

# Senegalese farmers visit Europe

PAN UK's Food and Fairness project provides a channel for African farmers to voice their concerns to the European food sector and consumers, and to exchange experiences with European farmers. To this end, a group of five Senegalese horticulture growers visited Germany, the Netherlands and UK in July 2006. **Stephanie Williamson** reports on what they saw and the lessons they took back.

The horticulture sector in Senegal is expanding rapidly, both for local consumption and for export. While this allows European consumers to enjoy many out of season crops such as green beans, cherry tomato, mango and melon, small scale growers in Senegal face many problems (PN 71, pp12-13) ranging from managing their crops profitably without hazardous pesticides, to finding a reliable buyer and getting a decent price.

In July 2006 PAN UK and PAN Africa organised a visit to give Senegalese smallholders a better understanding of how vegetable growers in Europe are coping with stricter residue and quality requirements and the ever lower prices offered by supermarkets. Three women and two men took part, representing associations of small and medium scale growers, all using organic or IPM methods. We chose tomatoes as a focus crop as they are widely grown in Europe and Africa.

The largest farmer organisation participating, represented by Mr Diery Gaye, was the Les Niayes Zone Federation of Horticulture Producers (FPMN) which has 1,800 members, mainly smallholders from over 45 villages in Senegal's main vegetable production zone. FPMN has been involved in Integrated Pest and Production Management Farmer Field School training since 2001, with the support of the United Nations Food and Agriculture Organisation and regional research organisation CERES Locustox (PN 61 pp8-9). More than 400 of their members have reduced pesticide use and five men and two women members are qualified as Master Trainers.

Mrs Kene Ndiaye and Mrs Awa Ndione represented women's rural self help groups Mun Takku Liggééy ('organising to work better together') with 75 members, and Yakaar ('hope'), with 105 members, both in Diamniadio district. The aims of both groups are to help members improve production techniques and to develop processing opportunities for local cereal and horticulture produce, to promote small trading enterprises and improve the income and livelihoods of rural women. From 2001 to 2003 PAN Africa trained more than 100 women from these groups in Integrated Pest Management (IPM) for vegetables,

using Farmer Field School methodology.

Mrs Jeanne Diatara is president of the Network of Women in Organic Agriculture and Fair Trade (REFABEC), which works with around 150 members in the Thies region. REFABEC's main activities are production of organics (fruit and vegetables, cereals, peanuts, hibiscus flowers for fruit drinks), processing, storage and marketing of organic produce. They aim to integrate women into productive and profitable supply chains and to promote closer links between producers and consumers.

The fifth participant in the exchange visit was Mr Elhadji Hamath Hane, founder member of the Senegalese Association of Natural Farmers (AGRINAT) which organizes production and training in organic farming, with a research and training farm for agroecology in Mbour department. He was instrumental in setting up the Senegalese Council of Organic Agriculture in 2000.

The group's main objectives were to:

- express to European stakeholders their views on the horticulture situation in Senegal
- exchange experiences with European farmers
- meet European horticulture importers
- discuss alternative production systems, especially Integrated Pest and Crop Management and organic methods
- take part in forums about horticulture supply chains
- discuss concerns regarding compliance with European Union MRLs and other quality requirements, especially EurepGAP (PN73, pp16-17).

## Understanding European production systems

To give the Senegalese visitors an appreciation of the diversity of horticulture systems and size of enterprises and the different challenges facing European growers, they visited a range of growers. Large and small scale growers of organic, IPM and conventional tomatoes were visited in Germany, the Netherlands and the UK. All tomato production was under protection, from modest two metre high plastic polytunnels erected by some small organic growers, to



The Senegalese group and PAN partners with Dutch organic glasshouse grower, Rob van Paassen.

Photo: Hans Mulierman

the cutting-edge technology of glasshouses more than five metres tall with computerised temperature and humidity control and year-round illumination, operated by the biggest growers in the Netherlands.

