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# *Gendered patterns of IMT adoption and use: learning from Action Research*

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## **Abstract**

This paper illustrates the value of using an action research methodology to improve understanding of gendered patterns of adoption and non-adoption of Intermediate Means of Transport (IMTs) and similar gender-related transport issues. It presents results from a novel action research project undertaken in five farming villages in southern Ghana, a region where IMT usage is currently low. The participatory action research study not only revealed important issues around differences between stated preferences and actual gendered patterns of adoption and non-adoption in the particular context of southern Ghana, but offers a methodology which may have value in many other gender and transport contexts across sub-Saharan Africa and beyond.

**Key words:** action research, gender, women, transport, IMT, Ghana

## **Introduction**

Intermediate Means of Transport have become an extremely popular intervention with donors in Africa in recent years, as a low cost and ‘appropriate’ solution to the access constraints imposed by the shortage of good paved or gravelled roads, and potentially a means of helping to alleviate African women’s enormous transport burden (Doran 1990, Bryceson and Howe 1993, Porter 1997). However, there has been little detailed follow-up research regarding the impact of these interventions (positive or negative) on recipient communities beyond the life of the project, despite the many adoption failures that seem to have occurred, and the apparently limited participation of women in most IMT projects.<sup>1</sup>

By contrast, this paper reports on an action research project conducted to follow through an IMT intervention from baseline studies prior to the intervention, the intervention itself, and an 18 month monitoring period during which diverse aspects of IMT impact were assessed, with particular reference to gender issues. Although the period available for detailed monitoring of the intervention was inadequate (being constrained by available funds and a delay in receipt of some of the equipment), the learning process for the actors concerned – beneficiaries, academic researchers, ministry and local government collaborators – was substantial. Along the way we came to know rather more about the preconditions for a sustainable IMT intervention in this particular context and about the challenges and benefits of action research as a process. This latter theme forms the principal focus of the paper. Following a short description of the project and its local context we discuss the concept of action research and some of the main issues which emerged during our action research project. We conclude by reviewing the value of this approach as a learning process in the gender and transport arena.

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<sup>1</sup> Occasionally other transport interventions (notably road construction) are followed by post-project reviews of impact, but these tend to be limited in scope, taking a snap-shot approach to conditions at that time and to view impacts in a very narrow arena.

### **The local context of the project**

Our project was conducted in five villages located at distances of three to twenty-five kms from good (paved) roads in Ghana's Central Region. We had already spent a year examining problems associated with access to markets in this region and had conducted detailed studies in the five villages, four of which were located in the coastal savanna lands of Gomoa district, the other in a rain forest area in Assin district. This preliminary study had shown the enormous burden faced by women, who are the principal crop transporters and traders in this region: in the absence of good roads and regular, reliable transport they and their children have to carry the harvested produce belonging to male family members and themselves on their heads to the village or nearest good road where transport is available (Porter 2002a). No motorised transport was generally kept in the villages and IMTs such as bicycles, wheelbarrows etc. were very few in number and almost wholly in the ownership of men. They were mainly used for personal transport or work such as transporting construction materials rather than for transporting farm loads. Given the enormous transport burden that women and their children faced in off-road villages in the region, it seemed appropriate to find out whether IMTs might alleviate their problems. Certainly, the villagers – men and women- in all the communities we had studied told us they were keen to participate in the new project.

The IMT action research project was particularly timely because the World Bank, in conjunction with the Ghana Ministry of Agriculture, had recently completed a pilot Village Infrastructure Project (VIP) in which IMTs were a significant component, and was shortly due to move to the main phase of that project. Our aim was to inform the larger VIP project, in particular, and other proposed IMT projects in Africa more generally. We intended to conduct two studies at the same time, one focusing on our five project villages, and a second study focused on some of the main phase VIP interventions, but delays to the VIP project meant that we were unable to conduct the latter research component during the project period<sup>2</sup>. Nonetheless, the fact that the project was a collaborative effort involving not just researchers from UK Universities (Durham and Lancaster), but also Ghana's Ministry of Agriculture and staff from the two local governments in which our study villages were located (with additional support from an NGO) enabled us to feed our results directly to the (delayed) VIP programme, which was being handled from within the Ministry of Agriculture.

