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## **Youth, mobility and rural livelihoods in sub-Saharan Africa: perspectives from Ghana and Nigeria**

### **Abstract**

The linkages between youth daily mobility and livelihood patterns and potential have been little explored. Drawing on field studies in Ghana and Nigeria, this paper examines youth transport and mobility issues from a livelihoods perspective. Mobility affects livelihoods directly, in terms of access to jobs, and indirectly in terms of accessing the good education, healthcare and strong social networks on which future job opportunities may depend. The factors which help determine youth access to transport and mobility are considered and the role of transport itself as a livelihood strategy (girls as porters, boys as transport operators) is examined.

### **Biographical statements**

Gina Porter is Senior Research Fellow in the Department of Anthropology, University of Durham. She has worked in sub-Saharan Africa for thirty years on mobility and gender issues.

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## **Introduction**

Youth<sup>2</sup> mobility in sub-Saharan Africa, especially daily mobility (as opposed to migration), represents a major research gap. This paper explores some of the substantive issues concerning youth transport and mobility in rural Africa from a livelihoods perspective. Livelihood opportunities for young people in rural areas are often limited and highly dependent on the services and networks which enable entry into work and help to support youth at work. Transport and mobility are frequently key components for attaining successful, sustainable livelihoods and a route out of poverty. The widespread need for multiple livelihood strategies in rural areas, including off-farm work, and the potential that transport can itself present one such livelihood opportunity (though in different forms according to gender), adds further complexity to the transport and mobility issues discussed.

This paper is informed by the (often fragmented) literature on youth, on rural livelihoods and on rural transport, as well as mobility and access to services in sub-Saharan Africa. Transport refers to both motorised and non-motorised modes used for movement of people and/or goods (e.g. bicycles, motorcycles, and cars). In accordance with Bryceson et al.<sup>3</sup> we define mobility as the agency with which people move themselves or their goods. By access we mean ability and ease of reaching destinations (as in the transport usage of the term). Access depends on physical proximity and mobility and may be improved by greater mobility and/or greater proximity<sup>4</sup>.

The paper draws on the diverse transport and mobility studies (six projects in total) undertaken in two regions of West Africa over the last fifteen years. Field research on the Jos Plateau, Nigeria, consisted of studies by Gina Porter in 23 villages with varying accessibility conditions in 1991, a repeat study in 2001, and a limited

review in 2004<sup>5</sup>. Field research in southern Ghana (Gomoa district in the coastal savanna, and Assin district in the forest zone) took place from 1997 to 2003<sup>6</sup>. The studies focussed principally on five villages with access problems (the villages were all located 3 to 25 kms from the nearest paved road when the studies commenced), with additional research in villages that were more accessible. One of the projects in Ghana involved an action research component in which people in the five off-road villages were offered bicycles and other transport equipment on credit. Both the Ghana and Nigeria studies were concerned principally with the role of transport in market access (for all ages), but drew the authors' attention to specific mobility and access issues faced by young men and women in building a livelihood (including obtaining the necessary basic health, education and social networks which are so often a prerequisite for obtaining and keeping employment).

All the studies utilised a multi-method approach, with qualitative and quantitative components, though the specific mix of techniques varied between projects. The majority of projects included in-depth interviews, focus group discussions, surveys and participant observation to explore access issues with villagers of varying ages, socio-economic status and gender. In Nigeria surveys in village markets involved 804 respondents in 1991 (345 men, 459 women) and 656 in 2001 (310 men, 346 women); in Ghana a series of surveys covered 500 people in total (roughly equal numbers of men and women). Additional in-depth interviews with farmer-traders numbered 100 in Nigeria and 150 in Ghana. In-depth interviews were also conducted with transport operators (i.e. drivers, cart operators) and porters in both regions (50 in Nigeria, 100 in Ghana). Within the Ghana projects we were able to pursue youth issues more intensively than in Nigeria, and obtained more than 40 individual and group interviews with children, parents and teachers<sup>7</sup>. We obtained

ethical clearance for this study from the University of Durham and adhered to the ethical guidelines of the Association of Social Anthropologists.

