

focused intervention had changed these barriers and whether there is a related improvement in the three behaviours

3 Research activities

This section describes the action taken as part of the research project R7483

The project encouraged focused education on domestic energy and the promotion of sustainable natural resource management.

The 'focused' education and extension 'messages' addressed key 'barriers' identified during a first of survey, carried out during 1998² among indigenous and displaced communities within Northern Region of Ghana. The 'messages' and methodologies of this 'focused' extension were further developed by local extension agencies, both GO and NGO, involved in the promotion of sustainable natural resource management, during a workshop conducted in Tamale in January 2000. A further workshop was conducted in December 2000 to assess the midterm extension process and strengthen it with promotion tools, e.g. the development and testing of dramas suitable for radio, village dramas, role-play and flip charts for use by extension agents.

The general 'focused' extension intervention ran from February 2000 to September 2001. However, the more structured approach was applied between January 2001 and September 2001.

3.1 Workshop Jan 2000

In order to apply the findings of R6849, a diverse group of development actors came together. Over 50 delegates attended an initial workshop in Tamale (Jan 00) from the relevant extension services. The research team presented the findings on R6849 and the workshop undertook participatory exercises to explore the implication of the findings. It was important that the practitioners didn't just agree with the findings but "bought in" to the results as a useful guide for future activities.

The workshop report is available as a stand alone report. The conclusions are presented below:-

Possibly the most important conclusion from the workshop was the importance attached to issues associated with domestic fuelwood use and environmental degradation by extension and agricultural workers and policy makers. This was evident not only in the numbers who attended the workshop (with a high rate of acceptance of invitations), but also in the responses given throughout the workshop – formally through sessions, and informally through discussions.

In particular, firewood **collection** was regarded as an important, and hitherto ignored area, which should be addressed. It was interesting that woodlot planting was an important activity in the area, registering as one of the issues most commonly addressed by delegates. The workshop revealed that improved stoves is a complex issue where much work has been done. The complexities are due to traditional cooking methods and cultural preferences for a variety of food preparations, but most important is the fact that there appears to be a large range of these practices in a relatively small area.

The Gamos team explained the Theory of Reasoned Action, which was the basis of the original research work. The mixed response to these sessions reflected the varied nature of the delegates, which included NGO field workers to ministry directors. The principle findings of the research project were presented – both barriers identified, and appropriate social referents.

When presented with the primary barriers identified for each of the three behaviours, the delegates developed messages to address these barriers. They then worked through most of the messages to suggest appropriate strategies and channels for message delivery. This exercise included some innovative ideas on slogans and jingles

² This first survey formed the principal activity of the DFID sponsored research (R6849) into 'Barriers to the Adoption of Efficient Energy Strategies in Northern Ghana (Batchelor, McKemey & Sakyi-Dawson 1999).

for campaigns and mass media messages. The strategies developed provided an interesting range of activities that could be used for delivering messages. These activities fall into three categories:

Awareness raising e.g. community meetings and discussions

Information gathering e.g. village mapping, time lines, transect walks

Information communication e.g. demonstrations, video.

Not surprisingly, Ministry of Agriculture staff felt that strategies to address firewood collection and woodlot planting could fit in well with existing activities – woodlot planting is already the single most common agricultural issues addressed by delegates. It was encouraging that other government workers reported that strategies could be incorporated into programmes. NGO workers also felt that fuelwood collection and woodlot strategies give a good fit with existing programmes. This shows how the key players in the field all expressed an ability to accommodate the principle strategies within their programmes.

As follow up to the workshop, the project team needs to provide delegates with example tools to help them initiate the strategies developed into their programmes. The results from the workshop have been drawn together in the form of an aide memoire, which summarises the messages developed and the strategy methods. This is intended to provide agencies with all the information they need to implement programmes to address domestic fuelwood use. The project team will work on a limited range of specific tools which will be made available to participating agencies once available.

The workshop confirmed that much work is being done on woodlot planting and a wide range of improved stoves are being promoted. However the participants also noted the additional messages and activities suggested by R6849 and could see how they affected their extension approach. The participants expressed surprise at the comments on firewood collection and noted that they had not specifically addressed this in their extension activities. They noted that they should, and would be willing to do so in the future.

To conclude the workshop, the participants worked together on each domestic energy issue. Groups worked with extension messages to address each of the key barriers identified in the original project. The Aide Memoire circulated to participants and interested parties is appended. Appendix 2.

3.2 *Extension activities*

One of the greatest challenges of this research project was that it did not offer the extension agents any incentive to take up the results and deliver them to their clients. The research premise was built on the assumption that extension activity was being undertaken in Northern Ghana (funded by both Govt and NGO sources). It was assumed that the benefits of using the results of R6849 would be self evident to extension agents, and that they would incorporate them into their daily work.

It soon became evident that a flaw in these assumptions was that the level of extension activity in Northern Ghana is constrained by financially driven logistics. Agents discussed how they could not afford petrol for their motorbikes and therefore the number of visits made to villages was less than ideal.

The project had a small budget for material support.

A discussion flipchart was developed to deliver the key messages concerning the future, children's access and Gods will. Appendix 3. This was used in group situations by the extension workers.

A drama was developed which matched the flipchart. Appendix 4. This drama was presented on the local radio in Dagbani, and used in schools. In some cases the children then performed the drama in their home villages.

Ongoing activities included individual and group discussions. Extension agents adjusted their delivery to take on the R6849 comments on social referents.

3.3 *Second workshop*

In Nov 2001 there was a feedback and support workshop. Over 35 development actors gathered again to discuss their use of the messages and the responses of their clients. Some extension workers had

taken a number of significant actions. In one case school children had been co-opted to deliver the message back to their parents. This seemed an effective strategy requiring a focussed input from the extension worker on a single access point.

