



Quality & Conformity Fruit & Vegetables

# PIP Magazine

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TRAINING SPECIAL ISSUE

## editorial

From the very start, PIP has integrated training as an essential component in building the capacities of technical staff in ACP horticultural companies, which must cope with ever more new conditions for access to the European market. As there were no educational or support methods available and specifically adapted to this new economic and regulatory environment, they had to be created from scratch.

This is exactly what the PIP did, by developing a range of tools designed to train the programme's various beneficiaries. This training system is based on two fundamental principles: the will to share knowledge with a wide range of beneficiaries (from company managers to smallholder producers - who number over 100,000) and the establishment of a network of ACP trainers to keep the system going.

But what does the future hold? With the current major changes in European markets resulting from more stringent requirements from the high-value retailers, new needs have emerged for the training of ACP exporters. What are these needs exactly? How can they be met? How can the existing training system be improved? These are the questions being asked today in the field, where COLEACP's PIP programme has been tried and tested.

**Emmanuel BOURCELET**

PIP - Information and Communication Manager

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PIP

## Putting food safety management into higher education curricula: a new goal for the PIP programme

Until now, the capacity building activities of the PIP have focussed on those working in the fruit and vegetable export sector, in particular, company technical managers, and service providers. In 2007, the PIP launched training actions for a new target group: lecturers and other teaching staff in institutes of higher education that offer courses for future managers.



Before entering the workforce, most company staff such as production, quality or traceability managers, packhouse managers, etc. have acquired their basic knowledge at vocational schools, technical colleges, and other educational centres in ACP countries. Based on this premise, the PIP took the decision to develop activities that would increase the awareness of teaching staff in these institutes, both public and private, about the problems faced by ACP exporters in maintaining their access to markets.

The PIP's objective is to help teaching staff to update their knowledge of the regulatory environment, risk analysis, and food safety management, and to improve

their teaching skills. With better information and teaching tools, they will be able to build relevant technical and scientific concepts into their courses and transmit them more effectively to their students.

### Collaboration with the World Bank on a programme to train 100 teaching staff

In partnership with the World Bank Institute, PIP experts are currently preparing a series of seminars to be implemented later this year in a number of African countries, for around 100 specialised teaching staff. The World Bank

will identify the teaching establishments and training centres, and the PIP will determine the content of the training workshops, which will cover not only technical subjects, but also communication methods. The PIP training specialists will organise the sessions. They will also provide manuals and teaching aids (particularly the Toolbox and the "animated" training tools). They will assist teaching staff not only to use the aids as part of their courses, but will also encourage them to teach their students to assimilate them and use them in turn.

### Transferring knowledge in Papua-New Guinea

The first session is scheduled for May 2007 in Papua-New Guinea. Assisted by teaching staff, it will aim to develop an "incubator" of technicians who are thoroughly trained in food safety matters. With the support of the ACP Secretariat General and the European Commission Delegation in Port Moresby, a 10-day workshop will be organised by PIP experts for teaching staff, and for managers of professional organisations. The idea is to add to their knowledge and to provide them with teaching methods, aids, and material, to help them, in turn, pass on to their students the principles involved in food safety management for agricultural products, as well as respect for the environment.

# PIP educational tools:

## understanding the challenges of food safety regulations and sharing knowledge at all levels

In order to support training in the horticultural sector, PIP experts have developed educational tools customised to the circumstances of ACP companies. Technical manuals, training brochures, visual tools for role-play, puzzles, etc. have been designed to inform and train the various beneficiaries of the programme including local service providers, technical managers, farm workers and smallholder outgrowers who supply the export companies.

Since it was launched, the PIP programme has identified major training needs among ACP companies in the areas of food safety, food hygiene, the use of plant protection products, etc.

The PIP Training Unit was established to deal with the urgent need to adapt agricultural practices in line with new European regulations. With time, the training unit has become a true training system, based on the concept and design of educational tools adapted to the diversity of stakeholders involved in the production and export of ACP horticultural products.

