6th IndigenoVeg Meeting

Arusha, 17 - 21 September, 2007

Session One (SOA7)

MARKET CHAIN AND CONSUMER CONSUMPTION TRENDS: OPPORTUNITIES AND CONSTRAINTS OF THE AIV SUPPLY CHAIN IN URBAN AND PERI-URBAN AREAS

Meeting Report

Country Reports:

Country 1: Kenya
Country 2: Uganda
Country 3: Tanzania
Country 4: Benin
Country 5: Côte d’Ivoire
Country 6: Senegal
Country 7: South Africa

Compiled by:
Festo Maro & Germain Pichop
This session’s objective was mainly to report on the outcome of the small-scale baseline surveys carried out by the consortium in seven (7) sub-Saharan countries. Discussions followed each presentation of the baseline survey results by the various national partners, and general discussion was carried at the end in order to identify the strengths, weaknesses, opportunities and threats of the African indigenous vegetables in urban and peri-urban areas in SSA.

The report comprises the opening remarks by Dr. D. Virchow, speech by Dr. E. Young read by Dr. M. Pasquini on her behalf and country partners who presented respective country’s reports. Discussions, suggestions and questions are summarized after each presentation’s excerpt. Participants presented their views and opinions during interactive sessions. SWOT analysis done to determine strength, weakness, opportunities and threats in each country Indigenous Vegetable (IV) supply chain reports and a region wise summary of AIVs supply chain in table format is available at the end of the document (see appendix). Highlights, main similarities and differences were also discussed (see appendix).
Opening Remarks – Dr. Detlef Virchow

Dr. Virchow welcomed participants and wished them to have a week long productive workshop.

Project Management Highlights – Dr. Margaret Pasquini

Dr. M. Pasquini presented project management issues on which she observed there were few problems with periodic management report for the year 2006. Expenditures could not reach 70%, which threatened the release of the subsequent release of funds. However, with CAZS and ARC’s 2007 expenditure report we were able to reach the 70% threshold. She required each partner to observe the EU financial report guidelines and requirements. The integration meeting will be held on 21-24 November 2007 in Arusha; partners that are requested to send only two representatives each. The meeting program will be sent out at a later date. The main objective of this meeting will be to develop one page proposals on issues identified during the various thematic meetings as well as key note paper for conferences speakers.

Speech from Dr. Einir Young read on her behalf by Dr. M. Pasquini.

Dr. Young sent greetings from Wales and a special welcome to the 6th IndigenoVeg meeting participants. Her speech pointed the challenges that farmers face to produce for the ever increasing demand and the current food mile obsession in the developed world. She hoped that the session on accessing niche markets will include discussions on those issues in a broader angle and the future of AIVs in this context. The project’s final conference will be at Rhodes University on January 2008. The major task will be to transform scientific results, concepts and lessons into policy recommendations. The conference organization team and book team will have to galvanize researchers to work hard in order to complete the book on time and organize the conference efficiently. Dr. Pasquini gave thanks to AVRDC-RCA, Germain, Detlef for hosting the meeting and efficient organization of the meeting.
The aim of the presentation was to explain the methodology adopted for the whole survey in each country. The purpose was to facilitate country wise comparison of major findings in IV supply chain.

Abstract:

Dr. G. Pichop stated that the main objective of the survey was to generate comparable data across Africa through the use of standardized approach, standardized definition of peri-urban and standardized definition of IV. In each of seven participating African countries, 2 major cities each known for IV production and marketing were selected. This makes a total 14 locations for the whole study. The major limitation was the budget – Originally set for 60 person days per location (city) with a sample size of 210 respondents per city, 70 farmers, traders and retailers each. Data were collected by using structured cluster sampling approach.

The budget turned out to be very small, and the partners had to come up with original ideas in order to complete the survey. He stressed that the national partners be recognized for the work done given the limited resources.

There was no discussion after this presentation, which was followed immediately by the synthesis report.

---

Synthesis Report - Dr. G. Pichop

Abstract

Dr Pichop presented the amalgamations of all countries' reports (Tanzania, Uganda, Kenya, Benin, Cote d'Ivoire, South Africa and Senegal) which highlighted the crucial role of African Indigenous Vegetables (AIVs) in alleviating poverty and food insecurity among the Sub Saharan Africa.

The results of the survey showed that African Indigenous Vegetables in urban and peri-urban of sub-Saharan Africa were mainly produced by men and marketed by women. The supply chain actors' level of education was quite low. Many producers were young, since they started to produce AIVs after failing to secure other jobs, especially in West Africa. The production in urban area was intensive and the level input usage was high. Indigenous Technical Knowledge was mainly used in AIV production. The area used for vegetable production was small, usually less than half an acre. Main crops grown varied
per region. The bulk of the production was traded, and the volume sold by farmers outweighed that traded by middlemen and retailers, which was due to the numerous constraints faced by the chain actors. Men were found to be active because the opportunity cost of their time was higher than women’s. In addition, women preferred to be in one location. This made market operations slow in terms of cash generation.

The supply chain in Republic of South Africa (RSA) showed direct link from farmer to retailer. In some cases the supply chain linkages were rather complicated. This was the case in Uganda, where farmers sold to retailers, wholesalers and households, or wholesalers sold to themselves and purchased from retailers. The actors simply purchase where the price is low and sell where they get higher prices.

Several constraints hindering the chain actors’ activities were revealed. Lack of capital, land, water for irrigation, good quality seeds and high susceptibility to pest and diseases were cited by producers as the most important obstacles in AIV production. Traders added the lack of infrastructures and stiff competition to the list. Very little value was added to the produce before they were sold to consumers. AIVs were generally transported to markets either by foot, motorbike or bicycle, public transportation or in rare cases pickup trucks. The distances covered from farm gates to markets were generally low and little or no processing was done to the produce before they were sold to consumers. Actors indicated that color, size freshness and prices were the traits consumers considered important when purchasing the produce. In general, the level of cooperation between actors was low, and often limited to sharing labor, market information and transportation facilities.

**Summary of the Discussion Session**

After the presentation, questions and suggestions were made. Many participants questioned the reliability of the data and suggested the use PRA to improve the quantitative data. Unfortunately PRA mainly focus in obtaining qualitative information and not quantitative. It was reckoned that, this was the best data given the budget allocated and no other method could yield better result than what was collected for a one time questionnaires administration, since collecting information on income in SSA countries is difficult. Most respondents do not keep records.

Marketing efficiency of AIVs was poor; in some cases people purchased in super markets and sold back to wet markets (i.e. Nairobi). Market flows correspond to vegetables flows and in the context of IVs there was no any symptom of global markets to dictate terms of trade in IVs. There was straight competition in IVs in terms of quantities sold and income generation to individuals involved. Also substitution was found to exist between AIVs and other crops grown and traded along the chain. In Tanzania, substitution was found to exist between Ethiopian mustard and cabbage for example.
Agronomic aspects were found important in choosing which crops to grow. Farmers used both clear water and contaminated water for irrigation. Data collected on organic manure and fertilizer applications were not very significant. It was surprising African eggplant was not popular in Kenya as compared to Tanzania.

It was observed some AIVs e.g. African eggplant was not as popular in other countries as it is observed now in Tanzania. Also, although AIVs are gaining in popularity, some consumers still tend to purchase more of exotic vegetables as their income rises. Negative attitude towards AIVs was observed in RSA where young consumers considered AIVs old fashioned. In RSA, consumption of cabbage is high compared to AIVs, which have a higher nutritional content.

Generally one acre or less was used for production, in urban areas inputs application was very high, decreased progressively as one moved away towards rural areas. Organic manure was also applied to crops, and purchased either from input trader (RSA) or other urban agriculture actors such as poultry farmers. Simple irrigation techniques e.g. use of bucket were still popular. Packaging in bundles was the main packaging form. Public transport, bicycle, motor cycle, foot and human or animal powered carts were important means of transportation to reach marketing places. In some local markets, AIVs were placed on the ground or lifted some centimeters off the ground (Abidjan), which posed serious food safety concerns. There was also a concern about potentially huge post harvest losses along the chain that needed attention, since AIVs that were not sold were dumped at the end of the day. In Kampala traders’ gross margin was to found to range from 138% up. Traders were purchased little amount of IVs which they could sell before the sun set.

In general, actors were either not aware of certification or did not think that it is important. Major reasons for producing IVs were joblessness, good price and opportunity to earn extra income. Cooperation among actors was very minimal and major constraints facing producers were pest and diseases, prices fluctuations, lack of improved seed and labor availability.

Major concern among the researchers was the issue of data collection. The reliability, validity and accuracy were contentious.

**SWOT analysis**

**Strength**
- Application of one methodology in all countries in terms of applied standard questionnaire, standard protocol for data analysis and reporting. This made comparison of major finding from different countries possible;
- Increased production of and increased demand AIVs due to soaring popularity of AIVs. Also AIVs have potentials for increasing food security in Urban and peri-urban areas.

