males among the families where adult males were going to the forest to collect fuelwood, while in winter season, total 28.44 visits per family were made by the adult males among the families where adult males were going to the forest to collect fuelwood.

In district Jashpur, taking all the three seasons together, after adopting ICS, total 37.03 visits per family were made by the adult males among the families where adult males were going to the forest to collect fuelwood. In summer season, total 17.51 visits per family were made by the adult males among the families where adult males were going to the forest to collect fuelwood, while in winter season, total 19.40 visits per family were made by the adult males among the families where adult males were going to the forest to collect fuelwood.

In district Kandhamal, taking all the three seasons together, after adopting ICS, total 75.68 visits per family were made by the adult males among the families where adult males were going to the forest to collect fuelwood. In summer season, total 41.77 visits per family were made by the adult males among the families where adult males were going to the forest to collect fuelwood, while in winter season, total 33.81 visits per family were made by the adult males among the families where adult males were going to the forest to collect fuelwood.

Table-41 : Number of Visits to Collect Fuelwood by Adult Males in the Family After Adopting ICS

Classification	Summer Season	Rainy Season	Winter Season	Total
	n	n	n	N
Jashpur	17.51	0.12	19.40	**37.03**
Kandhamal	41.77	0.11	33.81	**75.68**
Overall	**32.74**	**0.11**	**28.44**	**61.30**
Category of Respondents-				
Project Village:Adopters	31.75	0.28	26.88	**58.91**
Project Village:Non-Adopters	32.58	0.09	31.13	**63.80**
Control Village:Non-Adopters	33.29	0.04	27.82	**61.16**
Category of Users-				
Families Using TCS,ICS,LPG	29.57	0.78	27.39	**57.74**
Families Using TCS & ICS	32.62	0.00	26.03	**58.65**
Families Using TCS only	34.84	0.09	29.88	**64.82**
Members in Family-				
Members in Family<=3	34.51	0.00	27.37	**61.88**
Members in Family 3-5	31.07	0.22	27.11	**58.39**
Members in Family>5	34.43	0.00	31.86	**66.29**

(B) Before Adopting ICS

Taking both districts together and taking all the three seasons together, before adopting ICS, total 80.51 visits per family were made by the adult males among the families where adult males were going to the forest to collect fuelwood. Overall, in summer season, total 41.94 visits per family were made by the adult males among the families where adult males were going to the forest to collect fuelwood, while in winter season, total 38.06 visits per family were made by the adult males among the families where adult males were going to the forest to collect fuelwood. The number of visits to the forest to collect fuelwood earlier (before adopting ICS) was slightly higher than when the families have adopted ICS.

Table-42 : Number of Visits to Collect Fuelwood by Adult Males in the Family Before Adopting ICS

Classification	Summer Season		Rainy Season		Winter Season		Total	
	n	%	n	%	n	%	N	%
Jashpur	1136	21.04	0	0.00	1116	20.67	**2252**	**41.70**
Kandhamal	4736	55.07	72	0.84	4212	48.98	**9020**	**104.88**
Overall	**5872**	**41.94**	**72**	**0.51**	**5328**	**38.06**	**11272**	**80.51**
Category of Users-								
Families Using TCS,ICS,LPG	1904	38.08	36	0.72	1812	36.24	**3752**	**75.04**
Families Using TCS & ICS	3600	43.37	36	0.43	3144	37.88	**6780**	**81.69**
Members in Family-								
Members in Family<=3	1296	49.85	36	1.38	1044	40.15	**2376**	**91.38**
Members in Family 3-5	2736	40.84	36	0.54	2388	35.64	**5160**	**77.01**
Members in Family>5	1840	39.15	0	0.00	1896	40.34	**3736**	**79.49**

5.6 Number of Visits to Collect Fuelwood by Adult Females in the Family

(A) After Adopting ICS

Taking both districts together and taking all the three seasons together, after adopting ICS, total 58.20 visits per family were made by the adult females among the families where adult females were going to the forest to collect fuelwood. Overall, in summer season, total 30.21 visits per family were made by the adult females among the families where adult females were going to the forest to collect fuelwood, while in winter season, total 27.89 visits per family were made by the adult females among the families where adult females were going to the forest to collect fuelwood.

In district Jashpur, taking all the three seasons together, after adopting ICS, total 39.93 visits per family were made by the adult females among the families where adult females were going to the forest to collect fuelwood. In summer season, total 18.01 visits per family were made by the adult females among the families where adult females were going to the forest to collect fuelwood, while in winter season, total 21.79 visits per family were made by the adult females among the families where adult females were going to the forest to collect fuelwood.

In district Kandhamal, taking all the three seasons together, after adopting ICS, total 76.38 visits per family were made by the adult females among the families where adult females were going to the forest to collect fuelwood. In summer season, total 42.36 visits per family were made by the adult females among the families where adult females were going to the forest to collect fuelwood, while in winter season, total 33.96 visits per family were made by the adult females among the families where adult females were going to the forest to collect fuelwood.

Table-43 : Number of Visits to Collect Fuelwood by Adult Females in the Family After Adopting ICS

Classification	Summer Season	Rainy Season	Winter Season	Total
	n	n	n	N
Jashpur	18.01	0.13	21.79	**39.93**
Kandhamal	42.36	0.06	33.96	**76.38**
Overall	**30.21**	**0.10**	**27.89**	**58.20**
Category of Respondents-				
Project Village:Adopters	29.68	0.12	25.80	**55.61**
Project Village:Non-Adopters	35.15	0.13	31.02	**66.30**
Control Village:Non-Adopters	28.09	0.06	27.45	**55.60**
Category of Users-				
Families Using TCS,ICS,LPG	27.03	0.00	26.11	**53.14**
Families Using TCS & ICS	31.41	0.22	25.78	**57.41**
Families Using TCS only	33.16	0.15	30.55	**63.85**
Members in Family-				
Members in Family<=3	27.93	0.00	25.80	**53.73**
Members in Family 3-5	29.04	0.19	26.70	**55.94**
Members in Family>5	34.25	0.00	31.81	**66.06**

(B) Before Adopting ICS

Taking both districts together and taking all the three seasons together, before adopting ICS, total 75.79 visits per family were made by the adult females among the families where adult females were going to the forest to collect fuelwood. Overall, in summer season, total 39.54 visits per family were made by the adult females among the families where adult females were going to the forest to collect fuelwood, while in winter season, total 35.43 visits per family were made by the adult females among the families where adult females were going to the forest to collect fuelwood. The number of visits to the forest to collect fuelwood earlier (before adopting ICS) was slightly higher than when the families have adopted ICS.

Table-44 : Number of Visits to Collect Fuelwood by Adult Females in the Family Before Adopting ICS

Classification	Summer Season	Rainy Season	Winter Season	Total
	n	n	n	N
Jashpur	25.80	0.86	23.02	**49.67**
Kandhamal	54.02	0.77	48.52	**103.31**
Overall	**39.54**	**0.82**	**35.43**	**75.79**
Category of Users-				
Families Using TCS,ICS,LPG	33.97	0.00	32.71	**66.68**
Families Using TCS & ICS	42.81	1.44	36.89	**81.15**
Members in Family-				
Members in Family<=3	44.34	1.37	36.00	**81.71**
Members in Family 3-5	37.06	1.10	33.06	**71.22**
Members in Family>5	40.83	0.00	39.10	**79.93**

5.7 Number of Visits to Collect Fuelwood by Minors in the Family

A) After Adopting ICS

Taking both districts together and taking all the three seasons together, after adopting ICS, total 57.26 visits per family were made by the minors among the families where minors in the family were going to the forest to collect fuelwood.

Table-45 : Number of Visits to Collect Fuelwood by Minors in the Family After Adopting ICS

Classification	Summer Season	Rainy Season	Winter Season	Total
	n	n	n	N
Jashpur	16.00	0.00	12.00	**28.00**
Kandhamal	40.32	0.00	32.16	**72.48**
Overall	**32.00**	**0.00**	**25.26**	**57.26**
Category of Respondents-				
Project Village:Adopters	34.67	0.00	30.00	**64.67**
Project Village:Non-Adopters	40.00	0.00	31.71	**71.71**
Control Village:Non-Adopters	24.89	0.00	18.67	**43.56**
Category of Users-				
Families Using TCS,ICS,LPG	56.00	0.00	42.00	**98.00**
Families Using TCS & ICS	24.00	0.00	24.00	**48.00**
Families Using TCS only	31.24	0.00	21.14	**52.38**
Members in Family-				
Members in Family<=3	26.67	0.00	8.00	**34.67**
Members in Family 3-5	31.06	0.00	22.59	**53.65**
Members in Family>5	33.78	0.00	30.67	**64.44**

Overall, in summer season, total 32 visits per family were made by the minors among the families where minors in the family were going to the forest to collect fuelwood, while in winter season, total 25.26 visits per family were made by the minors among the families where minors in the family were going to the forest to collect fuelwood.

(B) Before Adopting ICS

Taking both districts together and taking all the three seasons together, before adopting ICS, total 60 visits per family were made by the minors among the families where minors in the family were going to the forest to collect fuelwood. Overall, in summer season, total 24 visits per family were made by the minors among the families where minors in the family were going to the forest to collect fuelwood, while in winter season, total 36 visits per family were made by the minors among the families where minors in the family were going to the forest to collect fuelwood.

Table-46 : Number of Visits to Collect Fuelwood by Minors in the Family Before Adopting ICS

Classification	Summer Season	Rainy Season	Winter Season	Total
	n	n	n	N
Jashpur	0.00	0.00	30.00	**30.00**
Kandhamal	48.00	0.00	42.00	**90.00**
Overall	**24.00**	**0.00**	**36.00**	**60.00**
Category of Users-				
Families Using TCS,ICS,LPG	0.00	0.00	48.00	**48.00**
Families Using TCS & ICS	16.00	0.00	18.00	**34.00**
Members in Family-				
Members in Family<=3	64.00	0.00	60.00	**124.00**
Members in Family 3-5	10.67	0.00	28.00	**38.67**
Members in Family>5	0.00	0.00	0.00	**0.00**

5.8 Average Time Spent in Collecting Fuelwood by All Members in the Family

(A) After Adopting ICS

Taking both districts together and taking all the three seasons together, after adopting ICS, total 311 hours time per family was spent by all the family members of the families going to the forest to collect fuelwood. Overall, in summer season, total 163 hours time per family was spent by all the family members of the families going to the forest to collect fuelwood, while in winter season, total 147 hours time per family was spent by all the family members of the families going to the forest to collect fuelwood.

In district Jashpur, taking all the three seasons together, after adopting ICS, total 188 hours time per family was spent by all the family members of the families going to the forest to collect fuelwood. Overall, in summer season, total 87 hours time per family was spent by all

the family members of the families going to the forest to collect fuelwood, while in winter season, total 100 hours time per family was spent by all the family members of the families going to the forest to collect fuelwood.

In district Kandhamal, taking all the three seasons together, after adopting ICS, total 434 hours time per family was spent by all the family members of the families going to the forest to collect fuelwood. Overall, in summer season, total 240 hours time per family was spent by all the family members of the families going to the forest to collect fuelwood, while in winter season, total 193 hours time per family was spent by all the family members of the families going to the forest to collect fuelwood.

Table-47 : Average Time Spent in Collecting Fuelwood by All Members in the Family (in hours) After Adopting ICS

Classification	Summer Season	Rainy Season	Winter Season	Total
	n	n	n	N
Jashpur	87	1	100	**188**
Kandhamal	240	0	193	**434**
Overall	**163**	**0**	**147**	**311**
Category of Respondents-				
Project Village:Adopters	145	0	123	**268**
Project Village:Non-Adopters	185	1	170	**356**
Control Village:Non-Adopters	162	0	147	**310**
Category of Users-				
Families Using TCS,ICS,LPG	135	1	127	**263**
Families Using TCS & ICS	151	0	121	**272**
Families Using TCS only	188	1	169	**357**
Members in Family-				
Members in Family<=3	149	0	129	**278**
Members in Family 3-5	155	1	140	**296**
Members in Family>5	192	0	176	**369**

Among Project Village Adopters of ICS families, taking all the three seasons together, after adopting ICS, total 268 hours time per family was spent by all the family members of the families going to the forest to collect fuelwood. The similar proportion among Project Village Non-Adopters of ICS families, it was higher at 356 hours and among Control Village Non-Adopters of ICS families it was 310 hours.

(B) Before Adopting ICS

Taking both districts together and taking all the three seasons together, before adopting ICS, total 469 hours time per family was spent by all the family members of the families going to the forest to collect fuelwood. Overall, in summer season, total 225 hours time per family was spent by all the family members of the families going to the forest to collect fuelwood, while in

winter season, total 241 hours time per family was spent by all the family members of the families going to the forest to collect fuelwood.

In district Jashpur, taking all the three seasons together, before adopting ICS, total 222 hours time per family was spent by all the family members of the families going to the forest to collect fuelwood. Overall, in summer season, total 105 hours time per family was spent by all the family members of the families going to the forest to collect fuelwood, while in winter season, total 114 hours time per family was spent by all the family members of the families going to the forest to collect fuelwood.

In district Kandhamal, taking all the three seasons together, before adopting ICS, total 716 hours time per family was spent by all the family members of the families going to the forest to collect fuelwood. Overall, in summer season, total 344 hours time per family was spent by all the family members of the families going to the forest to collect fuelwood, while in winter season, total 368 hours time per family was spent by all the family members of the families going to the forest to collect fuelwood.

Table-48 : Average Time Spent in Collecting Fuelwood by All Members in the Family (in hours) Before Adopting ICS

Classification	Summer Season	Rainy Season	Winter Season	Total
	n	n	n	N
Jashpur	105	3	114	**222**
Kandhamal	344	4	368	**716**
Overall	**225**	**4**	**241**	**469**
Category of Users-				
Families Using TCS,ICS,LPG	180	1	210	**392**
Families Using TCS & ICS	253	6	255	**515**
Members in Family-				
Members in Family<=3	252	8	237	**497**
Members in Family 3-5	204	4	219	**427**
Members in Family>5	242	0	281	**523**

5.9 Average Time Spent in Collecting Fuelwood by Adult Males in the Family

A) After Adopting ICS

Taking both districts together and taking all the three seasons together, after adopting ICS, total 192 hours time per family was spent by the adult males of the families where adult males of the family were going to the forest to collect fuelwood. Overall, in summer season, total 103 hours time per family was spent by the adult males of the families where adult males of the family were going to the forest to collect fuelwood, while in winter season, total 89 hours time per family was spent by the adult males of the families where adult males of the family were going to the forest to collect fuelwood.

In district Jashpur taking all the three seasons together, after adopting ICS, total 121 hours time per family was spent by the adult males of the families where adult males of the familiy were going to the forest to collect fuelwood. Overall, in summer season, total 58 hours time per family was spent by the adult males of the families where adult males of the family were going to the forest to collect fuelwood, while in winter season, total 62 hours time per family was spent by the adult males of the families where adult males of the family were going to the forest to collect fuelwood.

In district Kandhamal taking all the three seasons together, after adopting ICS, total 233 hours time per family was spent by the adult males of the families where adult males of the family were going to the forest to collect fuelwood. Overall, in summer season, total 129 hours time per family was spent by the adult males of the families where adult males of the family were going to the forest to collect fuelwood, while in winter season, total 104 hours time per family was spent by the adult males of the families where adult males of the family were going to the forest to collect fuelwood.

Among Project Village Adopters of ICS families, taking all the three seasons together, after adopting ICS, total 168 hours time per family was spent by the adult males of the families where adult males of the family were going to the forest to collect fuelwood. This proportion was lower in comparison to the Project Village Non-Adopters of ICS families (208 hours) and also the Control Village Non-Adopters of ICS families (195 hours).

Table-49 : Average Time Spent in Collecting Fuelwood by Adult Males in the Family (in hours) After Adopting ICS

Classification	Summer Season	Rainy Season	Winter Season	Total
	n	n	n	N
Jashpur	58	1	62	**121**
Kandhamal	129	0	104	**233**
Overall	**103**	**0**	**89**	**192**
Category of Respondents-				
Project Village:Adopters	92	1	76	**168**
Project Village:Non-Adopters	105	0	102	**208**
Control Village:Non-Adopters	106	0	88	**195**
Category of Users-				
Families Using TCS,ICS,LPG	88	2	78	**168**
Families Using TCS & ICS	92	0	72	**164**
Families Using TCS only	112	0	97	**210**
Members in Family-				
Members in Family<=3	109	0	86	**195**
Members in Family 3-5	94	1	82	**177**
Members in Family>5	114	0	103	**216**

(B) Before Adopting ICS

Taking both districts together and taking all the three seasons together, before adopting ICS, total 270 hours time per family was spent by the adult males of the families where adult males of the family were going to the forest to collect fuelwood. Overall, in summer season, total 141 hours time per family was spent by the adult males of the families where adult males of the family were going to the forest to collect fuelwood, while in winter season, total 127 hours time per family was spent by the adult males of the families where adult males of the family were going to the forest to collect fuelwood.

In district Jashpur taking all the three seasons together, before adopting ICS, total 109 hours time per family was spent by the adult males of the families where adult males of the family were going to the forest to collect fuelwood. Overall, in summer season, total 60 hours time per family was spent by the adult males of the families where adult males of the family were going to the forest to collect fuelwood, while in winter season, total 50 hours time per family was spent by the adult males of the families where adult males of the family were going to the forest to collect fuelwood.

In district Kandhamal taking all the three seasons together, before adopting ICS, total 371 hours time per family was spent by the adult males of the families where adult males of the family were going to the forest to collect fuelwood. Overall, in summer season, total 193 hours time per family was spent by the adult males of the families where adult males of the family were going to the forest to collect fuelwood, while in winter season, total 176 hours time per family was spent by the adult males of the families where adult males of the family were going to the forest to collect fuelwood.

Table-50 : Average Time Spent in Collecting Fuelwood by Adult Males in the Family (in hours) Before Adopting ICS

Classification	Summer Season	Rainy Season	Winter Season	Total
	n	n	n	N
Jashpur	60	0	50	**109**
Kandhamal	193	3	176	**371**
Overall	**141**	**2**	**127**	**270**
Category of Users-				
Families Using TCS,ICS,LPG	125	1	115	**241**
Families Using TCS & ICS	149	2	128	**279**
Members in Family-				
Members in Family<=3	167	6	134	**307**
Members in Family 3-5	132	1	116	**249**
Members in Family>5	141	0	140	**281**

5.10 Average Time Spent in Collecting Fuelwood by Adult Females in the Family

A) After Adopting ICS

Taking both districts together and taking all the three seasons together, after adopting ICS, total 184 hours time per family was spent by the adult females of the families where adult females of the family were going to the forest to collect fuelwood. Overall, in summer season, total 95 hours time per family was spent by the adult females of the families where adult females of the family were going to the forest to collect fuelwood, while in winter season, total 89 hours time per family was spent by the adult females of the families where adult females of the family were going to the forest to collect fuelwood.

Table-51 : Average Time Spent in Collecting Fuelwood by Adult Females in the Family (in hours) After Adopting ICS

Classification	Summer Season	Rainy Season	Winter Season	Total
	n	n	n	N
Jashpur	59	0	73	**133**
Kandhamal	130	0	104	**234**
Overall	**95**	**0**	**89**	**184**
Category of Respondents-				
Project Village:Adopters	85	0	74	**159**
Project Village:Non-Adopters	113	0	101	**214**
Control Village:Non-Adopters	91	0	90	**182**
Category of Users-				
Families Using TCS,ICS,LPG	78	0	78	**156**
Families Using TCS & ICS	88	0	71	**160**
Families Using TCS only	108	1	102	**211**
Members in Family-				
Members in Family<=3	86	0	81	**167**
Members in Family 3-5	92	1	86	**178**
Members in Family>5	108	0	100	**208**

In district Jashpur taking all the three seasons together, after adopting ICS, total 133 hours time per family was spent by the adult females of the families where adult females of the family were going to the forest to collect fuelwood. Overall, in summer season, total 59 hours time per family was spent by the adult females of the families where adult females of the family were going to the forest to collect fuelwood, while in winter season, total 73 hours time per family was spent by the adult females of the families where adult females of the family were going to the forest to collect fuelwood.

In district Kandhamal taking all the three seasons together, after adopting ICS, total 234 hours time per family was spent by the adult females of the families where adult females of the family were going to the forest to collect fuelwood. Overall, in summer season, total 130 hours time per family was spent by the adult females of the families where adult females of the

family were going to the forest to collect fuelwood, while in winter season, total 104 hours time per family was spent by the adult females of the families where adult females of the family were going to the forest to collect fuelwood.

Among Project Village Adopters of ICS families, taking all the three seasons together, after adopting ICS, total 159 hours time per family was spent by the adult females of the families where adult females of the family were going to the forest to collect fuelwood. This proportion was lower in comparison to the Project Village Non-Adopters of ICS families (214 hours) and also the Control Village Non-Adopters of ICS families (182 hours).

(B) Before Adopting ICS

Taking both districts together and taking all the three seasons together, before adopting ICS, total 287 hours time per family was spent by the adult females of the families where adult females of the family were going to the forest to collect fuelwood. Overall, in summer season, total 129 hours time per family was spent by the adult females of the families where adult females of the family were going to the forest to collect fuelwood, while in winter season, total 156 hours time per family was spent by the adult females of the families where adult females of the family were going to the forest to collect fuelwood.

Table-52 : Average Time Spent in Collecting Fuelwood by Adult Females in the Family (in hours) Before Adopting ICS

Classification	Summer Season	Rainy Season	Winter Season	Total
	n	n	n	N
Jashpur	74	3	87	**165**
Kandhamal	187	2	228	**417**
Overall	**129**	**3**	**156**	**287**
Category of Users-				
Families Using TCS,ICS,LPG	102	0	138	**240**
Families Using TCS & ICS	146	5	165	**316**
Members in Family-				
Members in Family<=3	154	5	162	**322**
Members in Family 3-5	118	4	144	**265**
Members in Family>5	132	0	172	**304**

In district Jashpur taking all the three seasons together, before adopting ICS, total 165 hours time per family was spent by the adult females of the families where adult females of the family were going to the forest to collect fuelwood. Overall, in summer season, total 74 hours time per family was spent by the adult females of the families where adult females of the family were going to the forest to collect fuelwood, while in winter season, total 87 hours time per family was spent by the adult females of the families where adult females of the family were going to the forest to collect fuelwood.

In district Kandhamal taking all the three seasons together, before adopting ICS, total 417 hours time per family was spent by the adult females of the families where adult females of the family were going to the forest to collect fuelwood. Overall, in summer season, total 187 hours time per family was spent by the adult females of the families where adult females of the family were going to the forest to collect fuelwood, while in winter season, total 228 hours time per family was spent by the adult females of the families where adult females of the family were going to the forest to collect fuelwood.

5.11 Average Time Spent in Collecting Fuelwood by Minors in the Family

A) After Adopting ICS

Taking both districts together and taking all the three seasons together, after adopting ICS, total 171 hours time per family was spent by the minors of the families where minors of the family were going to the forest to collect fuelwood. Overall, in summer season, total 95 hours time per family was spent by the minors of the families where minors of the family were going to the forest to collect fuelwood, while in winter season, total 75 hours time per family was spent by the minors of the families where minors of the family were going to the forest to collect fuelwood.

Table-53 : Average Time Spent in Collecting Fuelwood by Minors in the Family (in hours) After Adopting ICS

Classification	Summer Season	Rainy Season	Winter Season	Total
	n	n	n	N
Jashpur	54	0	38	**92**
Kandhamal	116	0	95	**212**
Overall	**95**	**0**	**75**	**171**
Category of Respondents-				
Project Village:Adopters	85	0	74	**159**
Project Village:Non-Adopters	119	0	99	**217**
Control Village:Non-Adopters	80	0	58	**138**
Category of Users-				
Families Using TCS,ICS,LPG	152	0	114	**266**
Families Using TCS & ICS	52	0	54	**106**
Families Using TCS only	85	0	56	**141**
Members in Family-				
Members in Family<=3	85	0	32	**117**
Members in Family 3-5	82	0	61	**143**
Members in Family>5	109	0	97	**206**

In district Jashpur taking all the three seasons together, after adopting ICS, total 92 hours time per family was spent by the minors of the families where minors of the family were going to the forest to collect fuelwood. Overall, in summer season, total 54 hours time per family was spent by the minors of the families where minors of the family were going to the forest to

collect fuelwood, while in winter season, total 38 hours time per family was spent by the minors of the families where minors of the family were going to the forest to collect fuelwood.

In district Kandhamal taking all the three seasons together, after adopting ICS, total 212 hours time per family was spent by the minors of the families where minors of the family were going to the forest to collect fuelwood. Overall, in summer season, total 116 hours time per family was spent by the minors of the families where minors of the family were going to the forest to collect fuelwood, while in winter season, total 95 hours time per family was spent by the minors of the families where minors of the family were going to the forest to collect fuelwood.

(B) Before Adopting ICS

Table-54 : Average Time Spent in Collecting Fuelwood by Minors in the Family (in hours) Before Adopting ICS

Classification	Summer Season	Rainy Season	Winter Season	Total
	n	n	n	N
Jashpur	0	0	90	**90**
Kandhamal	256	0	222	**478**
Overall	**128**	**0**	**156**	**284**
Category of Users-				
Families Using TCS,ICS,LPG	0	0	144	**144**
Families Using TCS & ICS	96	0	90	**186**
Members in Family-				
Members in Family<=3	320	0	300	**620**
Members in Family 3-5	64	0	108	**172**
Members in Family>5	0	0	0	**0**

Taking both districts together and taking all the three seasons together, before adopting ICS, total 284 hours time per family was spent by the minors of the families where minors of the family were going to the forest to collect fuelwood. Overall, in summer season, total 128 hours time per family was spent by the minors of the families where minors of the family were going to the forest to collect fuelwood, while in winter season, total 156 hours time per family was spent by the minors of the families where minors of the family were going to the forest to collect fuelwood.