### "PIP training": a progressive and sustainable system serving the ACP agricultural export sector

At the outset, educational material specifically designed to meet the needs of ACP horticultural export companies did not exist. It was therefore necessary to start from scratch. The educational content of the PIP training curricula was chosen following diagnostic studies carried out in ACP companies during the first two years of the

programme, and based on the combined training needs that were identified. The training system includes eight theme-based modules:

- *The food safety approach*: What strategy should ACP companies adopt in order to access European markets? How should a food safety management system be implemented and how should it be evaluated?
- *Traceability*: What is traceability? How can product traceability be established? How should a traceability management system be implemented and what are the limits?
- *Hygiene and risk analysis*: Risk analysis using HACCP; biological, physical and chemical risks; hygiene in the field and packhouse, the importance of the cold chain;
- *Safe use of pesticides*: Toxicology; personal protective equipment; environmental risks; storage, labelling and transport of plant protection products; planning and conducting pesticide applications;
- *European regulations on plant protection products and food safety*: The international context and EU perspectives, general information about residues, EU requirements, control and monitoring;
- *Searching for information and the PIP Question/Answer system*: Information needs in terms of European regulations; using a computer to communicate and to disseminate information; using the Question/Answer system.



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- *Crop protection:* crop pests; how to identify diseases, insects pests and weeds? What are the principles of crop protection?
- *Training and communication methods:* training styles and training techniques. How do students memorise a message? How to communicate effectively? How to use training tools, and how to plan the training?

### Reference materials in the key areas of food safety

These eight modules are produced as illustrated guides, providing a common technical and methodological foundation for the programme, upon which relevant training packages can be developed for a wide range of PIP beneficiaries ranging from technical managers in ACP export companies (quality or production managers), operations managers (field and outgrower managers) or farm workers.

These manuals are available in printed form in two languages (French and English). They are also available in electronic format (pdf files) on the PIP website in the Restricted Area reserved for programme beneficiaries. They can thus be easily downloaded and printed by local consultants as well as public sector bodies involved in training in the horticultural sector.

Along with these guides, the PIP has drafted a series of reference protocols for the main crops. These illustrated guides, in French and English, are also available to ACP export companies.

### An underlying principle of sustainable cooperation

The development of the PIP training system is based on the underlying principle of sustainable cooperation: European consultants have provided training to technical



staff and agronomists in ACP companies, as well as ACP consultants who, in turn, have delivered the training to this type of public.

Using this approach, a "trickle down" effect has ensured that the training activities, and the mechanisms used, have transferred knowledge and skills throughout all levels of the export companies themselves, as well as to their outgrower suppliers.

Based on the 8 foundation modules, additional tools have now been developed to facilitate self-learning (for example, the "PIP Toolbox" that is directed at trainers or managers). Tools have also been developed to facilitate learning among those who are less familiar with knowledge acquisition, such as small-scale producers and farm workers. These include adapted training packs (visual tools for simulations, role play, posters, kits of educational material, etc).

In 2003 and 2004, PIP experts developed the eight thematic "modules". Based on these 8 modules, over the next two years PIP rolled-out the programme of collective training sessions in the field. This has allowed the technical skills of trainers, as well as company managers, to be strengthened.

Since 2006, the PIP has favoured the introduction of self-learning and self-assessment packages, while continuing to add to the training documents by regularly updating existing manuals or by adding new information.

In 2007, the PIP's main objectives are to consolidate the training materials – in particular by developing field training activities based on the use of games and role-play – and to develop a better relationship between trainers and their students, particularly through the use of participatory methodologies.

Thus, over six years, the PIP has created a wide range of training tools which could be made available to other development projects, or to higher education programmes (see the box "Integrating food safety management in higher education curricula").

### The "Toolbox": to promote self-learning

PIP developed the "Toolbox" in 2006. This consists of a computer-based interactive support tool for technical managers to assist them during the implementation of training programmes. It also promotes self-learning for the technical staff themselves. In addition, the Toolbox contains databases covering relevant supporting

## Making information available to everyone, to benefit as many as possible

Beyond their direct usefulness for the fruit and vegetable sector, the PIP training methods and tools may also be used, or serve as models, for other agricultural sectors in ACP countries. Their use need not be limited to the scope of activities within the programme. The PIP has therefore decided to make its tools available to other development programmes, or international organisations, and to independent service providers, as long as they agree to use them only for the benefit of ACP companies. The aim is to increase the possibility of benefiting as many farmers, farm workers, and packhouse workers as possible.