The paper first considers the broad significance of daily mobility to young people's livelihoods in rural areas of sub-Saharan Africa, drawing on the livelihoods literature. It then examines some of the issues shaping youth access to transport and mobility, including gender and education; firstly reviewing the very limited literature available, and then discussing our field evidence. Finally, it draws attention to the role of transport *as* a livelihood strategy for youth, considering the gendered pattern of transporting (girls as headloaders, i.e. porters carrying loads on their heads; boys as transport operators, i.e. operating equipment such as handcarts or driving lorries), and the long-term health, education and knock-on livelihood impacts of youth employment in transportation services. This latter section is largely dependent on our field research, in the virtual absence of other published literature.

## **Background**

The links between the daily mobility patterns of rural youth, their current livelihood options and future livelihood potential have received remarkably little attention in the literature on livelihoods, or transport, or youth in sub-Saharan Africa. However, there is ample evidence in the literature that livelihood opportunities for youth in rural areas are often extremely limited. Limitations imposed by lack of mobility contribute substantially to these limitations. Indeed, this is probably one of the major push factors encouraging out-migration to urban centres: the so-called 'greying of the countryside'<sup>8</sup>. An ILO report on youth employment (August 2004) suggests that there are particular difficulties for youth in accessing livelihood opportunities globally: 15-24 year-olds represent nearly half the world's jobless.

There are difficulties especially for women. Unfortunately, the link between youth unemployment and mobility is rarely explored.

Traditionally, a large proportion of Africa's rural youth have obtained their livelihoods either through supporting their family enterprises or working on their own account in agriculture, trade-related enterprises and craft industries. In many cases young people must contribute to family income or support themselves entirely while still in full-time education. This may entail long hours of work both before and after school. Income-earning opportunities often are seasonal and pluri-activity is probably as widespread among youth as among adults, especially in savanna regions with a restricted growing season. Indeed, a series of recent studies have emphasised the value of building multiple livelihood strategies and the importance African rural dwellers attribute to developing off-farm income sources for insuring themselves against poverty<sup>9</sup>. Bryceson<sup>10</sup> observes 'Amidst high levels of material uncertainty and risk, rural populations have become more occupationally flexible and spatially mobile'. Structural adjustment programmes, sharply worsening terms of agricultural trade and devalued currencies are among the factors implicated in the intensifying search for diversified income sources. The observations made about the value of multiple strategies and off-farm incomes are as relevant to youth as to other sectors of the population.

Agricultural activities are often conducted within the village lands and thus may not require substantial mobility (though this varies according to locally specific circumstances, including population densities etc.). However, many of the other livelihood opportunities which can help to build a more secure income for the individual and/or the household— including sale of agricultural produce at more lucrative external markets - require travel beyond the village boundary. Access to

centres beyond the village usually entails long journeys on foot, unless there is access to reliable and affordable motorised or non-motorised transport. Mobility beyond the village area is mediated by a range of factors, not least of which is gender.

In order to access more lucrative livelihood opportunities outside agriculture and petty trade, it is usually essential to possess some basic education and a reasonable degree of health. Each of these will normally have required past access to basic health and education services and safe water supplies. Again, there is a link to mobility and transport, since education and health services are much more easily obtained in places with transport and which enable mobility, unless peripatetic services are available<sup>11</sup>. Higher-level service provision (hospitals, secondary schools etc.) is limited to central localities and teachers and health workers are often reluctant to be based in remote locations<sup>12</sup>.

Even with reasonable health and a modicum of basic education, it is often difficult to obtain work without good social networks in place. While kinship and village linkages may render assistance in building a livelihood within the village, broader social networks may be required in the wider region to find employment. These also are dependent, in part, on transport and mobility since networks are affirmed through regular participation in a range of activities. In southern Ghana, for example, attendance at church and funerals are important components in cementing networks. Chant and Jones<sup>13</sup> reported that in Ghana and the Gambia, social networks are regarded as more important than skills to find employment: “a matter of ‘know who’ not ‘know how’”!

