

DFID CROP POST HARVEST RESEARCH PROGRAMME

Action Research on the livelihood impact of IMTs in Ghana's off-road settlements (R 7575)

RA Field Report K 1: Report on the first visit to Ghana and associated activities Sept – Nov 2000

Kathrin Blaufuss, CORD University of Durham.

This report reviews the fieldwork and other related activities undertaken since my appointment as Research Assistant on the 1st Sept. 2000, when I took up my position at Durham University. A field visit to Ghana was arranged shortly after my appointment, which was partly accompanied by Gina Porter.

The main objectives were:

- Introduction of the new project team member – Kathrin Blaufuss – to the study sites and to project collaborators, consultative group members and other persons related with the project.
- Formal introduction to the chief, elders and community of the study villages
- Conduct detailed qualitative studies in the villages with particular focus on women in order to further generate baseline information on gender relations, time budgets and transport activities.
- Preliminary assessment of the environmental issues involved in order to provide baseline data for the design of the Environmental Impact Assessment, which is to accompany the introduction of IMTs.
- Preparation and conduct of 5 village workshops
- Find an appropriate translator for Fante and Twi language

Fieldwork

Fieldwork was conducted from September to early November.

All five study villages in the Gomoa District and Assin District were briefly visited with Frank Owusu Acheampong and Gina Porter, which catered for the introduction of Kathrin Blaufuss as a new member of the project team to the village heads, elders and women in the communities. It was explained that she would be frequently returning to the villages and will be working primarily with women as well as conducting environmental studies. The forthcoming village workshops were also discussed, including the dates, arrangements and objectives.

After Gina Porter's departure to the U.K., Frank Owusu Acheampong and Kathrin Blaufuss resumed work in the village. In depth interviews were held with individual woman. They were aimed at time budgets, gender relations, economic activities as

well as history and attitudes towards IMT use. Discussions also included attitudes towards the proposed credit system for the purchase of IMTs. Ranking activities concerning daily activities and time budgets were used and the outcome will be reviewed in order to allow informed decisions on their information content and the necessity of any modifications. The applicability of ranking for the next project phases will be reviewed.

Some preliminary investigations on the road/path and general environment were made in order to facilitate information for the design of an appropriate Environmental Impact Assessment (EIA) methodology. Some potential study sites for future detailed quantitative analyses and erosion modelling were identified.

A qualitative inspection and observation of road/path conditions was undertaken. This included some physical characteristics such as average width, existence of ditches as well as the general condition of the road/path. This included the study of indicators for rilling on the surface, potholes and loose sediment availability. Due to the restricted time limit, not all roads / paths could be surveyed. Priority was given to the roads/path which will be potentially most exposed to future IMT use.

Some trials regarding the possibility of using photogrammetry methods for the assessment of erosion rates on the road surfaces were conducted. The results and the potential for the use of this methodology in the EIA will be reviewed in the U.K.

The environmental surveys will be presented and discussed in a separate preliminary report.

Translator

Grace Eshun was appointed as translator for the local Fante and Twi languages. She is currently holding a position in the National Mobilisation Program and has experience in community work. She was exempt from her position in the NMP, in order to assist throughout the fieldwork. Her native language is Fante, which is spoken in the study-villages in the Gomoa District. She used to live in Kumasi and is therefore also well able to speak Twi, spoken in the study village in Assin District. Some training regarding qualitative research methods however was necessary.

Trial of handcart in Abora

The proto-type handcart built by the GRATIS Foundation had been placed in Abora for trial purposes regarding its use and functionality. Inspection visits to check the use and functioning of the handcart were undertaken as well as indirect observation of its use during fieldwork at Abora. The handcart, when in working condition, had been highly demanded and was in frequent use. Frequent punctures, however, have started to cause a certain reluctance to use the equipment in fear of having punctures during its use. A log-book has been kept for the use and maintenance activities, however concern has risen on the accuracy of the record.

Workshops

Workshops were held in each of the study villages. The workshops provided the opportunity for the community to test the available IMT equipment, to gain further familiarisation with the project objectives as well as to voice any questions, concerns and feedback. The workshops were well attended including many women and allowed for vivid interaction. The women particularly were encouraged to test the various items and to report on their opinions. The workshops followed the format of a short formal introduction, an extended explanation of the project objectives and framework for the purchasing of the equipment on a credit basis and an interactive session held by the Self-Help Foundation regarding the various uses and advantages of the individual items. This introduction of the equipment was accompanied by the report of a local farmer owning a power tiller, who spoke about the benefits gained from the power tiller use. The workshop was aimed to lead to the identification of interested individual/groups for the purchase of any of these transport means. Return visits were made approx. 4 days after the workshop, when applications and details of the interested parties were taken. Project officers of the collaborating local banks assisted throughout the workshops and the follow-up visits. Local officials and members of the project's Consultative Group also attended various workshops.

Other Visits

Meteorological Office, Memepeasem, Legon (26.09.00)

A visit was made to the Accra Meteorological Office in order to retrieve relevant climatic data needed for the environmental assessment and modelling. The availability and nature of the data was checked and relevant data purchased.