Weakness
- Budget constraints and the need for more data collection time;
- Negative attitudes on AIV consumption among youths and food security issues were not given considerations;
- IV producers used Indigenous Technical Knowledge in growing their crops. AIVs marketing chain in some countries not well defined e.g. Uganda;
- Preservation, processing techniques and postharvest technologies were limited.

Opportunities
- Availability of data collected for future research;
- Large AIV unexplored potential market since some AIVs had intrinsic cultural values;
- Information gap need to be filled with more researches in developing preservation and processing techniques including determination of huge post harvest losses per crops.

Threats
- Poor infrastructure (i.e. roads) caused some production locations to be unreachable; Respondents did not keep records of farm and marketing activities;
- Lack of integration between urban and peri-urban planning processes;
- Urbanization trends e.g. increasing land demand for construction and shortage of clean water for irrigation;
- Outbreak of diseases and pests to IVs crops on fields.
The Urban and Peri-Urban Indigenous Vegetable Supply Chain Survey: Country Reports (East Africa)

1st Country Report: Kenya - Dr. Mary Onyango

Abstract

Dr. M. Onyango presented a country report from Kenya in which 75% of labor force employed in agriculture, mostly women. 20% of land is arable and 220 species of vegetables potential for production exist. Kisumu is net exporter of IVs after promotional campaign in producing AIVs. Production of AIV is intensive in urban areas. Larger plots were found in Kisumu than in Nairobi. Irrigation activities were also observed.

Main actors along the supply chain were mainly women who were supplying almost all the vegetables. It was observed that larger percent of the harvest was either spoilage or consumed. Retailers purchased 50% of total harvest from producers. Income generated from sales was enough to support daily expenses (i.e. retailers from Nairobi). Prices in Kisumu are lower compared to Nairobi. Production of AIVs in Nairobi was commercial in nature, while production in Kisumu was found to be mainly for subsistence. Aspects of quality were given equal importance in Kisumu as in Nairobi.

The main constraints to producers were lack of quality land, seed, advisory services and enough capital. Unorganized marketing systems, scanty market information along the supply chain for AIVs were also mentioned. Retailers complained about perishability of AIVs, price variation, infrastructure and poor structures of local markets (wet markets).

Summary of the Discussion Session

The percentages of quantities traded along the supply chain could not reach 100% due to spoilage and home consumption. Land accessibility for production was a constraint to the increase of the production. Traits important to buyers during purchase were freshness, size of the leaves etc. Stakeholders in Nairobi seemed to gain higher value for their crops than those in Kisumu. Retailers sourced not only in urban and peri-urban areas, but in rural areas as well.

Inefficiencies in the market chain primarily emanated from transport costs. Some traders went directly to farmers to source AIVs at cheap prices. In some cases wholesalers or retailers traveled to distant places looking for cheap produce. Inefficiencies could be eliminated by higher competition, and better market coordination. The data presented begged for more in depth research studies on AIVs supply chain activities.

SWOT analysis
Strength
Increased production on large plot and large demand for AIV in big cities were observed e.g. Nairobi. The larger number of varieties and increasing research activities were advantages to AIV actors.

Weakness
- Bottlenecks to retailers were lack of well organized AIVs market participants and scanty marketing information;
- Producers experienced inefficient extension and advisory services.

Opportunities
- Producers and traders of AIV can utilize established markets both local (wet) markets and supermarkets;
- Potential niche market development for organic production of AIVs to informed individuals (customers).

Threats
- Poor urban planning and clean water availability for irrigations
- Capital constraint to producers for expansion of production area.

Abstract

Mrs. P. Kasambula presented a country report from Uganda which showed 60 percent of full time producers were men. Distance to reach plots in Mbale was low compared to Kampala. Seed were sourced from neighbors or from farmers’ own farms. Manure was also applied. Few farmers indicated irrigating their plots since plots were strategically located close to water sources. Most were found living in their childhood towns (did not migrate). Main AIVs produced were African eggplant, spider plant and amaranths. Food crops produced were maize, potatoes, fruits and bananas. Surprisingly 92 percent of middlemen’s were women.

Main trading partners for farmers were wholesalers and households. For wholesalers, main trading partners were collectors and street vendors. Revenues were remarkably different in two cities. Only retailers processed their crops before selling. The reported value adding activities were slicing or bunching and sun-drying. Major constraints mentioned were lack of capital, low prices, competition among farmers and middlemen.
Summary of the Discussion Session

A presence of gender separation was observed along the lines of AIVs grown. Cultural myths were found to influence AIV production where taboos deterred men or women from growing or consuming certain crops. Men also tended to monopolize commercially viable crops. Wild collection of AIVs was observed in Mbale, which more rural than Kampala. Contract among AIV grower was pretty much non-existent. Contract only existed for ‘exotic’ vegetable farmers who supplied supermarkets and the export sector. This situation was deplored, since contracts may help secure not only supplies, but quality produce as well. Processing was limited to slicing due to consumer demand and sun drying to deal with unsold vegetables. Farmers believed that fresh vegetables were plentiful, and there was no need for preservation.

Participants found lack of capital (which meant limited access to credit in this context) was not the main important issue, because producers would usually spent any extra capital on non agricultural activities when available. This would eventually destabilize the entire production system. Lack of capital to producers resolved to be considered in a wider livelihood framework. Land problems could be solved in urban areas, if Urban Agriculture (UA) were integrated in the urban planning processes. The high competition for urban land uses was recognized.

SWOT Analysis

Strength
- AIV production significantly boosts income of poor farmers’ income and existence of higher profit margin to traders.

Weakness
- Undefined and complex AIV marketing supply chain linkages and lack of awareness on AIV production and marketing techniques.

Opportunity
- Producers and traders could have access to established markets and the existence of potential niche markets for organic AIVs production;
- Existence of unmatched high demand of IVs from affluent urban consumers.

Threats
- Rising land rents for decreasing area of production for urban AIV producers;
- Poor urban and peri-urban land planning utilization.
Abstract

Mr. I. Swai presented Tanzania country report which covered two locations Dar-es-Salaam and Arusha. In summary, production of AIVs took place in open spaces, close to homestead (traditional way of mitigating hunger at household level). Area under production is 300 m$^2$ and few lands were rented for production. Producers used government lands or lands which belonged to private organizations. Main AIVs produced were amaranthus, sweet potatoes okra and nightshade. Organic manure, which was purchased, was applied by some producers. Customers displayed awareness of the risk of pesticides residue on crops, which forced producers to use safe production methods. Most women producers were in majority unemployed. Both clean and contaminated water was used for irrigation. Gender role along the chain differed in two cities. In Dar-es-Salaam production and selling activities were done mainly by men while in Arusha selling was typical women activity.

The number of actors along the supply chain was higher in Arusha than in Dar-es-Salaam. Annual average income earned by farmers was 160,000Tshs and retailers’ was 210,000Tsh. Nearly all retailers in two cities made profit, although the margins were small. During the dry season, prices remained the same but quantities were reduced. The average distances to markets were small in Arusha compared to Dar-es-Salaam, which is a much bigger city. Packaging was not adequately practiced by traders. AIVs were sold in bundles tied with banana plant rope and few traders packed in plastic bags.

Among the constraints found were climatic reasons and disease outbreak. The latter was associated with unsafe production of AIVs using sewage water for irrigation (in Dar-es-Salaam). In addition, inadequate infrastructure hampered producers of AIVs located far from urban areas.

Summary of the Discussion Session

Suggestions and comments after presentation were as follows; women reduced mobility in marketing of AIVs contributed to significant difference of gender role in Dar-es-Salaam. Men were found to be more mobile in search of customers (door-to-door sales). The size of Dar-es-Salaam as a city should be taken into account. There was high fluctuation of prices due to seasonal variations of the supply and the occurrence of disasters. Few exceptions existed among AIVs, for example, amaranthus could grow anywhere and in any seasons during the year. The solution for disease outbreak was to challenge urban planners to integrate UA in the planning processes. This will necessitate strong arguments and initiatives in order to defend UA in planning processes to policy makers.

Producers reported lack of rainfall in dry season preventing production of vegetables. In Dar-es-Salaam rainfall during March and May is higher, this raises water level resulting to poor growth of some AIVs. Variability of rainfall
was also noted in Kenya’s producers. This is a general problem in African agriculture. Quality attributes e.g. fertilizer, pesticides and pathogens residues were not considered by buyers. In developing niche markets, consideration of waste water application in AIV production is important. Especially when advocating safe production of AIVs.

**SWOT Analysis**

**Strengths**
- Existence of wide varieties and growing markets for AIVs;
- Improved livelihood, employment, and
- Presence of active research on AIVs

**Weaknesses**
- Insufficient institutional framework and structures supporting AIVs activities. Lack of policy guidelines;
- Processing of IVs to extend shelf life is limited, and
- Disorganized markets.