6
Families Using ICS

(A) Social & Gender Impacts of ICS

6.1 Place of Getting Fuelwood by the Family

Taking both the districts together, almost all (96 percent) families collected fuelwood from the nearby forest, while the remaining 4 percent collected the fuelwood from their homestead land.

Table-55 : Place of Getting Fuelwood by the Family

Classification	Cutting/Collecting from Forest		Available in Homestead Land		Total	
	n	%	n	%	N	%
Jashpur	91	91.00	9	9.00	**100**	**100.00**
Kandhamal	100	100.00	0	0.00	**100**	**100.00**
Overall	**191**	**95.50**	**9**	**4.50**	**200**	**100.00**
Category of Users-						
Families Using TCS,ICS,LPG	70	92.11	6	7.89	**76**	**100.00**
Families Using TCS & ICS	109	97.32	3	2.68	**112**	**100.00**
Members in Family-						
Members in Family<=3	39	97.50	1	2.50	**40**	**100.00**
Members in Family 3-5	95	94.06	6	5.94	**101**	**100.00**
Members in Family>5	57	96.61	2	3.39	**59**	**100.00**

6.2 Distance Traveled to Get Fuelwood

Taking both districts together, 14 percent families collected fuelwood from a distance of less than 1 km. from their home, while around 45 percent families collected it from a distance of 1 to 3 kms. from their home. There were around one-third (33 percent) families that collected fuelwood from a distance of 3 to 5 kms. from their home and there were 9 percent families that collected fuelwood from a distance of more than 5 kms. from their home.

In district Jashpur, 22 percent families collected fuelwood from a distance of less than 1 km. from their home, while 31 percent families collected it from a distance of 1 to 3 kms. from their home. There were 35 percent families that collected fuelwood from a distance of 3 to 5 kms. from their home and there were 12 percent families that collected fuelwood from a distance of more than 5 kms. from their home.

In district Kandhamal, 6 percent families collected fuelwood from a distance of less than 1 km. from their home, while 58 percent families collected it from a distance of 1 to 3 kms. from their

home. There were 30 percent families that collected fuelwood from a distance of 3 to 5 kms. from their home and there were 6 percent families that collected fuelwood from a distance of more than 5 kms. from their home.

Table-56 : Distance Travelled to Get Fuelwood

Classification	Less than 1 Km.		1 to 3 Kms.		3 to 5 Kms.		More than 5 Kms.		Total	
	n	%	n	%	n	%	n	%	N	%
Jashpur	22	22.00	31	31.00	35	35.00	12	12.00	**100**	**100.00**
Kandhamal	6	6.00	58	58.00	30	30.00	6	6.00	**100**	**100.00**
Overall	**28**	**14.00**	**89**	**44.50**	**65**	**32.50**	**18**	**9.00**	**200**	**100.00**
Category of Users-										
Families Using TCS,ICS,LPG	11	14.47	29	38.16	25	32.89	11	14.47	**76**	**100.00**
Families Using TCS & ICS	16	14.29	54	48.21	35	31.25	7	6.25	**112**	**100.00**
Members in Family-										
Members in Family<=3	4	10.00	16	40.00	15	37.50	5	12.50	**40**	**100.00**
Members in Family 3-5	16	15.84	43	42.57	35	34.65	7	6.93	**101**	**100.00**
Members in Family>5	8	13.56	30	50.85	15	25.42	6	10.17	**59**	**100.00**

6.3 Mode of Transportation to Get Fuelwood

Taking both districts together, almost all the families carried/transported the fuelwood collected from the forests on their head/shoulders. A few families also used bicycle for the purpose.

Table-57 : Mode of Transportation to Get Fuelwood

Classification	On Head/ Shoulder		On Bicycle		Total	
	n	%	n	%	N	%
Jashpur	99	99.00	3	3.00	**100**	**100.00**
Kandhamal	100	100.00	4	4.00	**100**	**100.00**
Overall	**199**	**99.50**	**7**	**3.50**	**200**	**100.00**
Category of Users-						
Families Using TCS,ICS,LPG	75	98.68	4	5.26	76	100.00
Families Using TCS & ICS	112	100.00	3	2.68	112	100.00
Members in Family-						
Members in Family<=3	40	100.00	1	2.50	**40**	**100.00**
Members in Family 3-5	100	99.01	5	4.95	**101**	**100.00**
Members in Family>5	59	100.00	1	1.69	**59**	**100.00**

6.4 Problems Faced in Using Wood in ICS

Taking both districts together, problems in collecting/transporting fuelwood from the forests due to the effort and harassment involved in traveling long distances, climbing the trees, carrying loads of fuelwood on their head/shoulders was reported by 54 percent families. Similarly, health related problems, like swelling in the legs, bruises on the shoulders and breathlessness was reported by 51 percent families. There were around 26 percent families that said that they did not face any problem in collecting wood from the forests.

Table-58 : Problems Faced in Using Wood in ICS

Classification	Problem in Collecting/ Transporting Wood		Health Related Problems		No Problem		Total	
	n	%	n	%	n	%	N	%
Jashpur	71	71.00	39	39.00	14	14.00	**100**	**100.00**
Kandhamal	37	37.00	63	63.00	35	35.00	**100**	**100.00**
Overall	**108**	**54.00**	**102**	**51.00**	**49**	**24.50**	**200**	**100.00**
Category of Users-								
Families Using TCS,ICS,LPG	50	65.79	42	55.26	10	13.16	**76**	**100.00**
Families Using TCS & ICS	56	50.00	53	47.32	35	31.25	**112**	**100.00**
Members in Family-								
Members in Family<=3	21	52.50	23	57.50	10	25.00	**40**	**100.00**
Members in Family 3-5	60	59.41	44	43.56	25	24.75	**101**	**100.00**
Members in Family>5	27	45.76	35	59.32	14	23.73	**59**	**100.00**

(multiple responses were recorded)

6.5 Change in Time Spent in Collecting Fuelwood

Taking both districts together, around two-third (64 percent) families said that in comparison to TCS, now while using ICS also, the family had to spend lesser time in fuelwood collection, while the remaining one-third (36 percent) families said that there was no change in the time spent in collecting fuelwood even when they use ICS.

In district Jashpur, half (50 percent) families said that in comparison to TCS, now while using ICS also, the family had to spend lesser time in fuelwood collection, while the remaining half (50 percent) families said that there was no change in the time spent in collecting fuelwood even when they use ICS.

Similarly, in district Kandhamal, 78 percent families said that in comparison to TCS, now while using ICS also, the family had to spend lesser time in fuelwood collection, while the remaining 22 percent families said that there was no change in the time spent in collecting fuelwood even when they use ICS.

Table-59 : Change in Time Spent in Collecting Fuelwood

Classification	Less Time Spent in Collecting Fuelwood When Using ICS		No Less Time Spent in Collecting Fuelwood When Using ICS		Total	
	n	%	n	%	N	%
Jashpur	50	50.00	50	50.00	**100**	**100.00**
Kandhamal	78	78.00	22	22.00	**100**	**100.00**
Overall	**128**	**64.00**	**72**	**36.00**	**200**	**100.00**
Category of Users-						
Families Using TCS,ICS,LPG	46	60.53	30	39.47	**76**	**100.00**
Families Using TCS & ICS	72	64.29	40	35.71	**112**	**100.00**
Members in Family-						
Members in Family<=3	27	67.50	13	32.50	**40**	**100.00**
Members in Family 3-5	56	55.45	45	44.55	**101**	**100.00**
Members in Family>5	45	76.27	14	23.73	**59**	**100.00**

6.6 Purposes for which ICS Used

Taking both districts together, using ICS for cooking food was stated by all the families, while using ICS for heating water was stated by around 15 percent families. Using the ICS to keep the house warm during the winter season was stated by 9 percent families. The proportion of such families who use ICS to keep the house warm is low as large number of the families had bought the ICS after the winter season.

Table-60 : Purposes for which ICS Used

Classification	Cooking Food		Keeping the House Warm		Heating Water		Cooking Food for Livestock		Total	
	n	%	n	%	n	%	n	%	N	%
Jashpur	100	100.00	0	0.00	13	13.00	0	0.00	**100**	**100.00**
Kandhamal	100	100.00	18	18.00	16	16.00	4	4.00	**100**	**100.00**
Overall	**200**	**100.00**	**18**	**9.00**	**29**	**14.50**	**4**	**2.00**	**200**	**100.00**
Category of Users-										
Families Using TCS,ICS,LPG	76	100.00	8	10.53	9	11.84	1	1.32	**76**	**100.00**
Families Using TCS & ICS	112	100.00	10	8.93	18	16.07	3	2.68	**112**	**100.00**
Members in Family-										
Members in Family<=3	40	100.00	3	7.50	6	15.00	3	7.50	**40**	**100.00**
Members in Family 3-5	101	100.00	7	6.93	15	14.85	0	0.00	**101**	**100.00**
Members in Family>5	59	100.00	8	13.56	8	13.56	1	1.69	**59**	**100.00**

(multiple responses were recorded)

6.7 Time Saved in Cooking on ICS

Taking both districts together, around 42 percent persons (females) involved in cooking at home said that when they were using TCS for cooking food at home, they used to spend upto 2 hours time daily to cook food, while around 22 percent persons said that they used to spend between 2 to 3 hours time daily to cook food. The remaining 37 percent persons said that they used to spend more than 3 hours time daily to cook food.

In district Jashpur, 54 percent persons (females) involved in cooking at home said that when they were using TCS for cooking food at home, they used to spend upto 2 hours time daily to cook food, while 31 percent persons said that they used to spend between 2 to 3 hours time daily to cook food. The remaining 15 percent persons said that they used to spend more than 3 hours time daily to cook food.

On the contrary, 29 percent persons (females) involved in cooking at home said that when they were using TCS for cooking food at home, they used to spend upto 2 hours time daily to cook food, while 12 percent persons said that they used to spend between 2 to 3 hours time daily to cook food. The remaining 59 percent persons said that they used to spend more than 3 hours time daily to cook food.

Table-61 : Cooking Time in 1 Day When Using TCS (in Hrs.)

Classification	Upto 2 Hrs.		2 to 3 Hrs.		More than 3 Hrs.		Total	
	n	%	n	%	n	%	N	%
Jashpur	54	54.00	31	31.00	15	15.00	**100**	**100.00**
Kandhamal	29	29.00	12	12.00	59	59.00	**100**	**100.00**
Overall	**83**	**41.50**	**43**	**21.50**	**74**	**37.00**	**200**	**100.00**
Category of Users-								
Families Using TCS,ICS,LPG	29	38.16	20	26.32	27	35.53	**76**	**100.00**
Families Using TCS & ICS	50	44.64	23	20.54	39	34.82	**112**	**100.00**
Members in Family-								
Members in Family<=3	16	40.00	7	17.50	17	42.50	**40**	**100.00**
Members in Family 3-5	47	46.53	21	20.79	33	32.67	**101**	**100.00**
Members in Family>5	20	33.90	15	25.42	24	40.68	**59**	**100.00**

Taking both districts together, around 31 percent persons (females) involved in cooking at home saved upto 30 minutes per day of cooking time when they started using ICS for cooking food at home, while another 59 percent persons saved upto 60 minutes per day of cooking time. There were around 11 percent persons who saved more than 60 minutes per day of cooking time.

In district Jashpur, 46 percent persons (females) involved in cooking at home saved upto 30 minutes per day of cooking time when they started using ICS for cooking food at home, while

another 48 percent persons saved upto 60 minutes per day of cooking time. There were around 6 percent persons who saved more than 60 minutes per day of cooking time.

In district Kandhamal, 15 percent persons (females) involved in cooking at home saved upto 30 minutes per day of cooking time when they started using ICS for cooking food at home, while 70 percent persons saved upto 60 minutes per day of cooking time. There were 15 percent persons who saved more than 60 minutes per day of cooking time.

Table-62 : Time Saved in Cooking on ICS (in minutes)

Classification	Upto 30 Minutes		Upto 60 Minutes		More than 60 Minutes		Total	
	n	%	n	%	n	%	N	%
Jashpur	46	46.00	48	48.00	6	6.00	**100**	**100.00**
Kandhamal	15	15.00	70	70.00	15	15.00	**100**	**100.00**
Overall	**61**	**30.50**	**118**	**59.00**	**21**	**10.50**	**200**	**100.00**
Category of Users-								
Families Using TCS,ICS,LPG	22	28.95	49	64.47	5	6.58	**76**	**100.00**
Families Using TCS & ICS	37	33.04	63	56.25	12	10.71	**112**	**100.00**
Members in Family-								
Members in Family<=3	13	32.50	25	62.50	2	5.00	**40**	**100.00**
Members in Family 3-5	35	34.65	59	58.42	7	6.93	**101**	**100.00**
Members in Family>5	13	22.03	34	57.63	12	20.34	**59**	**100.00**

6.8 Utilization of Saved Time Due to Use of ICS

Taking both districts together, among the families that saved cooking time due to use of ICS, more time for self was the way the saved time was utilized was stated by around 50 percent persons (female) responsible for cooking, while utilization of saved time for livelihood activities was stated by around 33 percent; and more time for outside work was stated by around 32 percent persons. Similarly, more time for other household work was stated by around 29 percent persons. Details are presented in Annexure-11.

Table-63 : Utilization of Saved Time Due to Use of ICS

Classification	Jashpur		Kandhamal		Overall	
	n	%	n	%	N	%
More Time for Self	42	42.00	57	57.00	**99**	**49.50**
More Time for Livelihood Activities	25	25.00	40	40.00	**65**	**32.50**
More Time for Outside Work	18	18.00	45	45.00	**63**	**31.50**
More Time for Other Hhld. Work	35	35.00	22	22.00	**57**	**28.50**
More Time for Children	11	11.00	16	16.00	**27**	**13.50**
More Time for Community Work	10	10.00	8	8.00	**18**	**9.00**
Total	**100**	**100.00**	**100**	**100.00**	**200**	**100.00**

Around 84 percent of those who saved time and utilized it on self, saved upto 30 minutes cooking time per day, while the remaining 16 percent saved upto 60 minutes of cooking time per day. In district Jashpur, the proportion of persons saving upto 60 minutes per day (26 percent) was higher than in district Kandhamal (9 percent)

Table-64 : More Time for Self

Classification	Upto 30 Minutes		Upto 60 Minutes		Total	
	n	%	n	%	N	%
Jashpur	31	73.81	11	26.19	**42**	**100.00**
Kandhamal	52	91.23	5	8.77	**57**	**100.00**
Overall	**83**	**83.84**	**16**	**16.16**	**99**	**100.00**
Category of Users-						
Families Using TCS,ICS,LPG	26	78.79	7	21.21	33	100.00
Families Using TCS & ICS	53	88.33	7	11.67	60	100.00
Members in Family-						
Members in Family<=3	18	94.74	1	5.26	**19**	**100.00**
Members in Family 3-5	36	78.26	10	21.74	**46**	**100.00**
Members in Family>5	29	85.29	5	14.71	**34**	**100.00**

Around 93 percent of those who saved time and utilized it on their children, saved upto 30 minutes cooking time per day, while the remaining more than 7 percent saved upto 60 minutes of cooking time per day.

Table-65 : More Time for Children

Classification	Upto 30 Minutes		Upto 60 Minutes		Total	
	n	%	n	%	N	%
Jashpur	11	100.00	0	0.00	**11**	**100.00**
Kandhamal	14	87.50	2	12.50	**16**	**100.00**
Overall	**25**	**92.59**	**2**	**7.41**	**27**	**100.00**
Category of Users-						
Families Using TCS,ICS,LPG	13	100.00	0	0.00	**13**	**100.00**
Families Using TCS & ICS	12	100.00	0	0.00	**12**	**100.00**
Members in Family-						
Members in Family<=3	6	100.00	0	0.00	**6**	**100.00**
Members in Family 3-5	14	93.33	1	6.67	**15**	**100.00**
Members in Family>5	5	83.33	1	16.67	**6**	**100.00**

More than 84 percent of those who saved time and utilized it on other household work, saved upto 30 minutes cooking time per day, while the remaining around 16 percent saved upto 60 minutes of cooking time per day.

Table-66 : More Time for Other Household Work

Classification	Upto 30 Minutes		Upto 60 Minutes		Total	
	n	%	n	%	N	%
Jashpur	31	88.57	4	11.43	**35**	**100.00**
Kandhamal	17	77.27	5	22.73	**22**	**100.00**
Overall	**48**	**84.21**	**9**	**15.79**	**57**	**100.00**
Category of Users-						
Families Using TCS,ICS,LPG	20	86.96	3	13.04	23	**100.00**
Families Using TCS & ICS	25	89.29	3	10.71	28	**100.00**
Members in Family-						
Members in Family<=3	9	90.00	1	10.00	**10**	**100.00**
Members in Family 3-5	25	83.33	5	16.67	**30**	**100.00**
Members in Family>5	14	82.35	3	17.65	**17**	**100.00**

More than 95 percent of those who saved time and utilized it on doing outside work, saved upto 30 minutes cooking time per day, while the remaining around 5 percent saved upto 60 minutes of cooking time per day.

Table-67 : More Time for Outside Work

Classification	Upto 30 Minutes		Upto 60 Minutes		Total	
	n	%	n	%	N	%
Jashpur	16	88.89	2	11.11	**18**	**100.00**
Kandhamal	44	97.78	1	2.22	**45**	**100.00**
Overall	**60**	**95.24**	**3**	**4.76**	**63**	**100.00**
Category of Users-						
Families Using TCS,ICS,LPG	20	90.91	2	9.09	**22**	**100.00**
Families Using TCS & ICS	36	97.30	1	2.70	**37**	**100.00**
Members in Family-						
Members in Family<=3	17	100.00	0	0.00	**17**	**100.00**
Members in Family 3-5	25	92.59	2	7.41	**27**	**100.00**
Members in Family>5	18	94.74	1	5.26	**19**	**100.00**

More than 94 percent of those who saved time and utilized it for community work, saved upto 30 minutes cooking time per day, while the remaining around 6 percent saved upto 60 minutes of cooking time per day.

Table-68 : More Time for Community Work

Classification	Upto 30 Minutes		Upto 60 Minutes		Total	
	n	%	n	%	N	%
Jashpur	9	90.00	1	10.00	**10**	**100.00**
Kandhamal	8	100.00	0	0.00	**8**	**100.00**
Overall	**17**	**94.44**	**1**	**5.56**	**18**	**100.00**
Category of Users-						
Families Using TCS,ICS,LPG	4	100.00	0	0.00	**4**	**100.00**
Families Using TCS & ICS	12	92.31	1	7.69	**13**	**100.00**
Members in Family-						
Members in Family<=3	2	100.00	0	0.00	**2**	**100.00**
Members in Family 3-5	8	100.00	0	0.00	**8**	**100.00**
Members in Family>5	7	87.50	1	12.50	**8**	**100.00**

Around 83 percent of those who saved time and utilized it for doing livelihood activities, saved upto 30 minutes cooking time per day, while the remaining 17 percent saved upto 60 minutes of cooking time per day.

Table-69 : More Time for Livelihood Activities

Classification	Upto 30 Minutes		Upto 60 Minutes		Total	
	n	%	n	%	N	%
Jashpur	20	80.00	5	20.00	**25**	**100.00**
Kandhamal	34	85.00	6	15.00	**40**	**100.00**
Overall	**54**	**83.08**	**11**	**16.92**	**65**	**100.00**
Category of Users-						
Families Using TCS,ICS,LPG	21	80.77	5	19.23	26	100.00
Families Using TCS & ICS	30	83.33	6	16.67	36	100.00
Members in Family-						
Members in Family<=3	10	83.33	2	16.67	**12**	**100.00**
Members in Family 3-5	26	86.67	4	13.33	**30**	**100.00**
Members in Family>5	18	78.26	5	21.74	**23**	**100.00**

6.9 Change in Cleaning Time

Taking both districts together, around 88 percent persons (females) involved in cooking at home said that they observed that after adoption of ICS, they were spending lesser time in cleaning of chulha, cooking utensils, walls of the place of cooking, place of storing wood, soot, spider web, etc. However, the remaining 12 percent persons said that they did not observe any change in the time spent in such activities.

Table-70 : Observed Change in Cleaning Time of Place of Cooking

Classification	Observed Change in Cleaning Time		Observed No Change in Cleaning Time		Total	
	n	%	n	%	N	%
Jashpur	87	87.00	13	13.00	**100**	**100.00**
Kandhamal	88	88.00	12	12.00	**100**	**100.00**
Overall	**175**	**87.50**	**25**	**12.50**	**200**	**100.00**
Category of Users-						
Families Using TCS,ICS,LPG	67	88.16	9	11.84	76	100.00
Families Using TCS & ICS	100	89.29	12	10.71	112	100.00
Members in Family-						
Members in Family<=3	36	90.00	4	10.00	**40**	**100.00**
Members in Family 3-5	85	84.16	16	15.84	**101**	**100.00**
Members in Family>5	54	91.53	5	8.47	**59**	**100.00**

Those who said that they saved time, in cleaning activities after the adoption of ICS, said that they saved upto 30 minutes time per day.

6.10 Benefits of Portability of ICS

All the persons (females) involved in cooking activities at home said that they found it very convenient to shift the place of cooking food as per their need and convenience. They said that since the ICS was quite handy and portable, they cooked on it at a place convenient to them. Especially during the summer season, the evening food was cooked on the ICS in the open to escape from the heat of the kitchen. Few persons also took the ICS to the forest alongwith themselves when they went to the forest to collect fuelwood. Since, they spend long hours in the forest, they put the food to cook on the ICS while they collected wood.

6.11 Involvement of Male Members in Cooking Due to ICS

Taking both districts together, two-third (66 percent) families said that after the adoption of ICS, the male members of the family were more involved in cooking at home than when the family was using TCS. The remaining one-third (34 percent) families said that there was no change in the involvement of the male members in cooking activities at home after the adoption of ICS.

In district Jashpur, one-third (35 percent) families said that after the adoption of ICS, the male members of the family were more involved in cooking at home than when the family was using TCS. The remaining two-third (65 percent) families said that there was no change in the involvement of the male members in cooking activities at home after the adoption of ICS.

On the contrary, in district Kandhamal, almost all (96 percent) families said that after the adoption of ICS, the male members of the family were more involved in cooking at home than when the family was using TCS.

Table-71 : Involvement of Male Members in Cooking Due to ICS

Classification	Male Members Now More Involved in Cooking at Home Due to ICS		Male Members Not More Involved in Cooking at Home Due to ICS		Total	
	n	%	n	%	N	%
Jashpur	35	35.00	65	65.00	**100**	**100.00**
Kandhamal	96	96.00	4	4.00	**100**	**100.00**
Overall	**131**	**65.50**	**69**	**34.50**	**200**	**100.00**
Category of Users-						
Families Using TCS,ICS,LPG	41	53.95	35	46.05	**76**	**100.00**
Families Using TCS & ICS	78	69.64	34	30.36	**112**	**100.00**
Members in Family-						
Members in Family<=3	25	62.50	15	37.50	**40**	**100.00**
Members in Family 3-5	63	62.38	38	37.62	**101**	**100.00**
Members in Family>5	43	72.88	16	27.12	**59**	**100.00**

Among the families using TCS, ICS & LPG, 54 percent families said that after the adoption of ICS, the male members of the family were more involved in cooking at home than when the family was using TCS, while the families using TCS & ICS, the similar proportion was higher (70 percent).

Among small and medium size families, around 62 percent families said that after the adoption of ICS, the male members of the family were more involved in cooking at home than when the family was using TCS, while among large families, the similar proportion was higher (73 percent).

6.12 Decision Makers on ICS in the Family

(A) Decisions on Purchase & Maintenance of ICS by the Person Involved in Cooking On Her Own (Female)

Taking both districts together, the decision on repair & maintenance of the ICS was taken by the person involved in cooking at home (female) on her own in 75 percent families, while decision on cleaning the ICS was taken by the person involved in cooking at home (female)

on her own in 30 percent families. The decision to purchase ICS was taken by the person involved in cooking at home (female) on her own in 20 percent families.

Table-72 : Decisions on Purchase & Maintenance of ICS by the Person Involved in Cooking On Her Own (Female)

Classification	Cleaning of ICS		Repair & Maintenance of ICS		Purchase of ICS		Total	
	n	%	n	%	n	%	N	%
Jashpur	39	39.00	69	69.00	14	14.00	**100**	**100.00**
Kandhamal	21	21.00	80	80.00	26	26.00	**100**	**100.00**
Overall	**60**	**30.00**	**149**	**74.50**	**40**	**20.00**	**200**	**100.00**
Category of Users-								
Families Using TCS,ICS,LPG	25	32.89	57	75.00	11	14.47	**76**	**100.00**
Families Using TCS & ICS	35	31.25	80	71.43	26	23.21	**112**	**100.00**
Members in Family-								
Members in Family<=3	9	22.50	30	75.00	10	25.00	**40**	**100.00**
Members in Family 3-5	40	39.60	75	74.26	15	14.85	**101**	**100.00**
Members in Family>5	11	18.64	44	74.58	15	25.42	**59**	**100.00**

(multiple responses were recorded)

(B) Decisions on Purchase & Maintenance of ICS by the Person Involved in Cooking (Female) Alongwith Family Members

Taking both districts together, the decision to purchase ICS was taken by the person involved in cooking at home (female) alongwith her family members in almost all (98 percent) families. Similarly, the decision on repair & maintenance of the ICS was taken by the the person involved in cooking at home (female) alongwith her family members in 28 percent families.

