



ProBEC – Programme for Biomass Energy Conservation

Stove Producers assess their Impact

Methodology and Results of a ProBEC Participatory Impact Assessment



ProBEC - c/o GTZ, P.O.Box 13732, Hatfield 0028,
Pretoria, South Africa,
Tel: +27 12 342-0181, Fax: +27 12 342-3898,
e-mail: zaprobec@gtz.de
www.probec.org

Reporting by
Verena Brinkmann &
Agnes Klingshirn

Content

1.	Introduction	1
1.1	ProBEC & the Experience Exchange Workshop on low-cost Clay Stoves ...	1
1.2	Focus of the Assessment.....	1
1.3	Objectives of the Assessment.....	2
2.	Methodology.....	3
2.1	Interviewers & Interviewees	3
2.2	Impact Questionnaire	3
2.3	Assessment Process.....	4
3.	Main Results of the Assessment	5
3.1	Stove Usage.....	5
3.2	Fuel Usage.....	7
3.3	Economic Impact.....	7
3.4	Social-Cultural Impacts	9
3.5	Environmental Impacts.....	11
4.	Conclusions	14
5.	Recommendations.....	15
6.	Selected Bibliography & Internet References	16
7.	Annex	17
	Annex Questionnaire for the Assessment of ProBEC Impact	17

Tables and Diagrams

Table 1: Relation between interviewed households, stove adoption and frequency of use	5
Table 2: Alternative stoves in use besides improved cooking stove – type and purpose	6
Table 3: Fuel type and fuel purchase.....	7
Table 4: Price per stove and income per month through commercial stove production	9
Table 5: Number of users producing stoves, payment alternatives and benefiting persons ...	9
Table 6: Environmental awareness among stove users and other villagers – an overview ..	13

Diagram 1: Started stove usage	5
Diagram 2: Advantages of stoves appreciated.....	7
Diagram 3: Use of saved money	8
Diagram 4: Use of saved time	8
Diagram 5: Appreciation by family/husband	10
Diagram 6: Appreciation by neighbours.....	10
Diagram 7: Health related differences	11
Diagram 8: Activities against deforestation	12
Diagram 9: Activities against soil degradation	12
Diagram 10: Environmental discussions within the villages	13

Abbreviations

GTZ	Deutsche Gesellschaft für technische Zusammenarbeit/ German Development Cooperation
KSH	Kenyan Shilling
MDG	Millennium Development Goals
MK	Malawi Kwacha
no.	Number
ProBEC	Programme for Biomass Energy Conservation in Southern Africa
SADC	Southern African Development Community
s.o.	someone
TB	Tuberculosis
TSH	Tanzanian Shilling
vb	Verena Brinkmann
ZMK	Zambian Kwacha

1. Introduction

1.1 ProBEC and the Experience Exchange Workshop on low-cost Clay Stoves

The Programme for Biomass Energy Conservation (ProBEC)¹ – implemented by the German Development Cooperation (GTZ) since 1998 – is a Southern African regional programme that seeks to enhance capacity of governments and development institutions to plan and integrate biomass energy conservation activities. The programme aims to improve the living conditions of households and the efficiency of small-scale industries through the introduction and further development of improved cooking technologies for efficient and sustainable use of biomass energy.

In 2004 this programme was implemented in eight countries of the Southern African Development Community (SADC) Lesotho, Zimbabwe, Mozambique, Namibia, South Africa, Tanzania, Zambia and Malawi. Different types of stoves were developed in the different countries, according to cooking habits, existing technologies and resource availability.

The stove promoters and producers from respective ProBEC countries were invited to join the ProBEC Workshop on Experience Exchange on low-cost Clay and Ceramic Stoves², held at the IFSP office in Mulanje, Malawi, from 28th June to 7th July 2004. Representatives from six countries: Malawi, Mozambique, Zimbabwe, Zambia, Tanzania and Kenya attended this workshop.

To prepare themselves and to reflect their activities, these participants were asked to carry out an impact assessment themselves on the basis of an impact questionnaire³. They were supposed to receive a feedback from stove users in their respective impact areas. The approach, the methodology and the results of this self-assessment are presented and explained in this report.

1.2 Focus of the Assessment

The assessment focussed on energy saving clay and ceramic stoves. Low-cost clay stoves have been promoted in Eastern Africa since two decades. Two models have proved to be quite successful – the portable clay stoves and the inbuilt mud-stoves, which have a similar fire chamber⁴.



Photo (ProBEC): Portable clay stove



Photo (vb): Fixed mud-stove Malawi

¹ Compare <http://www.probec.org>

² Compare Tawha & Owala Odhiambi 2004.

³ Compare Annex, Questionnaire for the Assessment of ProBEC Impact

⁴ For more details on the stoves compare <http://www.probec.org/goto.php/index.htm> and <http://www.hedon.info/goto.php/index.htm>.

While these low-cost clay stoves have been promoted in Kenya and Tanzania for quite some years, they have been introduced in Malawi, Zimbabwe, Mozambique and Zambia since 1999 only, improving existing technologies and as result of ProBEC and other GTZ initiatives.

1.3 Objectives of the Assessment

The main objective of this questionnaire assessment was to get first impressions about users' experiences. Stove users were asked to share their experiences about effects and impacts through the use of energy saving stoves and household management principles on their everyday life. As a very simple and general assessment, it was considered as important and as a first milestone to determine changes that may have resulted from using these new technologies.

This assessment and the respective discussions with stove users were also supposed to prepare the stove promoters and producers for the workshop. As they carried out the assessment themselves, they got the opportunity to exchange directly with their customers. They would not only report according to their own understanding, but moreover according to other users' thinking and experiences. The results of this questionnaire assessment provided an informative basis for improvements and changes. Through the feedback of stove users it would be possible to judge the activities carried out on their suitability for the target group and to modify them, if required.

The questionnaire assessment was also intended to deliver relevant data to compare experiences from different countries. Through comparison and exchange of these experiences during the workshop, the participants could learn from each other.

Finally this assessment provided an overview over stove adoption in different countries, in particular in Malawi, Mulanje, where a more detailed impact assessment at local level was carried out after the workshop⁵. The questionnaire results gave relevant information for the selection of respective villages, which were to be visited. Vice versa the detailed impact assessment substantiated the questionnaire results.

⁵ Compare Brinkmann 2005.