**Opportunity**
- There is an increasing demand for AIVs and opportunity for niche market development.

**Threats**
- Poor urban planning and lack of interdisciplinary urban planning creates danger for Urban Agricultural activities;
- The future of AIV is faced with lack of mainstreaming AIVs in government food security and nutrition policies;
- Lack of institutional framework on quality assurance to AIV consumers;
- Disorganized markets.

---

**4th Country Report: Benin - Mr. Florentin Akplogan**

**Abstract**

Mr. F. Akplogan presented a report for a survey conducted in Lokossa and Cotonou. He observed in Lokossa some farmers were also retailers. Main AIVs produced were the amaranths, jute mallow (*Corchorus olitorius*) and African eggplant (*Solanum macrocarpon*). Cotton pesticides, although prohibited for fruits and vegetable production, was heavily used by some farmers in Cotonou. For some crops (amaranth), yields were higher in Lokossa compared to Cotonou, but this was due to the practice of multiple harvests in the former city.

Market structure was not very complex. The most important marketing channel identified for African indigenous vegetables goes from the producers
to the consumers while passing through the retailers. The main mode of transportation used in Lokossa was walking, and AIVs were mainly sold in there loose form. Prices were higher in Cotonou than in Lokossa. There were also price variations during the year in both locations. Value adding activities were more observed in Cotonou than in Lokossa. The major constraint was low demand.

Summary of the Discussion Session

Farmers in both locations produced other crops besides AIVs. They decided on what to grow based on income generation potential of each crop. Some producers migrated to urban centers looking for job but ended up producing AIVs. Many AIV producers did not rely solely on AIVs. Some were taxi drivers while others sold staple crops such as rice, maize etc.

Some AIV crops were gender specific. For example, jute mallow was grown exclusively by women in Lokossa, because of the intensive and meticulous method used for harvesting. This alone insured that men would not participate. There were also cultural/ethnic reasons behind men disengagement.

Land ownership is very precarious. They are situation were farmers could be forced to move to another land provided by government due to urbanization. However, the government has dedicated some land to urban and peri-urban agriculture, where these farmers are usually relocated.

It was noted that in Dar-es-Salaam, situation sometimes lead to producers completely loosing their livelihood and ending up in city slums.

Producers in Cotonou occupied government land. Access to these lands is very difficult for new migrants because current land users inform their families and friends of land availability before any outsiders are aware of such eventuality. To gained access to land must have either have a close relation with government officials or have relatives already working in the area. They are therefore left out of any new land allocations if they do not satisfy the requirements listed above.

In Nairobi, it was observed that conflicts between new comers and long-term residents are widespread.

SWOT Analysis

Strength

- Well established markets and marketing channels for IVs lead to good prices especially in Cotonou;
- Government policy makers’ recognition of Urban Agriculture (UA) in urban planning.
Weaknesses

- Application of non-suitable and unauthorized pesticides and herbicides in AIV production and poor packaging of IVs were observed.

Opportunities

- AIVs market development because of potentially high demand. Therefore AIVs offer opportunity to increase the income of producers and traders.

5th Country Report: Côte d’Ivoire - Mr. Yannick Assouma

Abstract

Mr. Y. Assouma presented Côte d’Ivoire’s report for the survey which was conducted in Abidjan and Yamoussoukro. Main AIVs produced were cowpea, spider plant and jute mallow. Producers were men, non-Ivorian and most of them illiterate. They were aged between 30 and 40 years. Pesticide and fertilizers were intensely applied to crops. Chicken and/or cattle organic manure was also applied, and were sourced from nearby poultry/cattle farms.

Wholesale activities were done exclusively by women. Producers generally sold almost all of their harvest (99%). Postharvest losses were low, especially among wholesalers. Seasonal price fluctuations caused most of the losses. Farmers generally sold to wholesalers or marketed their produce themselves. In general, there were little problems accessing market as distance between farms and markets were low. Very little processing was done, and only concerned few crops such as okra and sweet potato leaves apparently. Processed products were sold at premium prices, sometimes nearly the double of the raw produce’s price.

Summary of the Discussion Session

Discussions highlighted the following points: actors did not consider the labor cost of processing AIVs. Processing was viewed as a normal women activity since they spent most of the time sitting idle at markets. The same practice existed in Kenya, but they were no clear difference in price between processed and unprocessed AIVs to attract customers. The cost of processing was also associated with traders’ personalities, on how they valued own time. There is a need to raise traders’ awareness on economic principles by training them on how to consider and include the opportunity cost of their time or their activities in their costs calculations.
**SWOT Analysis**

**Strengths**
- Major occupation to women and disadvantage/vulnerable groups;
- Established market channel for AIVs encourage emerging producers and traders.

**Weaknesses**
- Most producers were not Ivorian and high prices existed during wet and dry seasons;
- Processing was done only for okra.

**Opportunities**
- Cultural values attached to AIVs creates potential demand and improve food security;
- Market demand for AIVs increased due to affordability of the crops.

**Threats**
- National policies did not support AIVs production and consumption;
- Urbanization trends create shortage of land for IV production in urban areas.

______________________________________________________________

**Summary of the General Discussion**

This section highlighted main point raised after presentation of all country reports during the first day. It pinpoints areas where further clarifications needed and each participant shared views.

**Method**

Views and ideas were collected in participatory and interactive approaches. Brainstorming of main points raised were discussed in random fashion and conclusions noted down.

Importance of wild collection was noted during wet season in Tanzania. A crop collected from the wild was *Corchorus Spp*, since it has not been possible for existing seeds to germinate. In South Africa high proportion of IVs were collected from the wild. There was no close scientific relationship between cholera and urban agriculture, it was merely political rhetoric. It was argued most affected areas were not larger producers of AIVs. Urban dwellers that practice urban agriculture are driven by good prices. Too much competition leads to low prices and transport is major constraint. Low price margin is associated with wet season when there supplies are high. There is a need to develop improved varieties with long shelf life and storage mechanisms. Farmers should be trained on the effects of over-fertilization and
pesticide misuse, in order for to meet quality assurance set by high value markets (supermarkets for instance).


No participant from Senegal was present

7th Country report: South Africa report no. 1 Soshanguve - Mrs. Ineke Vorster

Abstract

Mrs. I. Vorster presented a report on Soshanguve, a community near Pretoria established in 1974. The majority are individual farmers with little land owned or occupied. Less than 10% of total land was planted with AIVs. Farmers were all women aged above 50 years old who considered themselves unemployed. Their average education level was primary school. Retailers, street vendors in particular, were older women. Wet market vendors were younger. Farmers sold jute mallow, okra, taro and sweet potatoes. Some farmers grew AIVs for home consumption. Most of AIVs were collected from the Brits (commercial farms) area or from the wild. When cultivated, no chemical inputs were used. Organic manure was used sparingly. Improved seeds were not available, and farmers did not believe in saving amaranth seeds. Farmers sold produce from their gardens, at markets, directly to households and in front of public services buildings where large numbers of people usually gathered. Farmer prices were higher than retailer prices. Drying, sorting and packaging were major forms of processing. Crops were dried, and used during winter when fresh produce become unavailable and/or more expensive. Food safety and origin of the IVs were not important to buyers. Farmers did not want to produce or sell more than what currently sold, since customers were hard to find. Most customers, particularly youth, preferred exotic over indigenous vegetables that they considered old fashioned. A saturated indigenous vegetable market was a general perception among market participants.

Summary of the Discussion Session

The survey was representative of the northern part of South Africa. AIVs grew as weed on commercial farms in the Brits area just west of Soshanguve. Collector went into the farms to pick IVs against payment of an entrance fee. Donation of AIVs was generally made to families having AIDS victims and to
hospitals. Pumpkin was the main AIV donated. Farmers sold AIVs directly to customers who did not go to urban markets. Retailers sold to urban commuters but at lower prices than prices that farmers received at farmstead or homestead, because competition is higher in urban markets.

The surplus produced by farmers was dried and consumed during winter. Urban demand came from the community of immigrants, especially Nigerians, who do not produce. These foreign nationals had an influence on the type of AIV grown. The production and marketing of taro became popular with the arrival of the Nigerian community. There is a need to encourage production of AIVs in urban areas as part of Urban Agriculture, because the quantity supplied by collectors is not enough to satisfy the urban demand.

**SWOT Analysis**

**Strengths**
- AIVs provided food security to producers and traders;
- Wild harvesting places minimal demands on household resources;
- Producers use Indigenous Knowledge in production of AIVs;
- High availability of AIVs species in the wild for collection leads to policies that encourage production and consumption of AIVs.