Table-73 : Decisions on Purchase & Maintenance of ICS by the Person Involved in Cooking (Female) Alongwith Family Members

Classification	Repair & Maintenance of ICS		Purchase of ICS		Total	
	n	%	n	%	N	%
Jashpur	**35**	**35.00**	**99**	**99.00**	**100**	**100.00**
Kandhamal	21	21.00	96	96.00	**100**	**100.00**
Overall	**56**	**28.00**	**195**	**97.50**	**200**	**100.00**
Category of Users-						
Families Using TCS,ICS,LPG	29	38.16	71	93.42	**76**	**100.00**
Families Using TCS & ICS	26	23.21	112	100.00	**112**	**100.00**
Members in Family-						
Members in Family<=3	9	22.50	40	100.00	**40**	**100.00**
Members in Family 3-5	31	30.69	98	97.03	**101**	**100.00**
Members in Family>5	16	27.12	57	96.61	**59**	**100.00**

(multiple responses were recorded)

6.13 Change in Behaviour of Family Members

Taking both districts together, in 63 percent families, there was change in the behaviour of the family members towards the person involved in cooking at home after the adoption of ICS, while in the remaining 37 percent families there was no such change observed in the behaviour of the family members.

In district Jashpur, in 42 percent families, there was change in the behaviour of the family members towards the person involved in cooking at home after the adoption of ICS, while in the remaining 58 percent families there was no such change observed in the behaviour of the family members.

On the contrary, in district Kandhamal, in 84 percent families, there was change in the behaviour of the family members towards the person involved in cooking at home after the adoption of ICS, while in the remaining 16 percent families there was no such change observed in the behaviour of the family members.

Table-74 : Change in Behaviour of Family Members After Adopting ICS

Classification	Change in Behaviour of Family Members Towards the Person Involved in Cooking		No Change in Behaviour of Family Members Towards the Person Involved in Cooking		Total	
	n	%	n	%	N	%
Jashpur	42	42.00	58	58.00	**100**	**100.00**
Kandhamal	84	84.00	16	16.00	**100**	**100.00**
Overall	**126**	**63.00**	**74**	**37.00**	**200**	**100.00**
Category of Users-						
Families Using TCS,ICS,LPG	37	48.68	39	51.32	**76**	**100.00**
Families Using TCS & ICS	78	69.64	34	30.36	**112**	**100.00**
Members in Family-						
Members in Family<=3	26	65.00	14	35.00	**40**	**100.00**
Members in Family 3-5	60	59.41	41	40.59	**101**	**100.00**
Members in Family>5	40	67.80	19	32.20	**59**	**100.00**

Among the families using TCS, ICS & LPG, in around 49 percent families, there was change in the behaviour of the family members towards the person involved in cooking at home after the adoption of ICS, while among the families using TCS & ICS, in around 70 percent families, change was observed in the behaviour of the family members.

Among the families where change in the behaviour of the family members towards the person involved in cooking at home after the adoption of ICS was observed, in 61 percent cases now the family members had started assisting in cooking activities, while in more than 17 percent cases it was reported that now since the person involved in cooking was able to give more time to the family, her family was more happy.

Table-75 : Types of Change in Behaviour of Family Members After Adopting ICS

Classification	Jashpur		Kandhamal		Overall	
	n	%	n	%	N	%
Family Members Assist in Cooking Activities	10	23.81	67	79.76	**77**	**61.11**
Able to Give Time to Family So They Are Happy	11	26.19	11	13.10	**22**	**17.46**
Person is in the Limelight Due to Savings	11	26.19	6	7.14	**17**	**13.49**
Food is Served Quickly So Family is Happy	10	23.81	0	0.00	**10**	**7.94**
Families Showing Change in Behaviour Towards the Person Involved in Cooking	**42**	**100.00**	**84**	**100.00**	**126**	**100.00**

Similarly, in more than 13 percent cases, it was reported that the person involved in cooking at home was in the center of discussions at home due to saving in cooking time and fuelwood. In around 8 percent cases, it was reported that now since the food was served in lesser time, the family was happy. Details are given in Annexure-12.

6.14 Change in Mobility Outside the House

Taking both districts together, in around 63 percent families, there was change in the mobility outside the house of the person involved in cooking at home after the adoption of ICS, while in the remaining 37 percent families there was no such change observed.

Table-76 : Change in Mobility Outside the House After Adopting ICS

Classification	Change in Mobility Outside the House After Adopting ICS		No Change in Mobility Outside the House After Adopting ICS		Total	
	n	%	n	%	N	%
Jashpur	43	43.00	57	57.00	**100**	**100.00**
Kandhamal	82	82.00	18	18.00	**100**	**100.00**
Overall	**125**	**62.50**	**75**	**37.50**	**200**	**100.00**
Category of Users-						
Families Using TCS,ICS,LPG	39	51.32	37	48.68	**76**	**100.00**
Families Using TCS & ICS	76	67.86	36	32.14	**112**	**100.00**
Members in Family-						
Members in Family<=3	26	65.00	14	35.00	**40**	**100.00**
Members in Family 3-5	63	62.38	38	37.62	**101**	**100.00**
Members in Family>5	36	61.02	23	38.98	**59**	**100.00**

In district Jashpur, in 43 percent families, there was change in the mobility outside the house of the person involved in cooking at home after the adoption of ICS, while in the remaining 57 percent families there was no such change observed. On the contrary, in district Kandhamal, in 82 percent families, there was change in the mobility outside the house of the person involved in cooking at home after the adoption of ICS, while in the remaining 18 percent families there was no such change observed.

Among families using TCS, ICS & LPG, in 51 percent families, there was change in the mobility outside the house of the person involved in cooking at home after the adoption of ICS, while among the families using TCS & ICS, in 68 percent families there was change in the mobility outside the house of the person involved in cooking at home after the adoption of ICS.

Among the families where change in mobility outside the house was observed, The person (female) involved in cooking at home was able to reach everywhere on time was reported by 46 percent persons, getting more time to do outside work was reported by 27 percent persons. Getting more time to spend in SHG meetings was reported by 16 percent persons, while ability to spend more time with the neighbours was stated by 15 percent persons. Details are given in Annexure-13.

Table-77 : Types of Change in Mobility Outside the House After Adopting ICS

Classification	Jashpur		Kandhamal		Overall	
	n	%	n	%	N	%
Now Reach Everywhere on Time	23	53.49	35	42.68	**58**	**46.40**
Now Get Time To Do Outside Work Also	22	51.16	12	14.63	**34**	**27.20**
Get More Time To Spend in SHG Meetings	3	6.98	17	20.73	**20**	**16.00**
Able to Spend More Time with Neighbours	0	0.00	19	23.17	**19**	**15.20**
Families Showing Change in Mobility Outside the House After Adopting ICS	**43**	**100.00**	**82**	**100.00**	**125**	**100.00**

(multiple responses were recorded)

6.15 Change in Leadership Abilities/Qualities in the Society

Taking both districts together, in 63 percent families, there was change in the leadership abilities/qualities of the person involved in cooking at home after the adoption of ICS, while in the remaining 37 percent families there was no such change observed.

Table-78 : Change in Leadership Abilities/Qualities in the Society

Classification	Change in Leadership Abilities/Qualities in the Society		No Change in Leadership Abilities/Qualities in the Society		Total	
	n	%	n	%	N	%
Jashpur	52	52.00	48	48.00	**100**	**100.00**
Kandhamal	74	74.00	26	26.00	**100**	**100.00**
Overall	**126**	**63.00**	**74**	**37.00**	**200**	**100.00**
Category of Users-						
Families Using TCS,ICS,LPG	43	56.58	33	43.42	**76**	**100.00**
Families Using TCS & ICS	73	65.18	39	34.82	**112**	**100.00**
Members in Family-						
Members in Family<=3	26	65.00	14	35.00	**40**	**100.00**
Members in Family 3-5	60	59.41	41	40.59	**101**	**100.00**
Members in Family>5	40	67.80	19	32.20	**59**	**100.00**

In district Jashpur, in 52 percent families, there was change in the leadership abilities/qualities of the person involved in cooking at home after the adoption of ICS, while in the remaining 48 percent families there was no such change observed.

In district Kandhamal, in 74 percent families, there was change in the leadership abilities/ qualities of the person involved in cooking at home after the adoption of ICS, while in the remaining 26 percent families there was no such change observed.

Among the families where change in the leadership abilities/qualities was observed in the person involved in cooking at home, now the person involved in cooking at home was able to express herself in public was reported by 80 percent persons, while now the person was able to discuss the details of ICS in the SHG meetings was reported by 41 percent persons.

Table-79 : Types of Change in Leadership Abilities/Qualities in the Society

Classification	Now Able to Discuss in Detail about ICS in SHG Meetings		Able to Express Ourselves in Public		Families Showing Change in Leadership Abilities/Qualities in the Society	
	n	%	n	%	N	%
Jashpur	38	73.08	29	55.77	**52**	**100.00**
Kandhamal	14	18.92	72	97.30	**74**	**100.00**
Overall	**52**	**41.27**	**101**	**80.16**	**126**	**100.00**
Category of Users-						
Families Using TCS,ICS,LPG	20	46.51	30	69.77	43	100.00
Families Using TCS & ICS	26	35.62	63	86.30	73	100.00
Members in Family-						
Members in Family<=3	7	26.92	22	84.62	**26**	**100.00**
Members in Family 3-5	25	41.67	44	73.33	**60**	**100.00**
Members in Family>5	20	50.00	35	87.50	**40**	**100.00**

(multiple responses were recorded)

6.16 Change in Participation in Mahila Mandal Meetings/SHE School Sessions

Taking both districts together, in 86 percent families, there was change in the participation in Mahila Mandal Meetings/SHE School Sessions of the person involved in cooking at home after the adoption of ICS, while in the remaining 14 percent families there was no such change observed.

In district Jashpur, in 76 percent families, there was change in the participation in Mahila Mandal Meetings/SHE School Sessions of the person involved in cooking at home after the adoption of ICS, while in district Kandhamal, such proportion was 96 percent.

Table-80 : Change in Participation in Mahila Mandal Meetings/SHE School Sessions

Classification	Change in Participation in Mahila Mandal Meetings/SHE School Sessions		No Change in Participation in Mahila Mandal Meetings/SHE School Sessions		Total	
	n	%	n	%	N	%
Jashpur	76	76.00	24	24.00	**100**	**100.00**
Kandhamal	96	96.00	4	4.00	**100**	**100.00**
Overall	**172**	**86.00**	**28**	**14.00**	**200**	**100.00**
Category of Users-						
Families Using TCS,ICS,LPG	62	81.58	14	18.42	**76**	**100.00**
Families Using TCS & ICS	99	88.39	13	11.61	**112**	**100.00**
Members in Family-						
Members in Family<=3	35	87.50	5	12.50	**40**	**100.00**
Members in Family 3-5	82	81.19	19	18.81	**101**	**100.00**
Members in Family>5	55	93.22	4	6.78	**59**	**100.00**

Among the families where change in the participation in Mahila Mandal Meetings/SHE School Sessions was observed, it was reported that now the person involved in cooking at home had started giving more time to SHE School sessions in 66 percent cases, while the person had become more active in discussions on ICS in SHE School sessions was reported in 38 percent cases.

Table-81 : Type of Change in Participation in Mahila Mandal Meetings/SHE School Sessions

Classification	Have Become More Active in Discussions on ICS in SHE School Sessions		Started Giving More Time to SHE School Sessions		Families Showing Change in Participation in Mahila Mandal Meetings/SHE School Sessions	
	n	%	n	%	N	%
Jashpur	46	60.53	36	47.37	**76**	**100.00**
Kandhamal	19	19.79	78	81.25	**96**	**100.00**
Overall	**65**	**37.79**	**114**	**66.28**	**172**	**100.00**
Category of Users-						
Families Using TCS,ICS,LPG	33	53.23	32	51.61	**62**	**100.00**
Families Using TCS & ICS	29	29.29	73	73.74	**99**	**100.00**
Members in Family-						
Members in Family<=3	10	28.57	25	71.43	**35**	**100.00**
Members in Family 3-5	37	45.12	50	60.98	**82**	**100.00**
Members in Family>5	18	32.73	39	70.91	**55**	**100.00**

(multiple responses were recorded)

6.17 Change in Safety of Small Children Due to Use of ICS

Taking both districts together, in around 40 percent cases it was reported that the elders in the family keep the small children away from the ICS, while around 8 percent families said that there was no risk to small children of burns due to ICS. In 17 percent cases, the families said that there was no change in safety of small children due to the use of ICS.

Table-82 : Change in Safety of Small Children Due to Use of ICS

Classification	No Risk of Suffering Burns of Small Children		No Small Children at Home		Keep Small Children Away from ICS		There Has Been No Change		Total	
	n	%	n	%	n	%	n	%	N	%
Jashpur	6	6.00	32	32.00	34	34.00	29	29.00	**100**	**100.00**
Kandhamal	9	9.00	41	41.00	45	45.00	5	5.00	**100**	**100.00**
Overall	**15**	**7.50**	**73**	**36.50**	**79**	**39.50**	**34**	**17.00**	**200**	**100.00**
Category of Users-										
Families Using TCS,ICS,LPG	5	6.58	25	32.89	32	42.11	14	18.42	**76**	**100.00**
Families Using TCS & ICS	10	8.93	43	38.39	41	36.61	19	16.96	**112**	**100.00**
Members in Family-										
Members in Family<=3	1	2.50	22	55.00	13	32.50	4	10.00	**40**	**100.00**
Members in Family 3-5	9	8.91	35	34.65	43	42.57	15	14.85	**101**	**100.00**
Members in Family>5	5	8.47	16	27.12	23	38.98	15	25.42	**59**	**100.00**

(B) Economic Impacts of ICS

6.18 Money Spent on Buying ICS

Almost all the families reported having spent Rs. 1,350/- to buy ICS.

6.19 Money Spent on Repair & Maintenance of ICS

No family had to spend any money on repair & maintenance of their ICS. The families said that they have only recently purchased the ICS and its use by them is also limited. Hence, there has been no need of repair & maintenance of the ICS yet.

6.20 Money Saved on Fuelwood Due to Use of ICS

Almost all the families using TCS, collected fuelwood from the forest free of cost. There was no cost involved for fuelwood collection and transportation, as they carried the loads of fuelwood on their head/shoulders. Depending upto the family size and the fooding habit of the family different families used different quantities of fuelwood in their TCS. On the basis of the prevailing market rate of fuelwood and the quantity of fuelwood used by the family, the notional value of the fuelwood used by each family has been arrived at.

On the basis of this calculation, taking both districts together, 82 percent families said that due to the use of ICS, they have been able to save upto Rs. 300/- per month, while around 12

percent families said that they have been able to save upto Rs. 500/- per month. Similarly, around 4 percent families said that they have been able to save more than Rs. 500/- per month.

Table-83 : Money Saved on Fuelwood Due to Use of ICS

Classification	Upto Rs. 300/- p.m.		Upto Rs. 500/- p.m.		More Than Rs. 500/- p.m.		Total	
	n	%	n	%	n	%	N	%
Jashpur	86	86.00	6	6.00	2	2.00	**100**	**100.00**
Kandhamal	78	78.00	17	17.00	5	5.00	**100**	**100.00**
Overall	**164**	**82.00**	**23**	**11.50**	**7**	**3.50**	**200**	**100.00**
Category of Users-								
Families Using TCS,ICS,LPG	65	85.53	5	6.58	3	3.95	**76**	**100.00**
Families Using TCS & ICS	89	79.46	16	14.29	4	3.57	**112**	**100.00**
Members in Family-								
Members in Family<=3	33	82.50	3	7.50	0	0.00	**40**	**100.00**
Members in Family 3-5	85	84.16	11	10.89	4	3.96	**101**	**100.00**
Members in Family>5	46	77.97	9	15.25	3	5.08	**59**	**100.00**

6.21 Utilization of Time Saved from Collecting Fuelwood

Taking both districts together, around 26 percent persons (females) involved in cooking food at home said that they utilized the time saved due to use of ICS in some income generation activity, while the remaining 74 percent such persons said that they did not utilize the time saved in any income generation activity.

Table-84 : Utilization of Time Saved from Collecting Fuelwood

Classification	Utilize Time Saved Due to ICS in Income Generation Activity		Do Not Utilize Time Saved Due to ICS in Income Generation Activity		Total	
	n	%	n	%	N	%
Jashpur	11	11.00	89	89.00	**100**	**100.00**
Kandhamal	40	40.00	60	60.00	**100**	**100.00**
Overall	**51**	**25.50**	**149**	**74.50**	**200**	**100.00**
Category of Users-						
Families Using TCS,ICS,LPG	17	22.37	59	77.63	**76**	**100.00**
Families Using TCS & ICS	31	27.68	81	72.32	**112**	**100.00**
Members in Family-						
Members in Family<=3	9	22.50	31	77.50	**40**	**100.00**
Members in Family 3-5	26	25.74	75	74.26	**101**	**100.00**
Members in Family>5	16	27.12	43	72.88	**59**	**100.00**

Most of these persons (females) who utilized their saved time in some income generation activity used this time to make leaf plates and working in their agriculture fields.

6.22 Money Earned/Saved Due to Use of ICS

(A) Money Earned by Doing Income Generation Activity

Taking both districts together, among those persons (females) who were involved in cooking activity at home, utilized the saved time in some income generation activity, more than 80 percent earned upto Rs. 500/- per month, while around 8 percent persons earned upto Rs. 1,000/- per month.

There were around 10 percent persons who earned more than Rs. 1,000/- per month. Most of these women who utilized their saved time in some income generation activity used this time to make leaf plates and working in their agriculture fields. These activities were seasonal and were carried out for a period of around 3 months in a year.

Table-85 : Money Earned Due to Doing Income Generation Activity

Classification	Upto Rs. 500/- p.m.		Upto Rs. 1,000/- p.m.		More Than Rs. 1,000/- p.m.		Utilize Time Saved Due to ICS in Income Generation Activity	
	n	%	n	%	n	%	N	%
Jashpur	2	18.18	3	27.27	5	45.45	**11**	**100.00**
Kandhamal	39	97.50	1	2.50	0	0.00	**40**	**100.00**
Overall	**41**	**80.39**	**4**	**7.84**	**5**	**9.80**	**51**	**100.00**
Category of Users-								
Families Using TCS,ICS,LPG	11	64.71	2	11.76	3	17.65	**17**	**100.00**
Families Using TCS & ICS	28	90.32	2	6.45	1	3.23	**31**	**100.00**
Members in Family-								
Members in Family<=3	9	100.00	0	0.00	0	0.00	**9**	**100.00**
Members in Family 3-5	19	73.08	2	7.69	4	15.38	**26**	**100.00**
Members in Family>5	13	81.25	2	12.50	1	6.25	**16**	**100.00**

(B) Additional Money Earned by Family Due to Support in Income Generation Activity

Taking both districts together, among those families in which the person involved in cooking activity at home utilized the saved time in supporting a family member in his/her income generation activity, more than 31 percent helped him/her earn additional upto Rs. 500/- per month, while another 31 percent helped him/her earn additional upto Rs. 1,000/- per month.

There were around 38 percent persons who helped his family member earn additional more than Rs. 1,000/- per month. Most of these women helped their family in agricultural activities of the family. These activities were seasonal and were carried out for a period of around 3 months in a year.

Table-86 : Additional Money Earned by Family Due to Support in Income Generation Activity

Classification	Upto Rs. 500/- p.m.		Upto Rs. 1,000/- p.m.		More Than Rs. 1,000/- p.m.		Utilize Time Saved Due to ICS in Supporting Family Member in Income Generation Activity	
	n	%	n	%	n	%	N	%
Jashpur	4	25.00	6	37.50	6	37.50	**16**	**100.00**
Kandhamal	6	37.50	4	25.00	6	37.50	**16**	**100.00**
Overall	**10**	**31.25**	**10**	**31.25**	**12**	**37.50**	**32**	**100.00**
Category of Users-								
Families Using TCS,ICS,LPG	5	35.71	3	21.43	6	42.86	14	100.00
Families Using TCS & ICS	4	23.53	7	41.18	6	35.29	17	100.00
Members in Family-								
Members in Family<=3	1	16.67	2	33.33	3	50.00	**6**	**100.00**
Members in Family 3-5	5	41.67	4	33.33	3	25.00	**12**	**100.00**
Members in Family>5	4	28.57	4	28.57	6	42.86	**14**	**100.00**

(C) Money Saved by the Family By Utilizing the Time Saved in Such Activity for Which Earlier Had to Spend Money

Taking both districts together, among those families in which the person involved in cooking activity at home utilized the saved time in such activities for which earlier she had to spend money, 23 percent earn upto Rs. 500/- per month, while another around 54 percent earn upto Rs. 1,000/- per month. There were 23 percent persons who earn more than Rs. 1,000/- per month. Most of these women helped their family in agricultural activities of the family. There were only 13 such cases (4 cases in district Jashpur and 9 cases in district Kandhamal). These activities were seasonal and were carried out for a period of around 3 months in a year.

6.23 Frequency of LPG Cylinder Refilling in Last 1 Year

Majority of the families have got LPG connection under the Ujjwala Scheme of the Government.

Table-87 : Frequency of LPG Cylinder Refilling in Last 1 Year

Classification	Jashpur		Kandhamal		Overall	
	n	%	n	%	N	%
Not Once	33	40.74	29	37.66	**62**	**39.24**
One Time	13	16.05	19	24.68	**32**	**20.25**
Two Times	15	18.52	8	10.39	**23**	**14.56**
Three Times	2	2.47	4	5.19	**6**	**3.80**
Four Times	6	7.41	3	3.90	**9**	**5.70**
Five Times	2	2.47	2	2.60	**4**	**2.53**
Six or More Times	10	12.35	12	15.58	**22**	**13.92**
Total	**81**	**100.00**	**77**	**100.00**	**158**	**100.00**

Taking both districts together, more than 39 percent families did not get the LPG cylinder refilled even once, after exhausting the first one received alongwith the connection. More than 20 percent families got the LPG cylinder refilled just once during the last one year, while another 4 percent families got it refilled twice. Details are given in Annexure-14.

6.24 Cost Incurred in LPG Cylinder Refilling

Among the families that got their LPG cylinder refilled even once, were asked about the cost incurred by them in getting the LPG cylinder refilled, including the cost of refilling and the transportation cost.

Taking both districts together, more than 35 percent families said that they spent on an average an amount of upto Rs. 900/- for refilling the LPG cylinder once. Similarly, 15 percent families said that they spent on an average an amount of upto Rs. 1,000/-, while the remaining 10 percent families said that they spent an amount upto Rs. 1,100/- per refilling.

Table-88 : Cost Incurred in LPG Cylinder Refilling Once

Classification	Cost Incurred Upto Rs. 900/- per Refilling		Cost Incurred Upto Rs. 1,000/- per Refilling		Cost Incurred Upto Rs. 1,100/- per Refilling		Families That Got LPG Cylinder Refilled Even Once	
	n	%	n	%	n	%	N	%
Jashpur	31	38.27	10	12.35	7	8.64	**81**	**100.00**
Kandhamal	25	32.47	14	18.18	9	11.69	**77**	**100.00**
Overall	**56**	**35.44**	**24**	**15.19**	**16**	**10.13**	**158**	**100.00**
Category of Users-								
Families Using TCS,ICS,LPG	36	47.37	12	15.79	7	9.21	**76**	**100.00**
Families Using TCS & ICS	14	20.00	8	11.43	7	10.00	**70**	**100.00**
Members in Family-								
Members in Family<=3	10	34.48	5	17.24	2	6.90	**29**	**100.00**
Members in Family 3-5	28	34.57	13	16.05	11	13.58	**81**	**100.00**
Members in Family>5	18	37.50	6	12.50	3	6.25	**48**	**100.00**

(C) Impacts on Health of ICS

6.25 Facing Health Problems when Using ICS vis-à-vis TCS

(A) Problems Faced When Using TCS

Taking both districts together, irritation in the eyes was reported by almost all (97 percent) persons (females) involved in cooking activities at home, while coughing was reported by around 86 percent such persons. Other health related problems due to smoke emitted as stated by the person involved in cooking activities at home due to TCS include headache (74 percent), breathing problem (69 percent) and chest pain (66 percent). Details are given in Anneexure-15.

Table-89 : Facing Health Problems When Using TCS

Classification	Jashpur		Kandhamal		Overall	
	n	%	n	%	N	%
Eye Irritation	98	98.00	96	96.00	**194**	**97.00**
Coughing	82	82.00	89	89.00	**171**	**85.50**
Headache	56	56.00	92	92.00	**148**	**74.00**
Breathing Problem	71	71.00	66	66.00	**137**	**68.50**
Chest Pain	44	44.00	88	88.00	**132**	**66.00**
Total	**100**	**100.00**	**100**	**100.00**	**200**	**100.00**

(multiple responses were recorded)

(A) Problems Faced When Using ICS

In almost all the families, the persons (females) involved in cooking activities at home said that while using ICS, they did not face any smoke related health problem as the smoke emitted by the ICS in comparison to the TCS was negligible.

6.26 Expenses on Treatment of Health Problems when Using ICS vis-à-vis TCS

Taking both districts together, there were 17 cases where it was reported that the family had to spend money on medical treatment of health related problems due to smoke emitted from the TCS. Out of these, in 9 cases, the family had to spend upto Rs. 1,000/- on the medical treatment of the member, while ion the remaining 8 cases, the family had to spend more than Rs. 1,000/-. On the contrary, when the families used ICS, they did not incur any expense on medical treatment of smoke related health problems.

(D) Perception about ICS

6.27 Present Condition of ICS

Taking both districts together, 86 percent families said that the present condition of their ICS was good, while the remaining half 14 percent families said that the present condition of their ICS was satisfactory.