### **Factors determining youth access to transport and mobility**

Factors that determine access to transport and mobility for youth living in rural areas and thus influence their livelihood opportunities may not be limited to transport

related issues. Youth access to transport and mobility can be affected by a diverse range of factors such as gender, age, birth order, education, marital status, parental status, local circumstances and the broader cultural and political economy contexts. In this paper we focus on two of these factors, gender and age.

The family demands commonly made upon young people, as subordinate household members and kin, can be very considerable in terms of free labour input. These may be required both in the domestic/reproductive sphere (e.g. sweeping, food preparation, caring for younger children, garbage disposal, water and fuel wood collection etc.) and the productive sphere (agriculture, trading, and craft work). The heaviest of these work demands are likely to be placed on women<sup>14</sup>. The obligations of young women in remote and less accessible areas often include help to carry loads for family members because of inadequate or costly transport facilities. Such demands inevitably limit the time available for travelling to other locations to earn a livelihood.

Gender and age can also impose other constraints on access to transport and mobility and thus livelihood potential, particularly in certain cultural contexts. In many rural areas, young girls with Islamic backgrounds are probably as free as boys to travel locally on foot up to the age of puberty and marriage. Katz<sup>15</sup> describes how, in rural Sudan, young girls and boys deliver messages and carry food around the village, and also travel more frequently and more widely, depending on their birth-order position. Robson<sup>16</sup> describes similar patterns in rural Nigerian Hausaland. After that, Muslim women tend to be subject to substantial constraints, varying from limited movement beyond the village area (as in Nigeria's Borno region<sup>17</sup>) to house seclusion (as in areas of Nigerian Hausaland<sup>18</sup>).

More widely, across Africa, it seems that girls' access to money to pay transport fares and to means of transport are more restricted than that of boys, despite



the apparent absence of gender constraints on mobility in many regions. In particular, girls' have less access to bicycles than boys (which seem the obvious low-cost solution for getting to work in remote areas and areas with limited and/or expensive transport services). This restriction inevitably impacts on women's livelihoods not only during their youth but throughout their lives. Women cyclists are a rare phenomenon across much of Africa<sup>19</sup>. This may be one of the factors which limit their opportunities to attend distant secondary schools and expand their horizons.

Our field work in Nigeria and Ghana supports the view that girls' access to transport, including low-cost transport like bicycles, is extremely limited. In the 2001 Nigeria Plateau study, 76% of women interviewed in rural markets had walked there, compared to only 41% of men. While male cyclists were common, women cyclists were virtually non-existent; we encountered just two women cyclists among over 300 women interviewees. Here the constraints on women's cycling were related, in part, to cultural inhibitions among local Plateau people, especially Muslim people. Our research in five off-road villages in (mostly Christian) southern Ghana presented a different facet of the female mobility issue. It emphasised how girls' mobility can even be restricted in the absence of overt cultural prohibitions. Women who obtained bicycles through our action research project did not ride them themselves, but loaned them out to their husbands and sons. Because women had not learned to cycle in their youth, most were extremely reluctant to learn in adulthood (despite our offers to teach them). Daughters' access to cycles was constrained principally by housework duties which meant they never had time to learn to cycle. It was thus usually only boys who cycled to school. Girls seen trying to learn to ride bicycles in these villages were told by men and boys that they should be in the kitchen:

“...if we want to hire [a bicycle] they will tell us we are girls to work at the kitchen, not to ride a bicycle... boys shout at us to leave the bicycle.. We don’t have time to learn to ride because we close school at 2 pm and use our time to 4 to cook... since there is no light here... we must finish our chores and then it’s dark... Boys ...will quickly fetch water and go to play”.<sup>20</sup>

Age and education can have other impacts. One of the most interesting findings of our southern Ghana study was that education appears to be more important than precise age in determining adult views of their children’s potential to travel long distances safely. This is in contrast to common patterns in Western industrialised countries where age tends to determine extent of independent travel. Adult perceptions appear to be mostly related to confidence and problems of getting lost. Both village parents and older children in Ghana pointed to difficulties for young rural people travelling outside the village: “...in urban areas a child of nine can travel on their own, but in rural areas a child of fifteen may not travel on their own because of illiteracy. Those in urban areas have seen many cars and tarred roads and other signs...”<sup>21</sup>