All the tomato growers use commercial biocontrol agents for controlling insect pests, especially whitefly, spidermites and aphids. They also purchase bumblebees for pollinating the tomato plants, a task which had to be carried out by hand in the past when insecticides (toxic to bees) were widely used. The visitors learnt that while biological control can be highly effective, it is expensive and requires a lot of monitoring and staff time. Pesticide use by IPM and conventional growers is mainly limited to burning of sulphur fungicide candles for a few hours each day, to prevent mildew disease, or last resort insecticide application if the biocontrol balance is upset.

## Organic growers and pest problems

Organic growers have fewer options, particularly as they are only permitted under organic regulations to grow plants in soil, and not in rockwool substrate, the common practice in conventional glasshouse systems. This means they often have to contend with serious nematode problems. Rotation to avoid a build-up of nematode populations is difficult as only a limited range of crops can be grown profitably under cover. A small Dutch organic producer described to the Africans how he has been experimenting with various options, including grafting shoots onto more resistant rootstock, steam sterilisation and companion planting with African marigold (*Tagetes* spp). Marigold is well documented as a nematode repellent, but did not seem to work for him. Similarly, soil steaming killed off useful soil microorganisms while the problematic nematodes just moved deeper in the soil to avoid the heat. He is now trialing a predatory nematode as a biocontrol option.

Nematodes are also a major headache for organic and IPM growers in Senegal who do not use nematicides. The Senegalese had never heard of the use of



Learning how samples are prepared for residue analysis, Institute for Hygiene and Environment, Hamburg.

Photo: E. Hamath Hane

marigolds, which could be a cheap method if it works under their conditions. In exchange, they described their relative success with planting peanuts as a trap crop for nematodes, which can reduce populations in the following crop, and encouraged their Dutch counterpart to try it out.

An important lesson was that there are few ready-made technical solutions for European growers. All the organic growers learned by trial and error and although there are academic research results available on organic growing, these are no substitute for doing site-specific experiments under their own soil conditions. The Dutch grower has found that soft soap spraying against aphids only works if he also manages to get at least 50% parasitisation of aphid colonies by use of commercial parasitic wasps. Beneficial insects introduced into glasshouses were unable to cope with the rapid increase in pest numbers during the recent heatwave. Leafminer populations can explode when temperatures rise and commercial biocontrol agents may not be able to keep them under check. The only effective control this grower has found is to roll out a long strip of yellow sticky plastic on the glasshouse paths each day but avoiding putting it too high, which traps the beneficial flying insects.

While all growers make use of biocontrol, organic ones also need to take advantage of as much naturally occurring and free pest control as possible. A small British organic grower has established three ponds close by his polytunnels and now gains an effective reduction in slugs and snails from the resident frogs which have moved in. The Dutch grower noticed that birds did not seem to prey on caterpillars after he sprayed *Bacillus thuringiensis* (Bt) and as birds are effective pest predators even inside the glasshouse, he now prefers to limit Bt use as a last resort.

### Problems faced in Senegal

According to Kene Ndiaye, the members of the women's groups gradually realised that using a lot of pesticides on fresh vegetables was neither healthy nor sustainable, and was also expensive for women farmers,



Jeanne Diatara looks at tomato plants in small-scale glasshouse cultivation, Stefan Sooth's farm, Germany.

Photo: E. Hamath Hane

who have less access to credit than men. Many had encountered health problems when relying on pesticides before being trained in IPM. They were always worried about exposing their babies when breastfeeding and about contaminating the family food if residues remained on their hands after washing. As none of them knew what the correct dose rate was for different products, it was quite common to end up scorching their crops with too high a concentration. All these factors motivated them to get involved in IPM training as a solution.

