

**DFID CROP POST-HARVEST PROGRAMME**

**RURAL ACCESS ISSUES AND THE SUPPLY OF URBAN FOOD  
MARKETS IN NIGERIA: FOCUS ON MARKET ACCESS FOR  
SMALLHOLDER VEGETABLE PRODUCERS ON THE JOS  
PLATEAU (R 7924)**

**PROCEEDINGS OF A ONE-DAY WORKSHOP ON  
MARKET ACCESS ISSUES FOR SMALLHOLDER  
VEGETABLE PRODUCERS ON THE JOS PLATEAU,  
NIGERIA, HELD AT THE UNIVERSITY OF JOS,  
WEDNESDAY 4 APRIL 2001**

**DRAFT**

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## **I BACKGROUND TO THE WORKSHOP**

### **Aims of the workshop**

This one-day workshop on market access issues for smallholder vegetable producers on the Jos Plateau represents the second major activity in a small six-month research project funded under the DFID Crop Post-Harvest research programme. The workshop follows a period of field research by the project researchers on the Jos Plateau. The principal aim of the workshop was to present the results of the field research and to review these with invited participants prior to the preparation and submission of the final technical report to DFID, which will incorporate conclusions reached at the workshop.

### **The research project**

The project is specifically concerned with the supply of agricultural produce to urban markets and the constraints on small farmers and rural-based petty traders imposed by access problems. It builds directly on a previous rural access project undertaken 10 years ago by the project leader, Gina Porter, in the former mineland region of the Jos Plateau, Nigeria. It also links to other work undertaken at various times in the Plateau region by the five project collaborators - Jasper Dung, Alhaji Adepetu, Frances Harris, Fergus Lyon and Gina Porter.

The aim of this project is to resurvey and compare market conditions and rural access in roadside and off-road market settlements of 3 districts of the Jos Plateau with those prevailing 10 years ago and, additionally, to compare transport and rural access conditions with those currently prevailing in a linked study in coastal Ghana (R7575 'Action research to evaluate the impact on livelihoods of a set of post-harvest interventions in Ghana's off-road settlements: focus on IMTs.)

The Plateau study provides an opportunity to make a detailed assessment of change in market access and market structures over a 10 year period in which there have been major political, institutional and economic changes in Nigeria, and to examine the impact this has had on men and women in an important food producing region. The former mineland region of the Jos Plateau has considerable potential for the production of a range of temperate and tropical vegetable and fruit crops through irrigated agriculture. Since the decline of the Plateau tin-mining industry, water from disused ponds has allowed substantial expansion of fadama market gardens. Work conducted on the Jos Plateau 10 years ago, alerted the Principal Investigator to the crucial significance of physical access for producers of perishable crops, and the particular difficulties faced by off-road producers.

The project provides a longitudinal perspective on market reorganisation and development (in Nigeria) which is rarely available and, secondly, an opportunity for cross-country (Nigeria-Ghana) comparison of transport and rural access conditions. The aim is to develop strategies which can assist market access on the Jos Plateau and elsewhere in Nigeria, and to inform the ongoing access project in Ghana. (A report of the Nigeria findings will be made available to the Ghana project Consultative Group and related Ghana National Forum Group on Rural Transport.)

## **II WORKSHOP PARTICIPANTS**

Workshop invitations were issued to a broad mix of potential participants, including village and district heads, local government staff, relevant state ministries, the Fadama Farmers' Association, the Plateau Agricultural Development Programme, market managers, local NGOs, Jos university staff and DFID project staff in Nigeria. Additionally, two Ghanaians were invited, Mr Frank Owusu, who works on a related rural access project (R7575) in coastal Ghana, and Mr Vincent Akoto, a member of the Ghana project's Consultative Group from the Ghana Ministry of Agriculture's Agricultural Engineering Services Department. Following consultation with the programme manager, Kathrin Blaufuss, the UK-based RA on project R7575 was also invited to the workshop.

Appendix 2 presents a full list of the 53 workshop participants. As can be seen from this list, the workshop attracted a good level of attendance and a mix of staff from state and local government, parastatals, traditional leaders and their representatives, NGOs, farmers and traders, in addition to the substantial contingent of staff from the University of Jos.

## **III WORKSHOP STRUCTURE**

The workshop was structured into three components, as can be seen from the programme (Appendix 1). The first component, chaired by Alhaji Adepetu, consisted of presentation of research results in the form of three papers: one dealing with environment, presented by Jasper Dung, one on vegetable marketing, presented by Alhaji Adepetu, and a third on transport/access perspectives, presented by Gina Porter (with a contribution on related Ghana transport/access work by Frank Owusu Acheampong.)

Workshop participants then broke into three discussion groups, according to interest. There was one group for each of the paper topics: environment, marketing and transport/access. The groups were asked to comment on the papers and, additionally, to consider a set of questions/issues which related to the findings. One member of each group then presented the group's findings to the other participants. A short question and answer session followed.

The third component of the workshop was a discussion kindly chaired by Professor John Olaniyan of the Department of Geography and Planning at the University of Jos (and Director of the British Council-funded Jos-Durham university linkage programme). The aim of this session was to consider how to move forward from the current project, reviewing research needs and potential research directions with user groups present at the workshop.

## IV WORKSHOP PRESENTATIONS

### **Oral presentations**

The workshop presentations focussed on three different elements of the research project - environmental issues, marketing and transport/access - though with inevitably a degree of overlap between individual elements. The impact of the expansion of irrigated crop production was considered in all the presentations. The presentation outlines are provided in Appendix 3. In Jasper Dung's welcome address, as well as in each of the presentations, it was emphasised that analysis of data was ongoing and that we were merely presenting preliminary results for discussion and feedback by the workshop participants. The presentations were made in English, with subsequent summaries in Hausa by Jasper Dung and Jessica Agaye (Department of Geography, University of Jos).

### **Field research results: a brief synopsis of the papers presented**

#### **1. *Environmental background and issues.***

**(Paper by Frances Harris and Jasper Dung; presented by Jasper Dung)**

This paper presented the results of the environmental research conducted under the current project and also drew on some recent joint field work by Margaret Pasquini, Alhaji Adepetu, Frances Harris and Jasper Dung and ongoing work by Margaret Pasquini (a research student from the University of Durham supervised by Frances Harris).

Jasper Dung first outlined the four sources of data utilised in this report: a survey of irrigated vegetable producers at four sites on the Plateau, a comparison of on- and off-road irrigated vegetable production in the three survey districts drawn from semi-structured interviews with farmers; detailed interviews on pests and diseases conducted with farmers at Barikin Ladi, and interviews with the Plateau State Agricultural Development Programme (PADP), the Jos Municipal Development Board, and the Fadama Farmers' Association.

He then went on to consider a series of environmental constraints, including soil fertility, water, and plant pests and diseases. Soil fertility is a major issue now that a large area of land on the Plateau is permanently cropped. Current fertiliser supplies, according to farmers, are inadequate but farmers do not appear to understand the varying utility of the fertilisers on sale. There is a need for research and extension re application rates, timing of applications, cultivation practices to maximise uptake and minimise leaching. The use of a variety of animal manures and town waste for maintaining soil fertility was also reviewed (though use of the latter is reportedly constrained by the shortage of tipper trucks.) The value of town waste as a manure was acknowledged although potential public health dangers (associated with the use of unsorted waste etc.) were noted.

Recommendations were made regarding testing of ground water for contamination by agrochemicals and fertilisers and also possible regulation of ground water supply: some

farmers run short of water before the end of the cropping season and there is also evidence of overwatering as a result of rotation of shared pumps.