2. Methodology

2.1 Interviewers and Interviewees

Three groups can be regarded in connection with stove production, stove users, producers and promoters and project staff. The stove producers and promoters are using stoves themselves, thus they belong to the group of users. But they were elected for their skills and knowledge, to promote and produce stoves in the respective villages. These producers and promoters receive training and support from trained EO, staff of ProBEC and other projects.

For this impact assessment, the producers and promoters participating in the experience exchange workshop of ProBEC were asked to be interviewers of stove users. They got the opportunity to exchange with their customers, to assess the distribution of stoves, the usage, experienced improvements and remaining challenges. This information was collected using an impact questionnaire. And finally they were invited to share their experiences during the workshop.

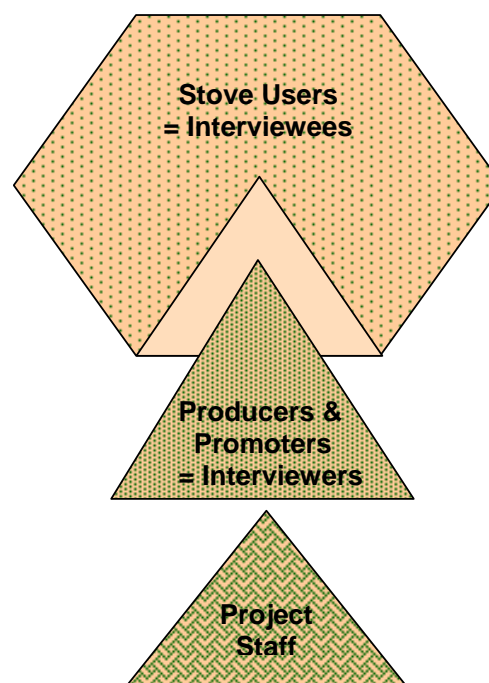


Fig.: Interviewers and interviewees

Meanwhile the stove users were the interviewees within this assessment. They were interviewed as resource person, having experiences with portable and inbuilt stoves.

Both, the interviewers and the interviewees, come from rural areas. So far most of them had only little exposure to formal education. This was also the first time and a challenge for them to participate in such an assessment.

2.2 Impact Questionnaire

A questionnaire was designed before the ProBEC workshop started. It was developed in cooperation between GTZ consultants and local ProBEC coordinators. The questionnaire was divided into six parts⁶. Besides general information about the respective stove users, it reflected

- stove usage,
- fuel usage,
- economic impacts,
- social-cultural impacts and
- environmental impacts.

In order to measure ProBEC impact with this questionnaire assessment, certain quantitative and qualitative INDICATORS were identified.

- Quantitative indicators were number of stoves in use, number of stoves produced and sold, amount of firewood or time saved etc. – anything countable.
- Qualitative indicators could show and express the changes in everyday life, opinion and attitude, which took place over time, due to the work of promoters

⁶ Compare Annex, Questionnaire for the Assessment of ProBEC Impact.

and facilitators in their communities. Even though they were more complex to measure, the collection of this qualitative information was supposed to provide important perspectives on the actual effectiveness of the project.

In recent years, since 1992 and in particular since 2000, there has been an overall international understanding as to what the priorities are to reach sustainable development – the Millennium Development Goals (MDGs)⁷.

Several of these goals are referring to biomass energy conservation and thus they were taken into consideration when developing the indicators of the questionnaire.

MDGs related to Biomass Energy Conservation

- Goal 1: Eradicating extreme poverty and hunger
Indicators would be
- number of households benefiting from using energy saving stoves
 - actual income increasing through selling stoves or spending less on fuel wood
- Goal 2: Achieving universal primary education
Indicator would be
- number of girls going to school, due to decreased work load
 - increased knowledge of stove users in terms of environmental and technical issues
- Goal 3: Promoting gender equality and empowering women
Indicators would be
- reducing daily workload of women
 - increases in the decision-making powers of women
 - reduction of time spent on household activities
 - ownership of productive equipment and know-how by women
- Goal 4, 5, 6: all related to improving health
Indicators would be
- a reduction of indoor air pollution from less smoke
 - less accidental burns by children
- Goal 7: Ensuring environmental sustainability
Indicators would be
- trees saved from being cut, because of decreased need of firewood when using improved stoves
 - better harvests, because dung remains on the fields instead of being burnt
 - increased environmental awareness

Fig.: MDGs related to Biomass Energy Conservation

2.3 Assessment Process

Preceding the exchange workshop each of the participating stove promoters and producers – the interviewers – were asked to interview ten of their stove users. As guideline they were supposed to use the provided questionnaire. Additionally it was recommended, to gather these ten people in a meeting and to have a joint informal discussion about improved stoves. These discussions were meant to complement the information collected in the questionnaires.

The interviewers managed to interview 220 stove users within their impact area. The impact questionnaires were filled out and brought back for the workshop on experience exchange. The results of this participatory questionnaire assessment were compared, analysed and discussed in the plenary⁸.

This documentation report is based on the experiences of stove-users from Malawi (districts: Rumphi and Mulanje), Zimbabwe (districts: Hurungwe, Gwanda, Chimanimani and Mwenezi), Zambia (districts: Monze, Lusaka West, Lusaka, Chongwe, Kafue and Kamekete), Tanzania (districts: Arumeru, Arusha, Moshi and Lushoto) and Kenya (district: Kisumu). The representatives from Mozambique didn't manage to return questionnaires.

⁷ <http://www.developmentgoals.org>

⁸ For the analysis of assessment results, a database for all countries and respective districts was created. It provided an overview and the basis for the numerous tables and diagrams, presented in this report.

3. Main Results of the Assessment

The results of the questionnaire assessment are presented and structured according to stove usage, fuel usage, economic, social-cultural and environmental impacts. Tables and diagrams illustrate results of the analysis and provide an overview.

3.1 Stove Usage

According to the questionnaire results, stove usage – adoption and frequency of use – can be described as follows. This table shows the number of interviewed stove using households in total as well as per country. In total 220 households were interviewed – 70 in Zimbabwe, 68 in Malawi, 33 in Zambia, 29 in Tanzania and 20 in Kenya. Comparing, the table gives an overview over the number of stoves in use and the frequency of stove usage in the respective countries. Many interviewees confirmed to use more than one stove in their family and most of the stove users explained to use it regularly during the day. This comes out very clearly for Malawi, as most of the households use more than one stove, regularly.

	no. of interviewed household	no. of stoves in use	regular stove-usage
total	220	311	200
Malawi	68	116	64
Zimbabwe	70	72	64
Zambia	33	43	25
Tanzania	29	43	29
Kenya	20	37	18

Table 1: Relation between interviewed households, stove adoption and frequency of use

The following diagram shows when the interviewees in the different countries started using stoves. Most of Kenyan households started before 1999. Tanzania started before 1999 as well, but many households continuously joined. The table shows that in Zambia, Zimbabwe and Malawi many households started using and improving their stoves during the last years from 2000 to 2004. The time that users continuously applied them expresses the good appreciation of the stoves promoted under ProBEC.