Kumasi Magazin (27.09.00)

This visit was to ascertain the availability and prices of locally made transport equipment, such as the push-truck, wheelbarrow and donkey carts.

The Kumasi push-truck is made from angle irons with 4 used car-tyres on two axels. They are made in two versions with 1 ½ inch or 2 inch angle irons and 13 or 14 rim car tyres. The price is currently 350 000 cedis regardless of the model type and there will be no reduction if purchased in bulk.

The wheelbarrow costs between 200 000 –250 000 cedis depending on its size.

Donkey carts for the use of one donkey are also manufactured. They cost 380 000 cedis and are mainly sold to the northern regions or are exported.

Alhaji Saliah Enterprise, Kumasi, Bicycle shop (28.09.00)

The bigger 28' Phoenix bicycles and smaller 26' Phoenix bicycles are readily available and they cost 395 000 cedis. If bought in a case of six not assembled bicycles, the price for the case is 2 340 000 cedis. There are only men's bicycles available, but women's bicycles might be obtained from Alabar (second-hand bicycle market in Kumasi).

Alabar, Kumasi second-hand bicycle market (28.09.00)

There are a large number and range of second-hand bicycles available, including many women's bicycles. Differences exist in type and quality. Prices range from 170 000 cedis to 400 000 cedis.

Self-Help Foundation, Kumasi, Mr Foster Boateng (28.09.00)

A visit was made to the collaborating NGO Self-Help in order to discuss recent developments in the IMT project. The forthcoming village workshops were briefly introduced and discussed. Kathrin Blaufuss was formally introduced as new project team member.

Akyempin Community Bank, Dawurampong, Mr. Owusu Ansah (4.10.00)

This visit was aimed to obtain information on any group activity with the bank in the study-villages of the Gomoa District.

There are no existing groups in the villages Abora, Adabra, Lome and Sampa. There might be some individuals who have accounts with the bank, but as they will have opened the accounts on different dates, the data is not readily available. However, whenever we had applicants for the credit scheme, he offered to check the bank history of that individual. If groups were to be formed, he further advised that they could be added to the VIP-loans.

Technology Consultancy Centre, UST, Prof. Peter Donkor (9.10.00)

Prof. Peter Donkor was involved in a World Bank study concerning small-farm vehicles in the early 90s. They developed and produced over 500 bicycles, tractors and wheelbarrows. Their regional focus was the North and the Upper West, due to the advantages of the flat topography. Some equipment however, was also disseminated in other Regions. The North had already been using bicycles and the technology is not foreign to that Region.

Other institutions, such as a NGO in Tamale have been involved in the technology-transfer. The Fatawe company in Tamale was producing the bicycles and was also involved in the production of tractors.

Most of the technology was developed in the ITTU. They used re-enforced rims, produced from angle-iron.

The beneficiaries were able to buy bicycles and trailers for the same price as one bicycle and hence benefited from the additional value of the trailer. The weight limit was between 50-100 kg. However, the problem with continuous punctures developed. He further reports that sometimes when these punctures occurred, the men simply stopped using the bicycles.

The design of the cart was using wheelbarrow tyres. Different versions of the cart had been developed and produced:

- Wheelbarrow type, with one wheel at the front
- 2 tyres in the middle on one axel.

They decided to use wheelbarrow tyres, as they were perceived to be most robust, however he also acknowledged that they are not produced locally.

Similar work had been conducted in Sierra Leone, where the same project was replicated. He himself was supposed to be involved, but did not contribute to it in the end.

The set-backs experienced by the project in Ghana were due to various issues. The 500 pieces of equipment were given free of charge and therefore were perceived as gift, which diminished the sense of responsibility towards maintenance of the equipment and carelessness resulted. At the end of the project, the equipment was left to the people. When he is visiting any of the villages now, he does not see any of these equipments in use. During the project, some handcarts were sent to the Gomoa District, but during visits now in this region, he does not see any of them in use.

He admits that some evaluation about three years after the end of the project phase should have been conducted, but it was not done. He further recalls problems on the downhill journey of the carts due to insufficient braking systems.

Important issues to be considered:

- price affordability
- direct income generation

If the cost of any of the newly designed equipments (i.e. handcart etc.) is more expensive than the bicycle, there will be no willingness to pay and people will opt for the bicycle. With regard to price affordability and technology transfer, women do not have opportunity costs for leisure and will not adopt new time-saving technologies on the grounds to free leisure time, if the same process can be done manually and without financial investment. He cites an example, where they developed a processing machine with the aim to reduce manual labour, but women failed to make use of that equipment. The technology transfer was conducted by a NGO, as they provided the necessary funding.

Unless the equipment can be directly used to generate income, he sees little success for the introduction of new technologies including transport means. If the equipment can solely be used to reduce labour, he doubts the willingness to invest, as labour is available through children helping with the various activities.

They made some versions of the carts with solid tyres, which proved to be the best option to solve the puncture problem, however the disadvantages were that it would not move as fast and more effort was needed to push the cart, especially on up-hill slopes. It was difficult for people to mend punctures themselves and they generally had to carry the vehicle to places with organised repair structures present.