The potential for rapid spread of pests and diseases under the conditions of intensive irrigated cultivation now practised on the Plateau was a further cause for concern. Diseases and pests are already a common problem for farmers in the survey area. Farmers have only a basic knowledge about crops and diseases encountered on their farms and depend on local chemical sellers for advice on chemical treatments. Again this lead to recommendations for research regarding plant protection, extension work on disease identification with farmers, and possible promotion of crop rotation practices. Linkages between input (fertiliser, agrochemicals and water pumps etc.) supply/extension services and road/transport access were noted.

## ***2. Marketing vegetables on the Jos Plateau: a review*** **(Paper by Gina Porter, Fergus Lyon and Alhaji Adepetu, presented by Alhaji Adepetu)**

Alhaji Adepetu began this paper with a short review of the history of Plateau vegetable production and the expansion of irrigated agriculture, drawing on his own work and that of others including Kevin Phillips-Howard and Hyacinth Ajaegbu. He then focussed specifically on agricultural marketing issues.

The methodology of the current study was described briefly, emphasising the direct application of the methodology employed in the 1991 study to this current study in order to give a longitudinal view of change. The market survey covers markets in the same three rural districts as in 1991 with the addition of extra urban and peri-urban markets. The same three questionnaires were used (one for district heads, one for village heads and elders and market heads, one for market traders) with the addition of a few supplementary questions relating to change in patterns of irrigated production, overall change in the villages and certain transport issues (see 3. below) in the district and village head questionnaires. A few extra questions relating to transport and credit were added to the trader questionnaire.

The pattern of rural marketing in 1991 was compared with the current situation, employing a set of overhead maps to illustrate the points made. In 1991 many off-road rural markets in the three districts had been in decline for some years, in part as a result of declining quality of access roads and partly due to a deteriorating transport stock; by contrast, there had been expansion of roadside markets as traders focussed on buying in easily accessible places. In areas where paved road access coincided with land suitable for irrigated production, market expansion was marked

By 2001 there had been a very substantial expansion in fadama vegetable production in both on-road and off-road areas (in one village the area under fadama production had reportedly quadrupled) and many more crops are now grown; this trend is associated with an increase in the availability of irrigation pumps, though petrol shortages



sometimes limit their use. The marketing pattern had also changed, as a result of further rationalisation. Preliminary analysis of the data suggested that the majority of rural off-road markets had continued to decline, despite the expansion of irrigated production in off-road areas, though there was some focus on bulking in a very few off-road markets located at some distance from the tar. At the roadside too, the decade had seen some rationalisation of marketing patterns, with growing emphasis on a reduced number of roadside market centres. The overall pattern appears to reflect changes in transport conditions discussed further in paper 3.

The marketing arrangements in 2001 - as in 1991 - showed strong linkages established between farmers and urban-based dealers, and a continued emphasis in supply to consumption centres outside the Plateau region, notably in southern Nigeria. There are various possible intermediaries in the chain from producer to consumer, but the perishability of many vegetables probably restricts the total number of intermediaries. A substantial portion of traders (over one-third) were found to be supplying farmers with credit as part of their marketing strategy in 2001. Farmers continue to bear the brunt of risk in these arrangements, however, since the crop is usually harvested before bargaining over prices with traders commences. Nonetheless, farmers generally perceive their relationships with dealers in a positive light. Despite the expansion in irrigated production, there appeared to be little regulation of marketing activity among farmer groups; consequently gluts are common.

It was stressed that a more detailed review of marketing conditions and comparison with 1991 awaits completion of the trader questionnaire analysis.

### ***3. Agricultural production and marketing on the Jos Plateau: transport perspectives.*** **(Paper prepared and presented by Gina Porter with Frank Owusu Acheampong)**

This paper first provided a background to the current project's transport component. Gina Porter began by emphasising the significance of access for a variety of purposes: the need for access to markets to sell produce, access to markets and service centres to obtain farm inputs including petrol for irrigation pumps, chemicals, fertilisers and irrigation hoses and pipes, access so that extension workers can visit farms, and associated need for access to urban areas for banking/credit purposes, secondary education, health care and consumer goods. Good access, it was emphasised, implies not merely presence of a road or track, but also transport; roads are not enough - a fact even now not recognised by many development agencies. Where perishable produce is marketed, as on the Plateau, the need for regular, reliable and efficient transport is especially crucial. This is most particularly the case in the context of the development of off-road irrigation sites.

The methodology for the studies in 1991 and 2001 was reviewed, noting basic transport/access questions asked in 1991 and the additional transport questions included in the 2001 survey. This time we included specific questions on fares to major centres, about motorised and non-motorised vehicle ownership in the villages and their location, about male and female patterns of transport ownership and use, about access to irrigated

farmlands from the villages (rather than just about market access), and about village labour contributions to road maintenance. In both years, the limitations of a purely dry-season study were noted.

Results of the 1991 study pertaining to access and transport were briefly reviewed and copies of relevant papers from the 1991 study circulated. At that time traders and farmers living in off-road settlements had raised transport as one of their main problems. The 1991 study concluded that one of the main reasons for the decline of off-road markets evident at that time was the poor condition of roads (particularly in the wet season), and the limited number of vehicles plying the unpaved roads. Thus women faced an enormous headloading burden (typically carrying their own and their husbands' produce) which for off-road women increased as off-road transport declined and markets disappeared in the SAP era.

Preliminary results of the 2001 survey were considered first with reference to motorised transport, then IMTs (Intermediate Means of Transport). Results suggested that so far as motorised transport is concerned some features have changed little since 1991: transporters continue to charge higher fares on bad than on good roads; off-road villagers continue to maintain roads to the village boundary as they did in 1991, since graders are still rarely available to assist with road maintenance; there continue to be long waiting periods for transport in some off-road villages, and there continue to be crop losses due to perishability/bad roads. However, there are more vehicles - particularly pickups - in every village included in the survey than there were 10 years ago, reportedly due principally to increased income from expanded vegetable production and improved access to spares. It is notable that these are almost wholly owned by men in every settlement. Nonetheless, the expansion of motorised transport has brought a massive improvement in access to service and market centres across the Plateau region. In some areas there are also now new motorable tracks which have been made to the new irrigation areas, though most produce is probably still headloaded from farm to village. However, for village to market transport, headloading has been substantially replaced by motorised transport.

So far as IMTs are concerned, there are two major changes, firstly a substantial increase in bicycle ownership, though their ownership and use is largely restricted to men, especially in Hausa communities. Secondly, achaba (motorbike taxi) services have appeared and operate throughout the region. This was entirely absent in 1991 and has had an enormous impact on villagers' perceptions of accessibility to markets and services. The value of these services is particularly appreciated in times of emergencies.

Frank Acheampong Owusu (who had undertaken a short field programme with the project collaborators since arriving in Nigeria for the workshop) then presented a brief synopsis of the Ghana rural access and IMT projects. He emphasised the much lower levels of motorised transport in off-road villages in coastal Ghana than on the Plateau, the very low level of IMT ownership and use, and limited perceptions of IMT potential, by comparison with northern Nigeria, associated limited availability of support services (bicycle menders) in coastal Ghana, and the more limited commitment to community road maintenance in off-road areas.



## V SUMMARY OF GROUP DISCUSSIONS

The participants were asked to split into three discussion groups (environment, marketing and transport), according to their interests. Fortunately, there were sufficient numbers in each group to provide diverse perspectives in the ensuing debates. Verbatim notes were taken when possible during the discussions and are presented in Appendix 4. In this section a very brief review of the major topics discussed in each session and reported back in the feedback session is provided.