The workshop participants discussed the difficulties they had in travel and therefore the low intensity of extension work. Two key decisions were taken:-

- To form the actors into area networks to encourage each other and to share resources.
- To commission an area of greater activity for a period of 3 months with specific financial support from the research project for day to day activities.

3.4 Focused Extension Interventions

The focused extension intervention started in the communities from November 2001. A survey of extension agents was undertaken in Jan 2002 to collate activities attributable to the research project. The data was collected from the 8 of the 10 field extension agents working on the “focused extension intervention-project areas” in the three districts in the Northern Region, namely Tamale, Yendi and Bimbilla Districts. The behavioural areas were considered, namely (i) adoption of improved stoves, (ii) sustainable firewood collection, and (iii) woodlot planting / tress planting.

The focused extension for three months revealed the realities of extension work in Northern Ghana. Extension is constrained by a lack of capacity both in human and physical resources. The extension activities undertaken during this period are discussed in some detail in Appendix 5. The evaluation of the effectiveness of different methods is included in the extract below.

3.4.1 Extension agents’ evaluation of the effectiveness of the different Extension methods / Media in domestic energy extension activities

The extension agents’ perception on the effectiveness of the different extension methods and media used in the focused extension intervention is the basis of the evaluation. In general radio, radio or recorded audio tape with discussion, role play /drama were indicated to be less effective for the focussed extension intervention activities. The reasons for their ineffectiveness differed according to the methods and media.

Problems with the use of radio have to do with poor and limited range of reception of the station used for the broadcast, limited access to radios, and unsuitable timing of the broadcast. There was also problems with credibility of radio – community members were thought to not consider radio as serious source. Lack of possibilities for feedback was also considered a weakness.

The use of audio tapes was constrained mainly by limited access to the play-back equipment on the part of the extension agents. Some clientele did not understand the language used. Otherwise, it was considered to have the potential to engender lively exchange of ideas and interactions in extension activities.

Use of role play / drama was considered ineffective because the extension workers perceived the community members as having difficulty in understanding the messages. However further critical analysis points to the lack of skills in the use of role play and drama in extension as the main reason for it being considered as ineffective. For example, some of the extension workers could not rank it because they have not used it, whilst one actually confessed to lacking the appropriate skill as the main limitation.

The domestic energy flipchart, group discussions, method and result demonstrations, talks, lectures and home visits, were considered to be more effective. The flipcharts facilitated understanding and generated interest and effective interactions between the extension workers and their clientele as well as among the clientele. Similarly, group discussion, talks and lectures were considered highly effective because of the high level of participation engendered, free face to face exchange of ideas and feedback, resulting in better understanding. Results and method demonstrations as well as home visits ensure that the participant experience the effects, have opportunity to trial their hands on, addresses personal problems directly and thus enhances adoption. In other words, not only is there effective communication, but in addition, there is personalised experiential learning.

3.5 *Final impact survey*

The final research activity³ was to repeat the TORA survey in order to explore the changes that had occurred among extension clients. 230 sample households were surveyed in the districts exposed to the focused extension. The sample was selected by applying a randomised cluster sampling process involving seven rural Dagbani speaking communities. The respondents were women above the age of 18. Only one respondent was interviewed per household. This was usually the most senior female representative present. The sampling process was not stratified.

The first survey's sample covered various tribal groups, urban and rural communities and displaced and stable households. The extension intervention targeted rural households and the main interventions were carried out in the Dagbani language. It was therefore decided to compare 'like with like' in the comparison of the first and second surveys. Therefore comparison was made between female, rural Dagbani speaking respondents. A sub sample of 62 initial respondents that were female, rural and Dagbani speaking was drawn from the first survey to represent the 'before' intervention status.

The analysis conducted compares not only the samples taken from the first (before) and second (after) surveys, but also from the second survey sample, those that were exposed to the 'focused' extension and those that are not. A further comparison is made between those who claim to have attended demonstrations regarding the specific behaviours and those who have not, also from the second survey sample. The second survey sample was drawn mainly from communities who had been targeted to different degrees by the 'focused' extension initiative. The different development agencies operating within the area, particularly those who had participated in the earlier workshops were questioned to find the extent of their extension coverage during the past 2 years. Within the seven communities sampled one was identified which was not targeted by the extension initiatives regarding firewood collection and wood lot planting. The coverage of improved wood stove extension was found to be less extensive. The comparison between those covered by the extension initiative 'with' and those 'without' is considered as the central one regarding each of the three behaviours addressed. The other two comparisons, 'before' and 'after' and 'demonstration attendance' are used to provide additional support to the findings.

In both the first and second surveys the same questionnaire was applied. Data was collected and the analysis conducted based on the key variables adjudged to explain the decision making process supporting the adoption or rejection of specific behaviours. The model used permitted the identification of the key outcome beliefs, their attributed values and the perceived 'normative pressures' regarding the adoption of the particular behaviour. The influence of these attitudinal and normative factors on the decision making process was and is identified by observing the strength of their relationship with the individuals' stated intention to perform the specific behaviour. This process permits the identification of whether the decision is governed by perceived social pressure (the subjective norm) or the actors' own knowledge and values (attitude). This in turn permits the identification of the key barriers and drivers of adoption, either the specific outcome beliefs and their attributed importance or specific influential social referents. The analysis process is further explained in the section titled 'Understanding the Analysis'.

³ Note:- presentations of findings were made in Ghana to the participants of the research and to other interested parties in March 2002. The project has also worked towards active dissemination of the lessons learned through this research, and dissemination has been considered a "project activity" although not a "research activity".