A 15-year-old girl in a village in Gomoa district informed us that youth living in her village would need to be older than she was to travel any distance alone, “because those living in the rural areas find it difficult to travel on their own”. But she went on to argue that in urban areas children of 10 or 12 might travel alone “because they are educated”. The group of about 17 children agreed that the crucial factor was education, not gender or age. In another group discussion, with 23 children from a primary school (grade 6) in a village in Assin district, only 4 pupils (three girls aged 12, 13 and 15 and one boy aged 15) said they had travelled by motor transport on their own. Those who had not travelled on their own anticipated the

experience would be exciting and frightening in roughly the same proportions. When we asked children and youths in the off-road villages about their travel experiences, we found that their main concern, as with their parents, revolved around the dangers of getting lost.

Boys in West Africa are more likely than girls to obtain an education, especially when residing in remote areas where children have to travel to reach a school for basic education. This gives them both literacy skills and travel experience such that they and their parents have the confidence to let them make other long-distance journeys for secondary education and other purposes. There is obviously some diversity in individual cases, as illustrated by the fact that we interviewed Junior Secondary School and out-of-work boys of 16 and 17 in the off-road study villages in Ghana who had never travelled beyond the nearest major market centre, and then only in the company of their mothers.

### **The role of transport as a livelihood strategy**

Thus far the paper has focussed on access to transport, but transporting of itself is an important livelihood strategy for youth. In many of Africa's rural areas, young girls and boys play a massive but largely unrecognised and unrecorded role as transporters carrying heavy loads on foot. Generally, this activity is subsumed under women's work, but the youth component needs specific recognition. The issue of transport as a livelihood strategy for youth has not been examined in either the transport or youth literatures. It is very important to consider not only the gendered pattern of transporting (girls as headloaders/carriers, boys as transport operators), but also the long-term health, education and knock-on livelihood impacts of youth employment in transportation services.

Head-loading is an important (often unpaid) activity for girls, from an early age and they often continue to carry heavy loads through adulthood. The impact of such load carrying on women's livelihood opportunities in the long term may be substantial, but there is little systematic evidence. Health problems associated with head loading may include backache, head and chest pain, deformation of the spine and osteo-arthritis of the soft tissue of the knee<sup>22</sup>. Some of the health issues may even have inter-generational impacts, in terms of miscarriage, damage to the unborn foetus and reduced quality and quantity of breast milk in nursing mothers, etc.<sup>23</sup>. Unfortunately, we have remarkably little data on this issue and the impact of associated ill-health on livelihoods.

Our field data from traffic surveys in southern Ghana emphasise the ubiquity of girls' transport roles in off-road areas of this region, though boys also often carry loads up to the age of about 15. Small girls of three or four years start by carrying a very small bowl of water or grain, progressing to around 1 'rubber' weight ( a plastic bucket of maize, weighing 8 kgs) at about 8 years of age, then up to as much as 4 'rubbers' at 15 years of age. At an off-road village, both boys and girls from the age of about 10 regularly carry large loads of firewood to the district headquarters for sale before they go to school, a journey of around 10 kms in total. In another village, where we conducted a class discussion on travel and headloading with grade 6 primary school pupils, 21 of the 23 pupils (aged between 12-15 years), said they regularly carried goods for their mothers. The two exceptions were both boys. We found girls of 15 to 18 years of age regularly carrying 20-30 kg or more (whereas boys over the age of 15 are not usually expected to carry loads at all).

We were unable to examine health and livelihood impacts of headloading in any depth within the remit of our research, but interviews with teachers and children

indicated the likelihood that educational opportunities for some girls, in particular, are substantially affected by their head-loading duties; through arrival at school late, tiredness and headaches. In Aworabo, where children carry heavy loads of cocoa and firewood, every child we interviewed said they regularly suffered neck, waist or head pains from carrying goods. Load carrying reportedly affects girls more, according to teachers, because they are expected to carry more on the way to school.