In each group participants were requested to first review the relevant presentation and comment on it, then consider, if they wished, a set of questions/topics prepared by the researchers. However, groups were encouraged to move beyond these topics should they identify more significant issues for discussion.

### Transport Discussion Group

Suggested terms of reference for discussion:

- 1) Comments on presentation findings
- 2) Are labour-based methods of road construction/maintenance being promoted on the Plateau? If not, why not? If so, details.
- 3) To what extent are women disadvantaged by limited ownership/access to IMT/motorised transport?
- 4) Does IMT ownership still give people status now that ownership of motorised transport is expanding?

The discussion group followed the outline above.

(1) They confirmed the presentation findings, and noted, additionally, the significant role of children in portering to markets and bulking points. (It was suggested at a later point in the discussion that IMT ownership could reduce head portering by both women and children.)

(2) They emphasised the strength of community action in road maintenance and other development activities in off-road villages. The role of the defunct DFRRRI (Department of Feeder Roads and Rural Infrastructure) was debated and it was concluded that during the period of DFRRRI activity community self-help initiatives on road maintenance and construction declined because DFRRRI paid contractors. (Prior to DFRRRI almost all road work was conducted by communities themselves, especially in off-road areas.) However, since the demise of DFRRRI there has been a revival of community efforts in road maintenance. Those who drive on the community roads may sometimes be asked by villagers (often schoolchildren or villagers without jobs) who are filling potholes to contribute a small amount as they pass: this is an informal and voluntary collection and some commercial drivers will refuse to pay. Reference was made to the recent UNDP workshop on rural road maintenance, which had encouraged the combination of local government with community efforts to maintain roads. Some local government councils

reportedly give prizes to those who do community-based work including road maintenance. In some communities local government taxes are withheld if the LG does not assist with their roads.

(3) There was some disagreement between women and men in the group as to whether women were disadvantaged by limited ownership/access to IMTs and conventional transport. Men pointed to a recent increase in ownership of vehicles by women and suggested that the situation for women was improving in many communities, while women emphasised that in rural areas women 'are subdued' in a situation where men have the control of household assets. [In the open discussion following the presentation of group reports, a trader member of the audience observed, 'to see a man carrying things on his head in our culture is not allowed'].

(4) The group broadly agreed that IMT ownership - notably ownership of motorbike taxis - is still considered an achievement, but does not confer status in the way it once did.

### **Marketing Discussion Group**

#### **Suggested terms of reference for discussion:**

- 1) Comments on presentation findings
- 2) To what extent are farmers restricted from selling in markets? Is this good/bad?
- 3) Is there any regulation between village areas or groups of farmers regarding periods for selling produce?
- 4) Has there been an increase in the role of rural traders (assemblers) because of the decline of off-road markets?

The discussion group largely followed the outline above.

(1) Additional comments from the group were that ownership of markets is concentrated in the hands of middlemen and are thus buyers' markets. One solution could be to have farmers markets. [When this suggestion was made in the group presentations there was some debate and the comment from the audience that farmers generally haven't enough time to market themselves seemed to be widely accepted.] Also it was emphasised that farmers do not generally sell directly to consumers and that although middlemen perform important functions in the markets, touts (yan wazi) need to be eliminated.

(2) Restrictions were observed to operate in the markets to the detriment of farmers. Again, the role of touts was noted. It was emphasised that farmers unions are not effective while there is unionisation of middlemen. The lack of an efficient transport system was viewed as a restriction on the effective operation of markets: bad feeder roads, insufficient vehicles and fuel scarcity contributed to transport problems. The lack of storage/preservation facilities was also noted.

- (3) There is some informal regulation by village heads who try to enhance the ability of farmers to take advantage of higher prices. Some villages hold meetings to ensure gluts are avoided, for example villages which specialise in certain vegetables.
- (4) The group thought that there had been an increase in rural assemblers. Many traders have retired to become farmers and then do assembly as well. Some become farmer-transporters by buying vehicles, which they use to take produce to roadside markets. They take their own and the produce of other people to the road. This encourages roadside markets to grow. Some have become speculators.

### **Environment Discussion Group**

#### **Suggested terms of reference for discussion:**

- 1) Comments on presentation findings
- 2) What role should government play in environmental management?
- 3) Has increased use of water/water pumps had an impact on the water table? and on wells/boreholes?
- 4) Is there any farmer regulation of production (e.g. closed seasons) to reduce insect infestation and plant disease?

The discussion group mostly followed the outline above, but two additional topics were included by the group: (5) land ownership/access/competition and (6) land reclamation.

- (1) There was general agreement with the presentation findings. Comments were added regarding issues of land management. The high cost of and limited access to farm inputs - pesticides and fertilisers - was noted, as was the need for more feedback of research and technical assistance through agricultural extension officers to farmers. There was some variation among group members as to the extent to which farmers were aware of adulteration of inputs.
- (2) Government was seen to have a role in environmental management in terms of controlling the use of inputs such as water and town refuse and, secondly, in determining the safety of products. They should make environmental laws and empower the farmer. The community is not always necessarily the right agent to make decisions. However, it was recognised that there are difficulties in ensuring enforcement of legislation.
- (3) The group concluded that water pumps are having an impact on the water table. They saw a need for better water management and noted that there are problems regarding water quality and quantity (though with spatial variations). There was concern that vegetables may be being contaminated by polluted water and other inputs. The need to assess concentrations of trace metals in vegetables was noted. One group member from PADP suggested that Fulani herders need to be included in farmer associations so that designated grazing areas can be established: the expansion of irrigation creates conflict regarding access to water for grazing purposes. He suggested that there is a need to create water users associations where more than 5-10 people use the same water source so that over-pumping does not occur.

- (4) This question was expanded by the group to cover soil fertility enhancement as well as pest control. They reported that there is no regulation to control production levels, that there is a need to introduce crop varieties resistant to pests and disease, a need for quarantine services to reduce possible infestation problems, a need for crop rotation and to reintroduce organic farming to enhance soil fertility.
- (5) Land ownership/access/competition. The group concluded that there was a need for land allocation to avoid problems of conflicts arising from competition for land and land disputes (particularly with reference to grazing).
- (6) Land reclamation. The group suggested that government ecological funds should be used to reclaim land and not for other (non-ecological) purposes. Also there should be a categorisation of derelict lands and the use of specific reclamation measures with 'citizen participation'. It is important that the community is involved in deciding which mine ponds should be reclaimed, left as they are, or improved.

## **VI SUMMARY OF PLENARY SESSION: where do we go from here?**

The aim of this session, chaired by Professor Olaniyan, was to identify knowledge gaps and areas where further research on rural development issues is needed on the Jos Plateau. The workshop provided an ideal opportunity to undertake this exercise, given the wide range of stakeholders and academics participating. During the course of the discussion a wide range of issues were raised:

### **(1)Farmer-trader relations and the role of the middleman.**

Is there potential for irrigation farmers to expand direct selling to consumers, for example through cooperatives? Would this prove advantageous to farmers? There is a need to distinguish between various types of middlemen currently operating in the region and to identify ways in which farmers can be protected from touts (as opposed to bona fide middlemen).

### **(2) Farmer regulation of crop sales.**

Is there potential for farmers to regulate crop sales to avoid gluts and low prices? How widespread and effective have farmer efforts at staggering of planting dates been in reducing gluts? How can problems of water shortage towards the end of the dry season be overcome if planting dates are staggered?