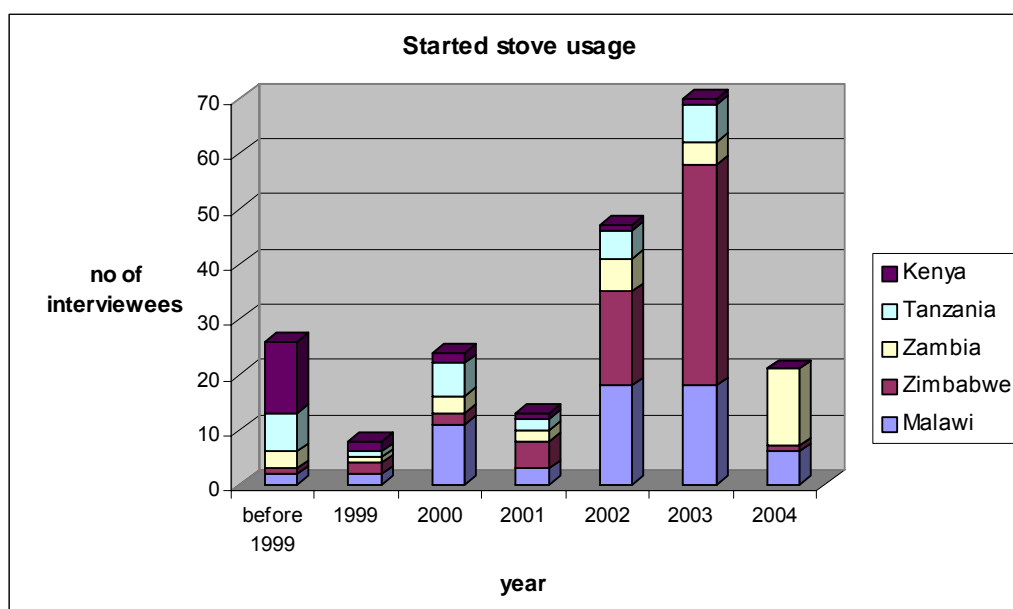


Diagram 1: Started stove usage

The dissemination strategies followed in these countries (self-made, built by someone else for free or for payment or bought) differed a lot, due to the different approaches. Most of the Zimbabwean, Tanzanian and Kenyan households bought the stoves or paid someone to build it for them. The stove producers received money or goods for their services. Whereas in Malawi and Zambia most of the stoves were self-made, the users built the stoves themselves. This self-help approach was initially applied in the two countries, where nowadays the projects change towards a commercial approach. Nevertheless this has an impact on the method of acquiring stoves as well as income generation and use of generated money, which plays a minor role in Malawi or Zambia compared to countries like Kenya and Zimbabwe, where producers generate income⁹.

29% of the households explained to still use other stoves besides the improved clay cooking stoves. Most of them used the 3-stone fire (30). Some used a stove fuelled by charcoal or kerosene (16) and a few mentioned the paraffin stove, the fireless cooker, electricity or (one) the solar cooker.

The purposes of using these other stoves varied. The 3-stone fire for instance was preferred for cooking in big pots, boiling water, baking bread etc. (13), for beer-brewing (10), for special occasions (5) and for heating (5).

The following table shows how many households were using alternative cooking facilities, which type and for which purposes.

country	no. of households using alternatives	Which types are favourites?	For which purposes?
total	64 out of 220 (29%)	3-stone fire (30) or charcoal, kerosene (16)	cooking in big pots and beer-brewing
Malawi	20 out of 68 (29%)	3-stone fire (12) or paraffin (3)	beer-brewing and cooking
Zimbabwe	13 out of 70 (19%)	3-stone fire (8) or solar cooker (1)	cooking in big pots and heating
Zambia	14 out of 33 (42%)	charcoal, kerosene (6) or 3-stone fire (5)	cooking in big pots and special occasions and heating
Tanzania	14 out of 29 (48%)	charcoal, kerosene (9) or 3-stone fire (2) or fireless cooker (2)	special occasions and cooking in big pots
Kenya	3 out of 20 (15%)	3-stone fire (3)	special occasions

Table 2: Alternative stoves in use besides improved cooking stove – type and purpose

Reflecting what users like most about the improved cooking stove, the interviewed users identified many changes and advantages due to this innovation. The following diagram presents and ranks the appreciated advantages of the stoves and thus provides an overview over the opinions of all interviewed 220 persons. (As there were many similarities between the countries, they are presented in this cumulative diagram).

Most of the interview partners appreciated fuel wood saving and fast or time saving cooking. But the stove users made many other interesting experiences as well: not only fuel and time saving were mentioned, but also retaining of heat, easy cooking, less smoke or clean kitchen. The stove was appreciated as smart, comfortable, portable and safe. It's made of local material and therefore cheap to build, it has potential to save money, reduces the workload and is durable.

⁹ Compare section 3.3 Economic Impact later on. The different dissemination approach is influencing the money spent, the income generated and the money used for other purposes.

The stove users were asked to compare the amount of money they spent on fuel before they applied improved stoves and the amount they spend nowadays. Just a few were able to quantify the answer, but explained to save app. half of the money they spent before. Others said they spend less than before, without talking about amounts. Most of the interviewees had difficulties to calculate exact amounts of money. When discussing the alternative use of saved money, many different applications were mentioned. The following diagram shows what the interviewees bought with the extra money they saved.