Table-90 : Present Condition of ICS

Classification	Present Condition of ICS is Good		Present Condition of ICS is Satisfactory		Total	
	n	%	n	%	N	%
Jashpur	80	80.00	20	20.00	**100**	**100.00**
Kandhamal	92	92.00	8	8.00	**100**	**100.00**
Overall	**172**	**86.00**	**28**	**14.00**	**200**	**100.00**
Category of Users-						
Families Using TCS,ICS,LPG	66	86.84	10	13.16	**76**	**100.00**
Families Using TCS & ICS	95	84.82	17	15.18	**112**	**100.00**
Members in Family-						
Members in Family<=3	35	87.50	5	12.50	**40**	**100.00**
Members in Family 3-5	84	83.17	17	16.83	**101**	**100.00**
Members in Family>5	53	89.83	6	10.17	**59**	**100.00**

In district Jashpur, 80 percent families said that the present condition of their ICS was good, while the remaining half 20 percent families said that the present condition of their ICS was satisfactory. Similarly, in district Kandhamal, 92 percent families said that the present condition of their ICS was good, while the remaining half 8 percent families said that the present condition of their ICS was satisfactory.

Taking both districts together, around 47 percent families said that they used the ICS for a short duration of time in a day, hence the condition of the ICS was good/satisfactory. Around 28 percent families said that they took proper care of the ICS, hence the condition was good/satisfactory. There were around 27 percent families that said that they had only recently purchased the ICS and hence it was in a good/satisfactory condition.

Table-91 : Reasons for the Present Condition of ICS

Classification	Maintaining it Properly		Purchased Recently		Used for Short Duration		Present Condition of ICS is Good	
	n	%	n	%	n	%	N	%
Jashpur	22	22.00	39	39.00	39	39.00	**100**	**100.00**
Kandhamal	33	33.00	14	14.00	54	54.00	**100**	**100.00**
Overall	**55**	**27.50**	**53**	**26.50**	**93**	**46.50**	**200**	**100.00**
Category of Users-								
Families Using TCS,ICS,LPG	20	26.32	25	32.89	32	42.11	**76**	**100.00**
Families Using TCS & ICS	34	30.36	25	22.32	53	47.32	**112**	**100.00**
Members in Family-								
Members in Family<=3	12	30.00	12	30.00	16	40.00	**40**	**100.00**
Members in Family 3-5	27	26.73	28	27.72	45	44.55	**101**	**100.00**
Members in Family>5	16	27.12	13	22.03	32	54.24	**59**	**100.00**

6.28 Upkeep & Maintenance of ICS

Taking both districts together, regularly removing the ash from the ICS for upkeep & maintenance of the ICS was stated by 76 percent families, while cleaning the ICS with a piece of wet cloth was reported by around 21 percent families. Around 16 percent families said that they did not do anything for the upkeep & maintenance of the ICS. All the families said that they did not face any problem in maintaining the ICS.

In district Jashpur, regularly removing the ash from the ICS for upkeep & maintenance of the ICS was stated by 64 percent families, while cleaning the ICS with a piece of wet cloth was reported by 25 percent families. There were 24 percent families that said that they did not do anything for the upkeep & maintenance of the ICS.

In district Kandhamal, regularly removing the ash from the ICS for upkeep & maintenance of the ICS was stated by 88 percent families, while cleaning the ICS with a piece of wet cloth

was reported by 16 percent families. There were 8 percent families that said that they did not do anything for the upkeep & maintenance of the ICS.

Table-92 : Upkeep & Maintenance of ICS

Classification	Regularly Remove the Ash from the ICS		Wipe With Wet Cloth		Do Not Do Anything		Total	
	n	%	n	%	n	%	N	%
Jashpur	64	64.00	25	25.00	24	24.00	**100**	**100.00**
Kandhamal	88	88.00	16	16.00	8	8.00	**100**	**100.00**
Overall	**152**	**76.00**	**41**	**20.50**	**32**	**16.00**	**200**	**100.00**
Category of Users-								
Families Using TCS,ICS,LPG	58	76.32	13	17.11	9	11.84	**76**	**100.00**
Families Using TCS & ICS	84	75.00	25	22.32	23	20.54	**112**	**100.00**
Members in Family-								
Members in Family<=3	27	67.50	10	25.00	11	27.50	**40**	**100.00**
Members in Family 3-5	77	76.24	20	19.80	17	16.83	**101**	**100.00**
Members in Family>5	48	81.36	11	18.64	4	6.78	**59**	**100.00**

(multiple responses were recorded)

6.29 Benefits of Using ICS

The families were asked to state the benefits of using ICS. There were many benefits stated by the families including, in ICS the use of fuelwood is less in comparison to TCS was stated by 79 percent families, while ICS emits less smoke and also cooks food fast was stated by 71 percent families. Ability to shift the place of cooking was stated as a benefit of using ICS by 33 percent families. Details are given in Annexure-16.

Table-93 : Benefits of Using ICS

Classification	Jashpur		Kandhamal		Overall	
	n	%	n	%	N	%
Less Use of Fuelwood	72	72.00	86	86.00	**158**	**79.00**
Less Emission of Smoke	59	59.00	83	83.00	**142**	**71.00**
Cooks Food Fast	78	78.00	63	63.00	**141**	**70.50**
Able to Shift Place of Cooking	23	23.00	43	43.00	**66**	**33.00**
Less Blackening of Walls & Cooking Vessels	9	9.00	3	3.00	**12**	**6.00**
Total	**100**	**100.00**	**100**	**100.00**	**200**	**100.00**

(multiple responses were recorded)

6.30 Problems in Using ICS

The families were asked to state the problems they face while using ICS. Taking both districts together, small pieces of wood has to be used was the problems stated by 18 percent families, while the single pot chulha of the ICS was a problem stated by 13 percent families. The opening where thee fuelwood is put in the ICS was small was the problem stated by 13 percent families. Having to sit in front of the ICS while the food was cooking was a problem

stated by 12 percent families. However, there were almost 63 percent families that said that they did not face any problem in using ICS. Details are given in Annexure-17.

Table-94 : Problems in Using ICS

Classification	Jashpur		Kandhamal		Overall	
	n	%	n	%	N	%
Small Pieces of Wood Has to Be Used	33	33.00	3	3.00	**36**	**18.00**
It Should Have Two Pot Stove	26	26.00	0	0.00	**26**	**13.00**
Opening Where Fuelwood is Put Should be Bigger	26	26.00	0	0.00	**26**	**13.00**
Have to Sit in Front of the ICS When Cooking	23	23.00	1	1.00	**24**	**12.00**
No Problem	28	28.00	97	97.00	**125**	**62.50**
Total	**100**	**100.00**	**100**	**100.00**	**200**	**100.00**

(multiple responses were recorded)

6.31 Suggestions for Increase in Adoption of ICS

The families were asked to give suggestions to increase the number of families adopting ICS. Taking both districts together, creating awareness about the benefits of ICS was the suggestion to increase its adoption was stated by around 77 percent families, the cost of ICS should be affordable and should be less that its prevailing cost was suggested by 29 percent families.

Table-95 : Suggestions for Increase in Adoption of ICS

Classification	Create Awareness About the Benefits of ICS		The Cost of ICS Should be Reduced		Total	
	n	%	n	%	N	%
Jashpur	78	78.00	25	25.00	**100**	**100.00**
Kandhamal	75	75.00	33	33.00	**100**	**100.00**
Overall	**153**	**76.50**	**58**	**29.00**	**200**	**100.00**
Category of Users-						
Families Using TCS,ICS,LPG	62	81.58	18	23.68	**76**	**100.00**
Families Using TCS & ICS	82	73.21	35	31.25	**112**	**100.00**
Members in Family-						
Members in Family<=3	30	75.00	11	27.50	**40**	**100.00**
Members in Family 3-5	78	77.23	28	27.72	**101**	**100.00**
Members in Family>5	45	76.27	19	32.20	**59**	**100.00**

(multiple responses were recorded)

(E) Perception about ICS Adoption Program

6.32 Sources of Information about ICS

All the families said that they came to know about the ICS adoption program from the Care India Representatives and the Mahila Mandal members of their village.

6.33 Issues of Discussion in Mahila Mandal Meetings

The families said that various issues were discussed in the Mahila Mandal meetings. When asked to specify the issues, less consumption of fuelwood was stated by around 92 percent families, while ICS cooks food fast was stated by 86 percent families. The ICS emits less smoke was discussed in the meeting was stated by 82 percent families. Other issues discussed in the meetings as stated by the families included – the cooking vessels did not get blackened (69 percent) families and the ICS is portable unlike the TCS and can be shifted to more convenient location was stated by 66 percent families. Details are given in Annexure-18.

Table-96 : Issues of Discussion in Mahila Mandal Meetings

Classification	Jashpur		Kandhamal		Overall	
	n	%	n	%	N	%
Less Fuelwood is Consumed	89	89.00	94	94.00	**183**	**91.50**
ICS Cooks Food Fast	92	92.00	80	80.00	**172**	**86.00**
Low Emission of Smoke	72	72.00	92	92.00	**164**	**82.00**
No Blackening of Cooking Vessels	68	68.00	70	70.00	**138**	**69.00**
Can be Shifted from One Place to Another	62	62.00	70	70.00	**132**	**66.00**
Total	**100**	**100.00**	**100**	**100.00**	**200**	**100.00**

(multiple responses were recorded)

6.34 Source of Motivation to Adopt ICS

The families were asked to state the source of their motivation to adopt ICS. Taking both districts together, the awareness generation programs by the Care India Representatives was stated as the source of motivation by 57 percent families, while self motivation was stated by 26 percent families. Other sources of motivation included – Mahila Mandal (12 percent) and family members (10 percent).

Table-97 : Source of Motivation to Adopt ICS

Classification	Care India Person		Self Motivated		Mahila Mandal		Family Members		Total	
	n	%	n	%	n	%	n	%	N	%
Jashpur	66	66.00	10	10.00	21	21.00	10	10.00	**100**	**100.00**
Kandhamal	48	48.00	42	42.00	2	2.00	9	9.00	**100**	**100.00**
Overall	**114**	**57.00**	**52**	**26.00**	**23**	**11.50**	**19**	**9.50**	**200**	**100.00**
Category of Users-										
Families Using TCS,ICS,LPG	44	68.75	13	20.31	7	10.94	3	4.69	**64**	**100.00**
Families Using TCS & ICS	36	51.43	16	22.86	12	17.14	9	12.86	**70**	**100.00**
Members in Family-										
Members in Family<=3	26	65.00	11	27.50	3	7.50	1	2.50	**40**	**100.00**
Members in Family 3-5	53	52.48	23	22.77	17	16.83	14	13.86	**101**	**100.00**
Members in Family>5	35	59.32	18	30.51	3	5.08	4	6.78	**59**	**100.00**

(multiple responses were recorded)

6.35 Reasons that Motivated to Adopt ICS

The families were asked to state the factors that motivated them to adopt ICS for cooking food. Consumption of less fuelwood in comparison to TCS was stated as the motivating factor by three-fourth (75 percent) families, while the fact that ICS cooks food faster than TCS was stated by 71 percent families. Some other factors that motivated the families to adopt ICS included - less emission of smoke in comparison to TCS (63 percent) and the ICS is portable unlike the TCS and can be shifted to more convenient location (66 percent).

Table-98 : Reasons that Motivated to Adopt ICS

Classification	ICS Cooks Food Fast		Less Fuelwood is Consumed		Less Emission of Smoke		Able to Shift the ICS Anywhere		Total	
	n	%	n	%	n	%	n	%	N	%
Jashpur	72	72.00	76	76.00	59	59.00	19	19.00	**100**	**100.00**
Kandhamal	69	69.00	73	73.00	67	67.00	29	29.00	**100**	**100.00**
Overall	**141**	**70.50**	**149**	**74.50**	**126**	**63.00**	**48**	**24.00**	**200**	**100.00**
Category of Users-										
Families Using TCS,ICS,LPG	48	63.16	55	72.37	46	60.53	17	22.37	76	100.00
Families Using TCS & ICS	83	74.11	86	76.79	71	63.39	27	24.11	112	100.00
Members in Family-										
Members in Family<=3	31	77.50	31	77.50	23	57.50	8	20.00	**40**	**100.00**
Members in Family 3-5	71	70.30	78	77.23	63	62.38	23	22.77	**101**	**100.00**
Members in Family>5	39	66.10	40	67.80	40	67.80	17	28.81	**59**	**100.00**

(multiple responses were recorded)

6.36 Arranging for the Cost of ICS

Almost all (92 percent) families said that they purchased the ICS from their own money, while the remaining (8 percent) families said that to buy the ICS, they had taken loan from the Mahila Mandal.

7
Families Not Using ICS

(A) Social & Gender Impacts of TCS

7.1 Place of Getting Fuelwood by the Family

Taking both districts together, collecting fuelwood from the nearby forest was reported by 97 percent families, while fuelwood also available in the homestead land was reported by 3 percent families. Fuelwood was purchased was reported by 1 percent families.

Table-99 : Place of Getting Fuelwood by the Family

Classification	Cutting/Collecting from Forest		Purchase from Market		Available in Homestead Land		Total	
	n	%	n	%	n	%	N	%
Jashpur	279	93.00	7	2.33	20	6.67	**300**	**100.00**
Kandhamal	300	100.00	0	0.00	0	0.00	**300**	**100.00**
Overall	**579**	**96.50**	**7**	**1.17**	**20**	**3.33**	**600**	**100.00**
Category of Respondents-								
Project Village:Non-Adopters	195	97.50	2	1.00	4	2.00	**200**	**100.00**
Control Village:Non-Adopters	384	96.00	5	1.25	16	4.00	**400**	**100.00**

(multiple responses were recorded)

7.2 Distance Traveled to Get Fuelwood

Taking both districts together, more than half (53 percent) families traveled 3-5 kms. to the forest to collect fuelwood, while 31 percent families traveled 1-3 kms. to collect fuelwood. There were 10 percent families that traveled more than 5 kms. to collect fuelwood.

Table-100 : Distance Traveled to Get Fuelwood

Classification	Less than 1 Km.		1 to 3 Kms.		3 to 5 Kms.		More than 5 Kms.		Total	
	n	%	n	%	n	%	n	%	N	%
Jashpur	28	9.33	88	29.33	139	46.33	45	15.00	**300**	**100.00**
Kandhamal	11	3.67	97	32.33	176	58.67	16	5.33	**300**	**100.00**
Overall	**39**	**6.50**	**185**	**30.83**	**315**	**52.50**	**61**	**10.17**	**600**	**100.00**
Category of Respondents-										
Project Village:Non-Adopters	8	4.00	78	39.00	87	43.50	27	13.50	**200**	**100.00**
Control Village:Non-Adopters	31	7.75	107	26.75	228	57.00	34	8.50	**400**	**100.00**

In district Jashpur, around 44 percent families traveled 3-5 kms. to the forest to collect fuelwood, while 29 percent families traveled 1-3 kms. to collect fuelwood. There were 15 percent families that traveled more than 5 kms. to collect fuelwood.

Similarly, in district Kandhamal, around 59 percent families traveled 3-5 kms. to the forest to collect fuelwood, while 32 percent families traveled 1-3 kms. to collect fuelwood. There were 5 percent families that traveled more than 5 kms. to collect fuelwood.

7.3 Mode of Transportation to Get Fuelwood

Taking both districts together, almost all the families carried/transported the fuel wood collected from the forests on their head/shoulders. A few families also used bicycles and another few tractors to transport the fuelwood.

Table-101 : Mode of Transportation to Get Fuelwood

Classification	On Head/ Shoulder		On Bicycle		On Tractor		Total	
	n	%	n	%	n	%	N	%
Jashpur	295	98.33	6	2.00	4	1.33	**300**	**100.00**
Kandhamal	299	99.67	0	0.00	1	0.33	**300**	**100.00**
Overall	**594**	**99.00**	**6**	**1.00**	**5**	**0.83**	**600**	**100.00**
Category of Respondents-								
Project Village:Non-Adopters	199	99.50	3	1.50	2	1.00	**200**	**100.00**
Control Village:Non-Adopters	395	98.75	3	0.75	3	0.75	**400**	**100.00**

(multiple responses were recorded)

7.4 Problems Faced in Using Wood in TCS

Taking both districts together, problems in collecting/transporting fuel wood from the forests due to the effort and harassment involved in traveling long distances, climbing the trees, carrying loads of fuel wood on their head/shoulders was reported by around 77 percent families. Similarly, health related problems like swelling in the legs, bruises on the shoulders and breathlessness was reported by around 69 percent families. There were around 2 percent families that said that they did not face any problem in collecting wood from the forests.

Table-102 : Problems Faced in Using Wood in TCS

Classification	Problem in Collecting/ Transporting Wood		Health Related Problems		No Problem		Total	
	n	%	n	%	n	%	N	%
Jashpur	263	87.67	130	43.33	3	1.00	**300**	**100.00**
Kandhamal	196	65.33	283	94.33	6	2.00	**300**	**100.00**
Overall	**459**	**76.50**	**413**	**68.83**	**9**	**1.50**	**600**	**100.00**
Category of Respondents-								
Project Village:Non-Adopters	170	85.00	136	68.00	4	2.00	**200**	**100.00**
Control Village:Non-Adopters	289	72.25	277	69.25	5	1.25	**400**	**100.00**

(multiple responses were recorded)

7.5 Reasons for Use of Wood in TCS

Taking both districts together, the ease of availability of wood was the reason for using wood in TCS was reported by around 72 percent families. Similarly, availability of wood for free of cost was the reason for using wood in TCS was reported by around 14 percent families. There were 27 percent families that said that they had no other option than to use wood to fuel their TCS.

Table-103 : Reasons for Use of Wood in TCS

Classification	Easily Available		Available Free of Cost		No Other Option		Total	
	n	%	n	%	n	%	N	%
Jashpur	241	80.33	64	21.33	39	13.00	**300**	**100.00**
Kandhamal	188	62.67	19	6.33	124	41.33	**300**	**100.00**
Overall	**429**	**71.50**	**83**	**13.83**	**163**	**27.17**	**600**	**100.00**
Category of Respondents-								
Project Village:Non-Adopters	163	81.50	39	19.50	22	11.00	**200**	**100.00**
Control Village:Non-Adopters	266	66.50	44	11.00	141	35.25	**400**	**100.00**

(multiple responses were recorded)

Among the Project Village Non-Adopters of ICS families, the ease of availability of wood was the reason for using wood in TCS was reported by around 82 percent families, while availability of wood for free of cost was the reason for using wood in TCS was reported by around 20 percent families. No other option was stated by 11 percent families.

Among the Control Village Non-Adopters of ICS families, the ease of availability of wood was the reason for using wood in TCS was reported by around 67 percent families, while availability of wood for free of cost was the reason for using wood in TCS was reported by around 11 percent families. No other option was stated by more than 35 percent families.

7.6 Time Spent on Cooking on TCS

Taking both districts together, two out of every five families (41 percent) stated that it took more than 3 hours every day to cook food for the family, while another two out of five families (39 percent) stated that it took upto 2 hours every day to cook food for the family. There were 20 percent families that stated that it took 2-3 hours every day to cook food for the family. Apart from the type of chulha being used, the time taken to cook food also depends upon the family size and the fooding habit of the family.

In district Jashpur, more than 63 percent families stated that it took upto 2 hours every day to cook food for the family, while another 28 percent families stated that it took 2-3 hours every day to cook food for the family. There were 9 percent families that stated that it took more than 3 hours every day to cook food for the family.

Table-104 : Time Spent on Cooking on TCS

Classification	Upto 2 Hrs.		2 to 3 Hrs.		More than 3 Hrs.		Total	
	n	%	n	%	n	%	N	%
Jashpur	190	63.33	83	27.67	27	9.00	**300**	**100.00**
Kandhamal	44	14.67	37	12.33	219	73.00	**300**	**100.00**
Overall	**234**	**39.00**	**120**	**20.00**	**246**	**41.00**	**600**	**100.00**
Category of Respondents-								
Project Village:Non-Adopters	81	40.50	37	18.50	82	41.00	**200**	**100.00**
Control Village:Non-Adopters	153	38.25	83	20.75	164	41.00	**400**	**100.00**

In district Kandhamal, 73 percent families stated that it took more than 3 hours every day to cook food for the family, while another 15 percent families stated that it took upto 2 hours every day to cook food for the family. There were 12 percent families that stated that it took 2-3 hours every day to cook food for the family.

7.7 Problem in Cleaning on Using TCS

Taking both districts together, almost all (96 percent) families stated that they faced problem in cleaning of chulha, cooking utensils, walls of the place of cooking, place of storing wood, soot, spider web, etc. due to excessive emission of smoke.

Table-105 : Problem in Cleaning on Using TCS

Classification	Problem in Cleaning Blackened Walls, Vessels, etc.		No Problem in Cleaning Blackened Walls, Vessels, etc.		Total	
	n	%	n	%	N	%
Jashpur	290	96.67	10	3.33	**300**	**100.00**
Kandhamal	285	95.00	15	5.00	**300**	**100.00**
Overall	**575**	**95.83**	**25**	**4.17**	**600**	**100.00**
Category of Respondents-						
Project Village:Non-Adopters	189	94.50	11	5.50	**200**	**100.00**
Control Village:Non-Adopters	386	96.50	14	3.50	**400**	**100.00**

7.8 Problems Due to Non-Portability of TCS

Taking both districts together, 80 percent families stated that they faced problem due to non-portability of TCS, while the remaining 20 percent families said that they faced no problem due to non-portability of TCS.

In district Jashpur, more than 74 percent families stated that they faced problem due to non-portability of TCS, while the remaining 26 percent families said that they faced no problem due to non-portability of TCS. Similarly, in district Kandhamal, 86 percent families stated that they

faced problem due to non-portability of TCS, while the remaining 14 percent families said that they faced no problem due to non-portability of TCS.

Table-106 : Problems Due to Non-Portability of TCS

Classification	Problems Due to Non-Portability of TCS		No Problems Due to Non-Portability of TCS		Total	
	n	%	n	%	N	%
Jashpur	223	74.33	77	25.67	**300**	**100.00**
Kandhamal	258	86.00	42	14.00	**300**	**100.00**
Overall	**481**	**80.17**	**119**	**19.83**	**600**	**100.00**
Category of Respondents-						
Project Village:Non-Adopters	141	70.50	59	29.50	**200**	**100.00**
Control Village:Non-Adopters	340	85.00	60	15.00	**400**	**100.00**

In Project Village Non-Adopters of ICS families, around 71 percent families stated that they faced problem due to non-portability of TCS, while the remaining 30 percent families said that they faced no problem due to non-portability of TCS. In Control Village Non-Adopters of ICS families, 85 percent families stated that they faced problem due to non-portability of TCS, while the remaining 15 percent families said that they faced no problem due to non-portability of TCS.

7.9 Involvement of Male Members in Cooking on TCS

Taking both districts together, around 61 percent families stated that male members of the family were also involved in cooking at home, while the remaining 39 percent families said that the male members of the family were not involved in cooking at home.

Table-107 : Involvement of Male Members in Cooking on TCS

Classification	Male Members Involved in Cooking		Male Members Not Involved in Cooking		Total	
	n	%	n	%	N	%
Jashpur	127	42.33	173	57.67	**300**	**100.00**
Kandhamal	238	79.33	62	20.67	**300**	**100.00**
Overall	**365**	**60.83**	**235**	**39.17**	**600**	**100.00**
Category of Respondents-						
Project Village:Non-Adopters	107	53.50	93	46.50	**200**	**100.00**
Control Village:Non-Adopters	258	64.50	142	35.50	**400**	**100.00**

In district Jashpur, more than 42 percent families stated that male members of the family were also involved in cooking at home, while the remaining 58 percent families said that the male members of the family were not involved in cooking at home. On the contrary, in district Kandhamal, more than 79 percent families stated that male members of the family were also

involved in cooking at home, while the remaining 21 percent families said that the male members of the family were not involved in cooking at home.

7.10 Role in Day to Day Decision Making for the Family

Taking both districts together, an overwhelming proportion (93 percent) of persons (females) responsible for cooking at home said that they had a role in day to day decision making for the family. District-wise, there was no difference.

Table-108 : Role in Day to Day Decision Making for the Family

Classification	Have Role in Day to Day Decision Making for the Family		Have No Role in Day to Day Decision Making for the Family		Total	
	n	%	n	%	N	%
Jashpur	274	91.33	26	8.67	**300**	**100.00**
Kandhamal	282	94.00	18	6.00	**300**	**100.00**
Overall	**556**	**92.67**	**44**	**7.33**	**600**	**100.00**
Category of Respondents-						
Project Village:Non-Adopters	168	84.00	32	16.00	**200**	**100.00**
Control Village:Non-Adopters	388	97.00	12	3.00	**400**	**100.00**

7.11 Get Time for Mobility Outside the House

Taking both districts together, an overwhelming proportion (90 percent) of persons (females) responsible for cooking at home said that they got time from household work for mobility outside the house. District-wise, there was no difference.

Table-109 : Get Time for Mobility Outside the House

Classification	Get Time for Mobility Outside the House		Do Not Get Time for Mobility Outside the House		Total	
	n	%	n	%	N	%
Jashpur	268	89.33	32	10.67	**300**	**100.00**
Kandhamal	273	91.00	27	9.00	**300**	**100.00**
Overall	**541**	**90.17**	**59**	**9.83**	**600**	**100.00**
Category of Respondents-						
Project Village:Non-Adopters	159	79.50	41	20.50	**200**	**100.00**
Control Village:Non-Adopters	382	95.50	18	4.50	**400**	**100.00**

7.12 Get Time to Express Leadership Abilities/Qualities in the Society

Taking both districts together, around 88 percent persons (females) responsible for cooking at home said that they got time from household work to express their leadership abilities/qualities in the society, while the remaining 13 percent said that they did not get time for such activities. District-wise, there was no difference.