Certainly, working as a porter brings limited rewards at any age, even if it is a paid occupation. It is usually one of the lowest status jobs in rural areas and, perhaps unsurprisingly, is seen as a job for women. Our research in southern Ghanaian villages indicated that paid portering work (as opposed to family portering obligations) was often undertaken only when women were very short of money. Boys and men over the age of about 18 years in both our Nigerian and Ghanaian study areas rarely carry loads on their head. The stigma is such that where young men who were carrying firewood to help a sick wife or mother in southern Ghana would travel before dawn in order to avoid being seen.

In contrast to head loading, operating of transport equipment, has status and is thus a potential occupation for men. Girls and women are rarely seen operating non-motorised transport equipment or driving commercial motorised vehicles in Africa. Many boys in Ghana and Nigeria earn their living through pushing non-motorised trucks, especially in market centres, though this is more commonly an occupation for urban-based boys. In Ghana we found that girls are not considered strong enough to operate push-trucks. The rewards are small and the work exhausting. Driving motorised vehicles gives much higher status and is often the goal of the push-truck operators and many other boys, who generally start their driving careers as conductors and drivers' assistants. However, opportunities to work as a motorised vehicle driver

are more common in villages located along good roads where vehicle ownership and operation tends to be far higher<sup>24</sup>. Consequently, this is also where most driving jobs are available.

In Nigeria, motorbikes are far more common than in Ghana and operation of motorbike taxis (called okada in southern Nigeria, achaba in the north) offers an additional transport-based livelihood opportunity. This is a common source of income for young men in urban areas, but in Nigeria's Jos Plateau we also came across cases of motor-bike taxi operation in rural areas. In recent years this has offered a dangerous but very lucrative source of income for many young men. By operating in areas with poor transport, motorbike-taxis are able to charge passengers up to three times the fare payable for the same mileage on the irregular bus services. Since most of the operators have other occupations, notably irrigated vegetable farming, they can make a good livelihood by local standards from the combination of these enterprises. Most of the motor-bike taxis operate from centres located on the paved road. Although motorbike-taxi fares are expensive, this and the expansion of other transport modes (related to a reduction in vehicle prices and the expansion of irrigated vegetable production in this region) is supporting livelihood strategies which have substantially improved conditions for young men.

## **Conclusion**

Transport and mobility are key issues for Africa's youth and their subsequent livelihood and health. Lack of access to transport and mobility reduces life chances from –and even before - birth, especially for those unfortunate enough to be conceived and born in remote places without access to basic services and affordable, regularly available, transport. The opportunity to be born safely and the chances of being immunised against common childhood diseases depend on transport availability

between the village and the health centre. It is possible that the health of the unborn foetus itself may be damaged when mothers spend large portions of their day carrying heavy loads in the absence of affordable alternative transport. As this is speculative, it is a topic in need of research. Subsequent attendances at primary school, at health centres and at social functions with the aim of building social networks to find jobs all probably depend in some part on access to transport and mobility.

These issues have important implications for the inter-generational transfer of poverty. Poor health and education are likely outcomes of poor access to health and education services and poor job opportunities will be compounded by lack of social networks. In these circumstances, the inheritance of the next generation is likely to be limited. There has been virtually no consultation about youth transport needs in Africa and certainly little consultation with youth about their needs. Indeed, broader gender issues have only recently been brought into the picture in the transport sector, and there is still much mere lip service paid to the topic. Getting youth issues onto the agenda, particularly youth perspectives on their own transport and mobility, will require very concerted action. Detailed evidence is required from across the continent to build theory and develop policy guidelines regarding the linkages between daily mobility and livelihoods and their role in breaking inter-generational cycles of poverty<sup>25</sup>.