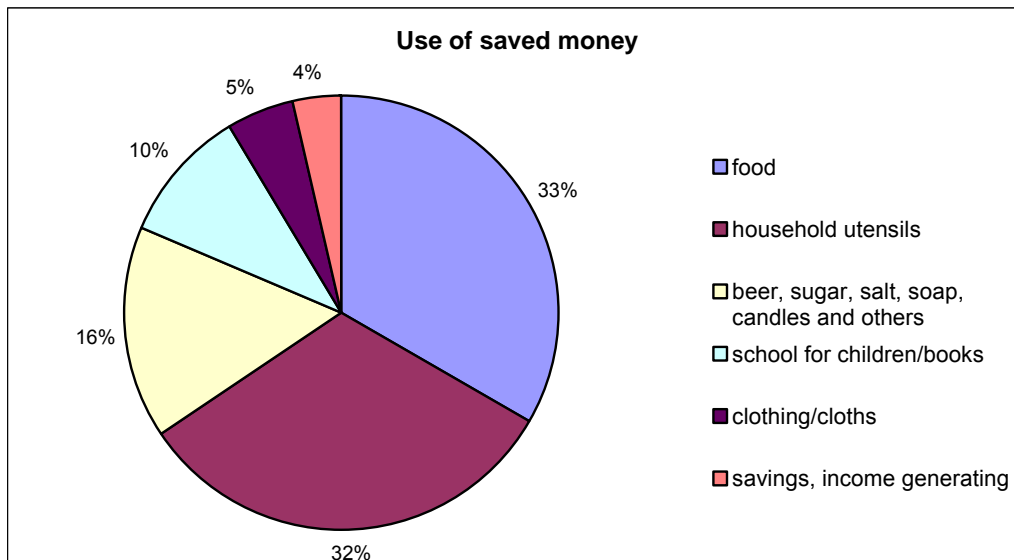


Diagram 3: Use of saved money

Concerning the collection of fuel, the interviewees were asked how much time they spent on fuel collection before and nowadays with the improved stoves. The result of this question was very similar to the previous. Generally they were able to say, that time can be saved with the stoves, but it was difficult to calculate time. According to these few examples given, the saved time was around 57%. Those who experienced saving time and having more time available – regardless the calculation of time – described their alternative activities as follows.

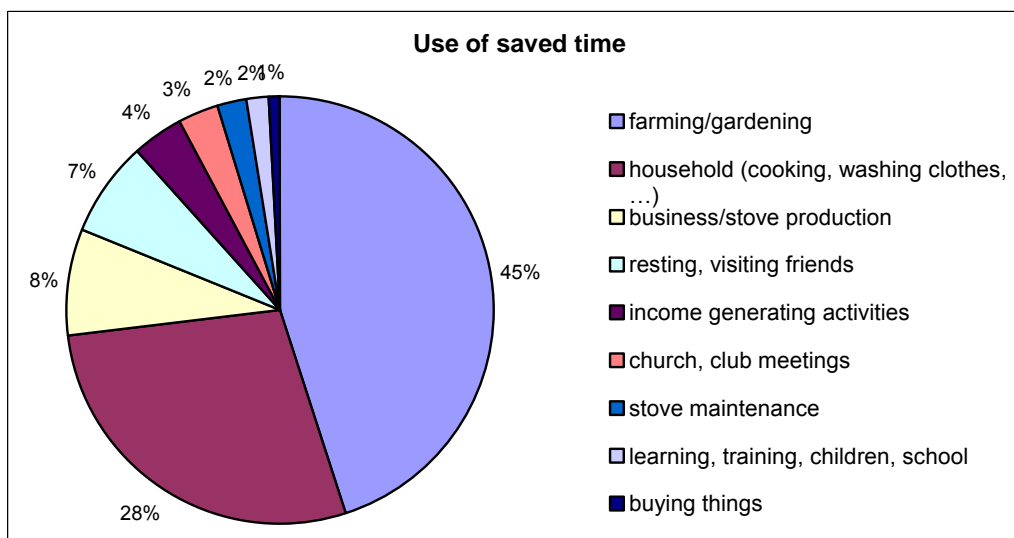


Diagram 4: Use of saved time

Income generation through stove production and sale differed a lot between the five countries according to the dissemination approaches¹⁰. Commercial activities in Malawi and Zambia started recently. Out of the 220 interviewed stove users, 72 explained that they make money through selling stoves. The following table compares the countries and shows the differences. The prices per stove and thus the income per month differ.

	price per stove	income per month
Malawi	50 Mk to 200 MK	200 MK to 1600 MK
Zimbabwe	4.000 \$ to 10.000 \$	10.000 \$ to 100.000 \$
Zambia	1.000 ZMK to 1.500 ZMKK	5.000 ZMK to 300.000 ZMK
Tanzania	500 TSH to 3000 TSH	10.000 TSH to 100.000 TSH
Kenya	100 KSH	600 KSH

Table 4: Price per stove and income per month through commercial stove production

98 stove users out of 220 explained that they build stoves for others (the number of interviewees are repeated to ease comparison).

They are either paid with money or with other goods. (The money charged per stove is listed in the previous table 4.) The number of stoves built for others, the payment alternatives and the person who receives, keeps and decides the use of the money are specified in the following table. In the different countries the stove users started building stoves for others to different extent. But it is distinct, that most of them charge money for production and most of the women keep the money themselves¹¹.

	no. of interviewed households	building stoves for others	payment alternatives	benefiting from money
total	220	98	money(68), goods(56), free(9)	self (69), other family members(10)
Malawi	68	48	Money (25), goods(20)	self (26), other family members (8)
Zimbabwe	70	21	money (19), goods(18)	self (18)
Zambia	33	11	goods (8), money(7)	self (9)
Tanzania	29	17	money (15), goods(10)	self (15)
Kenya	20	1	money (1)	self (1)

Table 5: Number of users producing stoves, payment alternatives and benefiting persons

3.4 Social-Cultural Impacts

The social cultural impacts were assessed as recognition and support from family members and neighbours as well as health improvements and risk reduction.

Husbands and other family members generally appreciated the new energy saving stoves. 207 interview partners explained that their husbands and children recognise changes and appreciate them; some even involve themselves in stove related activities. The improvements they appreciated differed from country to country. The following diagram presents what family members and husbands appreciate most – statements of all interviewees in total compared to Malawian interviewees.

¹⁰ Income generation and use of the money generated depends a lot on the dissemination approach (commercial or self-help) applied in the respective country. Compare section 3.1.

¹¹ Even though the women state to keep the money themselves, it should be considered that in most cases the money is used for the family, rather than for the women's individual needs.