### **Project methodology: participatory action research in a transport context**

Action research, as the name suggests, refers to a class of research methods where interventions are part of the research process. It has been an established methodology since the 1940s and stems from the basic contention that complex social processes can be best studied by introducing changes into these processes and observing the effects of the changes (Baskerville 1999). It is thus characterised by intervention experiments, though the type of intervention can vary substantially<sup>3</sup>. Another important characteristic of action research is the strong role played by the researcher, because when the researcher intervenes, (s)he inevitably becomes part of the study – one of the study subjects. Consequently, action research involves a team – the researchers and the research subjects as co-participants. Personal understanding inevitably invades the recording of observations and deductions in all research, but in

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<sup>2</sup> However, we visited some of the VIP's completed pilot phase projects and interviewed participants.

<sup>3</sup> A rather different example from the recent literature charts the role of workshops which bring stakeholders together to produce a collaborative reform agenda: see Williams et al., 2003.

action research this can never be discounted. Since action research takes an interpretative approach, it involves qualitative data (though, as in the study reported here, it may also include quantitative data).

Our action research project focused on putting items of transport equipment (pre-selected by villagers and made available to them on credit, with first preference to women applicants) into the five study villages and then monitoring their impact. Following on from our earlier village access studies in this region, we had conducted a one-year pre-intervention baseline study, during which men's and women's transport usage and travel patterns were monitored and their transport preferences assessed (including an IMT attitudes survey), village wealth profiles created, and detailed data collection completed on land tenure patterns, farm size, cropping patterns, labour inputs, marketed outputs, time budgets, road/path surfaces, etc.

Having confirmed that women in all the communities were interested in the proposed IMT intervention, in which women were to be given preference, and that their menfolk would also support the project, discussions with Ministry of Agriculture, the district assemblies, roads department, IMT suppliers and NGOs then ensued and a Consultative Group was established. This was composed of staff from the Rural Infrastructure Coordinating Unit Village Infrastructure Project, the Agricultural Engineering Services Directorate, other Ministry of Agriculture departments, the Department of Feeder Roads, the District Chief Executives and planning officers from the two study districts, relevant local NGOs and academics, and the research team. Meetings at roughly six-monthly intervals ensured not only that our findings were presented to local stakeholders soon after they emerged, but also enabled us to gain regular advice, immediate comment upon our findings, practical assistance where necessary, etc.

The selection of IMTs for the intervention was based on preferences that women in the study villages, in particular, had expressed during our earlier work with them (ranking their preferred choice of equipment etc.), our observations of the tasks for which women might use IMTs and the equipment we could obtain from suppliers in Ghana. We held workshops in each village to which we took the six pieces of equipment we would be able to offer on credit: a woman's bicycle, man's bicycle, a locally made 4-wheeled push-truck, a very light two-wheeled cart to a design by UK's IT Transport (which an Intermediate Technology workshop in Tema could build for us: they had already made a prototype which we had piloted in one of the villages and which was displayed at these village workshops), a locally made wheelbarrow, and – most expensive of all – a power tiller imported from China.

The IMTs were offered on one-year's credit, with first preference given to women applicants. However, we had money available in the equipment budget for more equipment than the women said they wished to purchase: many declined to take part because they argued that the equipment was simply too expensive, despite the easy terms. Consequently, we offered men an opportunity to purchase equipment too, on the basis that in this way we would also obtain their good will for the study. Whereas many IMT projects, including the VIP pilot, offer equipment only to groups, we decided to offer it to either individuals or groups, because our baseline studies and other related work had emphasised the considerable suspicion of group activities in this region (Porter and Lyon 2006). In total 71 pieces of equipment were selected and

purchased through the project, mostly by individuals: 44 push trucks (21 to women and 1 to a women's group, 22 to men), 2 power tillers (to groups, one mixed, one all-male), 16 men's bicycles (5 to women, 11 to men), 7 wheelbarrows (1 to a woman, 2 to mixed community groups, 4 to men) and 1 handcart (to a woman). Ostensibly, women purchased men's cycles (so they said at the workshop) because these were stronger. We were surprised at this decision, because some IMT literature had suggested women didn't adopt cycles because women's cycles were unavailable.