## References

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- <sup>1</sup> We are extremely grateful to the many villagers in Ghana and Nigeria who participated in our research studies. The paper draws in part on findings from a number of recent research projects funded under DFID's Crop Post-Harvest Programme: R7924 Rural access issues and the supply of urban food markets in Nigeria: focus on market access for smallholder vegetable producers on the Jos Plateau, R7575 Action research to evaluate the impact on livelihoods of a set of post-harvest interventions in Ghana: focus on IMTs; R7149 Access to market opportunities in Ghana's off-road communities. However, the authors accept full responsibility for information presented and views expressed. An earlier version of this paper was presented at the African Studies Association of the UK biennial conference, Goldsmiths College, University of London, September 2004
- <sup>2</sup> We consider youth in this paper as young people (male and female) between the ages of 14 and 30. This conforms with general perceptions of youth in West Africa, where a person is not considered adult until they can support themselves. Because of economic and other difficulties, there are many young people in their early 20s still in school – even junior secondary school.
- <sup>3</sup> D Bryceson, D. Maunder, T. Mbara, R. Kibombo, A. Davis and J. Howe, *Sustainable livelihoods, mobility and access needs*, Crowthorne: Transport Research Laboratory Report 544, 2003, p 4.
- <sup>4</sup> *Ibid*, p 4.
- <sup>5</sup> Following the Jos ethno-religious crisis which commenced in September 2001, access to some villages was still difficult in 2004.
- <sup>6</sup> The research in Ghana was conducted by the first author with the assistance of the two co-authors.
- <sup>7</sup> G Porter and K Blaufuss, *Children, transport and traffic in southern Ghana*, International workshop on children and traffic, Copenhagen, May 2-3, 2002, <http://www.dur.ac.uk/child.mobility>
- <sup>8</sup> DF Bryceson, *Sub-Saharan Africa betwixt and between: rural livelihood practices and policies*, Leiden: Afrika-Studiecentrum Working Paper 43, 1999, p 7.
- <sup>9</sup> DF Bryceson, *Sub-Saharan Africa betwixt and between: rural livelihood practices and policies*, Leiden: Afrika-Studiecentrum Working Paper 43, 1999; C B Barrett, T Reardon and P Webb, 'Nonfarm income diversification and household livelihood strategies in rural Africa: concepts, dynamics and policy implications', *Food Policy*, vol 26, no 4, 2001; C H Gladwin, A M Thomson, J S Peterson. and A S Anderson, 'Addressing food security in Africa via multiple livelihood strategies of women farmers', *Food Policy* vol 26, no 2, 2001; T Reardon, 'Using evidence of household income diversification to inform study of the rural nonfarm labour market in Africa', *World Development* 25,5, 1997.
- <sup>10</sup> DF Bryceson, *Sub-Saharan Africa betwixt and between: rural livelihood practices and policies*, Leiden: Afrika-Studiecentrum Working Paper 43, 1999, p 1. Bryceson reviews a series of studies carried out under the DARE (De-Agrarianisation and Rural Employment) research programme at the University of Leiden. These provide supporting evidence for Tanzania, Nigeria, Ethiopia, Congo-Brazzaville, Malawi, Zimbabwe and South Africa.
- <sup>11</sup> V Lavy, J Strauss, D Thomas and P de Vreyer, 'Quality of health care, survival and health outcomes in Ghana', *Journal of Health Economics*, vol 15, 1996; WK Bosu, D



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<sup>12</sup> R Avotri, L Owusu-Darko, H Eghan and S Ocansey, *Gender and primary schooling in Ghana*, Sussex: Institute of Development Studies, October 1999; A Brenneman, *Infrastructure and poverty linkages: a literature review*, Background report. The World Bank, Washington DC, 2002; G Porter, 'Mobility and inequality in rural Nigeria: the case of off-road communities', *Tijdschrift voor Economische en Sociale Geografie*, vol 88, no 1, 1997; G Porter, 'Living in a walking world: rural mobility and social equity issues in sub-Saharan Africa', *World Development* vol 30, no 2, 2002; G Porter, 'Improving mobility and access for the off-road rural poor through Intermediate Means of Transport', *World Transport Policy and Practice* vol 8, no 4, 2002.