Their main pest problems on tomato are whitefly, which can transmit viral diseases, and they now use mesh to protect the seedlings at nursery stage. For leaf-cutting insects and caterpillars, the IPM training taught them to prepare botanical preparations based on neem seed, chilli and garlic. The women's groups are using these quite successfully although pounding neem seed to make the extract is laborious and a grinding machine would help cut down the time involved. For nematodes, they are still looking for a reliable control method and some of their members continue to apply carbofuran before planting tomatoes, a method which they would like to stop.

All the farmers stress that one of the most important tools in IPM and organic production is to spend time observing the health of the crops in the field to observe pest and predator organisms. They also agree that healthier and more environment-friendly crop management requires more time and effort than conventional production which is not recognised by consumers and is not compensated for price-wise, either in local or export market chains.

While European food safety regulations are seen as an unfair barrier to trade by some development organisations, the farmers on the exchange visit actually think complying with strict Maximum Residue Levels, as demanded by the EU, is a good thing as it promotes safer production without abuse of pesticides. Nevertheless, they do find it difficult to obtain only those pesticides authorised under export protocols and these crop protocols often change so it is hard to keep up to date. The IPM trained



Comparing sweet pepper management methods, Gut Wulfsdorf organic farm, Germany.

Photo: E. Hamath Hane

farmers are actively working to reduce their use of pesticides further and in theory, this should put them in a stronger position to produce for export. Kene Ndiaye's group recently took part in training on food safety and pesticide handling requirements under EurepGAP protocols organised with COLEACP Pesticide Initiative Project (PIP) and PAN Africa (PN73, pp16-17).

Recent analysis of Senegalese tomatoes showed no pesticide residues in any samples of produce from IPM trained smallholders, while 50% of conventional tomatoes did contain traces. Their main obstacle, however, is the inadequate information on prices and export standards and the inability to negotiate prices with exporters. The group would like much closer contacts with European importers and longer-term business relations with a fairer price to support them to invest in their farming enterprise and improve their produce quality and traceability.

### Key lessons learnt in Europe

The visits to large-scale tomato growers in the Netherlands and the distribution centre of one of the largest horticultural enterprises was an eye-opener for the Senegalese group, in terms of how the retailer and consumer end of the supply chain influences production upstream. Diery Gaye summed this up: 'In Europe the consumer is king. We need to start thinking 'How can I meet consumer requirements?', rather than 'Who will buy my produce?' The group was also impressed by how quality is one of the main criteria throughout the supply chain from field level to retail presentation. They recognise that African farmers can never compete with the scale or sophistication of the Dutch glasshouse sector. So what marketing strategies and good stories for consumers could they develop instead? REFABEC members have noticed the taste of pesticide-reliant produce is not good, even in the produce going for export. In contrast, their organic tomatoes taste much better and this could be a selling point to increase demand. The group loved the different varieties of tomato produced in the Netherlands, particularly the tiny 'sweetie'



Examining the on-farm pack line for mixed vegetable packs, Stefan Sooth's farm, Germany.

Photo: Stephanie Williamson, PAN UK

varieties grown by one company, in different colours, and sold in party packs for children. They took home seed from different varieties of peppers to experiment with for the Senegalese market.

The group noted that European organic farmers have considerable pest and disease problems and can incur economic losses but that price premiums or direct marketing help compensate. They saw how vegetable box schemes operate in the UK and Germany, as well as farm shops and alternative retail outlets, and realised how important it has become for groups of organic farmers to work together to share resources and be able to offer a range of crops and in sufficient quantity to compete in today's markets. Jeanne Diatara particularly liked the customer investment scheme started by the German organic farm visited, in which regular customers are invited to make a small investment to help the farm grow and receive 4% interest returned in fresh produce.