Is there potential to improve the cohesion of *fadama* farmer associations for this and other purposes?

### **(3)Water availability for irrigation.**

Farmers need guidance on water application for the more efficient use of the limited water supplies available. This requires research regarding optimum water application rates/patterns for specific crops etc.

### **(4) Development of suitable herbicides/weed control in intercropping systems**

Weeding is very labour intensive, which encourages monocropping. Farmers are encouraged to intercrop but available herbicides are crop specific.

#### (5) Improvement of input supplies

Farmers face considerable difficulties in obtaining inputs e.g. fuel for irrigation pumps, appropriate fertilisers and a wider variety of seeds - and access to tractor services at times when they need them. There is a need for research on ways of expanding and improving local seed production.

#### (6) Water quality

Concern was expressed about the quality of water used for irrigation. There is a need for detailed studies of water quality (presence of heavy metals etc.) and its impact on various crops on the Plateau.

#### (7) Gender issues

Irrigated farming is predominantly undertaken by men, whereas women are more active in less lucrative rain-fed production. Why are there so few women in irrigated production? [One suggestion was that women 'don't like hard work'. Do women want greater involvement in irrigated production? If so, what measures could be employed to improve their participation? There is a need to research the implications of land tenure as a potential factor limiting women's participation.

#### (8) Crop storage and processing

Improved storage and preservation could help vegetable farmers reduce their losses during periods of glut. What current local methods are used to aid storage and for processing? Why have previous attempts to introduce processing failed? Do foreign investors have a role to play in the provision of storage (refrigeration) and processing facilities.

#### (9) Access to credit

Farmers face severe problems accessing funds particularly at the beginning of the farming season. How can access to loans be improved?

#### (10) Insurance against crop failure

Is there potential to introduce an insurance scheme, which would enable farmers to survive major crop losses due to failure of the rains etc.?

#### (11) The profitability of irrigated vegetable production

We do not know how profitable irrigated vegetable production is currently. (Cost-benefits over rain-fed production under various conditions re access etc.)

### VII CONCLUSION

This one-day workshop brought together a wide range of stakeholders and generated useful debate not just about current conditions, as reported in the presentations, but also about areas where further research is needed. In many respects the discussions were extremely positive. 1991-2001 has been a decade of much change on the Plateau. During the surveys in each village, when the village head and elders were asked how conditions overall compared to ten years ago, it was remarkable how positive perceptions were. The improvements were expressed in terms of agricultural expansion, more children in school, better health services and improved access to transport. Given the crucial significance of the Plateau as a source of both tropical and semi-temperate food crops - particularly fresh fruit and vegetables - in West Africa, it is clear that much research needs to be done to assist the improvement and further expansion of agriculture



in this highly productive region. This is an area which is favoured not only by its specific climatic and environmental attributes but also by a strong spirit of enterprise and self-help among its resident populations which surely merits support.

**APPENDIX 1:**

**PROGRAMME**

8.00-8.30 Registration

**8.30 - 9.00 Welcome address: Jasper E. Dung, Department of Geography, University of Jos**

**9.00 - 1.00 Morning session (Chair: Alhaji A.A. Adepetu, Department of Geography, University of Jos)**

9.00 - 9.30 *Environmental issues and vegetable production on the Jos Plateau - J.E. Dung, University of Jos*

9.30- 10.00 *Marketing vegetables on the Jos Plateau: a review - Alhaji A. Adepetu, University of Jos*

10.00 - 10.30 *Transport perspectives - Dr Gina Porter and Mr F. Owusu, University of Durham, UK*

10.30 - 11.00 Coffee break

11.00 - 1.00 Group discussions

1.00 - 2.00 Lunch

**2.00 - 5.00 Afternoon session (Chair: Professor John Olaniyan, Department of Geography, University of Jos)**

2.00 - 3.00 Reporting back from the groups

3.00 - 4.30 Where do we go from here? Identifying future research foci. Discussion led by Professor J. Olaniyan

4. 30 Concluding remarks

5.00 Tea and departure

**APPENDIX 2: LIST OF PARTICIPANTS (in order of registration)**

<b>Name</b>	<b>Institution/address/occupation</b>
1. Godwin Onyia	Building materials market, Jos. Farmer/trader and chair of Irish Potatoes Union of Building Materials market.
2. Adamu Vou	Village head's representative, Kushe Rabak. Farmer
3. L.S. Rikko	Department of Geography, University of Jos, staff member.
4. Alex D. Wash	Plateau Agricultural Development Programme, Jos. Director: extension services.
5. Abarshi Danlami	Riyom L.G.C. Secretariat. Staff member (agricultural and natural resources dept.).
6. Emmanuel J. Akila	Saf Mozat Palace, Ropp district. Barikin Ladi LGA. Traditional ruler.
7. Margaret Pasquini	University of Durham, PhD student based at Jos.
8. G. B. Ayoola	University of Agriculture, Makurdi. Staff member.
9. O. Olaniyan	Department of Geography, University of Jos, research assistant.
10. John Jiller	Fadama Users Association, Jos. State Chairman,
11. Benjamin Gokum	Fadama Users Association, Jos. Project Secretary.
12. D. Dabi	Department of Geography, University of Jos, staff member.
13. Ibrahim K. Panle	COCIN Rural Development Programme, Panyam (NGO). Staff member.
14. Vincent Akoto	Ministry of Agriculture, Ghana. Civil servant.
15. Kathrin Blaufuss	University of Durham. Research staff.
16. Frank Owusu Acheampong	University of Durham. Ghana project coordinator.

17. Vincent C. Ihemegbulem	Department of Geography, University of Jos, Head of Department.
18. Adewale Olowolafe	Department of Geography, University of Jos, staff member.
19. Jonah Abaku	Riyom L.G.C. Civil servant (agriculture and natural resources dept.)
20. Sunny Okwudire	PEDA (Plateau agricultural NGO), Jos, agronomist.
21. Jessica Agaye	Department of Geography, University of Jos, staff member.
22. Leonard S. Bombom	Department of Geography, University of Jos, staff member.
23. John Y. Dung Gwom	Department of Geography, University of Jos, staff member.
24. Davou Sakai	Ropp District, District Head's representative.
25. Luka Dalyop	Riyom District, District Head's representative.
26. Gyang Lukā	Barikin Ladi, representative of Gwom Kwok (chief of Barikin Ladi.)
27. M. O. Osagbemi	Department of Geography, University of Jos, staff member.
28. K.Y. Jibarang	Plateau Agricultural Development Programme, Jos, civil servant.
29. S.E. Jumbo	Department of Geography, University of Jos, staff member.
30. Nankin Bagudu	League for Human Rights (NGO) Lawyer.
31. Ramatu A. Umar	League for Human Rights (NGO) Lawyer.
32. Botleng D. Pam	Marketing Association/Revenue Committee Chair, Barikin Ladi LGC.
33. Murtala Muhammed Badamasi	University of Jos, postgraduate student.
34. J. N. Gana	University of Jos, postgraduate student.