**Weaknesses**
- Insufficient research and lack of policy makers knowledge of the role of AIVs in food security and nutrition are a disadvantage to communities;
- Wild collection of AIVs in the wild is more prominent than actual cultivation due to lack of research and inefficient seed distribution systems;
- There was also disconnection between producers and retailers along the supply chain.

**Opportunities**
- Promotion on production and consumption of AIVs among young generation exists;
- AIVs provide an untapped source of income to producers and traders; Collaboration potential with institutions dealing with HIV/AIDS patients and individuals.

**Threats**
- Consumption of exotic vegetables is better established than AIVs and in general there is a low perception of AIVS among youths;
- National policies do not support AIVs production and consumption hence limited cultivation of IVs.
South African Report II: Durban - Prof. Charlie Shackleton

Abstract

Prof. C. Shackleton presented part II of South African report for the survey conducted in Durban. Production of AIVs was done in town, in small garden and on roadsides. In peri-urban it was done also on roadsides and in school gardens. Production of AIV was largely for home consumption. Producers were, Zulu speaking females that were born there and consequently absorbed by city expansion. They considered themselves not as producers but unemployed. Cultivated AIVs were pumpkin and sweet potatoes. 70% of the crops were collected from the wild. It was observed that men owned larger pieces of land than females. Land property rights were transferable and managed by government officials. No middlemen were found and farmers did not keep farms records. Farmers consumed most of the AIVs produced and sold leftover quantities at ad-hoc. Customers and retailers came to purchase directly from farmers at farm gates.

Summary of the Discussion Session

Production of AIVs was limited to local Zulu speaking population despite cultural diversity in Durban. Indians consumed taro leaves, while Zulus consumed their roots. In other places (Eastern Cape) both parts were consumed. Organic taros produced were in high demand and sold at supermarkets. Farmers had received training from NGOs on organic agriculture. Income generated from AIV sold was very important for the producers’ livelihood, but very low compared to larger income earners. South Africans youth found to have negative attitudes towards AIV consumption. There is a cultural value attached to AIV, which means there is a potential demand that needs to be developed. Extension services have been catching up since the collapse of apartheid regime.

SWOT Analysis

Strengths

- Improved livelihood, food security to producers and whole community at large;
- Low prices make IVs highly accessible to all income earners;

Weaknesses

- Inefficient AIV marketing system creates low demand in local and supermarkets;
- Inadequate promotional campaigns of AIVs consumptions in peri-urban and urban areas.

Opportunities
There is potential development of AIV markets and niche markets in both peri-urban and urban areas; AIVs provide potential means to improve livelihood to marginalized communities in South Africa.

Threats
- Prevailing negative attitude on AIVs among young generation in South Africa;
- Extension system in South Africa is weak and national policies do not incorporate AIVs production and consumption.
Summary of SWOT analysis to identify opportunities and threats for IV production and consumption in Sub-Saharan Africa

The summary was summarized in terms of regions survey conducted, namely West Africa, East Africa, South Africa and lastly a general summary for all countries. Participants were given cards to write down the strengths, weakness, opportunities and threats on separates card. Participants had freedom to choose which country or which region to write for.

<table>
<thead>
<tr>
<th>WEST AFRICA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strength</strong></td>
</tr>
<tr>
<td>▪ Young actors</td>
</tr>
<tr>
<td>▪ Existing markets and awareness</td>
</tr>
<tr>
<td>▪ Adapted to African climate</td>
</tr>
<tr>
<td>▪ Wide variety available</td>
</tr>
<tr>
<td>▪ Identified priorities been set</td>
</tr>
<tr>
<td>▪ Low prices – accessibility</td>
</tr>
<tr>
<td>▪ Food security</td>
</tr>
<tr>
<td>▪ Known by most</td>
</tr>
<tr>
<td>▪ Traditional K of IV production</td>
</tr>
<tr>
<td>▪ Commercial systems</td>
</tr>
<tr>
<td><strong>Opportunity</strong></td>
</tr>
<tr>
<td>▪ Cultural values create demand</td>
</tr>
<tr>
<td>▪ Food security</td>
</tr>
<tr>
<td>▪ Indigenous seed security systems</td>
</tr>
<tr>
<td>▪ Affordable</td>
</tr>
<tr>
<td>▪ Development</td>
</tr>
<tr>
<td>▪ Available markets</td>
</tr>
<tr>
<td>▪ Source of revenue</td>
</tr>
<tr>
<td>▪ Niche market development</td>
</tr>
</tbody>
</table>
## EAST AFRICA

<table>
<thead>
<tr>
<th>Strength</th>
<th>Weakness</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Demand for AIVs</td>
<td>▪ Lack of information amongst actors</td>
</tr>
<tr>
<td>▪ High nutritive values</td>
<td>▪ Lack of institutional framework and structures — OR lack of implementation where it does exist</td>
</tr>
<tr>
<td>▪ Established markets</td>
<td>▪ Lack of policy guides in government structures</td>
</tr>
<tr>
<td>▪ Strong support for niche markets</td>
<td>▪ Failure of actors to report information</td>
</tr>
<tr>
<td>▪ Growing market production</td>
<td>▪ Limited community participation</td>
</tr>
<tr>
<td>▪ Increasing market demand</td>
<td>▪ Market organization</td>
</tr>
<tr>
<td>▪ Good market potential</td>
<td>▪ Negative attitudes (especially of youth)</td>
</tr>
<tr>
<td>▪ Production and training of youth in production</td>
<td>▪ Processing to extend life and add value</td>
</tr>
<tr>
<td>▪ Indigenous knowledge of production</td>
<td>▪ Policies to support development of AIV markets</td>
</tr>
<tr>
<td>▪ Livelihoods and employment opportunities</td>
<td>▪ lack of policies or poor policies</td>
</tr>
<tr>
<td>▪ Active research</td>
<td>▪ Inefficient market chains</td>
</tr>
<tr>
<td></td>
<td>▪ Lack of organized markets</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>Threat</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Increasing demand in rural/urban areas</td>
<td>▪ Poor urban planning</td>
</tr>
<tr>
<td>▪ Growing market particularly by the rich</td>
<td>▪ Urban poverty increases</td>
</tr>
<tr>
<td>▪ Major success of organic production</td>
<td>▪ Poor planning and interdisciplinary planning ignored</td>
</tr>
<tr>
<td>▪ Value addition in niche markets</td>
<td>▪ Quality assurance</td>
</tr>
<tr>
<td>▪ Land policy support</td>
<td>▪ Competition with exotics</td>
</tr>
<tr>
<td>▪ Integrated agriculture and nutrition??</td>
<td>▪ Not many young people involved</td>
</tr>
<tr>
<td>▪ Market opportunities</td>
<td>▪ Pricing dilemma in markets</td>
</tr>
<tr>
<td>▪ Breeding programs established</td>
<td>▪ Uncoordinated urban expansion</td>
</tr>
<tr>
<td>▪ Compatible with other land uses</td>
<td>▪ Production in unsafe environments/circumstances</td>
</tr>
<tr>
<td>▪ High level of affordability</td>
<td>▪ Poor market structure</td>
</tr>
<tr>
<td>▪ Donor and national support for programs</td>
<td>▪ Urban land scarcity</td>
</tr>
<tr>
<td>▪ Potential contribution to MDGs</td>
<td>▪ Poor water quality</td>
</tr>
<tr>
<td>Strength</td>
<td>Weakness</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>▪ High use</td>
<td>▪ Poor market demand</td>
</tr>
<tr>
<td>▪ Lots of species known and used</td>
<td>▪ Insufficient research and policy knowledge</td>
</tr>
<tr>
<td>▪ Lots of species available in the wild – food security</td>
<td>▪ Low formal market demand</td>
</tr>
<tr>
<td>▪ Servitude areas available for production – areas of land available in urban and peri-urban areas</td>
<td>▪ Not integrated into peri-urban or urban planning</td>
</tr>
<tr>
<td>▪ Developed market system for other crops</td>
<td>▪ Promotion of AIV not done well</td>
</tr>
<tr>
<td>▪ Increased demand on AIVs for consumption</td>
<td>▪ Apparent plateau in demand (for certain species?)</td>
</tr>
<tr>
<td>▪ Policies which encourage production of AIVs</td>
<td>▪ AIVs are not considered to be of sufficient importance by the population</td>
</tr>
<tr>
<td></td>
<td>▪ No improved cultivars – no research, no seed system</td>
</tr>
<tr>
<td></td>
<td>▪ Lack of adequate evaluation of the value of IVs</td>
</tr>
<tr>
<td></td>
<td>▪ Low demand among young people</td>
</tr>
<tr>
<td></td>
<td>▪ No seed production for many AIVs</td>
</tr>
<tr>
<td></td>
<td>▪ Fewer young people involved in consumption or marketing</td>
</tr>
<tr>
<td></td>
<td>▪ Low investment in time and skills (both men and women)</td>
</tr>
<tr>
<td></td>
<td>▪ Wild collection</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>Threat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learn from West and East African experience</td>
<td>Limited cultivation</td>
</tr>
<tr>
<td>Appeals to African and cultural identity</td>
<td>Low prices for retailers</td>
</tr>
<tr>
<td>Potential local markets exist and could be developed</td>
<td>AIVs are marginalized</td>
</tr>
<tr>
<td>Awareness and raising of AIV profile</td>
<td>Policies do not support urban agriculture</td>
</tr>
<tr>
<td>Immigrants from other African countries</td>
<td>GMOs as a threat to IVs</td>
</tr>
<tr>
<td>Increasing consumer demand (e.g. Nigerians)</td>
<td>Modernizations – changing cultural values</td>
</tr>
<tr>
<td>Appealing to intuitionalists and those working with HIV/AIDS</td>
<td>Theft of produce on fields</td>
</tr>
<tr>
<td>Nutrition for livelihoods to be improved</td>
<td>Decreasing biodiversity</td>
</tr>
<tr>
<td>Existing extension system</td>
<td>Inappropriate use of water and waste water for irrigation</td>
</tr>
<tr>
<td>Markets for some crops increasing</td>
<td>Urbanizations, conservation and development policies</td>
</tr>
<tr>
<td></td>
<td>Markets for some species (more bitter) disappearing because of low demand</td>
</tr>
</tbody>
</table>
### ALL 3 REGIONS