Table-110 : Get Time to Express Leadership Abilities/Qualities in the Society

Classification	Get Time to Express Leadership Abilities/Qualities in the Society		Do Not Get Time to Express Leadership Abilities/Qualities in the Society		Total	
	n	%	n	%	N	%
Jashpur	257	85.67	43	14.33	**300**	**100.00**
Kandhamal	268	89.33	32	10.67	**300**	**100.00**
Overall	**525**	**87.50**	**75**	**12.50**	**600**	**100.00**
Category of Respondents-						
Project Village:Non-Adopters	150	75.00	50	25.00	**200**	**100.00**
Control Village:Non-Adopters	375	93.75	25	6.25	**400**	**100.00**

Among Project Village Non-Adopters, 75 percent persons (females) responsible for cooking at home said that they got time from household work to express their leadership abilities/qualities in the society, while the remaining 25 percent said that they did not get time for such activities.

Among Control Village Non-Adopters, almost 94 percent persons (females) responsible for cooking at home said that they got time from household work to express their leadership abilities/qualities in the society, while the remaining 6 percent said that they did not get time for such activities.

7.13 Safety of Small Children Due to Use of TCS

Taking both districts together, in around half the families (46 percent), there were no small children, hence there was no worry of their safety from TCS. Keeping small children away from the TCS was the way to ensure safety of small children by more than 35 percent families.

Table-111 : Safety of Small Children Due to Use of TCS

Classification	Jashpur		Kandhamal		Overall	
	n	%	n	%	N	%
No Small Children in the House	122	40.67	152	50.67	**274**	**45.67**
Keep Small Children Away from TCS	97	32.33	115	38.33	**212**	**35.33**
Problem of Eye Irritation	24	8.00	13	4.33	**37**	**6.17**
There is Risk of Burn Injuries	15	5.00	20	6.67	**35**	**5.83**
Breathing Problem	14	4.67	13	4.33	**27**	**4.50**
No Problem	44	14.67	0	0.00	**44**	**7.33**
Total	**300**	**100.00**	**300**	**100.00**	**600**	**100.00**

(multiple responses were recorded)

Small children of the family suffered eye irritation due to TCS was reported by 7 percent families. The risk of small children suffering burn injuries due to the use of TCS was reported by 6 percent families, while breathing problem suffered by small children was reported by around 5 percent families. Details are given in Annexure-19.

(B) Economic Impacts of TCS

7.14 Money Spent on Buying/Making TCS

All the families said that they did not spend any money on making the TCS that was being used at home. It was self made at home with bricks and was slaked with mud paste and cow-dung paste.

7.15 Money Spent on Repair & Maintenance of TCS

All the families said that they did not spend any money on repair & maintenance of the TCS that was being used at home. All the families using TCS said that they regularly cleaned the TCS after use by removing the ash inside it. They also regularly, slaked it with mud paste and cow dung paste to keep it clean, intact and functional.

7.16 Value of Fuelwood Used in TCS

Almost all the families using TCS, collected fuelwood from the forest free of cost. There was no cost involved for fuelwood collection and transportation, as they carried the loads of fuelwood on their head/shoulders. Depending upto the family size and the fooding habit of the family different families used different quantities of fuelwood in their TCS. On the basis of the prevailing market rate of fuelwood and the quantity of fuelwood used by the family, the notional value of the fuelwood used by each family has been arrived at.

On the basis of this calculation, taking both districts together, more than 61 percent families used fuelwood in their TCS worth upto Rs. 1,000/- per month, while around 20 percent families used fuelwood in their TCS worth upto Rs. 500/- per month. There were more than 15 percent families that used fuelwood in their TCS worth more than Rs. 1,000/-.

Table-112 : Value of Fuelwood Used in TCS

Classification	Upto Rs. 500/- p.m.		Upto Rs. 1,000/- p.m.		More Than Rs. 1,000/- p.m.		Total	
	n	%	n	%	n	%	N	%
Jashpur	52	17.33	170	56.67	66	22.00	**300**	**100.00**
Kandhamal	67	22.33	197	65.67	26	8.67	**300**	**100.00**
Overall	**119**	**19.83**	**367**	**61.17**	**92**	**15.33**	**600**	**100.00**
Category of Respondents-								
Project Village:Non-Adopters	34	17.00	111	55.50	44	22.00	**200**	**100.00**
Control Village:Non-Adopters	85	21.25	256	64.00	48	12.00	**400**	**100.00**
Members in Family-								
Members in Family<=3	50	33.11	95	62.91	0	0.00	**151**	**100.00**
Members in Family 3-5	50	16.89	197	66.55	35	11.82	**296**	**100.00**
Members in Family>5	19	12.42	75	49.02	57	37.25	**153**	**100.00**

In district Jashpur, around 57 percent families used fuelwood in their TCS worth upto Rs. 1,000/- per month, while around 22 percent families used fuelwood in their TCS worth more than Rs. 1,000/- per month. There were more than 17 percent families that used fuelwood in their TCS worth upto Rs. 500/-.

In district Kandhamal, around 66 percent families used fuelwood in their TCS worth upto Rs. 1,000/- per month, while more than 22 percent families used fuelwood in their TCS worth upto Rs. 500/- per month. There were around 9 percent families that used fuelwood in their TCS worth more than Rs. 1,000/-.

Among the small size families (<=3 members), none of the families used fuelwood in their TCS worth more than Rs. 1,000/- per month, among the medium size families (3-5 members), around 12 percent families used fuelwood in their TCS worth more than Rs. 1,000/- per month. However, among the large size families (> members), there were more than 37 percent families that used fuelwood in their TCS worth more than Rs. 1,000/-.

7.17 Time Spent on Cooking on TCS

Taking both districts together, around 81 percent persons (females) responsible for cooking at home said that they felt that they had to spend lot of time on cooking on TCS, while the remaining 19 percent said that they did not feel so.

Table-113 : Time Spent on Cooking on TCS

Classification	Feel That Lot of Time Spent on Cooking on TCS		Do Not Feel That Lot of Time Spent on Cooking on TCS		Total	
	n	%	n	%	N	%
Jashpur	206	68.67	94	31.33	**300**	**100.00**
Kandhamal	279	93.00	21	7.00	**300**	**100.00**
Overall	**485**	**80.83**	**115**	**19.17**	**600**	**100.00**
Category of Respondents-						
Project Village:Non-Adopters	160	80.00	40	20.00	**200**	**100.00**
Control Village:Non-Adopters	325	81.25	75	18.75	**400**	**100.00**

In district Jashpur, around 69 percent persons (females) responsible for cooking at home said that they felt that they had to spend lot of time on cooking on TCS, while the remaining 31 percent said that they did not feel that they had to spend lot of time on cooking on TCS.

In district Kandhamal, an overwhelming 93 percent persons (females) responsible for cooking at home said that they felt that they had to spend lot of time on cooking on TCS, while the remaining 7 percent said that they did not feel that they had to spend lot of time on cooking on TCS.

7.18 Awareness About Consumption of Lesser Fuelwood in ICS

Taking both districts together, only one-fourth (25 percent) families were aware that an ICS consumes lesser fuelwood than TCS, while the remaining three-fourth (75 percent) families said that they were not aware that an ICS consumes lesser fuelwood than TCS.

Table-114 : Awareness About Consumption of Lesser Fuelwood in ICS

Classification	Aware That ICS Consumes Lesser Fuelwood		Not Aware That ICS Consumes Lesser Fuelwood		Total	
	n	%	n	%	N	%
Jashpur	49	16.33	251	83.67	**300**	**100.00**
Kandhamal	99	33.00	201	67.00	**300**	**100.00**
Overall	**148**	**24.67**	**452**	**75.33**	**600**	**100.00**
Category of Respondents-						
Project Village:Non-Adopters	144	72.00	56	28.00	**200**	**100.00**
Control Village:Non-Adopters	4	1.00	396	99.00	**400**	**100.00**

In district Jashpur, only 16 percent families were aware that an ICS consumes lesser fuelwood than TCS, while the remaining 84 percent families said that they were not aware that an ICS consumes lesser fuelwood than TCS. Similarly, in district Kandhamal, 33 percent families were aware that an ICS consumes lesser fuelwood than TCS, while the remaining 67 percent families said that they were not aware that an ICS consumes lesser fuelwood than TCS.

Among Project Village Non-Adopters of ICS families, 72 percent families were aware that an ICS consumes lesser fuelwood than TCS, while the remaining 28 percent families said that they were not aware that an ICS consumes lesser fuelwood than TCS.

However, among Control Village Non-Adopters of ICS families, almost all (99 percent) families were not aware that an ICS consumes lesser fuelwood than TCS.

7.19 Awareness about Consumption of Lesser Time on Collecting Fuelwood for ICS

Taking both districts together, less than one-fourth (23 percent) families were aware that when using ICS, they will have to spend lesser time on collecting fuelwood than when using TCS, while the remaining three-fourth (77 percent) families said that they were not aware that when using ICS, they will have to spend lesser time on collecting fuelwood than when using TCS.

In district Jashpur, only 14 percent families were aware that when using ICS, they will have to spend lesser time on collecting fuelwood than when using TCS, while the remaining 86 percent families said that they were not aware that when using ICS, they will have to spend lesser time on collecting fuelwood than when using TCS.

However, in district Kandhamal, only more than 31 percent families were aware that when using ICS, they will have to spend lesser time on collecting fuelwood than when using TCS, while the remaining 69 percent families said that they were not aware that when using ICS, they will have to spend lesser time on collecting fuelwood than when using TCS.

Table-115 : Awareness about Consumption of Lesser Time on Collecting Fuelwood for ICS

Classification	Aware That When Using ICS Lesser Time Spent on Collecting Fuelwood		Not Aware That When Using ICS Lesser Time Spent on Collecting Fuelwood		Totals	
	n	%	n	%	N	%
Jashpur	42	14.00	258	86.00	**300**	**100.00**
Kandhamal	94	31.33	206	68.67	**300**	**100.00**
Overall	**136**	**22.67**	**464**	**77.33**	**600**	**100.00**
Category of Respondents-						
Project Village:Non-Adopters	136	68.00	64	32.00	**200**	**100.00**
Control Village:Non-Adopters	0	0.00	400	100.00	**400**	**100.00**

Among Project Village Non-Adopters of ICS families, 68 percent families were aware that when using ICS, they will have to spend lesser time on collecting fuelwood than when using TCS, while among the Control Village Non-Adopters of ICS families, none were aware that when using ICS, they will have to spend lesser time on collecting fuelwood than when using TCS.

7.20 Awareness That Cooking on ICS Takes Lesser Time Than on TCS

Taking both districts together, less than one-fourth (23 percent) families were aware that cooking on ICS takes lesser time in comparison to cooking on TCS, while the remaining 77 percent families were not aware that cooking on ICS takes lesser time in comparison to cooking on TCS.

Table-116 : Awareness That Cooking on ICS Takes Lesser Time Than on TCS

Classification	Aware That Cooking on ICS Takes Lesser Time Than on TCS		Not Aware That Cooking on ICS Takes Lesser Time Than on TCS		Total	
	n	%	n	%	N	%
Jashpur	48	16.00	252	84.00	**300**	**100.00**
Kandhamal	91	30.33	209	69.67	**300**	**100.00**
Overall	**139**	**23.17**	**461**	**76.83**	**600**	**100.00**
Category of Respondents-						
Project Village:Non-Adopters	137	68.50	63	31.50	**200**	**100.00**
Control Village:Non-Adopters	2	0.50	398	99.50	**400**	**100.00**

In district Jashpur, only 16 percent families were aware that cooking on ICS takes lesser time in comparison to cooking on TCS, while the remaining 84 percent families were not aware that cooking on ICS takes lesser time in comparison to cooking on TCS.

In district Kandhamal, more than 30 percent families were aware that cooking on ICS takes lesser time in comparison to cooking on TCS, while the remaining 70 percent families were not aware that cooking on ICS takes lesser time in comparison to cooking on TCS.

Among Project Village Non-Adopters of ICS families, around 69 percent families were aware that cooking on ICS takes lesser time in comparison to cooking on TCS, while among the Control Village Non-Adopters of ICS families almost no one was aware that cooking on ICS takes lesser time in comparison to cooking on TCS.

7.21 Utilization of Time Saved on Using Alternative Chulha

Taking both districts together, more time for other household work was the way the saved time due to using alternative chulha was proposed to be utilized by 74 percent persons (females) responsible for cooking at home, while more time for self was stated by 73 percent persons (females) responsible for cooking at home.

More time for outside work was the way the saved time was proposed to be utilized by 53 percent persons and more time for children was stated by 45 percent persons. More time for community work was stated by around 24 percent persons, while more time for their existing livelihood activities was stated by around 7 percent persons. Details are given in Annexure-20.

Table-117 : Utilization of Saved Time Due to Use of Alternate Chulha

Classification	Jashpur		Kandhamal		Overall	
	n	%	n	%	N	%
More Time for Other Hhld. Work	219	73.00	227	75.67	**446**	**74.33**
More Time for Self	200	66.67	236	78.67	**436**	**72.67**
More Time for Outside Work	146	48.67	170	56.67	**316**	**52.67**
More Time for Children	88	29.33	180	60.00	**268**	**44.67**
More Time for Community Work	76	25.33	67	22.33	**143**	**23.83**
More Time for Livelihood Activities	9	3.00	30	10.00	**39**	**6.50**
Total	**300**	**100.00**	**300**	**100.00**	**300**	**100.00**

(multiple responses were recorded)

The persons (females) involved in cooking activities at home were asked if they adopted an alternative chulha which resulted in reduced cooking time, will they take up any new income generation activity. Taking both districts together, around 18 percent persons (females) involved in cooking activities at home said that they would take up some income generation activity in this saved time duration, while the remaining 82 percent persons said that they would not take up any income generation activity. District-wise, there was no difference.

Table-118 : Will Take Up Income Generation Activity if Cooking Time Reduced

Classification	Yes, Will Take Up Income Generation Activity		No, Will Not Take Up Income Generation Activity		Total	
	n	%	n	%	N	%
Jashpur	50	16.67	250	83.33	**300**	**100.00**
Kandhamal	56	18.67	244	81.33	**300**	**100.00**
Overall	**106**	**17.67**	**494**	**82.33**	**600**	**100.00**
Category of Respondents-						
Project Village:Non-Adopters	59	29.50	141	70.50	**200**	**100.00**
Control Village:Non-Adopters	47	11.75	353	88.25	**400**	**100.00**

7.22 Frequency of LPG Cylinder Refilling in Last 1 Year

As stated before, majority of the families have got LPG connection under the Ujjwala Scheme of the Government. Taking both districts together, 43 percent families did not get the LPG cylinder refilled even once, after exhausting the first one received alongwith the connection. Around 12 percent families got the LPG cylinder refilled just once during the last one year, while another 20 percent families got it refilled twice. Details are given in Annexure-21.

Table-119 : Frequency of LPG Cylinder Refilling in Last 1 Year

Classification	Jashpur		Kandhamal		Overall	
	n	%	n	%	N	%
Not Once	79	38.73	83	48.26	**162**	**43.09**
One Time	26	12.75	18	10.47	**44**	**11.70**
Two Times	46	22.55	28	16.28	**74**	**19.68**
Three Times	25	12.25	15	8.72	**40**	**10.64**
Four Times	10	4.90	11	6.40	**21**	**5.59**
Five Times	4	1.96	9	5.23	**13**	**3.46**
Six or More Times	14	6.86	8	4.65	**22**	**5.85**
Total	**204**	**100.00**	**172**	**100.00**	**376**	**100.00**

7.23 Cost Incurred in LPG Cylinder Refilling Once

Among the families that got their LPG cylinder refilled even once, were asked about the cost incurred by them in getting the LPG cylinder refilled, including the cost of refilling and the transportation cost.

Taking both districts together, around 46 percent families said that they spent on an average an amount of upto Rs. 900/- for refilling the LPG cylinder once. Similarly, 34 percent families said that they spent on an average an amount of upto Rs. 1,000/-, while the remaining 20 percent families said that they spent an amount upto Rs. 1,100/- per refilling.

Table-120 : Cost Incurred in LPG Cylinder Refilling Once

Classification	Cost Incurred Upto Rs. 900/- per Refilling		Cost Incurred Upto Rs. 1,000/- per Refilling		Cost Incurred Upto Rs. 1,100/- per Refilling		Families That Got LPG Cylinder Refilled Even Once	
	n	%	n	%	n	%	N	%
Jashpur	72	57.60	33	26.40	20	16.00	**125**	**100.00**
Kandhamal	26	29.21	40	44.94	23	25.84	**89**	**100.00**
Overall	**98**	**45.79**	**73**	**34.11**	**43**	**20.09**	**214**	**100.00**
Category of Respondents-								
Project Village:Non-Adopters	43	53.09	21	25.93	17	20.99	**81**	**100.00**
Control Village:Non-Adopters	55	41.35	52	39.10	26	19.55	**133**	**100.00**

(C) Impacts on Health of TCS

7.24 Facing Health Problems When Using TCS

Taking both districts together, irritation in the eyes was reported by almost all (97 percent) persons (females) involved in cooking activities at home, while coughing was reported by around 80 percent such persons. Other health related problems due to smoke emitted as stated by the person involved in cooking activities at home due to TCS include breathing problem (62 percent), headache (58 percent) and chest pain (55 percent). Details are given in Anneexure-22.

Table-121 : Facing Health Problems When Using TCS

Classification	Jashpur		Kandhamal		Overall	
	n	%	n	%	N	%
Eye Irritation	295	98.33	286	95.33	**581**	**96.83**
Coughing	226	75.33	252	84.00	**478**	**79.67**
Breathing Problem	229	76.33	143	47.67	**372**	**62.00**
Headache	107	35.67	240	80.00	**347**	**57.83**
Chest Pain	131	43.67	198	66.00	**329**	**54.83**
Total	**300**	**100.00**	**300**	**100.00**	**600**	**100.00**

(multiple responses were recorded)

7.25 Expenses on Treatment of Smoke Related Health Problems

Taking both districts together, there were 29 cases where it was reported that the family had to spend upto Rs. 1,000/- in a year on medical treatment of health related problems due to smoke emitted from the TCS. Similarly, there were 14 cases where it was reported that the family had to spend upto Rs. 1,500/- in a year and there were another 17 cases where it was reported that the family had to spend more than Rs. 1,500/- on medical treatment of health related problems due to smoke emitted from the TCS.

In district Jashpur, there were total 6 cases where it was reported that the family had to spend money on medical treatment of health related problems due to smoke emitted from the TCS.

Similarly, in district Kandhamal, there were 54 cases where it was reported that the family had to spend money on medical treatment of health related problems due to smoke emitted from the TCS.

Table-122 : Expenses on Treatment of Smoke Related Health Problems

Classification	Expenses Upto Rs. 1,000/-		Expenses Upto Rs. 1,500/-		Expenses Above Rs. 1,500/-		Total	
	n	%	n	%	n	%	N	%
Jashpur	1	0.33	0	0.00	5	1.67	**300**	**100.00**
Kandhamal	28	9.33	14	4.67	12	4.00	**300**	**100.00**
Overall	**29**	**4.83**	**14**	**2.33**	**17**	**2.83**	**600**	**100.00**
Category of Respondents-								
Project Village:Non-Adopters	15	7.50	4	2.00	8	4.00	**200**	**100.00**
Control Village:Non-Adopters	14	3.50	10	2.50	9	2.25	**400**	**100.00**

(D) Perception about ICS

7.26 Readiness to Switch to an Alternative Chulha

Taking both districts together, around 79 percent families were ready to switch to an alternative chulha to the TCS being presently used by the family, while the remaining 21 percent families were not ready to switch to an alternative chulha.

Table-123 : Readiness to Switch to an Alternative Chulha

Classification	Ready to Switch to Alternative Chulha		Not Ready to Switch to Alternative Chulha		Total	
	n	%	n	%	N	%
Jashpur	215	71.67	85	28.33	**300**	**100.00**
Kandhamal	256	85.33	44	14.67	**300**	**100.00**
Overall	**471**	**78.50**	**129**	**21.50**	**600**	**100.00**
Category of Respondents-						
Project Village:Non-Adopters	166	83.00	34	17.00	**200**	**100.00**
Control Village:Non-Adopters	305	76.25	95	23.75	**400**	**100.00**

In district Jashpur, around 72 percent families were ready to switch to an alternative chulha to the TCS being presently used by the family, while the remaining 28 percent families were not ready to switch to an alternative chulha. In district Kandhamal, more than 85 percent families were ready to switch to an alternative chulha to the TCS being presently used by the family, while the remaining 15 percent families were not ready to switch to an alternative chulha.

Among the Project Village Non-Adopters of ICS families, 83 percent families were ready to switch to an alternative chulha to the TCS being presently used by the family. Similarly, among the Control Village Non-Adopters of ICS families, more than 76 percent families were ready to switch to an alternative chulha.

The families that were ready to switch to an alternative chulha to TCS, had some suggestions for the alternative chulha that they were looking for. Taking both districts together, the suggestion that the alternative chulha should cook food fast was given by more than 64 percent families, while the suggestion that it should consume less fuelwood was given by more than 55 percent families. Other suggestions included – It should emit less smoke (34 percent) and it should be affordable & sturdy (12 percent).

Table-124 : Those Ready to Switch to an Alternative Chulha

Classification	It Should be Affordable & Sturdy		It Should Consume Less Fuelwood		It Should Emit Less Smoke		It Should Cook Food Fast		Total	
	n	%	n	%	n	%	n	%	N	%
Jashpur	38	17.67	156	72.56	106	49.30	136	63.26	**215**	**100.00**
Kandhamal	18	7.03	105	41.02	55	21.48	167	65.23	**256**	**100.00**
Overall	**56**	**11.89**	**261**	**55.41**	**161**	**34.18**	**303**	**64.33**	**471**	**100.00**
Category of Respondents-										
Project Village:Non-Adopters	19	11.45	100	60.24	55	33.13	111	66.87	**166**	**100.00**
Control Village:Non-Adopters	37	12.13	161	52.79	106	34.75	192	62.95	**305**	**100.00**

(multiple responses were recorded)

The families that were not ready to switch to an alternative chulha to TCS, said that they were not aware of any alternative chulha to their TCS. Moreover, many of them also said that they did not have the money to buy any alternative chulha to their existing TCS.

7.27 Present TCS Bought or Self Made

All the families said that they did not spend any money on making the TCS that was being used at home. It was self made at home with bricks and was slaked with mud paste and cow-dung paste.

7.28 Present Condition of TCS

Taking both districts together, half (50 percent) families said that the present condition of their TCS was good, while the remaining half (50 percent) families said that the present condition of their TCS was satisfactory.

In district Jashpur, more than 45 percent families said that the present condition of their TCS was good, while the remaining half 55 percent families said that the present condition of their TCS was satisfactory. Similarly, in district Kandhamal, more than 54 percent families said that the present condition of their TCS was good, while the remaining half 45 percent families said that the present condition of their TCS was satisfactory.

Table-125 : Present Condition of TCS

Classification	Present Condition of TCS is Good		Present Condition of TCS is Satisfactory		Total	
	n	%	n	%	N	%
Jashpur	136	45.33	164	54.67	**300**	**100.00**
Kandhamal	163	54.33	137	45.67	**300**	**100.00**
Overall	**299**	**49.83**	**301**	**50.17**	**600**	**100.00**
Category of Respondents-						
Project Village:Non-Adopters	110	55.00	90	45.00	**200**	**100.00**
Control Village:Non-Adopters	189	47.25	211	52.75	**400**	**100.00**

7.29 Tasks Undertaken for Upkeep & Maintenance of TCS

Taking both districts together, slaking the TCS with mud paste and cow dung paste for upkeep & maintenance of the TCS was stated by an overwhelming (93 percent) families, while cleaning the TCS with a piece of cloth was reported by 9 percent families.

Table-126 : Tasks Undertaken for Upkeep & Maintenance of TCS

Classification	Have to Clean the TCS Daily		Slake it With Mud & Cow Dung		Total	
	n	%	n	%	N	%
Jashpur	24	8.00	287	95.67	**300**	**100.00**
Kandhamal	31	10.33	271	90.33	**300**	**100.00**
Overall	**55**	**9.17**	**558**	**93.00**	**600**	**100.00**
Category of Respondents-						
Project Village:Non-Adopters	42	21.00	165	82.50	**200**	**100.00**
Control Village:Non-Adopters	13	3.25	393	98.25	**400**	**100.00**

(multiple responses were recorded)

7.30 Problems in Upkeep & Maintenance of TCS

Taking both districts together, more than half (56 percent) families said that they did not face any problem in upkeep & maintenance of the TCS. Daily slaking the TCS with mud paste and cow dung paste for its upkeep was the problem stated by around 34 percent families, while having to clean the ash daily was the problem stated by around 18 percent families. The TCS was not portable and was fixed at one place was the problem reported by around 9 percent families.

In district Jashpur, only 15 percent families said that they did not face any problem in the upkeep & maintenance of the TCS, While the remaining 85 percent said that they faced problem in the upkeep & maintenance of the TCS. On the contrary, in district Kandhamal, almost all (97 percent) families said that they did not face any problem in the upkeep & maintenance of their TCS.

Table-127 : Problems in Upkeep & Maintenance of TCS

Classification	No Problem		Have to Slake it With Mud & Cow Dung Daily		TCS is Fixed at One Place		Have to Clean the Ash Daily		Total	
	n	%	n	%	n	%	n	%	N	%
Jashpur	46	15.33	193	64.33	52	17.33	103	34.33	**300**	**100.00**
Kandhamal	291	97.00	8	2.67	0	0.00	2	0.67	**300**	**100.00**
Overall	**337**	**56.17**	**201**	**33.50**	**52**	**8.67**	**105**	**17.50**	**600**	**100.00**
Category of Respondents-										
Project Village:Non-Adopters	105	52.50	71	35.50	22	11.00	32	16.00	**200**	**100.00**
Control Village:Non-Adopters	232	58.00	130	32.50	30	7.50	73	18.25	**400**	**100.00**

(multiple responses were recorded)

7.31 Benefits of Using TCS

The families were asked to state the benefits of using TCS. There were many benefits stated by the families including, food cooked on TCS tastes good was stated by around 69 percent families, while it is easy to cook food for large number of persons was stated by 50 percent families. Ability to use thick logs of fuelwood was the benefit stated by around 47 percent families.

