



ENDURE

European Network for Durable Exploitation of crop protection strategies

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IPM LEARNING NEEDS ASSESSMENT

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PU Public	X
PP Restricted to other programme participants (including the Commission Services)	
RE Restricted to a group specified by the consortium (including the Commission Services)	
CO Confidential, only for members of the consortium (including the Commission Services)	

Summary

The IPM learning needs assessment was developed via meetings with people involved in farmer training in six European countries and a short bibliographical study. In spite of the diversity of advisory systems in Europe, the necessity to have a more participatory approach was emphasized in every country.

Thus, implication 1 of this Deliverable is that technical materials, pest control and management tools and options applicable in IPM should be accompanied with methodological development, e.g. increase the participatory component of training activities and of learning process.

To propose complete IPM trainings is inconceivable because IPM is not an actual discipline but use information from several disciplines like agronomy, biology, biochemistry and sociology, which together forms the basis of IPM. Training in IPM should be adapted to the specific region, crop or cropping system. More, due to the fact that IPM is a continuous process, we need to adapt regularly our production.

Thus, implication 2 of this Deliverable is that ENDURE training activities and developed documents should fit to the system approach of IPM and allow end-users to adapt ENDURE outputs to the existing plant protection systems towards national IPM targets.

There are many trainings and courses, all around Europe, related to the use of pesticides or sometimes on the use of specific alternative measures. But we can never find a complete training material around the IPM concept. Thus, the better proposition is to build small ready-to-use modules to specific topics where ENDURE is involved to give more innovative information. Therefore, rather than producing a lot of materials “ready-to-use”, ENDURE should design products that will help trainers create their own training modules.

The products that ENDURE will disseminate should take the form of a guide composed of different elements (informative sheets, leaflets, recommendations, links etc...), following four main topics requested by trainers:

- convincing arguments,
- training methods,
- training tools and
- materials with general contents.

In the category of “end-users” ENDURE should cooperate with two potential target groups: advisors (who train directly the farmers) and teachers (who make courses to students and also to advisors or farmers often through certificate courses).

In the above four topics:

- advisors need more in arguments or training methods;
- teachers need more in training tools and general or specific contents.

In some countries, trainers need more content materials like databases and identification tools. A lot of material is already produced in some countries. So, in the training tools we should provide end-users with links to the existing materials. To elaborate this “IPM training guide”, two documents, which are the EU IPM concept basis, financed by the EC and developed by JKI into the BiPRO project, could be used; these two documents are:

- Development of guidance for establishing Integrated Pest Management (IPM) principles;
- Draft guidance document for establishing IPM principles.

IPM learning needs assessment.

Philippe DELVAL (ACTA-Association de Coordination Technique Agricole). August 2009.

1/ Introduction

For the Training core team, it was evident that, in spite of the different IPM documents or courses available around Europe, Endure has valuable expertise and information to offer useful support toward training in IPM.

The purpose of this study is to identify the needs and wishes of advisors and trainers to facilitate the implementation of IPM.

To make this assessment, it was decided during the Gödöllo SA1.1 meeting in February 2009 that Philippe Delval would meet with a number of advisors and staff of organizations involved in training. Six countries were selected: Denmark, France, Germany, Hungary, Spain and Switzerland.

Each meeting was organized by the hosting partner, who presented the status of training and IPM in the country. In order to ensure a broader perspective, the host were allowed to invite local advisors, teachers or similar involved in training of end-users.

Some programs developed specific participatory approach in trainings (“Farming with future” in the Netherlands, “Western Corn Rootworm” in Hungary, “ORPESA” in France).

So to complete these meetings, a few relevant documents were added in this assessment and we used the information about these three training programs in Europe (see Bibliography). So, we have also information about the Netherlands.

Lastly, we used the RA 3.5 milestones 3.10 to have more material on training approaches across Europe.

The terms “Learning needs” was chosen because we wanted to cover the different forms of learning:

- face to face learning with direct contact with the trainees;
- practical learning from fields or demonstration, specific in agriculture;
- e-learning.

Trainings need to be adapted from these different forms and with the public (advisors, farmers, students).