<table>
<thead>
<tr>
<th>Strength</th>
<th>Weakness</th>
</tr>
</thead>
</table>
| - African traditional knowledge on production and consumption  
  - High nutritive value and improving nutrition  
  - Well adapted to local environmental conditions  
  - Established formal (and informal) markets  
  - Can be grown organically - easily  
  - Increasing research  
  - Biodiversity – in terms of species and genes  
  - Good business opportunity  
  - Increased demand  
  - Increased government revenue from market taxes  
  - Peri- and urban suppliers supplying fresh low cost produce to large urban markets  
  - Dried AIVs help to stop seasonality gaps  | - Lack of scientific research results  
  - Lack of market organization  
  - Lack of producer organization  
  - Market chains inefficient  
  - Perishability of crops  
  - Insufficient markets  
  - Seed systems and cultivars  
  - Lack of process technology  
  - Loss of indigenous knowledge of species, use and production  
  - Lack of novel processing techniques for sale and for keeping nutritive value  
  - Low focus on nutrient management  
  - Post harvest losses – not addressed  
  - Poor drainage systems |

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>Threat</th>
</tr>
</thead>
</table>
| - ITK and production systems  
  - New and expanding markets e.g. immigrants, trends for health food, trendy restaurants  
  - AIVS can be grown in many African situations  
  - Exchange of information – cultivation and recipes  
  - Increased attention of international and national donors  
  - Seed systems and cultivars  
  - Seasonality  
  - AVRDC research results  
  - Income creation and livelihood security  
  - Nutrient recycling – compost and waste water if market systems work then young can get employment  
  - Opportunity to market where there is quality control  
  - Opportunity to increase the value of women in a society | - Lack of supportive policy and contacts with those willing or wanting to push for change  
  - Inefficient transport systems  
  - Lack of, or poor, market information systems  
  - Urbanization and uncoordinated development planning  
  - Lack of support from government extension systems  
  - Perceived food safety issues  
  - IPRs  
  - Processing systems not well developed  
  - Competition for water  
  - Women pushed out of the system when AIVs become ‘cash crops’ |
Below table present the main highlights, key methodological problems, similarities and main differences in respective countries. The methodology used to prepare findings in the table was participatory approach. Each participant presented his/her views with regards to particular country’s report presentation.

<table>
<thead>
<tr>
<th>Item</th>
<th>Benin</th>
<th>Cote d’Ivoire</th>
<th>Uganda</th>
<th>Kenya</th>
<th>Tanzania</th>
<th>South Africa</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Highlights</strong></td>
<td>Low number of producers in cotonou</td>
<td>- Producers were non Ivorian</td>
<td>Age stratification</td>
<td>- IVs were profitable</td>
<td>- Men were major producer in Dar es Salaam and women's in Arusha</td>
<td>- IVs were for home consumption</td>
</tr>
<tr>
<td></td>
<td>Cotton pesticides used on IVs</td>
<td>High percentage sold</td>
<td>Migration complexity of retailers</td>
<td>Major producers were female</td>
<td>- Only old females engaged in IVs supply chain</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Concincuous social stratification in producing IVs</td>
<td>No wholesalers</td>
<td>Consideration of city sizes important</td>
<td>Age stratification</td>
<td>- Land tenure</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Consideration of city size between Cotonou and Lakosa</td>
<td>Social stratification based on ethnics</td>
<td></td>
<td>Supply chain not well defined</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Consideration of city size important</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Key methodology problems</strong></td>
<td>Quantification of variables (e.g. quantity sold, monthly income, purchased, prices and input used)</td>
<td>Quantification of variables (e.g. quantity sold, monthly income, purchased, prices and input used)</td>
<td>- Quantification of variables (e.g. quantity sold, monthly income, purchased, prices and input used)</td>
<td>- Quantity of variables (e.g. quantity sold, monthly income, purchased, prices and input used)</td>
<td>- Quantification of variables (e.g. quantity sold, monthly income, purchased, prices and input used)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pesticides used</td>
<td></td>
<td></td>
<td>Response on constraints</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Similarities</strong></td>
<td>Gender involvement in production and</td>
<td></td>
<td>Gender in production, in marketing</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Urban-rural transect of tenure security and vulnerability found in all Core set of IV crops Market inefficiency</th>
<th>marketing</th>
<th>Low income groups</th>
<th>Partly low income - Also commercial sector growers</th>
<th>Low income groups - Also commercial sector growers</th>
<th>Vulnerable groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main differences</td>
<td>Ethnic/social</td>
<td>Wild collected IVs in Mbale from rural areas and sold in urban</td>
<td>Commercial sector groups</td>
<td>Tribal land linked to tenure security - Newly occupied linked to insecurity - Wild collection</td>
<td>Vulnerable groups</td>
</tr>
</tbody>
</table>
Summary:

City size consideration on the results presented was found to be very important in the following places Benin, Uganda and Kenya. In South Africa it was observed all activities along the supply chain from production to marketing were dominated by women. Major issues on the demand side were not sufficiently covered on the methodology.

Proposed actions in future studies/reports agreed

In the process of preparation of country reports refer to the highlights presentations and the matrix developed during discussion. Think on property right issues, institutional setting and organization of IV farmers and their motivation in doing their activities. There should be clear limitation of future findings should estimate statistical aspects like confidence limits. Finally the reports should be disseminated to planners and policy makers.
Session Two (Di 8)

QUALITY MANAGEMENT AND IDENTIFYING NICHE MARKETS IN URBAN AND PERI-URBAN AREAS

Meeting Report

Compiled by: Raymond Auerbach
Indigenous Vegetable production is a survival strategy deeply embedded in local culture throughout the world. The IndigenoVeg Project took as its point of departure the effectiveness of production of indigenous vegetables as a means for resource poor rural people to provide adequate nourishment for their families. The point of departure was thus literal and figurative: what happens when rural people leave their settled local environment, and migrate to urban areas? How much of the rural tradition migrates with them? How do they translocate their preferences as consumers and their skills as producers into the urban and peri-urban context? How much cross-over is there between the customs and preferences of different areas, when these are cast into the melting pot of the city? Is there interaction between international trends towards socially and environmentally sound product preference, and the development of local markets in Africa for indigenous vegetables, which have been seen traditionally as nutritious and easy to produce under low external input sustainable agriculture (LEISA)?

The IndigenoVeg Project has looked at production, nutrition, seed supply, and more recently markets, and Session Two of the Sixth and final thematic meetings looked at Niche Markets in particular. Session Three looked at Extension Linkages, and it is no surprise that part of the proceedings of Session Two were included in Session Three in the CD of the proceedings – Session Two formed a link between the market in general (Session One) and the means of helping producers to access the market (Session Three).

The intention of Session Three was to provide an overview of the specific markets which have developed in Africa, where small and large producers are already supplying agricultural produce successfully to consumer groups who have specific requirements. The session commenced with an overview of African markets for organic produce, by Dr Shilpi Saxena, the organic specialist of the World Vegetable Centre. She showed that although the proportion of production that is certified organic is relatively small in Africa (about 0.2% of the total), the proportion is growing rapidly, with the international organic market valued at well over US$40 billion per year, and growing at 8.4% per year. Price premiums are obtained in East Africa, where organic farming is well organised and growing rapidly.