Table-128 : Benefits of Using TCS

Classification	Jashpur		Kandhamal		Overall	
	n	%	n	%	N	%
Food Cooked on TCS Tastes Good	207	69.00	206	68.67	**413**	**68.83**
Easy to Cook Food for Large No. of Persons	102	34.00	199	66.33	**301**	**50.17**
Use Thick Logs of Fuelwood	83	27.67	196	65.33	**279**	**46.50**
No Cost is Involved	73	24.33	61	20.33	**134**	**22.33**
Have Become Habitual to Cook on TCS	2	0.67	73	24.33	**75**	**12.50**
Cooks Food Fast	54	18.00	9	3.00	**63**	**10.50**
Able to Cook Food on Big Vessels	42	14.00	6	2.00	**48**	**8.00**
Fuelwood is Available for Free from the Forest	31	10.33	2	0.67	**33**	**5.50**
Able to Cook 2 Dishes Due to 2 Pot TCS	14	4.67	9	3.00	**23**	**3.83**
Keeps the House Warm in Winters	23	7.67	0	0.00	**23**	**3.83**
Total	**300**	**100.00**	**300**	**100.00**	**600**	**100.00**

(multiple responses were recorded)

Some other benefits stated include – we have become habitual to cook food on TCS (13 percent) families, TCS cooks food fast (11 percent) families, able to cook food on big vessels (8 percent) families, fuelwood is available for free from the forest (6 percent) families, among others. Details are given in Annexure-23.

7.32 Problems in Using TCS

The families were asked to state the problems they face while using TCS. Taking both districts together, there were many problems stated by the families including, excessive emission of smoke from the TCS was stated by 71 percent families, while the TCS consumes excessive quantity of fuelwood was stated by around 61 percent families. The TCS takes lot of time to cook food was the problem stated by 44 percent families.

Table-129 : Problems in Using TCS

Classification	Jashpur		Kandhamal		Overall	
	n	%	n	%	N	%
Excessive Emission of Smoke	165	55.00	262	87.33	**427**	**71.17**
Excessive Consumption of Fuelwood	128	42.67	235	78.33	**363**	**60.50**
It Takes Time to Cook Food	76	25.33	189	63.00	**265**	**44.17**
Is Fixed at One Place	41	13.67	53	17.67	**94**	**15.67**
Blackening of Walls Due to Smoke	63	21.00	17	5.67	**80**	**13.33**
TCS Breaks Down Anytime	67	22.33	5	1.67	**72**	**12.00**
Cooking Vessels Get Blackened	57	19.00	2	0.67	**59**	**9.83**
Irritation in Eyes While Cooking	51	17.00	7	2.33	**58**	**9.67**
Breathing Problem While Cooking Food	27	9.00	7	2.33	**34**	**5.67**
No Problem	1	0.33	19	6.33	**20**	**3.33**
Total	**300**	**100.00**	**300**	**100.00**	**600**	**100.00**

(multiple responses were recorded)

Some other problems stated by the families include – the TCS is not portable (16 percent) families, blackening of walls due to smoke emitted from the TCS (13 percent) families, TCS breaks down anytime (12 percent) families, cooking vessels get blackened on TCS (10 percent) families, suffer irritation in eyes (10 percent) families, among others. Details are given in Annexure-24.

7.33 Suggestions for Increase in Adoption of ICS

The families were asked to give suggestions to increase the number of families adopting ICS. Taking both districts together, more than two-third (67 percent) families expressed unawareness about the ICS. The remaining were aware about the ICS. Creating awareness about the benefits of ICS was the suggestion to increase its adoption was stated by 23 percent families, the cost of ICS should be affordable was suggested by 12 percent families.

Among the Project Village Non-Adopters of ICS families, creating awareness about the benefits of ICS was the suggestion to increase its adoption was stated by 68 percent families, while the cost of ICS should be affordable was suggested by around 33 percent families. Among the Control Village Non-Adopters of ICS families, almost all (95 percent) families were not aware about the ICS.

Table-130 : Suggestions for Increase in Adoption of ICS

Classification	Cost of ICS Should be Affordable		Do Not Know About ICS		Create Awareness About the Benefits of ICS		Should Organize Display Sessions of ICS		Total	
	n	%	n	%	n	%	n	%	N	%
Jashpur	28	9.33	195	65.00	67	22.33	27	9.00	300	100.00
Kandhamal	44	14.67	206	68.67	68	22.67	0	0.00	**300**	**100.00**
Overall	**72**	**12.00**	**401**	**66.83**	**135**	**22.50**	**27**	**4.50**	**600**	**100.00**
Category of Respondents-										
Project Village:Non-Adopters	65	32.50	22	11.00	135	67.50	5	2.50	**200**	**100.00**
Control Village:Non-Adopters	7	1.75	379	94.75	0	0.00	22	5.50	**400**	**100.00**

(multiple responses were recorded)

(E) Perception About ICS Adoption Program

7.34 Awareness About ICS Adoption Program

Taking both districts together, only 25 percent families were aware about the ICS, while the remaining 75 percent families were not aware about the ICS. Among the Project Village Non-Adopters of ICS families, 76 percent families were aware about the ICS adoption program, while the remaining 24 percent families were not aware about the ICS adoption program. Among the Control Village Non-Adopters of ICS families, none of the families were aware about the ICS adoption program.

Table-131 : Awareness About ICS Adoption Program

Classification	Aware About ICS Adoption Program		Not Aware About ICS Adoption Program		Total	
	n	%	n	%	N	%
Jashpur	56	18.67	244	81.33	300	100.00
Kandhamal	96	32.00	204	68.00	300	100.00
Overall	152	25.33	448	74.67	600	100.00
Category of Respondents-						
Project Village:Non-Adopters	152	76.00	48	24.00	200	100.00
Control Village:Non-Adopters	0	0.00	400	100.00	400	100.00

7.35 Reasons for Not Adopting ICS

The families that said that they were aware about the ICS adoption program were asked to state the reason as to why they had not adopted ICS yet. Taking both districts together, almost all the families said that due to paucity of money they could not afford to buy the ICS. They also said that with little effort, fuelwood was available for free of cost in the nearby forests for their ICS. Hence, they did not adopt the ICS.

7.36 Source of Information About ICS

The families that said that they were aware about the ICS adoption program were asked to state the source of their information/awareness about the program. All the families said that they came to know about the ICS adoption program from the Care India Representatives and the Mahila Mandal members of their village.

7.37 Discussion on Long Term Benefits of ICS in Village Meetings

Among the families that said that they were aware about the ICS adoption program, around 86 percent families said that in the village meetings discussions on the long term benefits of ICS were done, while the remaining 15 percent families said that they did not remember about the discussions in these meetings.

Table-132 : Discussion on Long Term Benefits of ICS in Village Meetings

Classification	Discussions Held on Long Term Benefits of ICS		Don't Know About Discussions Held on Long Term Benefits of ICS		Families Aware About ICS Adoption Program	
	n	%	n	%	N	%
Jashpur	49	87.50	7	12.50	**56**	**100.00**
Kandhamal	81	84.38	15	15.63	**96**	**100.00**
Overall	**130**	**85.53**	**22**	**14.47**	**152**	**100.00**
Category of Respondents-						
Project Village:Non-Adopters	130	85.53	22	14.47	**152**	**100.00**
Control Village:Non-Adopters	0	0.00	0	0.00	**0**	**0.00**

The families that said that they were aware about the ICS adoption program were asked to share the long term benefits of using ICS that were discussed in the village meetings.

Table-133 : Issues of Long Term Benefits Discussed in Village Meetings

Classification	Less Emission of Smoke		Less Consumption of Fuelwood		Takes Less Time to Cook Food		Saves Time		Families Stating Discussions Held on Long Term Benefits of ICS	
	n	%	n	%	n	%	n	%	N	%
Jashpur	11	22.00	37	74.00	18	36.00	20	40.00	**50**	**100.00**
Kandhamal	45	54.88	58	70.73	27	32.93	27	32.93	**82**	**100.00**
Overall	**56**	**42.42**	**95**	**71.97**	**45**	**34.09**	**47**	**35.61**	**132**	**100.00**
Category of Respondents-										
Project Village:Non-Adopters	56	42.42	95	71.97	45	34.09	47	35.61	**132**	**100.00**
Control Village:Non-Adopters	0	0.00	0	0.00	0	0.00	0	0.00	**0**	**0.00**

(multiple responses were recorded)

The families said that various long term benefits of ICS were discussed in these meetings. When asked to specify the issues, less consumption of fuelwood was stated by 72 percent families, while less emission of smoke in ICS was stated by 42 percent families. Cooking on ICS saves time was stated by 36 percent families.

7.38 Likelihood of Adopting ICS in Near Future

The families presently not using ICS were asked whether they would like to adopt ICS in the future. Taking both districts together, almost two-third (65 percent) families said that they would like to adopt ICS in the future, while the remaining one-third (35 percent) families said that they would not adopt ICS.

Table-134 : Likelihood of Adopting ICS in Near Future

Classification	Would Adopt ICS in the Future		Would Not Adopt ICS in the Future		Total	
	n	%	n	%	N	%
Jashpur	217	72.33	83	27.67	**300**	**100.00**
Kandhamal	174	58.00	126	42.00	**300**	**100.00**
Overall	**391**	**65.17**	**209**	**34.83**	**600**	**100.00**
Category of Respondents-						
Project Village:Non-Adopters	170	85.00	30	15.00	**200**	**100.00**
Control Village:Non-Adopters	221	55.25	179	44.75	**400**	**100.00**

Among the Project Village Non-Adopters of ICS families, 85 percent families said that they would like to adopt ICS in the future, while the remaining 15 percent families said that they would not adopt ICS. Among the Control Village Non-Adopters of ICS families, 55 percent families said that they would like to adopt ICS in the future, while the remaining 45 percent families said that they would not adopt ICS. Those who said that they would adopt ICS in the future said that once they have money to purchase the ICS, they would adopt ICS for cooking at home.

8
Major Findings of the Study

8.1 Key Enablers in the Adoption of ICS

(A) For ICS Users

1. Time Saved in Cooking on ICS

Taking both districts together, around 31 percent persons (females) involved in cooking at home saved upto 30 minutes per day of cooking time when they started using ICS for cooking food at home, while another 59 percent persons saved upto 60 minutes per day of cooking time. There were around 11 percent persons who saved more than 60 minutes per day of cooking time.

2. Benefits of Portability of ICS

All the persons (females) involved in cooking activities at home said that they found it very convenient to shift the place of cooking food as per their need and convenience. They said that since the ICS was quite handy and portable, they cooked on it at a place convenient to them. Especially during the summer season, the evening food was cooked on the ICS in the open to escape from the heat of the kitchen.

3. Involvement of Male Members in Cooking Due to ICS

Taking both districts together, two-third (66 percent) families said that after the adoption of ICS, the male members of the family were more involved in cooking at home than when the family was using TCS.

4. Decision Makers on ICS in the Family

Taking both districts together, the decision to purchase ICS was taken by the person involved in cooking at home (female) alongwith her family members in almost all (98 percent) families.

5. Change in Behaviour of Family Members

Taking both districts together, in 63 percent families, there was change in the behaviour of the family members towards the person involved in cooking at home after the adoption of ICS.

6. Change in Mobility Outside the House

Taking both districts together, in around 63 percent families, there was change in the mobility outside the house of the person involved in cooking at home after the adoption of ICS.

7. Change in Leadership Abilities/Qualities in the Society

Taking both districts together, in 63 percent families, there was change in the leadership abilities/qualities of the person involved in cooking at home after the adoption of ICS.

8. Change in Participation in Mahila Mandal Meetings/SHE School Sessions

Taking both districts together, in 86 percent families, there was change in the participation in Mahila Mandal Meetings/SHE School Sessions of the person involved in cooking at home after the adoption of ICS.

9. Money Saved on Fuelwood Due to Use of ICS

Taking both districts together, 82 percent families said that due to the use of ICS, they have been able to save upto Rs. 300/- per month, while around 12 percent families said that they have been able to save upto Rs. 500/- per month. Similarly, around 4 percent families said that they have been able to save more than Rs. 500/- per month.

10. Money Earned/Saved Due to Use of ICS

(a) Money Earned by Doing Income Generation Activity

Taking both districts together, among those persons (females) who were involved in cooking activity at home, utilized the saved time in some income generation activity, more than 80 percent earned upto Rs. 500/- per month, while around 8 percent persons earned upto Rs. 1,000/- per month. There were around 10 percent persons who earned more than Rs. 1,000/- per month. Most of these women who utilized their saved time in some income generation activity used this time to make leaf plates and working in their agriculture fields. These activities were seasonal and were carried out for a period of around 3 months in a year.

(b) Additional Money Earned by Family Due to Support in Income Generation Activity

Taking both districts together, among those families in which the person involved in cooking activity at home utilized the saved time in supporting a family member in his/her income generation activity, more than 31 percent helped him/her earn additional upto Rs. 500/- per month, while another 31 percent helped him/her earn additional upto Rs. 1,000/- per month. There were around 38 percent persons who helped his family member earn additional more than Rs. 1,000/- per month. Most of these women helped their family in agricultural activities of the family. These activities were seasonal and were carried out for a period of around 3 months in a year.

(c) Money Saved by the Family By Utilizing the Time Saved Due to ICS

Taking both districts together, among those families in which the person involved in cooking activity at home utilized the saved time in such activities for which earlier she had to spend money, 23 percent earn upto Rs. 500/- per month, while another around 54 percent earn upto Rs. 1,000/- per month. There were 23 percent persons who earn more than Rs. 1,000/- per

month. Most of these women helped their family in agricultural activities of the family. There were only 13 such cases (4 cases in district Jashpur and 9 cases in district Kandhamal). These activities were seasonal and were carried out for a period of around 3 months in a year.

11. Facing Health Problems when Using ICS vis-à-vis TCS

(a) Problems Faced When Using TCS

Taking both districts together, irritation in the eyes was reported by almost all (97 percent) persons (females) involved in cooking activities at home, while coughing was reported by around 86 percent such persons. Other health related problems due to smoke emitted as stated by the person involved in cooking activities at home due to TCS include headache (74 percent), breathing problem (69 percent) and chest pain (66 percent).

(b) Problems Faced When Using ICS

In almost all the families, the persons (females) involved in cooking activities at home said that while using ICS, they did not face any smoke related health problem as the smoke emitted by the ICS in comparison to the TCS was negligible.

12. Expenses on Treatment of Health Problems when Using ICS vis-à-vis TCS

Taking both districts together, there were 17 cases where it was reported that the family had to spend money on medical treatment of health related problems due to smoke emitted from the TCS. Out of these, in 9 cases, the family had to spend upto Rs. 1,000/- on the medical treatment of the member, while ion the remaining 8 cases, the family had to spend more than Rs. 1,000/-. On the contrary, when the families used ICS, they did not incur any expense on medical treatment of smoke related health problems.

13. Benefits of Using ICS

There were many benefits stated by the families including, in ICS the use of fuelwood is less in comparison to TCS was stated by 79 percent families, while ICS emits less smoke and also cooks food fast was stated by 71 percent families. Ability to shift the place of cooking was stated as a benefit of using ICS by 33 percent families.

14. Source of Motivation to Adopt ICS

Taking both districts together, the awareness generation programs by the Care India Representatives was stated as the source of motivation by 57 percent families, while self motivation was stated by 26 percent families. Other sources of motivation included – Mahila Mandal (12 percent) and family members (10 percent).

15. Reasons that Motivated to Adopt ICS

Consumption of less fuelwood in comparison to TCS was stated as the motivating factor by three-fourth (75 percent) families, while the fact that ICS cooks food faster than TCS was

stated by 71 percent families. Some other factors that motivated the families to adopt ICS included - less emission of smoke in comparison to TCS (63 percent) and the ICS is portable unlike the TCS and can be shifted to more convenient location (66 percent).

16. Number of Visits to Collect Fuelwood by Adult Males in the Family

(a) After Adopting ICS

Taking both districts together and taking all the three seasons together, after adopting ICS, total 61.30 visits per family were made by the adult males among the families where adult males were going to the forest to collect fuelwood. Overall, in summer season, total 32.74 visits per family were made by the adult males among the families where adult males were going to the forest to collect fuelwood, while in winter season, total 28.44 visits per family were made by the adult males among the families where adult males were going to the forest to collect fuelwood.

(b) Before Adopting ICS

Taking both districts together and taking all the three seasons together, before adopting ICS, total 80.51 visits per family were made by the adult males among the families where adult males were going to the forest to collect fuelwood. Overall, in summer season, total 41.94 visits per family were made by the adult males among the families where adult males were going to the forest to collect fuelwood, while in winter season, total 38.06 visits per family were made by the adult males among the families where adult males were going to the forest to collect fuelwood. The number of visits to the forest to collect fuelwood earlier (before adopting ICS) was slightly higher than when the families have adopted ICS.

17. Number of Visits to Collect Fuelwood by Adult Females in the Family

(a) After Adopting ICS

Taking both districts together and taking all the three seasons together, after adopting ICS, total 58.20 visits per family were made by the adult females among the families where adult females were going to the forest to collect fuelwood. Overall, in summer season, total 30.21 visits per family were made by the adult females among the families where adult females were going to the forest to collect fuelwood, while in winter season, total 27.89 visits per family were made by the adult females among the families where adult females were going to the forest to collect fuelwood.

(b) Before Adopting ICS

Taking both districts together and taking all the three seasons together, before adopting ICS, total 75.79 visits per family were made by the adult females among the families where adult females were going to the forest to collect fuelwood. Overall, in summer season, total 39.54 visits per family were made by the adult females among the families where adult females were going to the forest to collect fuelwood, while in winter season, total 35.43 visits per family were

made by the adult females among the families where adult females were going to the forest to collect fuelwood. The number of visits to the forest to collect fuelwood earlier (before adopting ICS) was slightly higher than when the families have adopted ICS.

18. Average Time Spent in Collecting Fuelwood by Adult Males in the Family

(a) After Adopting ICS

Taking both districts together and taking all the three seasons together, after adopting ICS, total 192 hours time per family was spent by the adult males of the families where adult males of the family were going to the forest to collect fuelwood. Overall, in summer season, total 103 hours time per family was spent by the adult males of the families where adult males of the family were going to the forest to collect fuelwood, while in winter season, total 89 hours time per family was spent by the adult males of the families where adult males of the family were going to the forest to collect fuelwood.

(b) Before Adopting ICS

Taking both districts together and taking all the three seasons together, before adopting ICS, total 270 hours time per family was spent by the adult males of the families where adult males of the family were going to the forest to collect fuelwood. Overall, in summer season, total 141 hours time per family was spent by the adult males of the families where adult males of the family were going to the forest to collect fuelwood, while in winter season, total 127 hours time per family was spent by the adult males of the families where adult males of the family were going to the forest to collect fuelwood.

19. Average Time Spent in Collecting Fuelwood by Adult Females in the Family

(a) After Adopting ICS

Taking both districts together and taking all the three seasons together, after adopting ICS, total 184 hours time per family was spent by the adult females of the families where adult females of the family were going to the forest to collect fuelwood. Overall, in summer season, total 95 hours time per family was spent by the adult females of the families where adult females of the family were going to the forest to collect fuelwood, while in winter season, total 89 hours time per family was spent by the adult females of the families where adult females of the family were going to the forest to collect fuelwood.

(b) Before Adopting ICS

Taking both districts together and taking all the three seasons together, before adopting ICS, total 287 hours time per family was spent by the adult females of the families where adult females of the family were going to the forest to collect fuelwood. Overall, in summer season, total 129 hours time per family was spent by the adult females of the families where adult females of the family were going to the forest to collect fuelwood, while in winter season, total

156 hours time per family was spent by the adult females of the families where adult females of the family were going to the forest to collect fuelwood.

20. Reasons for Consumption of More Fuelwood in Jashpur than in Kandhamal

There were reasons reported for more use of fuelwood in district Kandhamal than in district Jashpur. In Kandhamal, the villages were located in dense forest areas and hence access to fuelwood was much easier here in comparison to Jashpur, where the villagers had to travel very little distance to reach the forest. Hence, number of visits to the forest in district Kandhamal was higher then in district Jashpur.

Also, the villages in district Kandhamal were situated in hilly terrain with low temperatures in comparison to Jashpur. As a result, almost all the families in Kandhamal used hot/warm water to take bath, where as no such practice was followed in Jashpur. Since TCS was the main chulha in the house, this resulted in higher consumption of fuelwood in Kandhamal in comparison to district Jashpur and thus higher number of visits to the forest.

The fooding habit of people in Kandhamal was also different from the people in Jashpur. In Kandhamal, people preferred to eat boiled rice both in the morning as well as in the night, whereas in Jashpur, people consumed boiled rice only during lunch. People in rural areas use large size vessels to boil rice on the TCS. Since, boiling rice takes more time in comparison to making chapattis, the consumption of fuelwood in Kandhamal is higher then in Jashpur.

Further, it was reported by the villagers in district Jashpur that due to indiscriminate cutting/ collecting of fuelwood by the people, since last one year, the Forest Guard of the Department of Forest, has imposed a restriction on the villagers on the number of visits to the forest to collect fuelwood. Earlier, the villagers went to the forest on any day to collect fuelwood, however, after the imposition of the restriction, the visit to the forest has been fixed on two days of the week – Tuesdays and Fridays. This has reduced the number of visits to the forest in district Jashpur. There is no such restriction in the villages of Kandhamal.

21. Change in Time Spent in Collecting Fuelwood

Taking both districts together, around two-third (64 percent) families said that in comparison to TCS, now while using ICS also, the family had to spend lesser time in fuelwood collection.

(B) For ICS Non-Users

22. Problems Faced in Using Wood in TCS

Taking both districts together, problems in collecting/transporting fuel wood from the forests due to the effort and harassment involved in traveling long distances, climbing the trees, carrying loads of fuel wood on their head/shoulders was reported by around 77 percent families. Similarly, health related problems like swelling in the legs, bruises on the shoulders

and breathlessness was reported by around 69 percent families. There were only 2 percent families that said that they did not face any problem in collecting wood from the forests.

23. Problem in Cleaning on Using TCS

Taking both districts together, almost all (96 percent) families stated that they faced problem in cleaning of chulha, cooking utensils, walls of the place of cooking, place of storing wood, soot, spider web, etc. due to excessive emission of smoke.

24. Problems Due to Non-Portability of TCS

Taking both districts together, 80 percent families stated that they faced problem due to non-portability of TCS.

25. Time Spent on Cooking on TCS

Taking both districts together, around 81 percent persons (females) responsible for cooking at home said that they felt that they had to spend lot of time on cooking on TCS.

26. Facing Health Problems When Using TCS

Taking both districts together, irritation in the eyes was reported by almost all (97 percent) persons (females) involved in cooking activities at home, while coughing was reported by around 80 percent such persons. Other health related problems due to smoke emitted as stated by the person involved in cooking activities at home due to TCS include breathing problem (62 percent), headache (58 percent) and chest pain (55 percent).

27. Readiness to Switch to an Alternative Chulha

Taking both districts together, around 79 percent families were ready to switch to an alternative chulha to the TCS being presently used by the family.

28. Problems in Upkeep & Maintenance of TCS

Taking both districts together, daily slaking the TCS with mud paste and cow dung paste for its upkeep was the problem stated by around 34 percent families, while having to clean the ash daily was the problem stated by around 18 percent families. The TCS was not portable and was fixed at one place was the problem reported by around 9 percent families.

29. Problems in Using TCS

The families were asked to state the problems they face while using TCS. Taking both districts together, there were many problems stated by the families including, excessive emission of smoke from the TCS was stated by 71 percent families, while the TCS consumes excessive quantity of fuelwood was stated by around 61 percent families. The TCS takes lot of time to cook food was the problem stated by 44 percent families.

30. Likelihood of Adopting ICS in Near Future

Taking both districts together, almost two-third (65 percent) families said that they would like to adopt ICS in the future, while the remaining one-third (35 percent) families said that they would not adopt ICS.

8.2 Key Barriers in the Adoption of ICS

(A) For ICS Users and Non-Users

31. Average Annual Family Income

Taking both districts together, average annual family income of 62 percent families was below Rs. 60,000/-, while average annual family income of another 29 percent families was between Rs. 60,001/- to Rs. 1,20,000/-.

32. Education Status of Adult Females (>=18 yrs.)

Taking both districts together, 26 percent adult females were illiterate; while around 12 percent adult females were literate but had no formal education. Around 11 percent adult females were educated upto primary school level.

33. Frequency of Use of Different Chulha in Last 1 Week

(a) Families Using TCS at Home

Among the Project Village Adopters of ICS families, more around 80 percent families using TCS at home reported using it two times a day during the last 1 week.

(b) Families Using ICS at Home

Taking both districts together, around 70 percent families using ICS at home reported using it one time a day during the last 1 week. Only 19 percent families reported using it two times a day during the last 1 week. Around 12 percent families rarely used the ICS during the last one week.

34. Most Affordable Chulha for the Families

Taking both districts together, almost 85 percent families said that for them TCS was the most affordable chulha, while 9 percent families said that ICS was the most affordable chulha. Even among the Project Village Adopters of ICS families, around 62 percent families said that for them, TCS was the most affordable chulha, while only 36 percent families said that ICS was the most affordable chulha.