PIP training materials such as the Toolbox, the training modules, crop protocols, and training methodologies, are thus subject to collaboration agreements with programmes and organisations active in the area of agriculture such as FAO, CTA, the World Bank, NGOs and technical centres in ACP countries. The PIP publications and tools are offered to local consultants, professional associations, and local organisations responsible for agricultural training and extension. The goal of the PIP is to make a long-term contribution to the overall development of the ACP agricultural sector. These tools – designed so that beneficiaries may use them on their own – can therefore be used wherever needs have been identified and validated by relevant programmes.

information. The Toolbox was designed as a CD-ROM, with the aim of providing a solution to the problems that face export companies in accessing important information, while at the same time minimising internet connection problems experienced in most ACP countries.

The Toolbox comes in the form of two CD-ROMS. Once they are installed on a computer, they provide access to several sources of information, including:

- a "pesticides database", based on European regulations on active substances, national regulations, and authorisations in ACP countries. The database may be searched using the commercial name of the product, the active substance and/or the crop;
- crop protocols for the main ACP export crops;
- an interactive training area, for self-learning and self-assessment, in the key areas of food safety and traceability;
- a glossary, with the definition of the main terms used in the area of food safety. The words are classified in alphabetical order and may also be accessed using a search engine;
- a question/answer section;
- a video library, with approximately twenty video demonstrations of the principal application methods for plant protection products;
- a photo library, with over 500 labelled photos relating to cultural practices, crop pests, etc.

The toolbox, which is available in French and English, is now fully integrated into the PIP training system. Since last year, computer-assisted training on its use has been provided to trainers (local PIP consultants) and to technical managers from the private and public sector. The Toolbox's interactive training space includes theme-based modules (personal hygiene, safe use of pesticides, crop protection, regulations, etc). Thanks to this training tool, participants can learn at their own pace. Furthermore, users can also test their level of knowledge using the self-assessment system; this includes evaluation by subject and by theme, as well as a final evaluation. Finally, the PIP, by monitoring the self-assessment sessions, can provide a certificate of competence once the training is complete.

### Adapting activities and tools to suit different beneficiaries

The collective training workshops, and the materials used at these sessions (such as the theme-based modules and the Toolbox), are mainly intended to provide managers with new technical knowledge. This knowledge will then help them to implement quality and traceability systems in their company, and to apply Good Practices.



By means of the collective training, and using the range of tools developed, the PIP has been able to reach top level company staff, i.e. managers and technical staff. The majority of these are educated, being qualified agronomists and quality control specialists, and thus familiar with modern learning methods. However, this is often not the case for labourers (in the field and packhouse) and the smallholders who supply the companies. The latter may have little education or literacy. This agricultural population are often illiterate, and may speak a local dialect. Providing these groups with technical knowledge and training in good practices calls for different methods and tools to be used than in the case of management staff.

Last year, the PIP looked into this problem. Experts worked on designing tailor-made activities and tools to train the large numbers of company workers (harvesters, sorters, packers, etc) and smallholders. The general approach is to opt for a concrete approach, using experimentation and visual tools.

### Training brochures and tools for "fun" activities

The concept of using "animated" training sessions emerged from this reflection on the best way to teach company workers and smallholders in the ACP horticultural sector about food quality (see boxes). To help plan and implement the sessions, a series of 21 "training brochures" were created, dealing with four main themes. Two of the themes are specific to production, and to work in fields and orchards: they concern crop protection and the safe use of pesticides. The other two themes are cross-cutting and deal with hygiene (in the field and during transport and packaging) and traceability (from