Dr Saxena pointed out that a very large proportion of African production uses little in the way of chemical inputs, and some refer to this as “organic by default”. Discussion clarified that this can be further sub-divided into those producers who use traditional and sustainable approaches, i.e. purposive sustainable management based on indigenous technical knowledge (ITK), and those who are just poor farmers, with unsustainable extractive systems. The organic niche
market will thus remain an important channel for small commercial farmers to use in accessing both local and export markets.

Dr Raymond Auerbach outlined some of the other niche markets: in addition to organics, with its emphasis on environmental stewardship, there are customers who would like to support socially responsible farming, and these are organised under the FairTrade banner, and are becoming increasingly important as a niche market in Europe. FairTrade buyers pay a premium of about 20% which goes directly to the producer, provided that the producer can demonstrate compliance with social norms (fair wages for farm-workers, safe working conditions, no use of child labour). A third niche market has become more general over the past decade: consumers everywhere are concerned about food safety. Whether the produce is organic or not, FairTrade or exploitative, consumers still want the assurance that if poisons were used, they were used responsibly, and that basic hygienic practices were followed and monitored at every step of the food production and processing chain. Other niche markets include the Rain Forest Alliance (growing rapidly in the United States, seeks assurance that forests are not being decimated by farmers), and Forestry Stewardship Council (sustainable production of timber).

Dr Auerbach went on to show how training in quality management could assist farmers in accessing niche markets, while at the same time helping farmers to become cost-effective and productive. The emphasis is on developing Internal Quality Standards based on what your particular markets require and are prepared to pay for. This has to be closely linked to risk assessment, so that risks of unacceptable quality infringements are minimised. Two case studies were presented where farmers in South Africa’s KwaZulu-Natal province were helped, first with soil and water conservation, and then with other aspects of quality management. One of the key constraints was in helping the farmers to understand the quality requirements of the local organic market – once these were clear to farmers, and had been internalised in terms of production processes, market access opened up. The need for farmer institution building was illustrated: primary producer co-operatives decide on production issues. Once a number of primary co-operatives are operating in an area, a secondary co-operative is needed to co-ordinate marketing and packaging of produce – such an institution requires very different skills, as was shown with reference to the development of Guatemalan Co-operative Movement. In KwaZulu-Natal, there is now a need for a tertiary co-operative to deal with branding and the co-ordination of quality management systems.

Dr Paul Rye Kledal from Denmark presented parts of his doctoral study, which set out to examine how organic production could benefit the environment and help small scale farmers to make a living. He showed that supermarkets are enormously powerful, and often extract hidden charges from suppliers through “new store fees” and “access fees” of various sorts. Supermarkets in Denmark have found that organic consumption, which was mainly limited to upper middle
class consumers, has spread to lower middle class and working class consumers. Many Danish supermarkets have recognised this trend by becoming “Discount Boutiques” - in 1980 these made up 1% of the Danish supermarkets, but by 2005 had risen to 55% of the market. These Discount Boutiques carry a number of specific product lines, often from small organic producers, whose products may be marketed exclusively by the supermarket, and may form part of seasonal themes promoted by the store.

Dr Kledal commented that the same trend is observed in developing markets: initially organic products are purchased by the upper middle class, and introduced only in the capital city, but soon, the consumer base widens, and the stores rapidly proliferate. This general principle was born out by Jane Nalunga’s presentation from the National Organic Agricultural Movement of Uganda. Ms Nalunga reported how the first organic shop, which was opened a few years ago in Kampala, was initially supported by 80% expatriate customers. However, within a year, the clientele was 90% Ugandan, and over the next two years, five shops were opened in different parts of Kampala. Uchiba Supermarket and various others are now entering the market in several East African countries, and South Africa’s Woolworths is also bringing its organic product range into many other African countries.

Ms Nalunga presented case studies which showed how, from the first certified organic cotton scheme in 1994 (Lango Cotton), there has been phenomenal growth, so that now there are over 60,000 certified organic producers (mainly cotton and coffee, but including an increasingly diverse range of vegetables and processed products). The emphasis in Uganda has been on shifting from the initial “Control System” approach, where farmer groups had to follow a set of rules to qualify as organic, to a quality management based approach, where initial risk assessment takes the specifications of the market into consideration and builds in the required food safety, social and environmental management as part of the Internal Quality Standard which the producer group adopts.

Although this approach requires training, mentorship and institutional support, it has resulted in the development of vibrant markets in Uganda. Since 1997, four large groups have developed, and their use of risk based quality management has allowed participation in risk assessment and internal standard development, and has helped farmers to adopt a process of continuous improvement and communication with the market.

Mr John Njoroge has been Director of the Kenya Institute of Organic Farming (KIOF) for twenty years, and has seen the development of organic farming from a fringe activity to a mainstream developmental approach. Traditional approaches to farming were organic in the past, but colonial governments introduced “modernisation” and brought in the “Green Revolution”, insisting that Kenyan farmers should use chemical fertilisers and poisons. Many progressive farmers adopted these methods, but increasingly, they have been turning back to
traditional systems, now with the help of scientific approaches to crop rotation, soil fertility and disease control. The market has developed rapidly in recent years, having three main segments: there is increasing growth of non-certified or locally certified organic produce (using Participatory Guarantee Systems - PGS), which is very popular but not yet very consistent with regard to quality or supply. There is also a small, but growing local market for certified organic produce, and then there is the high-value organic export sector, currently dominated by a few large commercial private farms.

Mr Njoroge points out that many Kenyan farmers have been trained in organic production techniques, and they are now organising themselves into groups and associations, to meet the increasing market demand. There is a major need for information and promotion of both organic farming and indigenous vegetables.

Mr Jordan Gama represents the Tanzanian Organic Agriculture Movement (TOAM), and gave an overview of developments in Tanzania, where there are 55,000 certified organic producers, and as many again who have some form of local PGS. The launch in Dar es Salaam of the East African Organic Standard (Kilimohai Organic: Naturally Nurtured) by the Tanzanian Prime Minister in May 2007, demonstrated that East Africa now takes organic farming seriously, and the Standards Bureaux of the East African Community worked together to set up an internationally acceptable standard.

Mr Gama showed how small farmers with plots as small as a tenth of a hectare, had been able to access markets and improve their standard of living. Using a small pineapple producing group as an example, he explained that small producers supply the co-operative, and the co-operative processes the pineapples, using a pack-house and solar driers, so that produce can be exported, certified organic. He showed a member of the co-operative who is building a brick house, having lived all his life in a mud hut until he was able to access the organic niche market and improve his terms of trade. TOAM is active in twenty regions of Tanzania, and provides a comprehensive training, extension, research and marketing service.

After the presentations, three groups discussed local and international niche markets, and training and support for quality management. It was agreed that in both the local and international market, Indigenous Vegetables (IVs) can access niche markets. They are seen as healthy and natural, and are part of traditional local cultures. They can also be part of an African Export Drive, seen as part of “Brand Africa” products, with specific nutritional and medicinal uses. This will require exposure (telling people that these products exist) as well as development of the market by famous chefs and nutrition experts. The potential of developing IVs as healthy, natural and nutritious products should not be compromised by researchers insensitively promoting technologies for use with IVs which could compromise perceptions in the market. Technologies such as genetic modification, which some researchers are already promoting, and
selection techniques which only screen varieties for productivity under high fertiliser, high crop chemical regimes, may do long term damage to a potentially huge market.

The Extension, training and research discussion group emphasised the need for analysing the progress which has been made over the past ten years, especially in East Africa. In particular, different approaches to certification and quality management should be reviewed, and long term cost-effectiveness assessed. The case studies presented show that with good training, extension and market development support, rapid expansion of profitable small commercial organic production has been possible. The IndigenoVeg project could build on this progress with sensitivity and imagination.
Session Three (SOA12)

Linking communities, extension services, researchers and policy makers for indigenous vegetable production in urban and peri-urban agriculture

Meeting Report

Compiled by:
Axel Drescher and Ernst-August Nuppenau.
Protocol: Stephanie Domptail
SOA 12: Linking communities, extension services, researchers and policy makers for indigenous vegetable production in urban and peri-urban agriculture

The topic of this session originates from a similar approach of the PUDSEA Network (Periurban Development in South-East Asia). The development research approach of many research organizations is not sufficiently taking into consideration the needs of the stakeholders involved in the research. Often stakeholders (e.g. farmers) are subject matters without participation and benefits of the research results. This leads more and more to the fact, that farmers get unwilling to participate in research projects (e.g. being questioned on their livelihoods or production pattern etc.). The other fact is that politicians often do not understand research results and researchers are unable to communicate appropriately the results. The main question is now how improve this situation and create more efficient communication pattern among these groups.

The aim of this session was to investigate linkages. Linkages between actors of an activity arena are present when actors are aware of and benefit from the existence of the others actors. Actors – and mainly the key stakeholders, the farmers themselves - often complain of isolation and disconnection. Consequently, there is an increasing unwillingness of collaborative efforts to be recognized. In this session, we gave special focus on how to identify missing links between actors of an activity arena and methods to build up linkages.