35. Isa Aliyu Ibrahim	University of Jos, postgraduate student.
36. Daniel Kopkang Bumpung	Ministry of Agriculture and Natural Resources (agricultural services dept.). Civil servant.
37. Okuchigire Onyechi Lucy	University of Jos, postgraduate student.
38. Daloeng Hyacinth Madaki	University of Jos, staff member.
39. Odah Odeh	University of Jos, staff member.
40. E.N. Aguigwo	Department of Geography, University of Jos, staff member.
41. Joshua B. Dung	Barakin Ladi, representative of Gashet Fan community.
42. Hon. Pam Dung Bot	Executive Chairman, Barikin Ladi LGC.
43. Peter Klash	Barikin Ladi, G.M. PAMDUNCO.
44. L. O. Balogun	Kaduna. Civil servant.
45. Manshik Gwamzhi	Barikin Ladi, LGC. Civil servant.
46. Cordelia Ajuem	University of Jos, Public administration.
47. Paul Baser	University of Jos, staff member.
48. Steve Dagoet	State Library Board, staff member.
49. Musa Timjah	Riyom LGC. Traditional ruler of Ra Hoss.
50. J. A. O. Olaniyan	University of Jos, staff member. [Workshop chair]
51. Jasper Dung	University of Jos. Project collaborator.[Workshop organiser].
52. A.A. Adepetu	University of Jos. Project collaborator. [Workshop chair]
53. Gina Porter	University of Durham. Project leader.



## **APPENDIX 3: PRESENTATION OUTLINES**

**Paper 1. Environmental issues**

**Paper 2. Agricultural marketing**

**Paper 3. Transport**

**Irrigated Vegetable Production on the Jos  
Plateau:  
An Assessment of Environmental Constraints**

**Frances Harris, University of Kingston, UK**

**and**

**Jasper Dung, University of Jos, Nigeria.**

**March 2001**

# **Outline of Presentation**

## **1. Introduction**

## **2. Method**

## **3. Environmental Constraints**

### **3.1 Soil Fertility**

### **3.2 Soil Ammendments**

### **3.3 Water**

### **3.4 Pests and Diseases**

### **3.5 Public Health**

### **3.6 Post-Harvest Issues**

### **3.7 Input supplies**

## **4. Conclusions**

**Marketing vegetables on the Jos Plateau:  
a review**

**Gina Porter, University of Durham  
Fergus Lyon, University of Middlesex  
and  
Alhaji A. Adepetu, University of Jos**

**April 2001**

## **Marketing vegetables on the Jos Plateau: a preliminary review**

- 1. Introduction: a brief history of Plateau vegetable production**
- 2. Studies of Plateau vegetable marketing**
- 3. Methodology for the current study**
- 4. Patterns of rural marketing:  
    Conditions in 1991  
    Conditions in 2001**
- 5. The role of urban markets**
- 6. Interactions along the market chain**
- 7. Implications for smallholder vegetable producers**



**Agricultural production and marketing on the Jos  
Plateau: transport perspectives**

**Gina Porter and Frank Acheampong Owusu  
University of Durham, UK**

**April 2001**

# **TRANSPORT PERSPECTIVES**

- 1. Introduction: the significance of transport  
for market access**
  
- 2. Transport/access research on the Jos Plateau**  
**Methodology**  
**Preliminary results: changes 1991-2001**
  
- 3. Transport/access research in Ghana**  
**The research area**  
**Methodology**  
**Results of work in Ghana**
  
- 4. Comparisons between Nigeria and Ghana**  
**Motorised transport services**  
**Intermediate Means of Transport**

## **APPENDIX 4: DETAILED REPORT OF THE TRANSPORT GROUP**

### **DISCUSSION**

This section was compiled by Kathrin Blaufuss.

#### **Suggested terms of reference for discussion**

- 1) comments on findings
- 2) are labour-based methods of road construction/maintenance being promoted on the Plateau? If not, why not? If so, details
- 3) to what extent are women disadvantaged by limited ownership/access to IMT/motorized transport?
- 4) Does IMT ownership still give people status now that ownership of motorized transport is expanding?

#### **Discussion:**

Jonah Abaku (Riyom Local Government Council) was appointed chair for the discussion.

**Jonah Abaku:** we are to discuss findings of the study presented on transport services in Nigeria and Ghana. Following questions will be out terms of reference for discussion.

- 1) comments on findings
- 2) are labour-based methods of road construction/maintenance being promoted on the Plateau? If not, why not? If so, details
- 3) to what extent are women disadvantaged by limited ownership/access to IMT/motorized transport?
- 4) Does IMT ownership still give people status now that ownership of motorized transport is expanding?

**Prof. John Olaniyan:** Are there any comments or any points you would like to make?

**Man:** On this issue, all transportation systems are as it was reported.

**Man:** Ladies carry on their head or back, because of the lack of transport in some areas were crops are grown.

**Man:** In some villages, there are not even access roads, but only footpaths and therefore you need to headload to a point where it can be hauled further. Women have to headload.

**Prof. John Olaniyan:** This point was already made. But so far no point was made about children; they are also included in head-portage. Children are also involved in head-portage to markets or bulking points. All other findings are reported in the presentation. The research is accepted as such.

**Jonah Abaku:** Let's move to question 2.

**Prof John Olaniyan:** We are to discuss the methods of road construction and maintenance.

**Vincent Akoto:** What I heard is that some of the roads are done by locals. Is it communal labour, or are they contributing money for the construction/maintenance?

**Man:** It is both, either by contributing money, or by doing it themselves, but it is more common to do it yourself.

**Vincent Akoto:** Are special days assigned for this activity?

**Jonah Abaku:** I have seen in the area where roads are not in a good condition, communities would normally act upon it and it is from their own contribution that culverts are built, as for that you will need specialists. But for other areas, people come together to fill in roads with stones and maintain them. It is only for special areas that you need to contribute financially. Off-road communities are more community development orientated. They act themselves. But overall, both occurs, the contribution of money as well as own labour inputs.

**Leo Bombom:** What is the extent of the encouragement to act for these villages?

**Prof. John Olaniyan:** Before we drift off, let's go and look at labour-based methods. The state government could pay for it?

**Jonah Abaku:** Most of the off-roads are done by communities themselves and not by the local government. Before the local government comes in, the community will need to have shown that it did something, before they will get assistance from the local government. But the assistance is competitive. Local government reimburses communities to certain percentages, who have undergone construction. It is...

**Prof. John Olaniyan:** This is now 50%. The other 15% has to come from the community and the remaining 35% has to come from somewhere else. Hence, the communities are complemented by the government and prizes are given to the communities. What can we say since the advent of DFERRI and the level of local self-help? Was the initiative killed by DFERRI, or promoted?

**Jonah Abaku:** DFERRI promoted self-help.

**Prof. John Olaniyan:** But was it not DFERRI, who was carrying out projects?

**Woman:** DFERRI assisted people on methods and possibilities. It gave education.

**Man:** In the past, DFERRI carried the work out themselves and then if DFERRI did not come again to maintain the roads, they would deteriorate. But as the government came to do the roads, the people thought that the government had taken full responsibility.

**Prof. John Olaniyan:** Since DFERRI is gone, do you think the spirit for self-help has picked up again? The spirit of self-development fell during DFERRI.

**Jonah Abaku:** DFERRI wanted communities to identify their problems, but they were over-riding the people and they did not get a chance to participate.

**Man:** They tried to make the communities understand that the road belonged to them.

**Prof. John Olaniyan:** DFERRI came to promote labour-based methods, but it took them away from local initiatives. DFERRI was contract-based. There was conflict between DFERRI and the communities. Now DFERRI is no longer there, so what is happening now in terms of responsibility?