An 18-month monitoring programme then ensued to examine the patterns of impact among women and men adopters, accompanied by matched research with a control group of non-adopters and broader research across the village populations. This was particularly important for quantitative assessment of IMT impact. Using a mix of qualitative and quantitative methods, our study monitored the gendered impact of the project on travel patterns, load carrying, agricultural production, labour inputs, marketed output, time budgets and gender relations within each village, and comparisons were made with data collected during the baseline studies. Specific methods utilised for monitoring impact included IMT diaries by designated recorders in each village; very detailed quarterly farm surveys of agricultural production and marketing with beneficiary and control groups; PRA activities including seasonal transport calendars, preference ranking, weekly travel diaries based on recall within the last seven days, all made with both women and men (and including other villagers as well as IMT beneficiaries or control group members); life histories of men and women as a source of gender relations and mobility data; other in-depth interviews on intra-household decision-making and IMT impacts; interviews and focus groups with women and men who work as porters (including possible loss of work and income), review of group (both IMT and other group) activities; load weighing (head and bicycle loads); traffic counts and review of conventional transport conditions (charges, traffic frequency etc.); in-depth interviews with children, their parents and teachers regarding children's use of IMTs, attitudes to IMTs, work loads, etc.; and regular inventories to check for absent equipment, sales and loans, condition of equipment etc.

The day-to-day field monitoring was conducted principally by two field-based research assistants (co-authors of this paper): a Ghanaian man who focused on agricultural impacts, a German woman working on broader gender relations and on environmental issues<sup>4</sup>. They were supported by the project leader and by staff from our collaborating institutions who visited intermittently. The research assistants resided in Gomoa district in a roadside village (where there was electricity to run computers in the evening) but spent their days with the villagers in the five project villages for approximately one year in total (since periods were spent in Accra and UK).

The monitoring was extremely labour intensive but arguably of enormous value in enabling us to understand the processes and politics of adoption/rejection and the

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<sup>4</sup> The gender of the researchers may or may not be important, depending on local context: in our project the female researcher worked principally with women, to a lesser extent with men; the male researcher worked with both men and women. This worked well, but in certain cultural contexts a firmer gender segregation of tasks may be advantageous or necessary.

complex patterns of impact which emerged<sup>5</sup>. Final review workshops were held in each of our study villages where village men and women working in separate groups ranked their perceptions of overall IMT impact, positive and negative. A regional workshop was then held with our Consultative Group members and others: ministry staff, local government staff, NGOs, donors and other stakeholders, to which the villagers sent their representatives. A further brief review was carried out by one of the researchers, two years after the conclusion of the project (Owusu Acheampong 2005).

### **Project findings about IMT adoption processes and their interplay with gender issues obtained through the action research process**

The process of making an intervention experiment and monitoring its impact over a substantial time period allowed us to build a much clearer picture than we would otherwise have gained regarding how the equipment was being used, by whom, where, for what purposes etc. and to understand how power relations in the villages affected access to and exclusion from the equipment. There was quite considerable divergence, in particular, between the pre-project indications of women's IMT preferences and actual uptake, especially with reference to handcarts and bicycles and further changes of view among project participants emerged as equipment was integrated into men and women's everyday rounds of activity.

Bicycles, for instance, were very rarely used by women, despite the researchers' offers to teach them if they did not know how to ride. It transpired that a number of wives had simply purchased cycles on their husbands' behalf. The equipment was paid for by the husband and used by him, despite formal ownership in the wife's name: clearly this was why men's cycles with a cross bar had been selected. It transpired that women and girls often simply did not have the time to learn to ride because of their housework and other duties and male attitudes to girls learning to cycle.