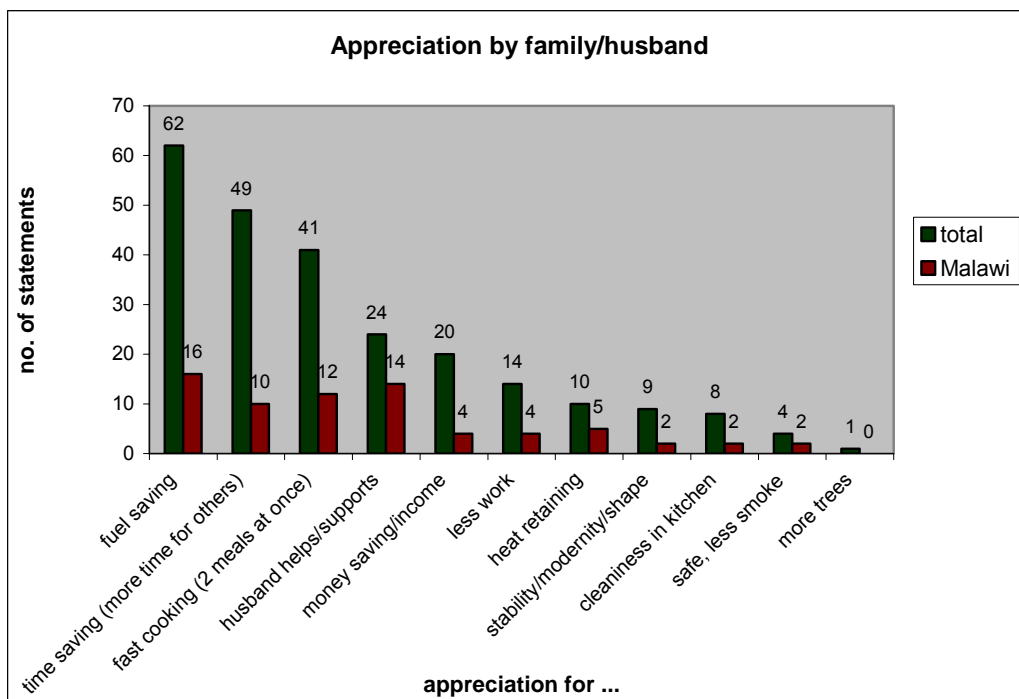


Diagram 5: Appreciation by family/husband

Concerning the village and neighbourhood, the stove users were asked, if they got comments or appreciation from other villagers and if other people got stoves, motivated by these good examples. The feedback was similar comparing the countries. 207 of the interviewees recognised the neighbours' appreciation and their interest to have an own stove (72). 156 of the interviewees assumed that other people got a stove because of them. At the same time they recognised villagers, who were interested, but didn't know how and where to get a stove or who thought that stoves are too expensive (17). The following table shows the improvements appreciated by neighbours.

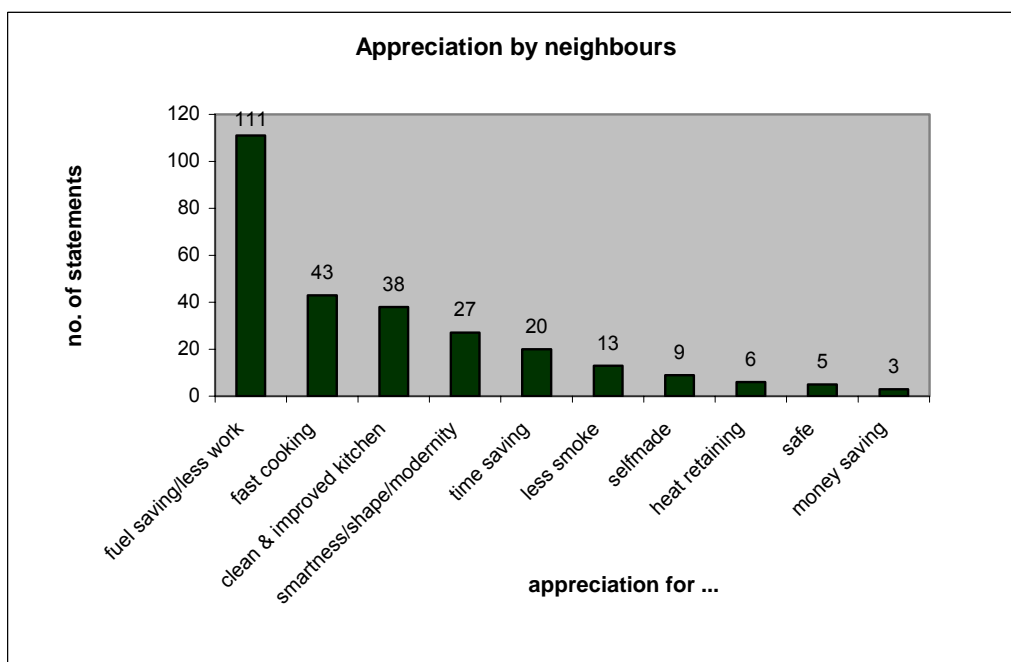


Diagram 6: Appreciation by neighbours

Concerning health related changes; a major improvement was achieved in terms of smoke reduction. Nearly every interview partner recognized a reduced amount of smoke (193) in the kitchen or around other cooking places. Only a few experienced the same amount (9) and one person experienced more smoke.¹²

Related to this smoke reduction, many health changes were recognised. 167 out of 220 stove users noticed the following health improvements, as presented in the diagram.

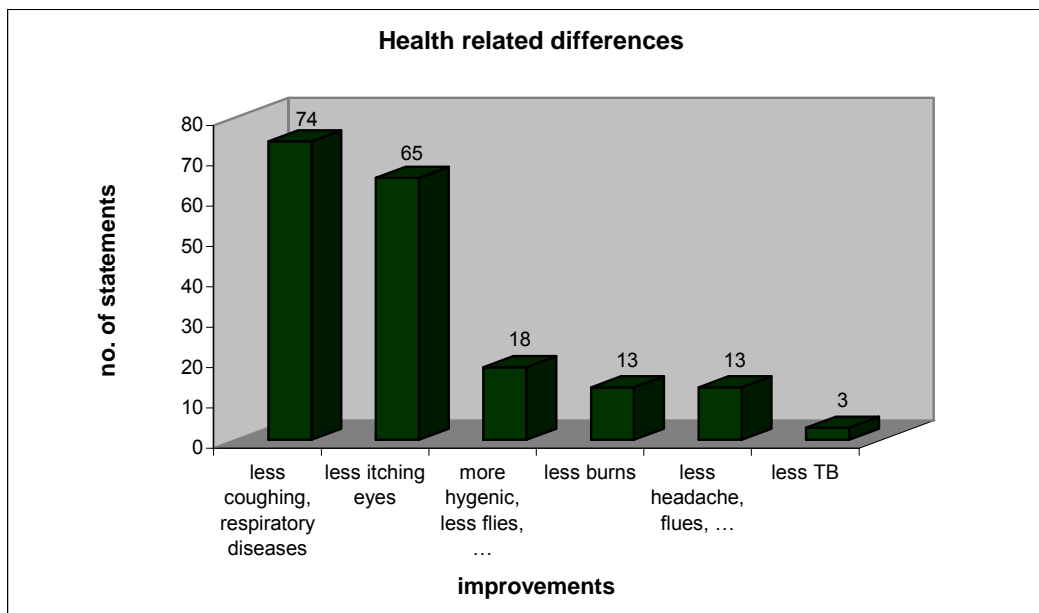


Diagram 7: Health related differences

Most of the interview partners experienced the stove as being safer than the 3-stone fire – this was mentioned as a general advantage of stoves as well¹³.