1. Excursions to 2 farms in the Moshi Rural District (Marangu settlement) and Tengeru irrigation scheme in Arumeru District-Arusha.

1.1. Method

We use an interactive approach in the form of a role game, in which each participant identifies with a stakeholder group relevant in the arena of indigenous vegetable production and market. During the proposed excursion on two farms and one irrigation system network, participants were required to make observations from the perspective of their respective stakeholder group. Observations were to identify existing linkages between stakeholders, their nature and the missing linkages. As an output, main issues were summarized. Participants proposed immediate key actions as a reaction to the observed problems and formulated their vision concerning the production of IVs in the areas.

1.2. Excursions description

Moshi Rural District in Marangu– Chagga farming system:

Farm 1: Mrs Mwalimu, Mixed farming system, irrigated and in the mountain area.
- 0.5 acre of land is under customary land tenure system, mostly around the farmhouse in the form of a home garden.
- Additional crop land including maize and beans are rented on a yearly basis and on an verbal agreement, in the lowland area around Marangu to Dar es Salaam road, 20 km from the farmhouse. Access to this land is ensured by private public
transport in local language known as ‘Combis’. For harvesting and collecting harvest residues, the farmer employs seasonal workers. All residues are brought to the farm for use as fodder.
- Animal husbandry: Zero grazing cattle, goats and pig (one sow) observed.
- Agro-forestry: Banana trees are intercropped with taro, coffee, maize, and various other plants including some IVs and fodder trees.
- Manure: collected, used and sold when excess to the price of TSh\(^1\) 14,000/= per tiller. The main market partners are neighbors.
- Water: communal access to irrigation water. The village committee is responsible for pump maintenance. A usage-unspecific fee of TShs. 1,200/= per month is paid to the town council.
- Products: Meat, milk, manure, bananas, coffee and vegetables.

**Farm 2: Traditional Chagga housing and gardening system**

- Garden: Mixed cultivation of many and various plants including indigenous vegetables, exotic leafy vegetables (e.g. paksoy) and aromatic and medicinal herbs.
- Agro-forestry system: banana trees constitute the basis of the homegarden system, again intercropped with several other cash and subsistence crops.
- Housing: small circular houses, housing both cattle (traditionally 2 or 3 pieces) and humans, including cooking activities.

**Tengeru irrigation system in the peri-urban zone of Arusha:**

Water is taken from a natural spring in the heights of the mountain, and canalized for the use of farmers on the slope of the watershed. A number of more than 300 farmers are dependent on this irrigation system for their production. They are part of a community water association, and contribute labor for the regular cleaning and maintenance of the channel in exchange to the water use rights. The system was designed 200 years ago and has been successful until now. However, the farmers the group met reported to have problems with pest control and plant quality. IVs constitute only a small part of their production system, whereas cucumbers were cultivated in monoculture on the largest part of the land.

**1.3. Analysis**

**Linkages:**

Farmers appeared to be well integrated in communities, such as water associations or village communities (also ensuring water access). Organization primarily concerns with water access and distribution. Farmers are also part of an ethnical group and clan, which constrains the array of possible management of the land, especially in terms of agriculture vs. non agricultural use and inheritance of property rights. Thus, farmers’ decisions may also be influenced by non-farmers members of the clan. The clan is often concerned with

\(^1\) Refers to Tanzania Shillings, which 1,250/= equivalent to 1USD by September 2007
the keeping of agricultural land within the clan, thus representing a strong partner in the maintenance of agricultural areas and the planning in urban and periurban areas.

Farmers may also be members of a coffee cooperative. However, there appears to be a lack of communication and accountability of the coffee coops to the farmers as well as between the primary and secondary coffee coop. Farmers appear to have a rather weak communication with the public extension service (as opposed to private extension services such as NGOs). It seems that the public extension is delivering only one message of production based on green revolution principles, and NGOs deliver information about alternatives such as organic farming (OF). Consequently farmers perceive that different actors deliver conflicting messages, which leads to confusion and distrust. Mostly linkages exist with veterinarian services but not for crop management. It appeared that both extension officers and farmers expect the other party to take initiative in the communication and exchange of information. This has been an obstacle to linkage formation until now.

Linkages with other actors of the public and policy making arena include only institutions dealing with water distribution. Land planning is not concerned.

Linkages with researchers are inexistent. Researchers expect to build this link via the extension service; however a link between extension service and researchers wasn’t identified either. Researchers stress the need to develop upwards and downwards information flows from farmers to researchers. At the moment, farmers are unaware of the various institutions that are their potential contact persons. Finally all actors, especially extension services focused on delivering help on the input and production side of the IV activity. Marketing issues are completely neglected, although there is big potential for further processing of produces and export since the flower export industry in located in Moshi, nearby the international airport of Kilimanjaro. Marketing issues, except in the case of the coffee, were not an issue in the linkages.

Main issues and related actions (group dependent)

In general, the level of linkages between the potential stakeholders of IV production was found to be low and a general aim would be to strengthen the linkages. Concretely, it is necessary to increase awareness of the stakeholders about the existence of each other and to adopt a language of communication recognized among all stakeholders. Results obtained by each participant group were gathered and plotted against each specific stakeholder in table 1.

Vision of the whole group for the Moshi and Arusha areas:
Increased training leads to better yields, better land use management, reduced water pollution and better informed farmers. Organic agriculture develops in its full potential; economic activities diversify from agriculture and include eco-tourism, cultural and non cultural tourism, cuisine, and landscapes. Hotels multiply and source inputs from the community. Coffee cooperatives and extension services are well functioning. Land use planners are the main link between policy makers and researchers / extension services. They strive to understand needs of farmers: for example, they include main issues of
marketing and input management (water and nutrient recycling issues) in the design and planning of urban agriculture. They are an important link among the non farming stakeholders of the IV arena. They develop a framework for the integration of agriculture in urban areas by developing rules and guidelines regulating the activity.
Table 1: Results of the role game: summary of issues and related actions identified by the 6 group of stakeholders in their analysis of the farming systems encountered during the excursions in the Moshi and Arusha areas.

<table>
<thead>
<tr>
<th>ISSUES or PROBLEMS identified</th>
<th>PROPOSED ACTIONS</th>
</tr>
</thead>
</table>
| **Concerning farmers and extension services** | - Training of farmers is weak, too technical, no marketing and has no follow up, does not include water quality management.  
- Linkage of farmers with extension service is too weak.  
- Both farmers and extension services expect the other group to take the contact initiative.  
- The blame is always put on the ones that have the money, but extension services can be valuable. | - Improve training and long term follow up of farmers. Increase awareness about water quality issues and all alternatives of farming systems (conventional vs. organic) and techniques to allow farmers to make better informed decisions.  
- Increase farmer awareness of the existence, the value and the quality of extension services, eventually also using monetary means (non-free extension service delivery).  
- Improve planning of activities of extension service and communication about those activities (e.g. thanks to a radio program dedicated to farming, run by the extension office on local frequencies (Southern Namibia)). |
| **Among the extension realm** | - Production is diversified at the home garden level but all farmers tend to produce the same crops.  
- Organic agriculture receives little support.  
- Marketing is not an issue | - Increase communication and cooperation between private and public extension services. - Review the extension services status, especially with regards to salaries in order to keep skilled employees throughout their carrier.  
- Train and develop the role of extension services as links between farmers and researchers.  
- Take into account the diversity of farmers and their diverse needs. Prioritize support and crop improvement taking into account this diversity. Take into account the possibility of gender issues. |
| **Concerning farmers and researchers** | - Information and results of research need be fed back to farmers in an increased manner.  
- Improve the information flow among the three actors: researchers-farmers-extension services. | - Review responsibilities and structure of the coffee primary and secondary cooperatives in order to improve accountability |
| **In the marketing realm** | - Increase in markets thanks to growing urbanization. | - |
### Concerning Researchers and Extension Services

- Production is diversified at the homegarden level but all farmers tend to produce the same crops.
- Processing of crops to overcome seasonality does not take place.

### Between Land Use Planners and Other Actors

- Conflicting land use: agricultural land being eaten up by construction industry in urban development processes.
- Growing urbanization and its negative impacts: increase prices of land, land scarcity, land subdivision, conflicts on land.
- Presence of two different land tenure controlling systems: legal and customary that act in parallel and as to yet still in an uncoordinated manner.
- Absence of land use planning in the stakeholder arena (at least in farmer discourse).
- Water issues: provision and maintenance. Linkage with water association is weak. Involvement in water management is inexistent.
- Function of land planners: negligible in rural areas (more in urban areas)

- Analyze the market potentials for IV. Analyze the actors of the production, as well as the demand side.
- Make a study on investment and costs for IV production.
- Make a thorough analysis of the linkages between actors.
- Determine optimal Marketing: places: considering issues of access to farmers, traders and customers, environment, etc.