The lighter hand cart with cycle tyres which we perceived as very suitable for more frail women to push on their own, and which interested women greatly when they saw it in pictures in the pre-intervention phase, turned out to be unpopular when it was offered for purchase at the village workshops because it was perceived as too flimsy. However, a year later when the IMT attitudes survey was repeated, a number of people in the village where one woman had taken a handcart now saw this as their first choice of IMT. The survey of IMT attitudes two years after the conclusion of the project suggested this preference was now even more pronounced: it was the most preferred IMT in that village.

A factor which did not emerge in our pre-intervention analysis was the extensive use which would be made of children as equipment operators (except in the case of the power tillers which were operated solely by men). We discovered that it was women with access to children's labour who purchased equipment: when we asked women who had been very keen on the IMT concept prior to the intervention why they did not purchase any equipment, it emerged that it was not simply shortage of funds in

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<sup>5</sup> A brief description of the project while it was still in progress is included within an earlier comparative paper on IMTs in Nigeria and Ghana in this journal (Porter 2002b).

some cases but rather lack of access to children who could operate the equipment for them.

Monitoring picked up on maintenance problems too: many IMT owners – men and women - soon abandoned their equipment when it failed to work for some reason (e.g. a puncture or connection rod). We were able to organise a series of bicycle maintenance workshops from an International NGO, and provided toolkits for each village, while MOFA Engineering Services provided training and support to those with more complex equipment (i.e. the power tillers). Nonetheless, it soon emerged that it is not simply maintenance knowledge that is required but also an understanding of the importance of budgeting for maintenance repairs, a point which we should have probably emphasised more strongly in the pre-purchase workshops.

Organisation of credit repayments was another issue of relevance in remote places where IMTs may be greatly needed but banks are distantly located. We had arranged for two rural banks to collect repayments, as we did not wish the project to be involved in this component, when we needed to maintain good relations with the villagers for the monitoring exercise, whatever their repayment status. However, bank staff proved unwilling to make regular visits to the villages, despite managers' initial keen expressions of interest in being involved. After one staff member absconded, we handed over the project to an International NGO specialising in microfinance, which also initially expressed its interest and capacity to undertake the collections. Again, however, this failed apparently because NGO staff did not wish to make arduous journeys to the off-road villages. We subsequently found individuals in each village willing to undertake collections and travel with the funds to the nearest bank: all were men, as women were reluctant to take on this task. When we asked village members (including women IMT owners) whom they trusted to undertake the work, it was mostly men they suggested, perhaps because these men had already had dealings with the bank and/or had been involved in collection of funds/repayments on other projects or for communal activities. In line with experience across much of Africa, women were much more assiduous in repaying their IMT loans than men. Our experiences of organising credit repayment arrangements and problems regarding lack of capacity in the rural banks were of considerable interest to the VIP organisers (who obtained feed-back through the consultative group mechanism), since they had also thought to use the rural banks in their main project.

We anticipated that a women's IMT project could harm gender relations in the villages: there is some evidence of back-lash against women following women-focused development projects in other contexts (Momsen 2001 cites various examples). However, we found no increase in gender tensions due to the IMT introductions: indeed, rather the contrary. Some men used their access to IMTs to take over tasks their wives had previously had to perform, because of cultural prohibitions on men carrying firewood, for instance. Women - at least over the monitoring period - perceived this to be a positive benefit. In part this may have been due to the considerable care we took to involve men, including allowing men to purchase equipment, once women had made their selections, and involving them fully in project monitoring and other activities so they did not feel excluded. However, positive male attitudes may also have been due to the fact that women's personal mobility did not change substantially through these IMT interventions. Our baseline studies had indicated that gender tensions and arguments did emerge in some cases

over women's (unnotified) absences from the home village, since men tend to associate such absences with promiscuity. The push truck - the most widely adopted IMT in the project - aids load movement rather than personal mobility and is operated mostly, in any case, by children and men. Overall, despite the fact that men have taken over the operation of much of the IMT equipment, the impact on women does seem to be positive in terms of a reduction in load carrying and overall work load, by comparison with the control group, though impacts on women's personal mobility have been very limited.