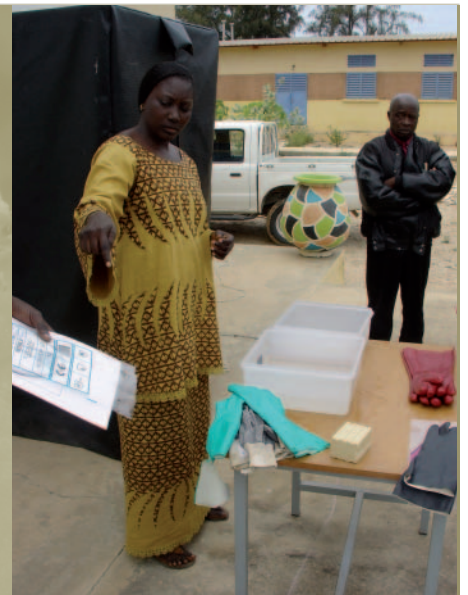
the plot to export). The aim of the PIP is that, with these training materials, technical managers will have the tools and the techniques to train and encourage all workers to apply good practices.

The training manuals were designed as illustrated brochure, in French and English. Each one is intended as a guide for training on a specific topic (e.g. principles of hygiene in order to avoid contaminating fruit), and for a specific audience (in this case, harvesters). The brochures describe a series of demonstrations and experiments that can be carried out with the workers to help them understand an issue – the existence of germs, for example – and adopting appropriate behaviour such as washing hands when they are dirty, or washing buckets.

In addition to the brochures, various training tools were also put together by the PIP, such as flip charts with visual images (drawings and photos), puzzles depicting scenes of what to do and what not to do, small posters, etc. These tools are available to trainers to enable and support them to carry out the demonstrations as they are described in the brochures. They are also provided with a kit containing the basic training objects such as gloves, masks, invisible ink, sprayers and an ultraviolet tube.



## PIP's "Animation" approach to training: for "hands-on exposure to export requirements"



Since its inception, the PIP has put a great deal of effort into building the capacities of ACP service providers, and relies on them to train company technical managers in regulatory requirements and Good Agricultural Practice. In 2006, the PIP entered a new phase of its training strategy with the creation of the "animation approach". Designed to extend knowledge transfer out to all company workers and smallholders, this new concept, and the very practical tools that accompany it, have been welcomed by companies.

*"Sometimes we have the knowledge but lack effective means for getting it across to the farmers",* explains Sarah Ndegwa of the Horticultural Crops Development Authority (HCDA) in Kenya, which provides training for groups of small-scale producers. Sarah is one of the trainees who, in December 2006, participated in the first PIP animation-training workshops. The aim of these collective workshops, that target producer organisations or relay structures working with smallholders (such as HCDA), is to train management staff in lively teaching methods and effective communication techniques, so that they can be more effective in creating awareness among workers of the importance of food safety. Using role-play, involving the participation of farm workers, the idea is to get them to understand how their practices can influence their own safety, the safety of food products, and the environment.

### Changing behaviour

By the end of the animation-training workshops, managers are better prepared to organise their own workshops, to become the "animators" within their own companies, and to disseminate good practices. To assist them the PIP provides brochures that describe simple and practical training activities: How to choose gloves that are resistant to chemical products? What type of filter cartridge must be used when applying plant protection products? Why do vegetables need to be protected from heat to prevent

them from going bad? How are germs transmitted to fruit by the hands? *"This type of training is meant to change workers' behaviour,"* explains Martijn de Ruijter, a consultant in Kenya who conducts the group workshops. *"Sometimes workers know how to do things correctly, but nevertheless continue doing them the wrong way, out of habit. Often it is because they have not really understood the full implications of what they have learned. With the animation-training, they experience first hand, and understand more easily and in a very practical way, the things they are not doing right. When students discover the message themselves, there is a better chance that they will adopt the right practices in the future."*

The use of masks is a striking example. For personal protection when applying dangerous plant protection products, an effective mask has to be used to keep out toxic fumes and particles. Most agricultural workers know it is important to wear a mask, but often are unaware that a very specific type of mask is needed when spraying – namely, a mask with a filter cartridge, and not just any mask. All too often, workers use a dust mask, which offers no health protection, or else the wrong type of filter for spraying. During the animation-training session on using masks, workers are asked to put on different kinds of masks and are then exposed to ammonia fumes – they find out first hand that only a mask fitted with the correct filter cartridge offers real protection against such fumes!

A small experiment thus enables them to visualise the effect of activated carbon.