35. Most Efficient Chulha According to the Families

Taking both districts together, almost 47 percent families said that LPG was the most efficient chulha in terms of time taken to cook food, while more than 35 percent families said that TCS was the most efficient chulha. There were only 13 percent families that said that ICS was the most efficient chulha in terms of time taken to cook food.

36. Most Convenient Chulha According to the Families

Taking both districts together, more than 48 percent families said that TCS was the most convenient chulha to cook food, while one-third (33 percent) families said that LPG was the most convenient chulha. There were only 16 percent families that said that ICS was the most convenient chulha to cook food.

37. Most Economical Chulha According to the Families

Taking both districts together, more than almost 78 percent families said that TCS was the most economical chulha to cook food, while only 20 percent families said that ICS was the most economical chulha.

38. Average Annual Maintenance Cost of Chulha for the Families

None of the families said that they incurred any cost on repair & maintenance of their TCS as it was self made at home using bricks and slaking it with mud paste and cow dung paste. Whenever, it required any repair or maintenance, the family would take care of it themselves.

39. Problems in Using ICS

Taking both districts together, small pieces of wood has to be used was the problems stated by 18 percent families, while the single pot chulha of the ICS was a problem stated by 13 percent families. The opening where the fuelwood is put in the ICS was small was the problem stated by 13 percent families. Having to sit in front of the ICS while the food was cooking was a problem stated by 12 percent families.

40. Suggestions for Increase in Adoption of ICS

The families were asked to give suggestions to increase the number of families adopting ICS. Taking both districts together, creating awareness about the benefits of ICS was the suggestion to increase its adoption was stated by around 77 percent families, the cost of ICS should be affordable and should be less that its prevailing cost was suggested by 29 percent families.

(B) For ICS Non-Users

41. Awareness About Consumption of Lesser Fuelwood in ICS

Taking both districts together, only one-fourth (25 percent) families were aware that an ICS consumes lesser fuelwood than TCS, while the remaining three-fourth (75 percent) families said that they were not aware that an ICS consumes lesser fuelwood than TCS.

42. Awareness about Consumption of Lesser Time on Collecting Fuelwood for ICS

Taking both districts together, less than one-fourth (23 percent) families were aware that when using ICS, they will have to spend lesser time on collecting fuelwood than when using TCS,

while the remaining three-fourth (77 percent) families said that they were not aware that when using ICS, they will have to spend lesser time on collecting fuelwood than when using TCS.

43. Awareness That Cooking on ICS Takes Lesser Time Than on TCS

Taking both districts together, less than one-fourth (23 percent) families were aware that cooking on ICS takes lesser time in comparison to cooking on TCS, while the remaining 77 percent families were not aware that cooking on ICS takes lesser time in comparison to cooking on TCS.

44. Benefits of Using TCS

There were many benefits stated by the families including, food cooked on TCS tastes good was stated by around 69 percent families, while it is easy to cook food for large number of persons was stated by 50 percent families. Ability to use thick logs of fuelwood was the benefit stated by around 47 percent families.

45. Suggestions for Increase in Adoption of ICS

Among the Project Village Non-Adopters of ICS families, creating awareness about the benefits of ICS was the suggestion to increase its adoption was stated by 68 percent families, while the cost of ICS should be affordable was suggested by around 33 percent families. Among the Control Village Non-Adopters of ICS families, almost all (95 percent) families were not aware about the ICS.

9
Case Studies

9.1 District Jashpur, Chhattisgarh

(A) Project Villages – Adopters

1. District : Jashpur, Block Kunkuri, Gram Panchayat : Narayanpur; Village : Narayanpur

Mrs. Urmila Bai (40 yrs.) has a family of 6 members, including her husband, 2 daughters (22 yrs. & 17 yrs.), 1 son (18 yrs.) and her mother-in-law. She along with her husband is engaged in agriculture as their main occupation and their annual income from agriculture of Rs. 70,000/-; which is the only source of income for the family. She and her husband go to the nearby forest twice a week, which is more than 5 kms. away from her home to collect fuel wood during the summer season. Each visit takes them around 3 hours to commute and collect fuelwood as they carry the fuelwood on their head/shoulders. With the advent of ICS in the family, the number of visits to the forests has reduced to half. She said that earlier when she was using only TCS her family collected around 25.6 quintals of fuelwood per annum from the forests. Now, with reduction in fuelwood consumption due to ICS, the family now collects around 12.4 quintals of fuelwood per annum.

Their house has a separate kitchen but the kitchen does not have a window. She is having TCS, ICS and Kerosene Oil Stove to cook food and all the three were used for cooking at home. She has been using ICS since last 10 months which she purchased for Rs. 1,350/-. However, she continues to use TCS as well, as she is of the view that TCS takes lesser time to cook food. She also finds the TCS more convenient to cook. However, she accepts that the ICS consumes lesser fuelwood and thus is a cheaper option. In her opinion, ICS has a comparative longer life (5 yrs.) than TCS (3 yrs.).

She says that due to the use of ICS, she is able to save around 1 hour every day on cooking food which she utilizes in doing sundry work outside the house and gets some time for herself as well. She says that she utilizes the saved time in putting up a chaat stall in the village and is able to earn around Rs. 3,000/- per month. However, in the chhat stall she still uses Kerosene Oil Stove to cook, as she finds it is more convenient to use. She opines that if the ICS model had two pot chulha, then more people would have bought it as it would have saved the cooking time.

2. District : Jashpur, Block Kunkuri, Gram Panchayat : Narayanpur; Village : Chitakwain

Mrs. Santoshi Bande is 47 years old and lives with her husband, 1 son (28 yrs.) and 1 daughter (23 yrs.). Her husband is a teacher and her son works in a finance company. The total annual family income is Rs. 9,60,000/. Mrs. Santoshi Bande says that she only occasionally cooks food on ICS as primarily she uses LPG chulha to cook food at home. Annually, she gets 6 LPG cylinders refilled at an average cost of Rs. 890/- per cylinder.

She says “When guests come to our house and there is a need for additional cooking option, I use ICS”. She emphasizes “It takes a lot of time to cook boiled rice on ICS, hence I do not use it often for day to day cooking”. Since the ICS is not used often hence, she does not have to go to the forest to collect fuelwood. The small wood pieces that are required in the ICS are collect by her from places in the vicinity of her house. She came to know about the ICS through the awareness campaign of Care India in her village.

3. District : Jashpur, Block Bagicha, Gram Panchayat : Pirai; Village : Pirai

Mrs. Manorama Kujur (43 yrs.) says "since I have started using ICS more than 2 years ago, I have stopped visiting the forests to collect fuelwood. I now manage with small quantity of wood available in the vicinity as there were only 3 members in the family who live together (3 children in the family live away for studies) and ICS is very convenient for our small family". Earlier when the TCS was used by the family for cooking food at home, Mrs. Manorama Kujur and her husband used to go to the forest, five days a week during the summer season to collect fuelwood. Each visit would consume 4 hours in commuting and collecting fuelwood. Annually, she and her husband would collect around 64 quintals of fuelwood from the forests. She also has a LPG chulha which she uses occasionally.

Now, she is saving time as she requires much less fuelwood (around 11 quintal per annum) for her ICS which she collects from nearby places from her house and need not go to the forest anymore. She said that she utilized this time to do sundry work outside the house and also gets time for herself now. She regularly participates in the SHE School meetings where she has been educated on the benefits of ICS. She also uses ICS during winter season to keep her house warm. During Mahua flowering and plucking season (February-April), Mrs. Manorama Kujur goes to the forest to collect Mahua flowers and takes her ICS along. While she collects Mahua flowers, she cooks rice on ICS in the forests. She also uses ICS to cook Mahua flowers and prepare local alcoholic drink commonly consumed by the tribal families.

4. District : Jashpur, Block Bagicha, Gram Panchayat : Jurudand; Village : Pandripani

Mrs. Alka Ekka is a housewife and her husband is a farmer. She lives with her husband, 2 sons (10 yrs. and 8 yrs.) and her mother-in-law. She says – "I have all the three types of chulha - TCS, ICS and LPG. However, our family is presently using mostly ICS for cooking food since last 4 months. Earlier I and my husband used to go to collect fuelwood from the forest, which is more than 5 kms, away, twice a week during the summer season and each visit consumed 5 hours including commuting and collection of wood. However, now our number of visits to the forests have reduced to half as now I and my husband go to the forests only once a week to collect fuelwood and also spend lesser time per visit (4 hours)."

She says that she was utilizing the saved time on doing other household work and even after that she gets 1 hour extra per day for herself. Earlier when the family was using only TCS, they would collect around 26 quintals of fuelwood per annum for cooking. Now, due to reduced consumption of fuelwood, as she is mostly using ICS, she collects only around 13 quintals of fuelwood per annum. She got the LPG connection under the Ujjwala Scheme but has not got it refilled due to the cost of refilling being beyond her pocket. She adds, "I regularly attend SHE School meetings in the village. Now, I have also started going to the market and started visiting neighbours/socializing." The kitchen in her house is in the living room and the room does not have a window either. She said that she suffered all sorts of problems due to heavy emission of smoke from the TCS including headache, coughing, irritation in eyes, breathing problem. With the adoption of ICS and abnegation of the TCS all these heath problems have vanished.

5. District : Jashpur, Block Bagicha, Gram Panchayat : Tambakachhar; Village : Jabla

It is a family of 6 persons where Mrs. Shanti Bai (35 yrs.) lives with her husband, father-in-law, mother-in-law and 2 children. Her husband is a farmer and her father-in-law gets old age pension. Shanti Bai and her husband go to the forest, which is around 2 kms. away, only during the winter season, twice a week to collect fuelwood. In each visit it takes around 2 hours. The annual consumption of fuelwood in her home is around 19 quintals.

The family owns all the three types of chulha – ICS, TCS and LPG. She purchased the ICS around 12 months back. The family got the LPG connection under the Ujjwala Scheme but the LPG cylinder after emptying has not been refilled due to high cost of refilling. The annual family income is low and her family finds it difficult to afford the cost of refilling LPG cylinder. The family uses both TCS and ICS for day to day work with the TCS being the primary chulha. After the purchase of ICS, the family has not relinquished the TCS and the ICS serves as an additional cooking medium for the family. Due to continued use of TCS as the primary chulha by the family, there has been no change in the number of visits to the forests to collect fuelwood.

There is a separate kitchen in her house but it does not have a window. She said that she suffered health problems due to heavy emission of smoke from the TCS including headache, coughing and irritation in eyes. With the adoption of ICS, these heath problems have mitigated to a little extent.

(B) Project Villages – Non-Adopters

1. District : Jashpur, Block Kunkuri, Gram Panchayat : Narayanpur; Village : Narayanpur

Mrs. Phulmat Bai says “I have become habitual to cook on TCS, hence I am not comfortable cooking in any other type of chulha. I have heard about ICS from people in the village, however, I have no idea about its features and benefits.”

In a family of 4 persons – Mrs. Phulmat Bai (26 yrs.), her husband and 2 sons (8 yrs. and 6 yrs.), Mrs. Phulmat Bai and her husband go to the forest to collect fuelwood thrice a week both during the summer season as well as the winter season. During the summer season, they spend around 2 hours per visit, while in winter season they spend 3 hours per visit in collecting fuelwood. The family collects around 67 quintals of fuelwood from the forest annually. Around one-third (22 quintals) of the fuelwood collected by the family is consumed at home for cooking food, while the remaining two-third (45 quintals) of fuelwood is sold by them in the market at an average rate of Rs. 400/- per quintal.

They use TCS for cooking purpose. In a day, it takes around 4 hours to cook food. Although they got LPG connection under the Ujjwala Scheme, they have not got the LPG cylinder refilled due to their inability to pay the refilling cost. Mrs. Phulmat accepts that she and her husband face problem in collecting fuelwood due to carrying heavy loads on their head/shoulders but still prefer it as the wood is available for free and the cost of cooking fuel is nil. The TCS being used by the family is a self made chulha, so no cost on purchase of chulha is incurred either.

She says that TCS is convenient to cook food as 2 dishes can be cooked simultaneously and speedily. She adds that the food cooked on TCS tastes good. She says “We can not afford the cost of the ICS hence, did not buy it. Moreover, only one dish can be cooked at a time thus, requiring lot more time in kitchen than in TCS. I have heard about the meeting by Care India in the village but have never participated in these meetings.”

2. District : Jashpur, Block Kunkuri, Gram Panchayat : Dhoridand; Village : Dhoridand

It is a family of 4 persons – Mrs. Smita Chauhan (24 years), her husband and two young children (5 yrs. and 3 yrs.). Her husband is a farmer with low annual income. She has been cooking food on home made TCS with no investment of money involved. Her husband goes to the forests, which is around 2 kms. away, 5 times a week during the summer season and once a week during the winter season to collect fuelwood. He collects around 37 quintals of fuelwood from the forest in a year. Out of this, he sells around 15 quintals of fuelwood in the

market @ Rs. 400/- per quintal and the remaining 21 quintals of fuelwood is used by the family for cooking food at home on TCS.

Mrs. Smita does not mind cooking on the TCS which generally takes 2 hours a day. She says that no cost is involved in using TCS as it is self made by the family and all repair & maintenance work is also handled at home. The fuelwood is easily available and is free of cost. So, no cost of cooking is incurred by the family at all. The family got LPG connection under Ujjwala Scheme but did not get the cylinder refilled due to paucity of money. She says that she has never used ICS but knows about ICS from the members of the village Mahila Mandal. She said that she suffered health problems due to emission of smoke from the TCS including headache, coughing and irritation in eyes. She wishes to use ICS but due to paucity of money, the family is not able to buy and use it.

3. District : Jashpur, Block Kunkuri, Gram Panchayat : Karma; Village : Karma

Mrs. Kamli Toppo (28 yrs.) knows about the ICS from her neighbours who were members of the local Mahila Mandal. She was also aware about the various benefits of ICS over TCS but due to paucity of money she was not able to buy one for her family. Mrs. Kamli is a housewife and her husband is a non-agriculture labour who is the sole earner in the family with annual income of Rs. 60,000/-. They have 3 small children, all studying in school. The house has a separate kitchen with window. The family got LPG connection under Ujjwala Scheme but did not get the cylinder refilled due to paucity of money. Hence, for cooking food at home, she is wholly dependent on her TCS. She spends around 2 hours per day in cooking food on TCS.

Mrs. Kamli and her husband collect around 61 quintals of fuelwood from the forest in a year by going to the forest thrice a week in the winter season and 2-3 times a week during the summer season. Out of this, they sell around 19 quintals of fuelwood in the market @ Rs. 400/- per quintal and the remaining 42 quintals of fuelwood is used by the family for cooking food at home on TCS. Mrs. Kamli admits that she and her husband face hardships in collecting and transporting heavy loads of fuelwood from the forests on their head/shoulder but they have no choice. Moreover, the fuelwood is easily available free of cost and with TCS at home; there is no cooking cost involved either. The repair & maintenance of the TCS is also taken care of in-house.

4. District : Jashpur, Block Kunkuri, Gram Panchayat : Remtey; Village : Pandripani

Mrs. Kamla Ekka (48 yrs.), says that her daughter-in-law, Mrs. Alka Ekka (24 yrs.) goes to the forest, twice a week, both during the summer season as well as during the winter season to collect fuelwood. Each visit consumes her 2 hours time. Mrs. Alka collects around 22 quintals of fuelwood from the forest in a year by going to the forest twice a week both during the winter season and the summer season. All of this fuelwood is consumed by the family for cooking food at home on TCS. No one else in the family of 7 persons goes to the forest to collect fuelwood. The annual family income is around Rs. 86,000/-. Mrs. Kamla's son Mr. David Ekka (25 yrs.) works as non-agriculture labour, while her husband is a farmer.

She says that "Since I do not know anything about ICS, I am not in a position to tell you anything. I have not heard about the awareness generation program organized in my village." She has TCS as well as an LPG connection and in the last 1 year she has even got it refilled twice at a cost of Rs. 890/- per refill for the cylinder and additional Rs. 40/- for transportation. She has been using LPG stove since last two years. She believes that LPG takes lesser time to cook and is more convenient than the TCS. However, while the cost of refilling LPG cylinder is too high, the fuel cost/cost of cooking on TCS in nil. Hence, the primary cooking medium for the family remains the TCS. She is willing to adopt ICS but lacks any knowledge about it.

5. District : Jashpur, Block Kunkuri, Gram Panchayat : Basantala; Village : Basantala

Mr. Lochan Yadav (40 yrs.) actively helps his wife Gauri Bai (38 yrs.) in the cooking activities at home. It takes around 3 hours per day to cook food. They have 2 children, a daughter (15 yrs.) and a son (10 yrs.). Mr. Lochan Yadav is a non-agriculture labour while his wife is a homemaker. The food is cooked in the living room which does not have a window for ventilation.

The family got an LPG connection under Ujjwala Scheme but never got the cylinder refilled after it got exhausted the first time. Mr. Lochan Yadav says that although cooking on LPG saves lot of time but the cost of cooking on TCS is nil. Mr. Lochan Yadav goes to the forest thrice a week during the winter season to collect fuelwood and each visit consumes 3 hours. His wife goes to the forest 5 times a week during the winter season and 4 times a week during the summer season and it takes her 4 hours per visit. Together, they collect around 64 quintals of fuelwood from the forests per year. Out of this, they sell around 35 quintals of fuelwood in the market @ Rs. 400/- per quintal and the remaining 29 quintals of fuelwood is used by the family for cooking food at home on TCS. He said that he is aware about ICS and would buy it in the future when he is able to arrange the money for it. He came to know about ICS from the members of the village Mahila Mandal.

6. District : Jashpur, Block Bagicha, Gram Panchayat : Tambakchhar; Village : Jabla

Mrs. Phulmani Bai (32 yrs.) is the daughter-in-law of the family. She alongwith her husband work as agriculture labour while her father-in-law is a farmer. She has 1 son (9 yrs.). All the 4 adult members of the family go to the forest to collect fuelwood 2-3 times a week during the summer season and 2-3 times a week during the winter season. Each visit consumes their 3 hours time. Together, they collect around 104 quintals of fuelwood from the forests per year. Out of this, they sell around 78 quintals of fuelwood in the market @ Rs. 400/- per quintal and the remaining 26 quintals of fuelwood is used by the family for cooking food at home on TCS. It takes around 3 hours per day to cook food.

Around 12 months back, the family got an LPG connection under the Ujjwala Scheme. However, once the cylinder exhausted, they did not get it refilled due to paucity of money. The TCS remains the primary cooking stove of the family. The family finds TCS convenient and economical as the cost of cooking is nil. The family also feels that the food cooked on TCS is tasty, large quantity of food can be cooked easily on a TCS and big vessels can be used to cook comfortably. Nevertheless, the family is ready to adopt ICS to save fuelwood and the cooking time involved. Mrs. Phumani Bai says that the blackening of cooking vessels used on TCS is also an irritant. However, paucity of money is the only deterrent for the family which has decided to put on hold the decision to buy ICS for the time being.

7. District : Jashpur, Block Bagicha, Gram Panchayat : Pirai; Village : Pirai

She has a family of 5 persons – Mrs. Sushila Bai (46 yrs.), her husband and three sons (18 yrs., 15 yrs. and 9 yrs.). Mrs. Sushila goes to the forests to collect fuelwood four times a week during the winter season and collects more than 19 quintals of fuelwood per year on her head. It takes her around 3 hours per visit. She and her husband are farmers. The primary cooking medium of the family is the TCS. They got an LPG connection under the Ujjwala Scheme 2 years back but once the LPG cylinder exhausted, they did not get it refilled due to paucity of money. She says LPG is both convenient and takes much less time to cook but is far too expensive for her family to afford. The cost of cooking on TCS on the other hand is nil as the TCS has been built at home and the fuelwood is available in the forest free of cost. It takes Mrs. Sushila around 2 hours per day to cook food for her family.

Mrs. Sushila further adds that her TCS has zero cost of cooking and also helps to keep the house warm during winters. She says that using TCS is convenient also as she is able to carry out other household works while cooking food, like washing, cleaning, fetching water, etc. Moreover, she says that the food cooked on TCS tastes good. The kitchen is in the living room and the room does not have any window. As a result, she faces irritation in eyes and breathing problem while cooking due to heavy emission of smoke from the TCS on a daily basis. As a result, despite counting so many benefits of TCS, she is ready to adopt an alternative chulha as it would save fuelwood, cooking time and problems faced due to emission of smoke from the TCS.

She does not know about any awareness generation campaign of Care India in her village nor has she ever attended any SHE School meeting. She would like to adopt ICS in the future after understanding its utility, once she sees how it operates and gets to know about its benefits.

8. District : Jashpur, Block Bagicha, Gram Panchayat : Sarkombo; Village : Jampani

Ms. Anisha Lakra (20 yrs.) lives with her father and younger brother. Her father is a farmer. Ms. Anisha goes to the forest 5 times a week during the winter season to collect fuelwood while her father goes to the forest 4 times a week during the winter season. The forest is 3-5 kms. away from home and it takes them around 3 hours to collect fuelwood in each visit. Together, they collect around 43 quintals of fuelwood from the forest per year. Out of this, around 19 quintals of wood is consumed at home in the TCS to cook food, while the remaining 24 quintals of fuelwood is sold by them in the market to consolidate their family income.

The family got an LPG connection under the Ujjwala Scheme but after the LPG cylinder exhausted after first use, they did not get it refilled due to paucity of fund. Hence, the age old TCS remain the primary cooking medium for the family. Ms. Anisha Says “Although LPG chulha was convenient to cook on and it took lesser time to cook food but it was beyond the financial capacity of the family to sustain/refill the cylinder. On the other hand the cost of cooking on TCS was nil.”

It takes Ms. Anisha 2 hours daily to cook food on her TCS. She has to suffer coughing, chest pain, irritation in eyes and breathing problem daily because of the emission of smoke from the TCS. Despite this, she does not fail to count on the benefits of TCS – food cooked on TCS tastes good and big cooking vessels can be used on it unlike the LPG chulha. Nevertheless, after having used LPG chulha she realizes that her TCS consumes lot of fuelwood, emits excessive smoke and takes longer time to cook. She is willing to adopt alternative chulha to save cooking time and the environment. She has attended SHE School sessions 4-5 times and knows about the benefits of ICS. However, due to paucity of money, the family is not able to purchase it for now. She said she would like to buy ICS in the future in consultation with her family members.

9. District : Jashpur, Block Bagicha, Gram Panchayat : Bhitghara; Village : Bartoli

Mrs. Umapati Bai (62 yrs.) lives with her husband, daughter-in-law and 2 grand children. The 3 adult members of the family go to the forest 2-4 times a week during the winter season to collect fuelwood. Each visit takes them 5 hours time, as the forest is around 3-5 kms. away from home. Together, they collect around 48 quintals of fuelwood from the forest per year. Out of this, around 19 quintals of wood is consumed at home in the TCS to cook food, while the remaining 29 quintals of fuelwood is sold by them in the market to consolidate their family income.

The family got an LPG connection last one year under the Ujjwala Scheme. They are using the LPG chulha and have got the cylinder refilled twice in last one year at a cost of Rs. 980/- each time. However, the primary

chulha at home is the TCS. It takes 3-5 hours to cook food daily on TCS. Although, Mrs. Umapati feels that TCS takes more time to cook food, it is more convenient and cost effective in comparison to LPG. Some other advantages of TCS cited by her include – the food cooked on TCS tastes good, large quantity of food can be cooked on it and can conveniently use big cooking vessels.

Nevertheless, she realizes the disadvantages of using TCS as well. She says that she realizes that TCS consumes large quantity of wood, emits excessive smoke and takes time to cook. The kitchen is in the living room, as a result coughing, chest pain, irritation in eyes and breathing problem are common irritants while cooking due to heavy emission of smoke from the TCS on a daily basis.

She said that in future she would like to opt for an alternative more effective chulha to save cooking time and fuelwood. She has attended SHE School sessions 2-3 times and has been told about the low consumption of fuelwood and the time saved on using ICS. The paucity of fund is the reason for not purchasing ICS yet, although, she would like to purchase it in the future.

10. District : Jashpur, Block Bagicha, Gram Panchayat : Jurudand; Village : Pandripani

It is a family of 2 persons, Mrs. Kiran Ekka (43 yrs.) and her husband, who is a farmer. Both of them go to the forest twice a week during winter season to collect fuelwood. Each visit consumes 4 hours time as the forest is 3-5 kms. away from their home. Together, they collect 19 quintals of fuelwood for their TCS per year which is installed in a separate kitchen without window in the house.

The family got an LPG connection under the Ujjwala Scheme but after the LPG cylinder exhausted after first use, they did not get it refilled due to paucity of fund. The TCS is the primary cooking medium for the family. When she cooked food on the LPG Chulha, it took her much less time, in comparison to the TCS. However, she says that cooking on TCS is more convenient and the cost of cooking is also nil. The TCS at home is self made hence, no cost of the chulha is also involved.

Nevertheless, she accepts the demerits of TCS which includes – excessive emission of smoke, blackening of cooking vessels, blackening of walls, etc. She also faces health related problems due to the smoke like headaches, irritation in eyes and breathing problem but due to paucity of money she cannot afford to buy ICS as it costs money. She does not know about ICS or about the interventions of Care India in her village. She has never attended SHS School sessions. She says she would like to continue using TCS in the future.

11. District : Jashpur, Block Bagicha, Gram Panchayat : Pirai; Village : Pirai

Mrs. Arti Ekka (32 yrs.) lives with her husband and two sons (12 yrs. and 8 yrs.). Her husband is a farmer and she is a housewife. She goes to the forest once a week only during the winter season to collect fuelwood, while her husband goes to the forest twice a week also only during the winter season to collect fuelwood. The forest is 3-5 kms. away from their home and each visit consumes around 4 hours time. Together, they collect more than 14 quintals of fuelwood for their TCS per year.