No publications resulted from the project, apart from reports to the Ministry of Transport. Initially IT transport was involved and they had sent a consultant.

Kumasi Magazin (9.10.00)

One Kumasi push truck, a wheelbarrow and a second-hand men's and women's bicycle were purchased and transported to Dawurampong in the Gomoa District. While the bicycles are used by Frank Owusu Acheampong and Kathrin Blaufuss, the equipment further served for the demonstrations during the village workshops.

**VIP- Rural Infrastructure Co-ordinating Unit (Central and Western Region)
Cape Coast, Mr. Patrick Larbi and Mr. Thomas Anang Siaw (19.10.00)**

This allowed the personal invitation of Mr Larbi and Mr Anang Siaw to the forthcoming village workshops as well as a short discussion on the details and objectives of the workshops. The progress of the V.I.P project was briefly raised. The meeting also aimed at the formal introduction of Kathrin Blaufuss as new member of the project team and her role in the project was briefly explained.

R.S.T. Company LTD., Mr Sen Chen (23.10.00)

A visit was made to R.S.T. Company Ltd. in order to collect the most recent prices for the Sifang power tiller. The price has not risen in terms of the dollar currency and remained at \$ 2150 for the tiller and an additional \$1000 for the trailer. The respective prices in cedis have risen however due to high inflation rates.

Advice was also given on the potential of motorised tricycles to serve as suitable transport means. The prices were quoted as \$1900 and \$2150 for the 40 km/h and 60 km/h version respectively.

Mr Chen further advised on the existence of a Chinese made pedal-type tricycle, which has re-enforced 26' rims and a load capacity of 350-400kg. The assembled tricycle is estimated to cost \$175 dollars and could be imported. We were presented with a picture of a locally made tricycle and the Chinese equivalent.

Foundaries Agricultural Machineries, Mr Ram (23.10.00)

This visit was intended to enquire about the current prices of the Mitsubishi-Shakti power tiller, which he is retailing. Prices could be expected to be \$3500 for the power tiller and an additional \$1000 for the trailer. The trailer can load 1 ½ t and the max. speed of the power tiller will not exceed 15 km/h. One version of the power tiller plus trailer was demonstrated to the visitors.

The existence of a pedal-type tricycle, currently hold in his workshop, was briefly discussed. The tricycle is estimated to cost less than \$400. Mr Ram noted, however that the availability of the tricycle is questionable and that they are not very common. Hence the introduction of only a few tricycles might not be practical.

Gratis Foundation, Tema (23.10.00) Mr. Ralph Inkoom, Mr. Dave Addien – Noy

This visit was aimed to discuss the continuous puncture problem regarding the GRATIS made handcart on trial in Abora. It had been identified that the ordinary bicycle tyre on a re-enforced rim has to be modified in order to prevent continuous punctures. Mr Dave Addien –Noy, Head of the Engineering and Industrial Design Centre, offered potential strategies.

1) If the current design is to be maintained there would then need to be further load restrictions and some checks on the capacity. The cost of the equipment would remain.

2) If the same load capacity is to be maintained, the design needs modification, which has a direct implication on the cost factor. Possible design modifications are two bicycle wheels on each side of the axel or the use of different tyres such as the mountain-bike tyre, motor-bike tyre or the solid wheelbarrow tyre. It needs to be checked whether the wheelbarrow tyre is compatible with the current design. However, it was stressed that the price will increase with any of these modifications.

The possibility of using solid tyres was raised, however was quickly dismissed by GRATIS staff as outmoded, difficult to push and hard work. They do not see an application or potential in this technology.

Alhaji Saliyah Entreprises, Accra (24.10.00)

Current prices of Phoenix bicycles were to be ascertained. Prices are not stable due to the cedi inflation and are changing on a daily basis. The bicycles are currently selling at 450 000 – 480 000 cedis. The ladies bicycle without the cross-bar is the same price as the men's bicycle.

Bicycle Market, Centre of Accra (24.10.00)

Prices found for the Phoenix large 28' and smaller 26' bicycles were 390 000 cedis and 420 000 cedis respectively. The smaller bicycle was found to be more expensive, quotations however were made by two different retail enterprises.

Visits in conjunction with Gina Porter during her visit in September and October/November:

General objectives:

- introduction of Kathrin Blaufuss as new project team member
- workshop preparation
- general project progress

NR International, Ben Dadzie

DFID Post-Crop Harvest, Stephanie Gallett

MOFA VIP Coordinating Unit, Mr Oppong

MOFA VIP Coordinating Unit Mr Mensah – Bonsu

MOFA agricultural engineering, Mr. Boamah

MOFA agricultural engineering Mr. Akoto

DCE Assin, Mr Fokuo

DCE Gomoa Mr Ayanful

Akyempim Community Bank, Gomoa, Mr Owusu Ansah

Agricultural Development Bank, Assin, Mr Opoku – Mensah

Winneba National Vocational Training Institute

Related activities:

Bibliographic searches on IMT and environmental issues, as well as familiarisation with project objectives were conducted. First discussions were held with Dr. Dave Higgitt regarding the environmental monitoring and impact assessment exercise. Further planning for the next field visit is being undertaken.