### Seeing is believing

The very practical approach adopted for these new training sessions is much appreciated by the local consultants who implement them. *"The people we deal with are pragmatic. They often need to see for themselves. The animation-training techniques help us to convince them through practical experience, also to simplify our explanations,"* comments Amadou Diouf, a consultant in Senegal. He goes on to tell an anecdote that speaks for itself: *"One of the technicians participating in an activity was convinced that one of his friends had tried to cast a spell on him. One day he left his bag, which contained bread, in the plant protection products shop his friend managed. When he came back the next day to get it, he found dead mice inside. They had eaten the bread. It was not until he attended the training session on 'Storage of pesticides away from living quarters' that he understood that the death of the mice was due not to a spell, but to the pesticides."*

The trainers are unanimous in saying that company technical managers participate enthusiastically in the workshops. They ask a lot of questions, and begin to question their own practices. This is essential because,



in this way, they are more likely to pass on the messages and instructions to the agricultural workers, the ultimate target that PIP aims to reach through the animation-training. *"We began by training local service providers, our partners in the training programme, in a number of ACP countries. We taught them how to organise training workshops, and to use the teaching manuals and materials. They are then in charge of organising training workshops for export company technical managers, who, in turn, must learn to implement these activities, focusing on good practice among workers responsible for harvesting, applying pesticides, sorting, etc."*, explains Bruno Schiffers, Head of the PIP Training Unit.

### **A hundred thousand small producers targeted through the training of managers in companies receiving PIP support**

The workshops for company managers are held in stages, over a period of several days. The main idea is to base the training on the existing experience of companies: the everyday practices they use for collecting, sorting, packing and transporting; the safety equipment they use, and so on. *"The first day, we take stock of the company's good and bad practices with the technical managers,"* explains Stanislas Dihoué, a specialist/trainer in Ivory Coast. An introduction to communication techniques and training also takes place at the start of the workshop: the idea is to demonstrate the importance of getting workers to participate in the animation-activities. On the second day, practical exercises are carried out in small groups,

using the training manuals and teaching aids. Participants have to prepare certain activities themselves and then present them to the other participants and the trainer. After this first phase of learning comes the real-life situation: the managers return to their jobs to put what they have learned into practice, and to conduct similar animation-activities for the workers in their own companies. Once this is done, together with the specialists/trainers, they will then evaluate how well they have performed.

To help the technical managers implement the animation-training explained in the manuals, the PIP has also developed teaching aids: these are mainly visual, such as flip charts with photos or drawings, puzzles, etc. These illustrate and reinforce the verbal messages. A kit containing different objects (buckets, invisible ink to simulate pesticides, coloured sequins to represent germs, etc.) completes the training pack. *"The concept and the teaching aids must be adapted to the target audience, which generally does not have a high level of schooling,"* points out Edit Kabré of Burkina Faso. Sometimes they do not even have sufficient mastery of English or French. That is why visual teaching materials, such as the flip chart illustrations or small posters, are very practical and can be used in any language. The trainers, moreover, encourage the company managers to switch to a local language with their workers when they organise training activities.

The teaching manuals and aids, along with the kit in the training pack, are made available to all PIP beneficiary companies whose managers have been trained by the programme. The PIP also plans support at individual company level to help managers organise the animation training sessions, with their new teaching methods and materials, once they return to their workplace. At the request of companies, local consultants will coach the technical managers to run animation-training sessions for farm workers and smallholders. Several in-company training sessions have already been conducted. Françoise Vallier heads Katope in the Ivory Coast, which exports mangoes. The firm works with many small-scale producers who, until now, had not all understood the full implications of food safety management. The organisation of an animation-training workshop in the company "gave producers hands-on experience with export requirements."

### **PIP "awareness days": reaching out to small-scale producers**

The fruit and vegetable sector in ACP countries often relies on a multitude of small-scale producers, who supply products for local markets and export companies. Most smallholder producers are independent of the export firms and, as such these PIP beneficiaries are sometimes hard to identify.

However, the economic stakes of making as many producers as possible aware of the need to adapt their farming practices are huge. Indeed, it is the determining factor in maintaining them in the export supply chain.