3.5 Environmental Impacts

Environmental impacts were assessed as recognition of environmental changes, as harvest losses due to the use of dung as fuel, as deforestation, as the loss of soil and environmental awareness.

Most of the interviewees recognized environmental changes (regardless of their specific perception of the environment), 179 out of 220 mentioned changes. Out of those 110 recognized positive changes: more trees/less trees cut/decrease of deforestation (101), less wood used (7), less bushfires (2) or employment through environmental work (1). But negative changes were experienced as well: deforestation/soil erosion (29), less rainfall (4), deforestation and walking further distances (3) or dirt in nature (1). These experiences are very similar in the different countries.

The question of harvest losses due to the application of dung as fuel was not very relevant within this group of interviewees, as most of them didn't burn dung anyway. Only 6 of 220 interview partners said that they use dung as fuel. In this impact area dung is not a common fuel and therefore not many cases are known where people harvest less due to burning dung.

¹² Though the appreciation of smoke reduction cannot be generalised. Less smoke was rather appreciated, where the cooking location is indoor, e.g. like in Zimbabwe, while in Malawi, where the cooking location is outdoor, this plays a minor role.

¹³ Compare Diagram 2: Advantages of stoves appreciated.

Remembering the first question about environmental changes, many interviewees mentioned an increased use of wood and deforestation. When they were asked explicitly, 141 agreed that deforestation has increased during the last years. They made different suggestions against deforestation; some activities already took place.

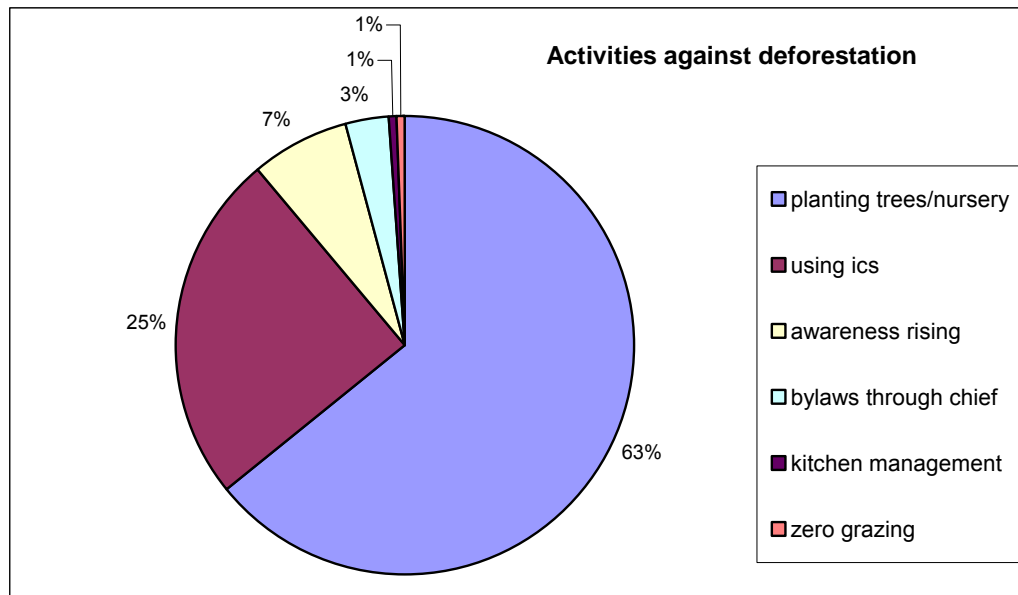


Diagram 8: Activities against deforestation

Many interview partners (138) explained that the loss of soil (soil erosion) and soil degradation has increased. Their measures against this problem and to improve their situation are presented in the following diagram.

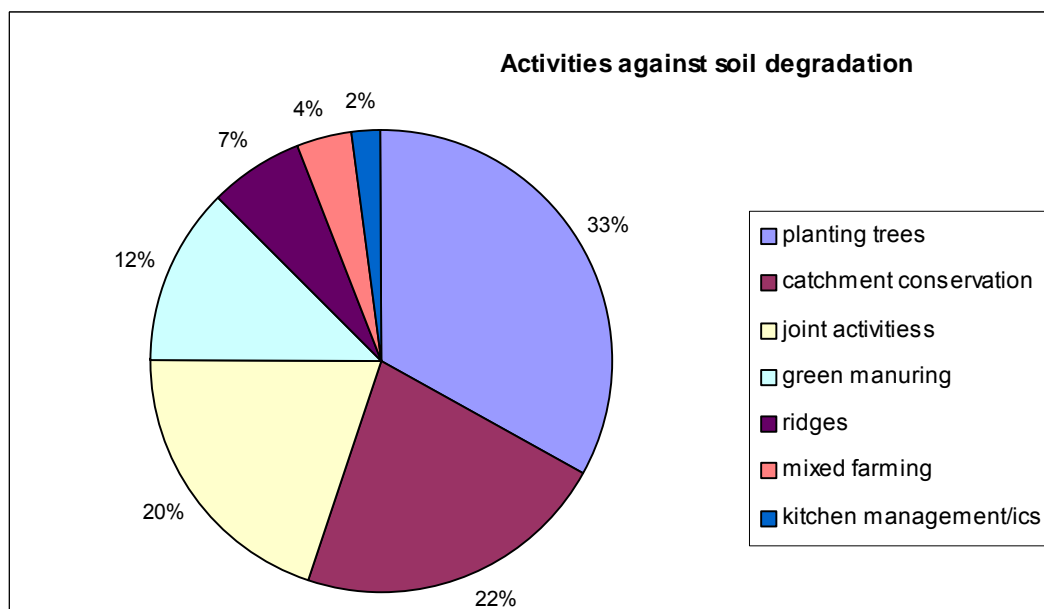


Diagram 9: Activities against soil degradation

As several interviewed stove users described (188), there is a greater awareness about the environment and environmental changes. 177 explained that they exchanged with other villagers about these phenomena and respective solutions to improve the envi-

ronment in their villages. The content of their discussions and solutions is described in the following diagram.