**Jonah Abaku:** The communities are fully aware to take care of the roads.

**Prof. John Olaniyan:** Are you saying that the spirit of self-development is there again?

**Gina Porter:** The feeling of ownership seems much higher in this part of Nigeria than in coastal Ghana.

**Prof. John Olaniyan:** The spirit got almost killed during DFERRI.

**Jonah Abaku:** the communities are doing better than the government, because they can easily acquire land, since it belongs to them.

**Prof. John Olaniyan:** This is due to community-cultural laws. It is our joint land and therefore nobody would object to use this land for construction, whereas if the government came in, they might not be willing to give their land away.

**Man:** During DFERRI, they were not so much interested in roads. They were not paid. DFERRI paid contractors.

**Woman:** There was apathy

**Gina Porter:** DFERRI paid them?

**Prof. John Olaniyan:** They only carried out few improvements on existing roads and then claimed them to be their roads

**Man:** But now, it is about calling back. The spirit is coming back.

**Woman(student):** But I don't think there is the same enthusiasm as before. They are not as interested in roads now.

**Prof. John Olaniyan:** Even though there is a revival, it has not reached the same level.

**Woman(NGO):** I disagree. Now the communities are more enthusiastic, because they are doing it on their own. The government came promoting better ways, but did not succeed. They feel as if the government has failed them and now they feel more enthusiastic, because they know it is their own land and development.

**Man:** The best thing is to join hands to make roads better. There is more enthusiasm now.

**Gina Porter:** There is more transport, more....

**Man:** People make sure that the road to his house is maintained by him or his children.

**Prof. John Olaniyan:** the past-DFERRI community participation is even greater than before. It seems more personal and there are economic incentives.

**Vincent Akoto:** Cars passing, are they charged for the road use?

**Jonah Abaku:** They don't charge anything, but if you feel to pay them for plying the road, you can.

**Prof. John Olaniyan.** School-children or people without employment fill potholes and charge, but it almost led to trouble, because some commercial drivers refused. The maintenance is voluntary work.

**Jonah Abaku:** Yes, nobody asks for it. It is not compulsory.

**Man:** You just give some change and continue.

**Prof. John Olaniyan:** They are not charges as in you have to pay before you pass. There is no formal charge.

**Vincent Akoto:** Will that occur in the future to help maintain and build the roads?

**Prof. John Olaniyan:** It is difficult to predict the future. If traditional way, esp. in the rural areas, it would be difficult to drop it. Maybe it is an idea to charge producers if the community improves the road and keeps maintaining. As for now in this part of Nigeria, they only charge on an emergency basis, where floods have washed away culverts etc. If they push you across the spot, they charge, or they lift you across for a charge, but these are not really common, but it is a standard practise.

**Jonah Abaku:** If the local government does not come in to help, the communities may refuse paying revenue. They become so angry that they refuse to pay.

**Prof. John Olaniyan:** It is a charge on produce, but it is not revenue on roads, they are holding back.

**Jonah Abaku:** The local government assists in different areas, because the communities might not have money. The revenue money is then used for this assistance.

**Prof. John Olaniyan:** Communities pressurize L.G.C. into assisting them in road construction and maintenance.

**Woman(student):** When divers ply the road and are compelled to pay a charge: those who own pick-ups in the village will have participated in the construction and if they were charged now, they would pay double. It is people in communities, which have pick-ups and they will have contributed to their community construction.

**Prof. John Olaniyan:** They still need to pay to the local government for their produce. It is best to catch them on the road. It is not a road tax.

**Jonah Abaku:** Next discussion point. Are woman disadvantaged?

**Woman(NGO):** We have a male-dominated society. In so many communities, they [women] are not even allowed to own property. It is a status symbol to have a bicycle. Men feel that if a woman now owns a bicycle, she would be equal to him, but the men want to be a step ahead. The women need to carry on their head or back; they need to walk long distances to the market, rather than riding a bicycle and Achaba. It puts strain on the legs. They have limited access to IMTs and a heavier burden. This will affect their health and life span.

**Prof. John Olaniyan:** I agree that they are disadvantaged, but look at own communities, is it not changing? I understand that a great deal of achabas and taxis are actually owned by women, but hire them out.

**Jonah Abaku:** That is correct.

**Prof. John Olaniyan:** Yes, in proportion fewer women own IMT, but the situation is changing.

**Woman(NGO):** I don't know.

**Prof. John Olaniyan:** Is it changing:

**Woman(NGO):** Mostly in urban areas, but in rural areas, they say it is not lady-like to ride a bicycle.

**Gina Porter:** Hardly any women own transport in the survey area.

**Jona Abaku:** It is very difficult to use vehicles in rural areas. Women are very fearful to pass on those roads not to get accidents.

**Vincent Akoto:** You need to encourage them.

**Woman(NGO):** Women are even better drivers. We drive, we fly airplanes. It is very chauvinistic what you said. Rural women are subdued and not as exposed as in the urban areas.

**Woman:** In rural areas, men own the land. You only have what your husband has, even if the farm is given to you. Men give you only peanuts, while you have to work. The level of income for women is much lower.

**Prof. John Olaniyan:** This is not applicable here. This study is from elsewhere. Women here own produce, but are expected to take care of children. If she is Birom, she will be working, while I drink beer. She will have children and therefore will be allowed to work on the farm and I will have more time to drink and even get a 4<sup>th</sup> wife. It is changing, it is a period of transition.

**Jonah Abaku:** In the future we will charge them. [road users]

**Prof. John Olaniyan:** Already now, some drivers take the money for the transportation before-hand. It was that after the selling of the produce, they would be paid, but now there are gluts in the market. If you could not sell, you cannot pay the driver, but he has already given you the service.

**Jonah Abaku:** In certain communities, not in all communities are women disadvantaged. You see women having fleets of lorries just south of Barakin Ladi.

**Prof. John Olaniyan:** How can we accelerate what is already developing?

**Woman:** The level of education and the age when women get married are changing.

**Prof. John Olaniyan:** It is improving?

**Gina:** What about question 4?

**Jonah Abaku:** Even if you have a motorcycle, you are not anything now.

**Man:** Yes, it is an immense achievement.

**Prof. John Olaniyan:** It is still an achievement, but not so much status.

**Gina Porter:** Will that mean that women might be allowed to own?

**Jonah Abaku:** Women are allowed to handle anything, there is no deprivation. But she feels, she cannot ride the bicycle, she does not like it, because she will expose herself openly outside. But there are no restrictions.

**Prof. John Olaniyan:** It is not a question of not being allowed; if women would buy bicycles, nobody would say anything, but it is not...

**Woman:**...encouraged.

**Prof. John Olaniyan:** It is a lingering on of old mentality amongst women. When motorcycles were the in-thing, many women were riding it, but now you don't see many anymore. They have not been restricted. There was a time when larger numbers of women used to ride motor-cycles.

**Jonah Abaku:** Because of the modern way of dressing, they don't want their hair blown and don't like motor-cycles.

**Prof. John Olaniyan:** There is the concern for safety. Women are easily scared. I saw women on bicycles and motorcycles even in villages, but now not anymore that much. In the city, there used to be more than now.

**Woman(NGO):** Most Achaba drivers are known to be rough. There is the association that motor-cycle riders are rough. Women would not want to be associated with rough. It is more classy to drive in a car.

**Woman(student):** More people can afford cars now. It is not so much class, but more cars are available. People can afford them. Once you have a car, you don't go on a motor-cycle. It has not to do with class. Before when you had a motor-cycle, you were a big man, but now it is not anymore.