To reach smallholder producers (around 100,000) the PIP has worked with local export companies and relay organisations to run "awareness days" in farming villages and communities. To get the project off the ground, the PIP teamed up with local organisations that are actively involved in agricultural extension services and the training of smallholders. With the help of these partners, who organise and conduct the sessions for the PIP, the smallholders within a given area are brought together, generally on the premises of a producer who exports to European markets. Using active communication techniques based on theatre, games and experimentation, the facilitators put across simple and clear messages on hygiene, food safety in fruit and vegetable production, and the safe use of pesticides.

The following is a report by a Senegalese journalist who attended the first of these awareness days, named "Golden Bean Day", held in March of last year.

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## Senegal: in the field and on stage



Observing food safety standards when spraying fields, wearing gloves, washing one's hands: these and other practices are now becoming second nature to Senegal's French bean producers, players for one day in the great awareness raising operation

When they come out of the darkroom (...) set up by the Senegalese community workers, the smallholder producers of green beans can hardly believe their eyes. The traces of invisible ink used to represent pesticides on the hands of one of the participants (...) are impressive. An ultraviolet lamp enables them to see the product, ordinarily invisible to the naked eye. *"Wédi Guiss bo kuu ci"* (*"Seeing once is better than hearing a thousand times"*, Ed.), says one of the farmers coming out of the darkroom.

In this month of March, in the village of Sangalkam, 30 km from Dakar, a workshop on hygiene and the safe use of pesticides is being held on the premises of a French bean exporter, Mamadou Ngom. Organised by the Pesticides Initiative Programme (PIP), it is a pilot awareness day named *"Golden Bean"*. Its aim is to reach 1,200 small producers of French beans who sell to local companies that export to Europe, and to convince them to adopt *"good phytosanitary practices (GPP) and good hygiene practices (GHP)"*. To communicate with them in Wolof, the local language, a team of three Senegalese community workers has been trained by PIP experts. *"We have to use simple and clear language with the small-scale producers, and get them to understand that this is in their own interests,"* explains Bruno Schiffers, head of the PIP Training Unit.

That indeed is the challenge, because to sell their products for export, these small producers now have to comply with European food safety standards.

### Awareness begins with a sketch

This Thursday, at Mamadou Ngom's place, the exercise begins with a sketch. On stage is a farm worker who mimics the treatment of a field with a plant protection product. His son comes out to announce that his wife has just had a baby. The happy father immediately asks his boss for permission to go home... This scenario prepared by the PIP is enacted in Wolof by the farmer-actors-for-a-day. They do an admirable job, bringing laughter from the spectators. The session leaders then ask different questions. The answers shoot back from the audience: *"The worker was not wearing a mask or gloves. He didn't wash his hands before greeting his son and talking to his boss. Once back home, he is going to take the baby and touch his wife..."* Problems are sure to follow!

Another scenario soon confirms that the smallholders are not in the habit of protecting themselves. Yet, according to Thierno Seck, who works for the non-governmental organisation ENDA, 85% of contamination is spread by the hands. Sidy Bâ, who lives in a village near Sangalkam, can attest to that. *"Six months ago, the doctor explained*

*to me that I had been contaminated by the pesticides I used to handle. I had no idea. I only know that I didn't wear gloves."*

### "Producers will make more of an effort"

In the vegetable growing areas, in Birthialane, close to Sanglakam, and in Notto a little further away, many are like Sidy. *"In Pout [60 km from Dakar], it was a disaster, with no protection at all being used,"* observes Maimouna Tine, an agent for Ancar (National Agricultural and Rural Advisory Agency). (...)

Nonetheless, progress has been observed. Since 2001, some farmers have been installing modern toilets at the entry to their farms. An old farmer, Cheikh T. Sylla, even bans smoking in the field. *"With Golden Bean [the PIP operation, Ed.], these producers will make more of an effort,"* confirms Mamadou Ngom, the head of the Wakhirlou export firm.

The first encouraging signs could well mean that *Golden Bean* will be expanded to many awareness days in different export sectors (cherry tomato, mango, etc.) and in other ACP countries.

Madieng Seck

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