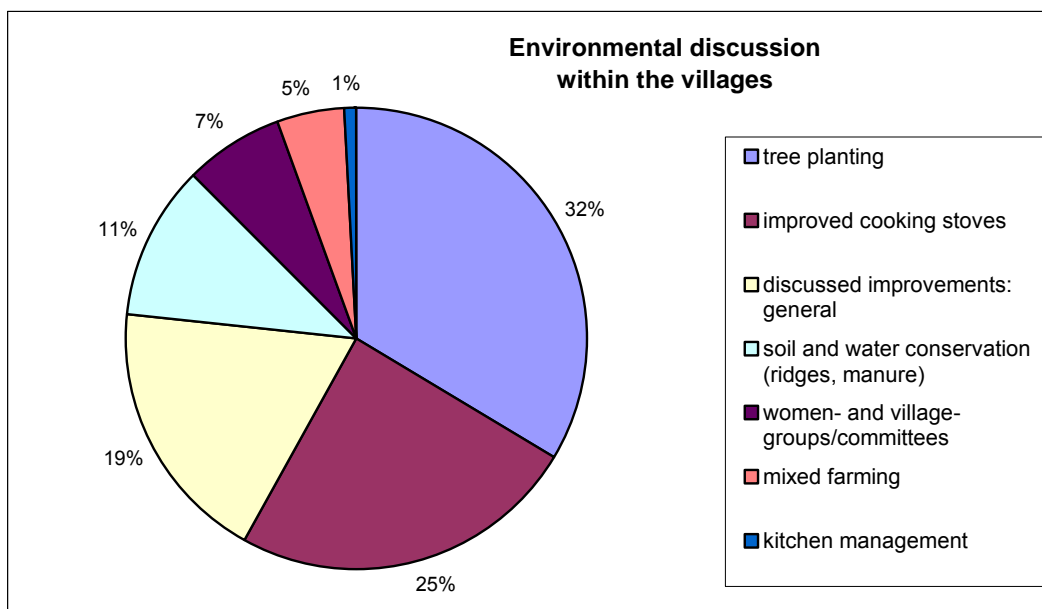


Diagram 10: Environmental discussions within the villages

Comparing the five countries, regarding and comparing the number of interviewees, the statements about environmental changes and thus the concerns about deforestation and soil degradation, the results were quite different.

BUT it is appreciated to note, that the environmental awareness was everywhere estimated as having increased nowadays.

	no. of interviewed households	deforestation mentioned	soil degradation mentioned	greater environmental awareness
total	220	141	138	188
Malawi	68	46	49	63
Zimbabwe	70	42	45	67
Zambia	33	10	7	19
Tanzania	29	26	21	19
Kenya	20	17	16	20

Table 6: Environmental awareness among stove users and other villagers – an overview

All analysed and presented results of this participatory questionnaire assessment give evidence about the impacts of energy saving stoves. Respective conclusions are drawn and specified in the following chapter.

Designing this assessment as a participatory process, to be carried out by the stove producers of the different countries themselves, did not only give a good picture of the impacts, more especially it was an important learning process for the stove producers the same as for ProBEC. The conclusions and the following recommendations, therefore will concentrate less on the content and analysis of the different questions asked, but focus more on the value of such an exercise and recommendations for future methodological consequences that might be drawn from it.

4. Conclusions

As a general statement it can be said, that this very short impact assessment demonstrated that, when considering the stove and fuel usage and the economic, social-cultural and environmental impacts, the energy saving cooking stove appears to have brought about several positive changes and improvements. Even though the economic changes could not be calculated precisely and the environmental impacts were challenging to estimate, positive changes were evident.

It was surprising to find that – although this questionnaire was never meant to produce statistically valid data and it was obvious from the answers that there were even some questions, which the interviewers had not well understood – the major results were the same as in the in-depth assessment carried out later in Mulanje, Malawi¹⁴. In fact, in both cases the results tally to a large degree with impact assessments carried out in other countries in East and West Africa.

In summary the main areas of proven impacts were recognised as follows:

- 1 At the **economic level** average fuel savings of 50% with a range of between 20 and 80%. The wide range presumably has to do with a greater awareness and interest and a better handling of kitchen management practices. Time and money savings correspond to the fuel savings. Fuel wood is still largely collected, which means that the monetary savings are not necessarily the dominant driving motor for savings, especially since any money saved is reinvested in the household.
- 2 At the **socio-cultural level** family and neighbours showed a high appreciation not only because of the fuel, money and time savings, but also because a well built stove is something like a status symbol, an indicator of modernity and progress. This reflected also on gender relations in that husbands showed a noticeable interest in the kitchen and wives began to play a role in community affairs, which again increased their social position. The most important impact, however, was the almost universal acknowledgment of health improvements for the whole family (less coughing, headaches) that resulted from the smoke reduction in the kitchen.
- 3 At the **environmental level** the most impressive changes noticed were the widespread awareness of the positive and/or negative changes going on and the readiness of the people to act and to do something to improve the situation. While this is not alone a result of using improved stoves, it certainly is one means of strengthening other ongoing activities. Moreover, by talking to stove users about these questions during the interviews, this in itself proved to be an awareness-raising activity.

Since we can say that on the basis of what is already known from similar studies¹⁵, a rapid participatory impact assessment by stove promoters and producers is an adequate tool for finding out the main impacts, it is time to generally think of new approaches for carrying out impact assessments – be it in the direction of reducing costs for elaborate assessments or in the direction of gaining additional insights and developing a new set of procedures. It is in this direction that the team responsible for the questionnaire assessment is arguing.

¹⁴ Compare Brinkmann 2005.

¹⁵ Compare Haushaltsenergie und Umwelt EC 1999, Kinyanjui 1995, Habermehl 1994, Hübner 1994 sowie Klingshirn 1992.

5. Recommendations

When discussing the results of the impact questionnaires with the workshop participants, they were invited to give a personal feedback about their experiences as interviewers of stove users. For many of the commercial producers it was the first time to get in contact with their customers – the stove using households – and thus they learnt firsthand about stove use, application of management techniques, difficulties, problems and demands.