**Vincent Akoto:** Is it the same in rural areas?

**Woman(student):** Yes

**Woman(NGO):** I would only ride achaba, if there was no other means of transport and the distance is far. Cars are preferred, because they are generally safer and it does not blow our hair. It is uncomfortable to sit on them with your clothes. The skirt comes up and you are conscious of pulling your skirt down.

**Gina:** Astride or straight?

**Woman(NGO):** You have less balance sitting astride.

**Jonah Abaku:** It is not allowed anymore to sit astride. There were many accidents.

**Gina Porter:** Is this why women are not riding as much anymore?



**Woman(student):** It might be that this is why women are riding less these days.

**Woman (NGO):** In some societies, women are not allowed to own property, even if a woman markets her produce, whatever she will earn needs to go to the husband. Whatever he will give her, is all she can use.

**Prof. John Olaniyan:** This does not occur so much in Birom culture.

**Woman(student):** On the Plateau, you can marry up to 10 wives and they work for you on the farm.

**Woman(NGO):** Even amongst educated women, when they collect their salary, they have to give it to their husbands.

**Woman:** They rate women with an education lower than a farmer women in the bride price. The bride price goes down for white collar jobs.

**Woman:** In urban areas, bride prizes increases with education.

**Prof. John Olaniyan:** Here, it is one of the areas with highest literacy rates than in other states and the Christian belief has served to ameliorate tendencies to equalize women.

Reading out of points noted for presentation: accompanied by discussion:

**Prof. John Olaniyan:** the local government only complements community efforts. Local people build own roads.

**Jonah Abaku:** Local people take care.

**Man:** On the 14<sup>th</sup> Feb, there was a workshop held on rural road maintenance by the UNDP. It was about practical work. It was not promoting rural roads, but talking about the local government complementing the communities, it is maybe worthwhile to mention the UNDP effort.

**Jonah Abaku:** UNDP came in where local government has taken over. UNDP can only participate where the road is taken over by state government. But the typical areas where farmers are, is where roads pass through their land.

**Man:** the workshop was more about how to use simple implements to maintain and construct roads. It was to enlighten how to go about it. It was more educational focused.

**Jonah Abaku:** Let's talk about solutions and recommendations

**Woman:** in terms of labour methods.

**Prof. John Olaniyan:** let's talk about point by point. Child labour first. Child labour varies according to definition, it may or may not include the carrying of loads.

**Woman:** In African culture, children are encouraged to labour. If it comes to filling potholes, look at the age of those participating. If it is a secondary school child, they can assist and be encouraged to fill potholes for some small tips. They start learning agric. Sciences in school. We had to plant. If children are not forced to work and if they are not too little, it is acceptable.

**Jonah Abaku:** Under-age children should not be allowed to fill. Children should be given incentives.

**Prof. John Olaniyan:** We should not only discuss potholes, but transportation. Should child-labour be discouraged? Parents should be discouraged in using head portage and using their children for head-portage.

**Kathrin Blaufuss:** You will not succeed, by just encouraging parents not to use the help from their children. They are intrinsic reasons, why this occurs in the first place. If you aim at a sustainable solution to avoid children having to burden heavy head-loads, you



need to change the institutionalised social conditions. If you can achieve that the labour input from children is not needed anymore, you will more likely succeed in freeing them from the headloading. Just to verbally discourage parents is not the best way forward.

**Woman:** NGOs or governments should maybe promote the use of IMTs to assist in the marketing. Women need to be given access to transport as this would reduce the necessity of child labour.

**Prof. John Olaniyan:** Ownership of IMT should be encouraged particularly in remote off-road communities. This will reduce women's and children's head portage and burden in places.

**Prof. John Olaniyan:** Expanding the rural road construction/maintenance, but necessarily with the approach taken by DFRRRI programs.

## **APPENDIX 5: DETAILED REPORT OF THE PLENARY SESSION: Where do we go from here?**

This section was prepared by Kathrin Blaufuss.

**Prof. John Olaniyan:** Where do we go from here? Let's identify research areas that should be carried out. Are there areas you feel that you have problems and would like them to be addressed, e.g. producers selling directly to consumers: there was some controversy and therefore, there exists some potential for research. Social equity reasons, why people feel they should e.g. when they are not allowed to sell in the markets. I was once prevented to buy chicken. I had to wait for him to come with his price even in the presence of the producer. To what extent can we accept this. There might be reasons of division of labour or economical reasons etc.

**Joshua Bott [Fan LGC]:** I observed an issue, which the other men were discussing about marketing. Actually like you, I work in the field and we have problems in the markets with the middlemen and to use to buy from us. How can we eliminate middlemen, so that farmers can sell to consumers? I don't know how to educate farmers to have a union, because they are not having a union, it is a big problem for the producer. There is nothing we can do if somebody does not want to buy or sell.

**Man:** Water for irrigation is a problem. In our area, a loan was issued for washbowls [shallow 6 metre wells] and pumps. We wanted pumps and wash bowls in the area. They told us that research was undertaken - that our area is not good for wash bowls. But we still have problems with water. Is there anything you can do about it?

**Prof. John Olaniyan:** It seems that you are asking for alternative technology solutions. There should be a recommendation for alternatives. Research should address recommendations.

**Alex Wash [PADP]:** Actually the wash bowl issue was tied to specific external funding - the aim was to find water just beneath the surface, underground water. The Plateau was initially not considered. The project was supposed to address problem areas and a survey had indicated potential areas suited for wash bowl developments. There was no point in giving that loan package to farmers where this technology was not feasible. Already dry season farmers are organised. Fadama have been organised into fadama associations. There are too many associations. 1353 associations exist as of December last year. These are too many to be meaningful, as it is difficult to work with so many, so we organised them into sections. Each local government had elections representing those associations with the intention that they are unionised and more internally cohesive. Now, they have been unionised, it is up to them to make decisions. They [farmers] are supposed to work together to help get rid of anything inhibiting marketing. The ball is now in their court.

**Prof. John Olaniyan:** Are they like cooperatives?

**Alex Wash:** Yes, but must be very united. If an association is strong it can do things. We need to find ways of strengthening the Fadama farmer Users Associations.

**Prof. John Olaniyan:** Unions of middlemen are more effective than unions of farmers. There were incentives to bring them together, but what they make of it is their problem. But the problem still remains.

**Man:** Co-operatives work in other areas, but if they are not strong, it is a problem. Farmers need to sell at the market.

**Prof. John Olaniyan:** Co-operative systems seems to be far more formal than associations. Co-operatives are ruled by law. If you are a member, you cannot go against it.

**Man:** If you want an association to be strong, you need to make rules.

**Prof. John Olaniyan:** Study into co-operatives and association regulation; need for studies on alternative technology for the area.

**Alex Wash :** Dry-season farming is intensive. The major constraint is the weed. Farmers are encouraged not to use mono-cropping, but the problem arises due to the cost of labour. Available herbicides are developed crop specific, which limits their use. Hence, if you are applying multi-cropping, how would the farmer use herbicides if they are specific. The farmer would have to pay for the extra labour. This needs a critical look. There is abundant water now, but it cannot last. Increasingly people are coming in and the water will not be enough. It needs investigation. We've tried to find out about specific water requirements of each crop so we can economise on water use. It may be that farmers could irrigate less, depending on the soil. How many times do farmers irrigate. Crops have specific irrigation times. As for the farmer, as soon as the surface is dry, he thinks the plants need water. Continuous irrigation will require fuel. The amount of water needed is depending on many issues and therefore it is difficult to tell the farmer the quantity of water needed for irrigation of his plot.