- With community: strengthen understanding and collaboration with clans and find a solution to integrate customary law in a new legal design, in order to benefit from the strength of a functioning system and not to destabilize land tenure and tenants.
- With policy makers: Act as links between the various ministries which have stakes in the development of urban and peri-urban agriculture (ministries of health, agriculture and water management, industry and construction) to coordinate actions and secure information flow.
- Water quality: develop regulations to guarantee water quality.
- Evaluate water resource and its current and estimated future use by agric, domestic and industry. Establish priorities.
- Evaluate land resources and ensure optimal land use plan (need for participatory approaches).
- Find ways to add value to agricultural to increase its value against construction industry land uses. Eg: integration with provision of green areas.
- Use of GIS
- Increase influence in rural areas: review functions of rural and urban land planners and identify why land planners are neglecting rural area.
2. Linking stakeholders: state of the art and stakes

2.1. Experience of a practitioner in the Tanzanian Health Sector: Pathways to Success in linking communities with researchers and policy makers - Selemani Mbuyita

Mr Mbuyita presented a methodology to build linkages among stakeholders, illustrated by the presentation of 2 case studies, and defined the concept and necessity of leadership in a stakeholder group.

Collaboration is about linkages and involves that all stakeholders perceive themselves as part of one group and not as outsiders facing ‘the others’. In order to create the necessary linkages between stakeholders, a methodology in 7 points is proposed here, from the point of view of a facilitator willing to coordinate an action project in situ.

- Know the legal governing structures existing in the country and take them into account when moving around in the social network.
- Map the existing groups of communities – social class, income level, gender. Use geographical data.
- Establish a list of all actors of the activity arena (NGOs, communities, research centers, …).
- Find commons values, which we can be shared and accepted by all stakeholders.
- Communicate about your activities, actions and plans. Allow partners to appreciate your presence and work. Create awareness.
- Strategize the representation of stakeholders.
- Involve all stakeholders in earlier stages of the program (from initiation).

The case studies presented illustrated two important prejudices that often are used as excuses for not including stakeholders in the design of an action project. First the urban design question or the issue may seem too complicated to involve people with a low education level. However, this only highlights that project leaders often lack know-how on how to integrate a variety of actors in the design of a project. Second, it is often assumed that is it enough to include stakeholders only in late stages of the design process, or only when it comes to the assessment of the benefits of the project. Those are two typical drawbacks that can make a project unsuccessful. It was shown that the inclusion of stakeholders from the moment of the data gathering in initial project phases validates the data and has an impact on the project’s design. Thus, project carriers need to be more aware and develop methods to include stakeholders in early project development phases. In this respect, project carriers can be viewed as leaders of the stakeholder arena. Characteristics of good leaders are flexibility, strength, confidence and patience. Leaders have secure communication paths with all stakeholder groups and are aware that they need them in order to succeed.

Land use planning practice is government dominated and centralized in Dar Es Salaam and country as a whole. Urban land use planning follows the government’s main set of priorities with little or no consultation of the concerned landholders and users. Land surveyors in managing land depend on guidelines as presented in land use plans as a framework for sustainable use of land. Urban agriculture is not a priority for the government and agricultural land is not reserved in city land use development plans. However, urban agriculture is important for several purposes among them food safety and its contribution to the ‘greening’ of cities.

Currently, urbanization patterns are complex and unorganized in Dar es Salaam. Land is still available in periurban and transition zones of the city, but wild construction takes place and therefore engulfs agriculture land. Activities using the same media, land, aren’t organized either. Thus, cases of pollution of land and/or water through household and industrial waste are known to reduce the quality and viability of urban farming activities. In this context, urban land use planning faces a number of challenges to facilitate the inclusion of urban agriculture in urban land use design:

- Complexity in decision making,
- Inadequate involvement of actors,
- Poor technology for waste water management,
- Lack of communication and coordination between ministries,
- Current attitudes at government level do not recognize the importance of UA.

In reality, the whole decision making in land use planning is a chaos of purposes and accidents. Voices of the various stakeholders are neither balanced nor taken into account. Mr. Magigi highlights that good governance reveals crucial in this issue of land distribution, where decision often are not taken for the benefit of the community.

2.3. Learning from other Sectors: Linkage or bottleneck? How actors and beneficiaries in urban environmental malaria control assess the interplay of communities, leaders, extension services, researchers and policy makers in Dar es Salaam – Stefan Dongus

This presentation illustrates very well the needed cooperation among various institutions at the city level and the necessity to consider urban agriculture planning in a systemic way. In the context of controlling malaria, the city government has put up a program aiming at preventing the breeding of malaria-carrying mosquitoes. This encompasses a wide variety of mainly non-agricultural breeding sites, but also agricultural areas such as the shallow waters of irrigated raised beds in urban agricultural plots. Community workers regularly apply biological larvicide (BTI) on those plots. The program is promising, as it constitutes a true opportunity to really and directly apply results of research about malaria. In addition, it is not a program implemented by donors or international experts; on the contrary, there is local ownership in the program. However,
the study of Stefan Dongus also reveals a series of findings that may compromise the success of the program:

- Community-based staff is not yet trained optimally, and often not in a position to communicate about their actions to the concerned communities.
- The role of community members is still a rather passive one. More participation could result in more sustainable malaria control, and raise commitment.
- Communication within the hierarchical pyramid of the city staff is low, so that there is only very limited trust and responsibility taking at lower levels of the pyramid. This leads to conflicts.

The experiences from this context in Dar es Salaam lead to the following conclusions:

- Applied („operational“) research can directly influence further programme development and implementation and therefore help getting research into policy and practice
- Institutionalization of program activities can contribute to ownership
- Inclusion of key policy makers from the start increases sustainability

2.4. Stakeholders and organization of the inputs for IV production in PUR: an introduction – Ernst August Nuppenau

Recycling is per essence an issue that links a whole chain of stakeholders for coordinated action between land planners, extension services and farmer communities, and researchers. This contribution deals with opportunities, problems and solutions for indigenous vegetables with respect to nutrients recycling and the promotion of a more profound basis of these vegetables in a periurban environment. The general idea is to use the advantage of cheap nutrients from recycling for indigenous vegetable production. We foresee a better chance and likelihood for the adoption of indigenous vegetables where organic production is introduced and this production is based on a solid compost economy within a community. Therefore we suggest a stakeholder analysis to find out the willingness in a community to embark on a broader concept of recycling and production in the sphere of indigenous vegetables.

In particular, the contribution reflects on new institutional arrangements conducive for the purpose of the promotion of recycling for indigenous vegetables. The methodological aspects raised are: participatory approaches, stakeholder involvement and economic analysis of contracting and of vertical integration.

This contribution brings to light the necessity to apprehend IV production in urban areas within the whole city nutrient cycle. This approach presents opportunities for better crop losses management and recycling, and stresses the fact that urban planning can be of great importance for the development of sustainable vegetable production in cities.

3. Take home message

IV and vegetable production appeared to be a very small issue in a much wider structure and are embedded in other problems (urban and periurban planning, health issues and malaria control, nutrient recycling, for ex.). Thus, we have to deal with a series of many
different actors. This suggests that a systemic approach should be used in the promotion of IV production and marketing in PUA and consequently the inclusion of the actors in the project.

During the interactive exercise, we have identified a series of linkages and key issues and proposed some actions that could be undertaken to improve conditions of agricultural and specifically IV production. The method used turned out to be powerful and allowed participants to widen their perception of the issue of IV production. A main finding was the weakness of extension services and their narrow focus on green-revolution based technologies for production only and especially problems of proper application of technologies. Marketing and alternatives are missing.

However, we realized that we participants became very rural in our observations and thought about farmers first, forgetting the other actors. In our assessment of linkages, most of us have reported about linear linkages, but Mr. Mbuyita has shown us a different way of seeing linkages, that is group learning and team action. All actors would gain from listening and learning from each other and promoting effective communication appears as a key issue. In addition, methods for social and group learning are well known and documented in the literature. Actors must stretch beyond their discipline or official status and become more multipurpose in order to fill the gaps and carry responsibility of information flow between groups of actors. The need for leaders to coordinate action was made clear and it appeared that land use planners could be potential leaders if given the means, the training and the responsibility at the governmental level. In addition, they could be of key influence to increase the value added of urban and periurban agriculture to livelihoods in governmental priorities. A major finding was also to include policy makers from the very beginning of a project already in the planning. A more systematic thinking in a more holistic approach towards action research methodologies is needed.

In the context of our IndigenoVeg networking project, it appears now important to find ways to include land use planners and policy makers in our activities and take lessons of the insights delivered by this 6th meeting in our future research efforts towards the PU and urban production of IV. This will be one of the objects of our integration and stakeholder meetings in November 2007 and January 2008.