<sup>13</sup> S Chant and G Jones, 'Youth, gender and livelihoods in West Africa: perspectives from Ghana and the Gambia', *Children's Geographies* vol 3, no 2, 2005, p 194.

<sup>14</sup> D F Bryceson, (ed.) *Women wielding the hoe: lessons from rural Africa for feminist theory and development practice*, Oxford: Berg, 1995; C Malmberg-Calvo, *Case study on the role of women in rural transport: access of women to domestic facilities*, World Bank, Africa Region: Sub-Saharan Africa Transport Policy Program working paper no 11, February 1994; A Mehretu and C Mutambirwa, 'Gender differences in time and energy costs... in rural Zimbabwe', *World Development* vol 20, no 11, 1992.

<sup>15</sup> C Katz, 'Sow what you know: the struggle for social reproduction in rural Sudan', *Annals of the Association of American Geographers*, vol 81 no 3, 1991; C Katz, 'Growing girls/closing circles: limits on the spaces of knowing in rural Sudan and US cities', in Kinnaird, V, and Monk J. (eds) *Geographies of women over the life course*. London: Routledge, 1993.

<sup>16</sup> E Robson, 'Children at work in rural northern Nigeria: patterns of age, space and gender', *Journal of Rural Studies* vol 20, 2004.

<sup>17</sup> see G Porter, 'Perspectives on trade, mobility and gender in a rural market system: Borno, north-east Nigeria', *Tijdschrift voor economische en sociale geografie*, vol 79 no 2, 1988.

<sup>18</sup> See Robson 2004.

<sup>19</sup> J Doran, *Rural transport*, London: Intermediate Technology Publications 1996; BG Kipke, 'Bicycle usage in two cities of Africa. Report on preliminary research in Burkina Faso and Ghana'. Excerpt from *Bicycle reference manual for developing countries*, ed. B.G. Kipke, April 1991, University of Karlsruhe. [[http://www.gtz.de/gate/publications/BicycleManual/brm/afri/kipke/toc/af\\_kip1s.htm](http://www.gtz.de/gate/publications/BicycleManual/brm/afri/kipke/toc/af_kip1s.htm)]; C Malmberg-Calvo, *Case study on Intermediate Means of Transport: bicycles and rural women in Uganda*, Washington DC: World Bank, SSATP Working Paper 12, 1994; G Porter, *Spatio-temporal perspectives on the social benefits and costs of roads and road transport: a discussion paper with special reference to women and children.*, Bracknell, TRL Workshop on Framework for social benefits in transport planning, March 2003.

<sup>20</sup> JSS girl, 15 years, off-road village

<sup>21</sup> Father of two boys, off-road village

<sup>22</sup> see M Carr The long walk home, *Appropriate Technology*, vol 10, no 1, 1983, in MK McCall, The significance of distance constraints in peasant farming systems with special reference to sub-Saharan Africa, *Applied Geography*, vol 5, 1985; E Mudzamba, in collaboration with the ILO, *The transport burden on women and girls*

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*in Zimbabwe's rural areas*, Vol 2. April 1998, p 12; Doran 1996, p 23; G Turner and P Fouracre, 'Women and transport in developing countries', *Transport Reviews*, vol 15, no 1, 1995.

<sup>23</sup> see Doran 1996 and S Ellis, *Key issues in rural transport in developing countries*, Crowthorne: Transport Research Laboratory Report no. 260, 1997, both citing V Curtis 1986 *Women and the transport of water*, London: IT Publications, 1986.

<sup>24</sup> In Ghana we found that even commercial vehicle owners who are themselves resident in off-road areas with poor access tend to base their vehicles at the paved road and operate them along better quality roads, because of the high costs of maintaining vehicles which spend much of their time traversing poor roads.

<sup>25</sup> A new study on this topic funded by the UK ESRC and DFID and led by Gina Porter has just started. This will involve research in Ghana, Malawi and South Africa with collaborators from the University of Cape Coast, the University of Malawi, CSIR and the International Forum for Rural Transport and Development. Details of the project will be posted at <http://www.dur.ac.uk/child.mobility/>