**Chair of potato association, building material market:** On marketing, middlemen coordinate farmers and consumers and they need to stay. E.G. in companies, there must be a co-ordinator between fluctuations of supply and demand. There is a difference between the middleman and the tout: If you want to buy potatoes, you move to the Building Material Market. We stay inside sheds with numbers. We are protecting the farmer. We take the risk. The buyer might not give all the money. Some people come without a shed. They are coming with no address. They operate and then go away [touts]. I get so many complaints as Chair. We are against touts.

**Alhaji Adepetu:** They are parasitic and exploitative. What have you done to protect the farmers?

**Man (pot. Assoc):** We middlemen move to farmers directly. Where touts are operating more effectively is with tomatoes. It is hard to control, because the market is everywhere. The market for tomatoes does not last long.

**Prof. John Olaniyan:** What are their sins?

**Man:** At times they help farmers. If he is a clever farmer, he knows that this commodity is scarce if they all rush to him. If the market is in surplus, these people will make it worse. The way they scramble for produce shows that this product is scarce. They don't have customers -that's the worst aspect of business if you don't have customers.

**Prof. John Olaniyan:** How is it worse for farmers? The problem in marketing of vegetables: A distinction between the tout and the true middlemen and their usefulness/harm should be addressed. We need to know how to make the most use of middlemen.

**Chief of Tudun Mazat:** We face problems in terms of marketing. At times we face fuel scarcity. Most of us use pumps and when going to the filling station, farmers don't get any petrol, because they are considered black marketers.

**Prof. John Olaniyan:** Hardship in procuring inputs.

**Chief of Tudun Mazat:** Tractors too: if he needs to cultivate, there are problems before he can get the machine. There is a lot of competition. The machine is from the local government or an individual owner. There is a time factor, before they can get the tractor, the season might have passed.

**Prof. John Olaniyan:** At the Bauchi trade-fair, there was a hand-operated machine. This is an alternative to the big expensive tractor, which is not within reach for the farmers. Why don't we see it on the farms?

**Chief:** Our soil is so hard, the machine with the hand can not serve some areas here. It makes the soil worse.

**Prof. John Olaniyan:** Human labour breaks the earth.

**Chief:** Even power of energy cannot always break it.

**Margaret Pasquini:** Tractors cause compaction and increase the soil compaction and erosion. Tractors are not the way forward. Concerning inputs: the unavailability of seeds; they are scarce and there is not a great variety of seeds available. Seeds beyond the expiry date are sold. Why do we have to rely on imported seeds and why are no Nigerian companies taking it up?

**Prof. John Olaniyan:** Zaria used to be a major centre. IIT and before in their records, they developed large varieties of local and exotic crops. It seems they lost their stocks as

it seems that there are no funds to disseminate them. I remember some beans I took to Jos, but you don't see it in the market. What is responsible for that?

**Alhaji Adepetu:** farmers like producing their own seeds. But if you grow hybrid varieties, the seeds from it never grow well again. When the farmers try to cultivate them, they get disappointed and then return to what they grew previously. They try to eliminate the cost of seed input by generating own seeds. It does not work with hybrid varieties.

**Prof. John Olaniyan:** We gave them (Merit) seeds, a variety of pulse from India, and propagated them and when disseminating, we gave them to selected people in Merit and within 2 years none had that type of beans anymore. Beans are sources of cheap protein. Research needed in: how to locally increase seed production also for animal feeds.

**Daniel Kopkang [Plateau Ministry of Agriculture]:** With regards to the development of seeds for farmers: why does Jos University not have a faculty of agriculture. Far away in Zaria, they run research on crops, but it became a problem with transport. If there was a faculty here, we could easily conduct research locally.

**Prof. John Olaniyan:** If NNC does not approve it, you cannot do it. They could argue that such a faculty is already available at A,B and C and they don't approve and don't give money. Are they adequately funded institutions? Even if you have one in Jos and it is not funded, there would be no point.

**Chief :** Fertilizer: Irish potatoes need single phosphate to develop roots. It is not available in the markets anymore. There is only compound fertiliser, which helps the foliage. With improved varieties, we cannot tell the success. We used to apply single fertiliser first and then compound fertiliser.

**PADP staff member:** we need water quality research: To what extent do we consider surface water healthy. At what point can a farmer say that this water is not good. There could be chemicals dumped and long-term effects could happen. Are there any surveys? The question of regulating the supply to markets to avoid gluts, but field experience says it is not very practical. Vegetables are perishable and you cannot delay only because it is not your turn to go to the market. Staggering the planting so that there is no harvest at the same time was suggested. Even with one plot of land, you can plant at different times. There are problems with staggering, farmers compete for water. They also want to plant so that harvest is at Christmas or Easter. It may be a matter of varieties which we can store longer without refrigeration.

**Prof. John Olaniyan:** Research needed into accessibility of varieties.

**Man:** Into varieties that can be stored.

**Alhaji Adepetu:** farmers are already trying regulations. They used to do just one planting of each vegetable. Now most farmers stagger and it has had effects on production and supply to the market. Gluts at the market are not as serious anymore as

before. The extension agents need to testify their activity. PADD may need to intensify activities on this.

**PADD employee:** Water was not the problem before, but some rivers dry early now due to increased water use. Some sources are now dry by February. Farmers have accepted staggering for market purposes; they delayed planting at January to harvest in May where prices are higher, but in the last 2 years, the weather was not reliable and farmers were more at risk.

[There is a question then of research into the potential for water regulation]

**Prof. John Olaniyan:** Some more on gender issues?

**PADD employee:** For vegetable farming. Women don't like hard work. Irrigation farming is very intensive. Not all farming activities are as strenuous as irrigation. They stay the whole day on the field. An irrigation farmer is always on the field. That alone becomes tedious to the woman, as she has other responsibilities. She is better in marketing. 90% of the farm to collection centres is done by women. There are hardly any pick-ups present. Women do other types of farming.

**Prof. John Olaniyan:** What is a research topic within this gender issue?

**Alhaji:** Irrigated farming is predominantly a male activity. Rain-fed farming is also a female activity. Irrigated market garden is male. Why is there low female participation and male ownership of irrigation farming, despite that women are active in rain-fed agriculture?

**Man (NGO env. Dev):** Gender is particularly sensitive with land tenure issues. There is a major limiting factor for female participation. They work on their husband's land or are widow is working the land left behind by the husband. Look at gender and land tenure issues. Why is women's participation so low in irrigated garden ownership? And the question of women's financial resources.

**PADD staff member:** Farmers cannot preserve and sell at better times. Why not more processing to preserve vegetables for longer periods to enter the market at better times. Storage is important. It needs high investments, but at production level, farmers should be able to preserve his produce. Sometimes a basket is sold at less than 100N. Some preservatives to store goods would be helpful.

**Margaret Pasquini:** the lack of capital and access to capital is a major issue. In the beginning of the season, you need capital to buy inputs to start farming. It is difficult to access loans. Banks would not loan. Hence, how can farmers have more access to capital?

**Man:** Farmer insurance facilities are needed, especially for vegetable producers. Sometimes they lose a lot of produce due to natural phenomena and their investment into the production is lost.

**Jessica Agaye:** Concerning the problem of storage and processing: the possibility of foreign investment should be looked at for refrigerated areas and processing.

**Alhaji:** Look at production. How profitable is irrigated market gardening? There is research needed. We know it is expanding. Is it profitable? How profitable?

**[Prof. John Olaniyan: Concluding remarks]**

## APPENDIX 6: R7924 COLLABORATORS ADDRESSES

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