They also noted how many of the European growers were using greener technologies, such as water recycling, for sustainability reasons and also for cost-effectiveness. Obtaining water is extremely expensive in Senegal and the water-driven motor for an automatically advancing sprinkler rig they saw in the UK would be ideal as it uses half the water volume of conventional sprinklers in Senegal and would save much labour time too. The sprinkler boom and carriage could be produced cheaply and easily by local blacksmiths. Unfortunately, finding seed money to invest in appropriate and greener technology for production and storage is very difficult for African small-holders. The group urge that donors and food companies interested in supporting smallholders in export markets should help them make these investments, through loans to be paid back via produce purchase contracts. In this way they could gain financial benefits, assure European consumers that their production is not harming the environment and use the technology to improve the sustainability of production for local markets too.

Nevertheless, the Senegalese did ques-



Awa Ndione examines French beans, Gut Wulfsdorf organic farm, Germany.

Photo: Stephanie Williamson, PAN UK

tion the long-term sustainability of the highly sophisticated glasshouse systems in the Netherlands, with some companies managing buildings up to eight hectares in size, with enormous energy demand for lighting and heating. In their views, European consumers and supermarkets need to recognise the value of the environmental and social equity benefits of African low resource use farming methods. The group made a plea for support for developing longer-term farming livelihoods in Africa, so that their children can look forward to inheriting a profitable farm, rather than join the exodus of young immigrants looking for work in Europe. As co-organisers of the exchange, PAN Africa insists that Europeans have an ethical responsibility to help women, in particular, develop sustainable markets.

### Next steps in Senegal

To address the problem of lack of market recognition and demand for IPM produce within Senegal, Diery Gaye's organisation, FPMN, plans to develop a 'Rainbow' label for members' IPM produce, to be sold via its own kiosks and weekly market stalls. This would require some form of official recognition and verification to give consumers confidence and he is interested to learn of experiences in other developing countries, which do not entail the prohibitive expense of full certification by ex-patriate auditors. FPMN is also exploring options for direct purchase by hospitals. This issue should be part of public health policy as sick people are more vulnerable to pesticide exposure than healthy ones. This strategy will require considerable education, as catering managers currently have no idea about where the food they purchase comes from. A direct procurement project could also include a public education message about pesticide residue hazards.

For Jeanne Diatara, to expand the local market for organics, REFABEC needs storage facilities and better preservation techniques, including low-cost and environment-friendly drying technology. They are particularly keen to research biodegradable packaging for their dried produce as



Diery Gaye, with the water-saving sprinkler rig, Mayfield Organic Farm, UK.

Photo: Hetty Selwyn, Farmers' Link

Senegal is awash with discarded plastic bags, which not only clutter up the landscape but also cause serious harm to grazing livestock. Many farmers have lost goats and cattle whose stomachs have become blocked with plastic. REFABEC have an organic café but aim to set up a home delivery scheme for busy housewives.

The Yakaar and Mun Takku Liggéey women's groups are confident that they can produce safe, quality vegetables but need initial help up the first rung on the ladder. They would like to be able to use drip irrigation, to save water, money and labour time, and support for small cool storage facilities and preservation and processing units for their vegetables and cereals.

For Elhadji Hamath Hane from AGRINAT, the main problem is to get better recognition for Senegalese produce both in local and international markets. To do this, they need to improve presentation and packaging and develop better production and marketing strategies for local markets as a key priority, to avoid the frequent gluts in crops like onion and tomato, which send farm-gate prices crashing. AGRINAT will continue to lobby for concrete policy support for organic expansion in Senegal, and collaborate with PAN Africa on innovative ways to get consumers interested in organic and IPM produce.

All the farmer organisations represented on the exchange highlight the need for expanding training in safer pest management, as existing projects have not reached even half their members, much less the thousands of untrained horticulture smallholders who continue to rely on highly hazardous pesticides in other parts of the country. Kene Ndiaye expressed the following message to European donors, consumers and companies in the food chain: 'IPM and organic farming supports health and environment. Helping women to do this means helping our entire nation, and we need more help for women to push for this type of development'.

More details of the farmers, the exchange visit and seminar can be found on the Food and Fairness web pages at [www.pan-uk.org/Projects/Fairness](http://www.pan-uk.org/Projects/Fairness)