### **Reflections on the action research process**

Through the action research approach we were able to examine the micro-processes of IMT adoption and thus to achieve a clearer understanding of the challenges and potentials for IMT adoption in southern Ghana: why projects focused only on groups might well fail, how difficult it is to establish satisfactory credit arrangements for remotely located villages, why draft-animal interventions are unlikely to be successful, how important it is to develop a maintenance culture, the significance of familiarity and building critical mass, and how much effort is needed to ensure that women are prime beneficiaries of IMT projects<sup>6</sup>. Action research was particularly valuable for exploring the gendered implications of IMT intervention because these are difficult to tease out: it was only over time and with careful observation that we learned not just how but also why women's stated preferences prior to an intervention may differ from actual patterns of adoption, about the potentially crucial role of labour availability to women for operating the equipment, and the potential significance for gender relations of linkages between the type of IMT introduced and the degree of personal mobility they offer to women. By relaying the findings to our Consultative Group at regular intervals, these were also fed into planning of other projects.

Observations of the effects of the intervention, a crucial component of action research, were facilitated in this project because the research assistants were based in the field and could observe what happened to the equipment and its impact in the villages on a daily basis. The researchers picking up a considerable amount of insight not just from the exercises we devised but also from the many informal conversations of everyday life. These insights would probably not have emerged with such clarity through the more formal methods of data collection and analysis alone. However, such close contact between researchers and project participants also means there are reflexivity issues to consider: the impact of the presence of the researchers on project outcomes and impact back on the researchers themselves.

In terms of direct impact on project outcomes, on the one hand the researchers' presence may have sustained village interest in the IMTs, but on the other hand may have also encouraged a tendency of participants to rely on external support, especially with reference to maintenance. On a number of occasions it was clear that the researchers rather than the owners were expected to deal with equipment breakdowns. Our decision to maintain a distance from the credit recovery process proved vital in maintaining good relations in the villages.

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<sup>6</sup> A full discussion of these findings is available in Porter (2003) and Porter, Acheampong and Blaufuss (2003) which can be accessed through the following link: <http://www.id21.org/rural/r2gp1g1.html>

A potential broader benefit of action research approaches is that, by operating over a longer time scale, they can build relationships with people in the community so that they have confidence not just in their role within the project but also recognise the importance of their voices more widely. Our focus was primarily on women and it is useful to reflect on whether women were empowered by the project. While the project interventions eased some women's transport burden, not least where their menfolk took over various tasks once IMTs were available, and the researchers developed strong community links and friendships, we would be cautious of making claims about women's empowerment. Rather, we assess the benefit of the approach in this project primarily in terms of improved understanding of gendered patterns of adoption and non-adoption of IMTs and similar gender-related transport issues.

The project also provided an important broader learning process for the researchers. Action research of this kind can be a particularly salutary exercise for academics, who are often highly critical of the interventions made by donor agencies and NGOs. It is easy to criticise when one is never embroiled in the very messy processes of making interventions and thus not fully aware of how difficult the intervention process can be. The authors of this paper went through a highly valuable learning process through this programme of research, which will inevitably colour their future assessments of, and reflections on, development work.

### **Conclusion**

Women are still commonly treated as welfare objects rather than decision-makers in development programmes, especially in the transport field which remains firmly male-dominated across most of Africa. Gender issues are often hidden and careful monitoring exercises and longer-term assessments will be essential in such cases to uncover the real meanings and implications of interventions for women. While we are cautious of making claims for women's empowerment through action research, we suggest that action-research approaches can offer an important route to achieving improved understanding of gender issues because they allow time for reflection on the full implications of an intervention, which may take a considerable period to emerge.

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