They have also got an LPG connection under the Ujjwala Scheme and use it intermittently for brief works like preparing tea, etc. During the last one year, they have got the LPG cylinder refilled twice for Rs. 700-800/- each time. Mrs. Arti says that cooking on LPG chulha consumes less time and is more convenient to cook food, however, it costs money, while cooking cost in TCS is nil. Mrs. Arti does not fail to count other benefits of using TCS and says that thick logs of wood can be used in the TCS, there was no need to buy the chulha and spend

money as TCS could be self made at home, one can do other household works simultaneously while cooking on TCS, etc. As a result, TCS is the primary chulha of the family and LPG chulha is secondary in terms of preference of use.

Due to more use of TCS which is installed in the separate kitchen without window, Mrs. Arti faces health problems like irritation in eyes and breathing problem due to the excessive emission of smoke from the TCS. Despite this, she has to spend around 4 hours per day on her TCS to cook food. She also has to bear other problems due to use of TCS like blackening of the cooking vessels and the walls. However, due to paucity of money, she has deferred the decision to buy ICS for now. She says that she would buy ICS once its cost reduces. She has heard about ICS and some intervention by Care India in her village. However, she has never attended SHS School sessions.

(C) Control Villages – Non-Adopters

1. District : Jashpur, Block Bagicha, Gram Panchayat : Pasia; Village : Pasia

In her family of four persons, Mrs. Sauhardi Bai (50 yrs.), her husband and her son (23 yrs.) go to the forest once a week only during the summer season to collect fuelwood. Her daughter does not go to the forest to collect fuelwood. The forest is around 5 kms. away from the village and each visits to collect fuelwood takes around 4 hours time. Together, they collect more than 19 quintals of fuelwood from the forest per year.

The only chulha at home is the TCS which has been self made by the family. The fuelwood is available from the forest without making any payment of money. Hence, the cooking cost for the family is nil. It takes around 4 hours to cook food on the TCS daily. Mrs. Sauhardi Bai complains that the TCS emits lot of smoke and results in irritation in the eyes and breathing problem. Since she has not heard about any alternative chulha to TCS, she wishes to continue using her TCS in the future as well.

2. District : Jashpur, Block Kunkuri, Gram Panchayat : Haradand; Village : Haradand

Mrs. Asanti Baiga (35 yrs.) is the Sarpanch of the village. She has a family of 4 persons including her husband and 2 sons. Her husband is a farmer. Mrs. Asanti and her husband collect fuelwood from the forest twice a week in both summer season and the winter season. Each visit takes around 3 hours of time, as the forest is less than 1 km. away from their home. Together, they collect more than 19 quintals of fuelwood from the forest every year.

She got an LPG connection under Ujjwala Scheme and has been using it since last 2 years. During the last one year, she has got the LPG cylinder refilled 6 times by paying around Rs. 890/- per refill. Despite this, the primary chulha for the family is still the TCS. Mrs. Asanti says that she feels that the TCS takes lesser time to cook food, is convenient to cook and the cost of cooking is also nil. She is wary of the fact that using TCS involves lot of hardships also like – every morning one has to prepare mud paste to slake the chulha, emission of excessive smoke and excessive use of fuelwood. She says that no one in her family knows about ICS. She was willing to switch to a better alternative to TCS if she gets to know about it.

3. District : Jashpur, Block Kunkuri, Gram Panchayat : Bartanr; Village : Bartanr

Mrs. Lalita Sai (56 yrs.) claims that nobody in her village knows about ICS. The primary chulha for the families in the village remains the age old TCS. People like to cook on TCS as over the generations they have become habitual to it. In a family of 7 persons, Mrs. Lalita Sai and her daughter-in-law, both go to the forest three times a week, both during the summer season as well as during the winter season to collect wood. The forest is 3-5

kms. away from their home and each visit takes around 3 hours time. Together, they collect more than 67 quintal of fuelwood per annum, half of which is consumed at home in the TCS while the remaining half is sold by them in the market.

The family got an LPG connection under Ujjwala Scheme and has been using it since last 2 years. During the last one year, she has got the LPG cylinder refilled twice by paying Rs. 890/- per refill. The primary chulha for the family is still the TCS, as according to her, the TCS takes lesser time to cook food and the cost of cooking is zero. She says that the good thing about using TCS is that one can cook for large number of people on it unlike the LPG chulha. However, for day to day cooking, she feels it is more convenient to cook on LPG.

Nevertheless, according to her, while cooking on the TCS for 4 hours daily, she faces problems like emission of excessive smoke, irritation in the eyes, no option to shift the place of cooking, etc. She says she is not aware about ICS. She was willing to switch to a better alternative to TCS if it saves cooking time.

4. District : Jashpur, Block Bagicha, Gram Panchayat : Budhadanr; Village : Budhadanr

Mrs. Kanchan Prabha Xess (42 yrs.) is a farmer and her husband works in a local place. They have three children. Mrs. Kanchan goes to the forest twice a week only during the winter season to collect fuelwood. The forest is more than 5 kms. away from her home but each visit takes around 2 hours time only as she brings wood on a tractor.

The family has an LPG connection and has been using it since last 12 years. During the last one year, she has got the LPG cylinder refilled four times by paying Rs. 890/- per refill. The primary chulha for the family is still the TCS as according to her the TCS takes lesser time to cook food and the family does not have to incur any cost on cooking. Moreover, she says that the food cooked on the TCS is tasty. There is a flip side to using TCS as well, as she admits that cooking on TCS results in blackening of the cooking vessels and the walls of the house. She is not aware about the ICS. She says that she would definitely opt for better alternative chulha to TCS when she comes to know about its use and benefits.

5. District : Jashpur, Block Kunkuri, Gram Panchayat : Ghatmunda; Village : Ghatmunda

In a family of 6 persons, Mrs. Kamla Bai (43 years) is a housewife and her husband and her son work as non-agriculture labour. Her 3 daughters are studying in school. Mrs. Kamla Bai, her husband and her son go to the forest once a week only during the summer season to collect fuelwood. They bring it on their head/shoulders and each visit takes them 2 hours time as the forest is around 1-3 kms. away from their home.

The house has a separate kitchen without window. Despite the family getting the LPG connection under Ujjwala Scheme 2 years ago, the TCS remains the primary chulha of the family. The LPG cylinder got exhausted after one use and the family did not get it refilled due to paucity of money. Mrs. Kamla says that cooking food on TCS is convenient and it takes less time to cook. To add to it, the cost of cooking is also nil as the TCS has been made in-house by the family and the fuelwood is available from the forest without making any payment.

However, cooking on the TCS will continue by the family as they are not aware about ICS. They are not willing to switch to any other chulha as of now, as they are not aware about any cost effective alternative. As a result, daily cooking on TCS for 3 hours in a windowless kitchen would continue for the family. Mrs. Kamla admits that cooking on TCS results in excessive emission of smoke leading to headache, irritation in the eyes and

breathing problem. It also results in blackening of the walls of the house. Another demerit of use TCS according to her is that every morning one has to prepare mud paste to slake the chulha.

9.2 District Kandhamal, Odisha

(A) Project Villages – Adopters

1. District : Kandhamal, Block : Phirangia, Gram Panchayat : Taladandukia; Village : Biraguda

Mrs. Chandrawati Vindhyani (38 yrs.) has a family of 4 members, including her husband and 2 sons (17 yrs. & 8 yrs.). She is a housewife and her husband is engaged in agriculture. She and her husband used to go to the nearby forest twice a week, which is more than 5 kms. away from her home to collect fuelwood during the summer season. During the winter season, both of them used go to the forest four times a week to collect fuelwood. Each visit takes them around 3 hours to commute and collect fuelwood as they carry the fuelwood on their head/shoulders. With the advent of ICS in the family, the number of visits to the forests has reduced to half. She said that earlier when she was using only TCS her family collected more than 118 quintals of fuelwood per annum from the forests. Now, with reduction in fuelwood consumption due to ICS, the family now collects only around 64 quintals of fuelwood per annum.

She is having TCS, ICS and Kerosene Oil stove to cook food. However, due to increasing cost of kerosene oil, now the kerosene oil stove is not used by the family. She has been using ICS since last 6 months which she purchased for Rs. 1,350/-. However, she continues to use TCS also. Nevertheless, she accepts that the ICS consumes lesser fuelwood and more convenient to use, in comparison to TCS. In her opinion, ICS has a comparative longer life (5 yrs.) than TCS (4 yrs.). She says that due to the use of ICS, she is able to save around 1 hour every day on cooking food which she utilizes in doing sundry work inside the house and gets some time for herself and her children.

2. District : Kandhamal, Block : Phirangia, Gram Panchayat : Taladandukia; Village : Dandikia

Mrs. Sunanda Pradhan (23 yrs.) has been using ICS (PCS-I Model) since last 6 months and says that this chulha also emits lot of smoke. She says that it takes lot of time to cook food and is not any different from TCS. Due to the smoke, the cooking vessels also get blackened too much on the ICS just like the TCS. Mrs. Sunanda also says that since in ICS only one dish can be cooked at a time, she prefers her old TCS to the new ICS.

Since she started using ICS, the number of visits to the forest has reduced. She said that earlier when she was using only TCS her family collected more than 118 quintals of fuelwood per annum from the forests. Now, with reduction in fuelwood consumption due to ICS, the family now collects only around 110 quintals of fuelwood per annum. She says that there was some problem in her ICS and she was still waiting for the redressal of her problem. Till the time the problem is resolved, she had to go back to TCS for cooking food.

3. District : Kandhamal, Block : Tikabali, Gram Panchayat : Gadaguda; Village : Telingia

The family has all the three types of chulha – ICS, TCS and LPG. They use all the three types of chulha as per the need. Mrs. Kumari Chandana (65 yrs.) lives with her son, daughter-in-law and 2 grand sons. She says that when food is cooked for all the members or when relatives also arrive, she uses TCS to cook food as it is convenient to cook large quantity of food on TCS. If she has to cook for fewer people, then she uses the ICS. For preparing breakfast and tea, she always uses LPG chulha.

Her son and daughter-in-law go to the forest to collect fuelwood. Both of them go to the forest twice a week during the summer season and four times a week during the winter season and collect around 64 quintals of fuelwood. However, earlier when they did not use ICS, they used to go to the forest thrice a week during the summer season and four times a week during the winter season and collected around 76.8 quintals of fuelwood.

She says that she has been using the ICS twice a day to cook food and is able to save on the cooking time which she utilizes on such activities like – more time for self, more time for children and doing sundry household work. With the use of ICS, she has also got rid of her daily sufferings from smoke related harassment of coughing and eye irritation.

4. District : Kandhamal, Block : Tikabali, Gram Panchayat : Gutingia; Village : Mallickpada

Mrs. Nirupama Pradhan (35 yrs.) lives in a small family consisting of her husband, her 4 year young son and herself. Her husband is engaged in agriculture and she is a housewife. Both Mrs. Nirupama and her husband go to the forest to collect fuelwood, twice a week during the summer season and almost all the seven days during the winter season and collect around 92.8 quintals of fuelwood per annum. She owns an ICS and finds it efficient, convenient and affordable in terms of consumption of fuelwood in comparison to the TCS.

She says that prior to owning the ICS, she and her husband used to visit the forest around five times a week during the summer season. Also, they used to collect 131.2 quintals of fuelwood from the forest. With the adoption of ICS she has been able to save time on collecting fuelwood and also in cooking food which she says she utilizes in taking care of her young son and in doing various household work. She finds the ICS convenient due to its portability. She says that she has respite from various smoke related problems which she suffered, when she was using only TCS like headache, coughing, eye irritation, etc. She says that she came to know about the ICS from the Representatives of Care India during the Mahila Mandal meetings.

5. District : Kandhamal, Block : Tikabali, Gram Panchayat : Padangi; Village : Kambaguda

Manini Pradhan (26 yrs.) has a family of 7 persons. Two persons in the family including herself go to the forest to collect fuelwood. Both of them go to the forest twice a week during the summer season and four times a week during the winter season and collect around 64 quintals of fuelwood. Her family owns all the three types of chulha – TCS, ICS and LPG. She find the ICS convenient to use but uses it infrequently as she has become habitual to use TCS and due to large family size, she prefers to use TCS for cooking food.

(B) Project Villages – Non-Adopters

1. District : Kandhamal, Block : Phirangia, Gram Panchayat : Taladandikiya; Village : Dandikia

Mrs. Namita Kanhar (46 yrs.) lives with her husband and 4 children. In a family of 6 persons, 3 persons – Mrs. Namita, her husband and her eldest son go to the forest to collect fuelwood twice a week during the summer season and four times a week during the winter season. Together, they collect around 96 quintals of fuelwood annually. During each visit, they have to spend around 3 hours time as the forest is around 3-5 kms. away from their home.

Apart from the TCS, the family also owns an LPG connection. The family uses LPG chulha infrequently and the TCS remains the primary chulha of the family despite it emitting excessive amount of smoke and consuming large quantity of fuelwood. She has heard about the SHE Sessions of the Mahila Mandal meetings from the Representatives of Care India in her village and has also attended a few of them. She said that she knows the

benefits of ICS but has not been able to purchase it yet due to paucity of money. She says that she was saving money and intends to purchase ICS in the next 4-6 months time.

2. District : Kandhamal, Block : Tikabali, Gram Panchayat : Gutingia; Village : Birangi

Mrs. Kadamati Digal (50 yrs.) is a well aware person but she is not able to use ICS because she does not have money to buy ICS. She said that she wanted to use ICS but due to paucity of fund she cannot afford it. Mrs. Kadamati has a large family of 10 members, out of which four members of the family, including herself, visit the forest to collect fuelwood twice a week during the summer season and twice a week during the winter season. Together, they collect around 89.6 quintals of fuelwood annually. During each visit, they have to spend around 3 hours time as the forest is around 1-3 kms. away from their home.

The family also owns an LPG connection under the Ujjwala Scheme of the Government and has since got the LPG cylinder refilled just once. The LPG chulha is intermittently used only to prepare tea in the evening and the complete food of the family is still cooked on the TCS. Mrs. Kadamati finds the TCS efficient, convenient and affordable. She spends around 2 hours time, both in the morning and in the evening to cook food for the family.

She has heard about ICS from the Representatives of Care India and in the Mahila Mandal meetings in her village. She says that she regularly attends the monthly meetings of the Mahila Mandal. She intends to adopt ICS as and when she is in a position to afford it.

3. District : Kandhamal, Block : Phirangia, Gram Panchayat : Taladandukia; Village : Biraguda

Mrs. Devi Digal (62 yrs.) lives with her son, daughter-in-law and three grand children. Her son and daughter-in-law go to the forest to collect fuelwood twice a week during the summer season and four times a week during the winter season. Together, they collect around 64 quintals of fuelwood annually. During each visit, they have to spend around 3 hours time as the forest is around 3-5 kms. away from their home.

The family also owns an LPG connection under the Ujjwala Scheme of the Government but has not got the LPG cylinder refilled even once due to paucity of money. Mrs. Devi Digal understand the problems of using TCS like excessive use of fuelwood, excessive emission of smoke and lot of time to cook food. She has also heard about the ICS and its benefits in the Mahila Mandal meetings but the paucity of money has made her to desist from adopting ICS.

4. District : Kandhamal, Block : Tikabali, Gram Panchayat : Padangi; Village : Kambaguda

Mrs. Nalini Pradhan (35 yrs.), her husband and their 6 year son live together. Nalini's husband is a farmer and Nalini works as non-agriculture labour. She and her husband go to the forest to collect fuelwood twice a week during the summer season and thrice a week during the winter season. Together, they collect around 41.6 quintals of fuelwood annually. During each visit, they have to spend around 3 hours time as the forest is around 1-3 kms. away from their home. TCS is the only chulha in their house. Nalini has heard about the ICS and its benefits through the Representatives of Care India and in the Mahila Mandal meetings in the village but due to paucity of money she has not purchased the ICS yet.

5. District : Kandhamal, Block : G. Udayagiri, Gram Panchayat : Gresinghia; Village : Burupatti

Mrs. Majhiarani Pradhan (62 yrs.) has a family of 5 persons including her son, daughter-in-law and two grandsons, both of whom are students. Mrs. Majhiarani alongwith her son and daughter-in-law go to the forest to collect fuelwood twice a week during the summer season and twice a week during the winter season.

Together, they collect around 67.2 quintals of fuelwood annually. During each visit, they have to spend around 3 hours time as the forest is around 1-3 kms. away from their home.

Apart from the TCS, the family also has an LPG connection that they have got under the Ujjwala Scheme of the Government. During the last one year, the family has got the LPG cylinder refilled once. Hence, TCS remains the primary chulha of the family. Mrs. Majhiarani and her daughter-in-law find the TCS affordable but neither efficient not convenient to cook food. However, they are of the view that the food cooked on TCS tastes good and one does not need to sit in front of the chulha while the food is cooking. Due to paucity of money, despite facing health hazards of smoke emanating from the TCS like coughing and eye irritation, the family continues to depend on the TCS.

Mrs. Majhiarani is well aware of the benefits of ICS through the Representatives of Care India and the demonstration of ICS in the SHE Sessions. Since, the TCS does not cost any money, the family is continuing with it till the time they can afford to purchase ICS.

6. District : Kandhamal, Block : Tikabali, Gram Panchayat : Gadaguda; Village : Telingia

Mrs. Mami Pradhan (35 yrs.) and her husband have four children. Mrs. Mami is a homemaker and her husband is a non-agriculture labour. In the family, only Mrs. Mami goes to the forest to collect fuelwood four times a week during the summer season and twice a week during the winter season. Annually, she collects around 35.2 quintals of fuelwood. During each visit, she spends around 4 hours time as the forest is around 3-5 kms. away from their home. Apart from the TCS, the family also has an LPG connection that they have got under the Ujjwala Scheme of the Government. During the last one year, the family has got the LPG cylinder refilled once. Hence, TCS remains the primary chulha of the family.

Mrs. Mami spends around 4 hours every day to cook food for the family on the TCS. She gets little time for other work and is often late to reach anywhere due to her engagements in fetching fuelwood and cooking food. She also suffers the ill-effects of the smoke emanating from the TCS like coughing and eye irritation. She says that she knows the benefits of the ICS through the Mahila Mandal meetings and intends to purchase the ICS when she has money for it.

7. District : Kandhamal, Block : Phirangia, Gram Panchayat : Ratanga; Village : Jargipader

Mrs. Renuka Rana (40 yrs.) and her husband go to the forest to collect fuelwood thrice a week during the summer season and five times a week during the winter season. Annually, they collect around 86.4 quintals of fuelwood. During each visit, they spend around 3 hours time as the forest is around 3-5 kms. away from their home. All the three sons of Renuka work as non-agriculture labours. She says that she knows the benefits of the ICS through the Mahila Mandal meetings and intends to purchase the ICS when she has money for it.

8. District : Kandhamal, Block : Tikabali, Gram Panchayat : Guitingia; Village : Mallickpada

Mrs. Savita Digal (56 yrs.), her husband and her eldest son go to the forest to collect fuelwood once a week during the summer season and twice a week during the winter season. Together, they collect around 48 quintals of fuelwood annually. During each visit, they have to spend around 5 hours time as the forest is far away from their home. Apart from the TCS, the family also has an LPG connection that they have got under the Ujjwala Scheme of the Government. During the last one year, the family has got the LPG cylinder refilled only twice. Hence, TCS remains the primary chulha of the family. Mrs. Savita spends around 5 hours every day to cook food for the family on the TCS. Like many in the village, she also says that she has attended several

Mahila Mandal meetings organized by the Representatives of Care India and is aware of the various benefits of using ICS. However, due to paucity of money, she has not been able to purchase ICS yet.

9. District : Kandhamal, Block : Phiragia, Gram Panchayat : Ratanga; Village : Seskajodi

Mrs. Prabhasini Mallick (30 yrs.) lives with her husband and three children. She and her husband go to the forest to collect fuelwood thrice a week during the summer season and four times a week during the winter season. Together, they collect around 76.8 quintals of fuelwood annually. During each visit, they have to spend around 3 hours time as the forest is 3-5 kms. away from their home.

TCS is the only chulha available in the house. Mrs. Prabhasini spends around 4 hours per day to cook food for the family on the TCS. Apart from the household work, she was involved in making leaf plates and selling mangoes when the season arrived. She has attended Mahila Mandal meetings organized by the Representatives of Care India and is aware of the various benefits of using ICS. However, due to paucity of money, she has not been able to purchase ICS yet.

10. District : Kandhamal, Block : Tikabali, Gram Panchayat : Guitingia; Village : Dorapida

Mrs. Lalita Digal (28 yrs.) and her husband go to the forest to collect fuelwood twice a week during the summer season and four times a week during the winter season. Together, they collect around 64 quintals of fuelwood annually. During each visit, they have to spend around 3 hours time as the forest is 1-3 kms. away from their home. TCS is the only chulha available in the house.

Mrs. Lalita spends around 4 hours every day to cook food for the family of four persons including her husband and father-in-law and mother-in-law. She has attended Mahila Mandal meetings organized by the Representatives of Care India and is aware of the various benefits of using ICS. However, due to paucity of money, she has not been able to purchase ICS yet.

(C) Control Villages – Non-Adopters

1. District : Kandhamal, Block : G. Udayagiri, Gram Panchayat : Raikola; Village : Raikola

Mrs. Sanju Bai Pradhan (43 yrs.) has a family of 6 persons. She, her husband and her son go to the forest to collect fuelwood which is around 3 kms. away from her home, twice a week during the summer season and thrice a week during the winter season and collect around 75.2 quintals of fuelwood. She cooks food primarily on the TCS but she also owns an LPG connection and during the last one year got the LPG cylinder refilled four times.

She has not heard about ICS but is ready to opt for an alternative chulha if it consumes less fuelwood, takes less time to cook food and emits low amount of smoke. She says that she suffers from coughing, eye irritation and breathing problem while using the TCS due to the excessive smoke emission. Being a resident of a non-intervention village, she has not heard about the SHE schools.

2. District : Kandhamal, Block : Tikabali, Gram Panchayat : Gardingia; Village : Gardingia

Mrs. Geetanjali Sahu (39 yrs.) has a small family of four persons – she, her husband and two sons. Her husband is engaged in business activity, while she is a homemaker. Both, Mrs. Geetanjali and her husband go to the forest to collect fuelwood once a week during the summer season and thrice a week during the winter season and collect around 41.6 quintals of fuelwood annually. Each visit consumes around 150 minutes as the

forest is around 1-3 kms. away from her house. Her family owns an LPG connection and she uses it to cook food often although, she uses TCS also for cooking food.

She has heard about ICS and its benefits. However, she is of the opinion that food cooked on TCS tastes good and it is convenient to cook large quantity of food in one go. However, she is not averse to adopting an alternative to her TCS, if the new chulha emits less smoke and takes lesser time to cook food.

3. District : Kandhamal, Block : Tikabali, Gram Panchayat : Burbinazu; Village : Midabali

Mrs. Jhiastri Pradhan (25 yrs.) lives in a nuclear family consisting of her husband and two infant sons. Her husband is a farmer and she is a homemaker. She and her husband go to the forest to collect fuelwood twice a week during the summer season and four times a week during the winter season and collect around 64 quintals of fuelwood annually. Each visit consumes around 3 hours as the forest is around 3-5 kms. away from her house. She has only TCS as the medium to cook food at home.

She is agreeable to adopt an alternative chulha to her TCS provided the new chulha emits less smoke, consumes less fuelwood and takes less time to cook food. If she is able to save on her cooking time, she was willing to take up making of leaf plates to supplement the family income. She has heard about ICS and its benefits but yet to use it.

4. District : Kandhamal, Block : Phirangia, Gram Panchayat : Dindragam; Village : Dindragam

Mrs. Sabita Kanhar (45 yrs.) has a family of four persons. Her husband is a farmer and her two sons work as non-agriculture labour. Three members of the family, including Mrs. Sabita go to the forest to collect fuelwood twice a week during the summer season and thrice a week during the winter season and collect around 81.6 quintals of fuelwood every year. Each visit takes around 3 hours time as the forest is 3-5 kms. away from home.

The family owns an LPG connection that they got under the Ujjwala Scheme. After using the first cylinder, they did not get it refilled even once, stating paucity of money. Despite having to suffer due to the smoke emanating from the TCS like coughing, chest pain, eye irritation and breathing problem, she continues to use her traditional TCS. This, despite the fact that she has heard about the ICS and its benefits. Such persons should be motivated to adopt ICS, although they are bound by traditions and have very strong resistance to change.

5. District : Kandhamal, Block : Tikabali, Gram Panchayat : Katimaha; Village : Kutrikhol

Mrs. Sonoti Pradhan (30 yrs.) lives with her husband who is a farmer and two young sons. Mrs. Sonoti and her husband go to the forest to collect fuelwood once a week during the summer season and thrice a week during the winter season and collect around 41.6 quintals of fuelwood every year. Each visits takes around 4 hours time as the forest is 3-5 kms. away from home.

As is the case with large number of families, the family owns an LPG connection that they got under the Ujjwala Scheme. After using the first cylinder, they did not get it refilled even once stating paucity of money. Hence, TCS remains the primary chulha for the family despite the family facing problems, physical and health, in collecting and carrying loads of fuelwood from the forest. Mrs. Sanoti says that she was willing to adopt an alternative chulha to the TCS, which should emit less smoke and take less time to cook food.

amal, Block : Tikabali, Gram Panchayat : Koinjhor; Village : Gondogaon

anhar (45 yrs.) is a homemaker and her husband is a farmer. She has three children. Mrs. al, her husband and her eldest son go to the forest to collect fuelwood twice a week during the summer season and four times a week during the winter season and collect around 96 quintals of fuelwood every year. Each visit takes around 3 hours time as the forest is 1-3 kms. away from home. The family only owns a TCS and is willing to adopt an alternative chulha that takes less time to cook food. However, they have not come across any alternative as of yet.