It can be expected, that if this kind of participatory monitoring is part of the regular training program of stove producers and promoters, this will increase their quality awareness, motivate them to improve the quality of their products, increase their reputation and marketing skills and thus access to customers.

The stove producers, builders and promoters considered this assessment as outstanding and so important, that they passed a resolution asking for training in monitoring and impact assessment as part of their regular training program.

The recommendations from this exercise therefore include the following aspects:

- 1 The dissemination approach should be extended to include regular monitoring and a simple version of impact assessment as part of the regular skills training program. This will be especially important in the future, as widespread dissemination is envisaged and monitoring by the project can no longer suffice. This new approach would also help to answer such questions as how best to achieve this goal, how far stove builders are willing to travel to find new customers, whether the money earned is enough to keep them interested in improving their skills and would provide them with an early feedback on stoves not being replaced.
- 2 Stove producers and promoters should be included in the design of the monitoring and impact questionnaires. This could be practised during the training. It would avoid the problem of interviewers not having understood the questions they were asking.
- 3 The project staff should concentrate on more frequent follow-up meetings and re-trainings, as this exercise has shown that additional training showed positive results and the feedback with project staff is vital for keeping up the necessary motivation of stove producers and builders. This would be especially important for this type of commercial approach, where part of the product (the kitchen management training) cannot be bought on the market, but is offered by the professional builders.
- 4 Since it seems from these experiences (the questionnaire exercise and the in-depth impact assessment) that fuel savings of approximately 50% can easily be achieved and the users appreciate the advantages of improved stoves, the focus during monitoring should shift to the non-users. There is an enormous future potential, but not enough awareness. Including producers, builders and promoters in the monitoring and impact assessments might be a chance to find new ways of raising a widespread awareness and motivation to buy and use this new technology.

6. Selected Bibliography & Internet References

- Brinkmann, Verena (2005): ProBEC Impact Assessment at Local Level. Experiences from Malawi – Mulanje District.
<http://www.probec.org/docs/ImpactAssessmentMalawi.pdf>.
- GTZ, Energie-Abteilung (2004): Impact Report – Efficient Use of Biomass for Cooking. Leaflet published for Renewables 2004. Eschborn.
- Habermehl, Helga (1994): Micro- and Macroeconomic Benefits of Household Energy Conservation in Rural Areas of Kenya. HEP Publikation. Eschborn.
- Haushaltsenergie und Umwelt EC (1999): Ein Leitfaden zur Erfassung und Bewertung der ökologischen Wirkungen von Haushaltsenergieprojekten. HEP Publikation. Eschborn.
- Hübner, Ute (1994): Impact Assessment of the Duma Community Stove. HEP Publikation. Eschborn.
- Kinyanjui, Margaret (1995): The Influence of Improved Stoves on Acute Respiratory Infection, Conjunctivitis, and Accidental Burns. University of Nairobi.
- Klingshirn, Agnes (1992): Improved Cookstoves as Focal Points of Development. GTZ. Eschborn
- Tawha, Joyline T.M. & Owala Odhiambi, Hellen (2004): Report on the Experience Exchange on low-cost Clay and Ceramic Stoves. Held at IFSP office, Mulanje, Malawi, 28th June – 7th July 2004. ProBEC, ITDG-EA. Not yet published.

<http://www.developmentgoals.org>

<http://www.hedon.info/goto.php/index.htm>

<http://www.probec.org>

<http://www.probec.org/docs/ImpactAssessmentMalawi.pdf>

<http://www.probec.org/goto.php/index.htm>

7. Annex

Annex Questionnaire for the Assessment of ProBEC Impact

Name of seminar participant (interviewer): _____

Name of person interviewed: _____

Name of village and district: _____

Date of interview: _____

1. Stove usage:

1.1 How many improved stoves do you have? _____ Since when? _____

1.2 How often do you use your stove(s)? _____

1.3 Did you buy your stove? Build it yourself? Pay someone to build it for you?

If you paid, who gave the money for your stove? You other family members

1.4 Do you also use other stoves? Yes No

If yes, which type and for what purpose (space heating)? _____

1.5 What do you like most about your stove(s)? _____

2. Fuel usage:

2.1 What is the main fuel you use? Fuel wood Leaves/twigs Dung Kerosene
others : _____

2.2 Do you collect your fuel (wood)? Or do you buy it?

If you buy it, how do you pay for it (money or other goods)? _____

3. Economic impact:

3.1 If you buy your fuel, how much did you spend before / without a stove? _____

How much do you spend now with stove? _____

If any savings are made, what do you use the saved money for? _____

3.2 If you collect your fuel, how much time was spent on collection before? _____

How much time do you spend now with stove? _____

If any time is saved, for which other things do you use this time? _____

3.3 Do you make any money selling stoves? Yes No

If yes, how much is it per month? _____

3.4 Do you build stoves for others? Yes No

If yes, do you get paid for it (with money or in exchange of other things)? _____

How much per stove? _____ Which other things? _____

Who earns the money from building and selling stoves?

You other family members

4. Social-cultural impacts:

4.1 Does your husband and your family appreciate that you have an energy saving stove (and that you can save money or time with it)? What can you tell? _____

4.2 Do you get comments from neighbours? What do other people appreciate most of your stove? _____

Did other people get a new stove because you had one? Yes No

4.3 Is the amount of smoke more , the same or less than before using the new stove?

4.4 How is your health? Have you noticed any difference to before, when you did not have an improved stove? Yes No

If yes, what has changed? _____

(Have you heard people talking about coughing less? or about Malaria?)

4.5 How do you estimate the danger of the stove, did you hear about accidental burns? _____

5. Environmental impacts:

5.1 Do you see any environmental changes in your area during the last years? Yes No

If yes, what has changed? _____

5.2 Have you heard people talking about harvesting less, if they are burning the dung instead of leaving it on the fields as fertilizer? Yes No

If yes, what are people doing about it? _____

If you are burning dung, what are you doing about it? _____

5.3 Has the use of wood and deforestation increased during the last years? Yes No

If yes, what are you and other people doing about it? _____

5.4 Has the loss of soil (soil erosion) and soil degradation increased? Yes No

If yes, what are you and other people doing about it? _____

5.5 Do you think that there is a greater awareness these days about how the environment around you is changing? Yes No

If yes, do you talk with other people around you? _____

Do you discuss what you can do to improve it? _____

Thank you very much!!! ☀