This document is based on a number of meetings with advisors and trainers, the two workshops of the Endure training core team in Gödöllő (Hungary) and Kleinmachnow (Germany) and some documents sent by the partners or found on Internet.

2/ MEETINGS AND DOCUMENTS.

2.1. Meetings

The different meetings were held during the beginning of 2009 from February to June. The program of the meeting was elaborated by each partner and was between half a day and two days. The main objective of the meetings was to define the trainers' wishes and needs in relation to facilitate the implementation of IPM taking the existing experiences in every country into account.

The content of the meetings was based on what we discussed during the Gödöllő workshop:

- organization of IPM trainings;
- point of view about the four topics listed: arguments, methodology, contents, tools;
- examples of learning methodology used in the country.

A description of each country involved and the information gathered is provided in annex.

2.2. Documents used

Three documents were used.

The first one is the desk study produced by J. Jiggins (Training Expert, SA 1.1 Deliverable 1.3 in 2007).

During the SA 1.1 meetings, we talked a lot of times about the “Farming with future” project in the Netherlands, so I searched on internet with these keywords.

It was interesting to see if there is some participatory training developed in plant protection in France. The third document was found on internet with “formation participative France” keywords on search.

2.2.1/ Desk study with analysis of existing different training programmes and proposal for their feasibility under ENDURE activities (J.Jiggins / D 1.3 Endure SA 1.1)

The main conclusions of this desk study, that we can use, are:

- i. the crop protection knowledge infrastructure in general does not appear to be sufficiently well organized to support:
 - a. wider adoption of IPM practices or
 - b. to foster broad-based ecologically informed understanding of the options or
 - c. to support informed decision-making particularly among small producers who are farming mainly to meet their own needs or selling into local markets.
- ii. information infrastructures are not well organized to support the access of diverse stakeholders to IPM education and training opportunity;
- iii. The technical components of such competencies increasingly are supplied by private providers (even if paid indirectly through public subsidy).
- iv. Considerable scope exists for European stakeholders to learn from international experience concerning:
 - a. how to place crop protection science in society in a cost-effective way;
 - b. how to reach thousands of small farmers (particularly in southern, eastern and central Europe), and

- c. how to complement participatory, learner-centered experiential training and education with actions that augment and scale up the impacts. The roles of farmers themselves are of particular interest under these heads.

2.2.2/ “Farming with future” Program (Netherlands)

Document URL and title:

(www.bugwood.org/arthropod2005/vol1/6e.pdf)

Implementation of biological control in glasshouse horticulture in the Netherlands.

Collected information:

Different comments are given in this article:

- There are many different factors determining the degree of success of biocontrol measures and the composition of an IPM strategy. Implementation of IPM is complex not only in technical, but also in socio-economic sense. Hence, custom-made IPM strategies are required.
- A new system of knowledge transfer is needed that meets interest, visions and strategies of stakeholders.
- Due to new knowledge and understanding, the transition into an even more sustainable crop protection should be a continuous process. Both “good practices” and “best practices” will change over time due to advancing possibilities and understanding, thus accomplishing a stepwise improvement of IPM.

2.2.3/ ORPESA Program (France)

Document URL and title:

(orprints.org/15508/01/54-Bayot.pdf)

Formation professionnelle et recherche participative. Actions combinées pour développer la riziculture biologique en Camargue (France).

Collected information:

In France, INRA Montpellier joint research unit (UMR Innovation and development in agriculture) was a partner in a European professional training project within the framework of the Leonardo da Vinci programme. The objective of this project was to help developing organic rice farming.

The main comments of this project are:

- the trainings was built from a participatory method (John Rodwell, 1994);
- the training material is in three parts (facilitator manual, trainee paper book, technical book);
- the facilitator has only a role to organize the sessions and to facilitate the sharing into a group. A technical trainer is invited to develop scientific and technical knowledge;
- the efficiency of the methods is better when:
 - you forecast initial meeting to present the participatory way of training and to define the topics that the trainees want to be developed during the training sessions;
 - no more than 15 trainees are into a session;
 - you develop different activities during the session and you control the technical trainer.

3/ IPM in the learning context is different from other learning concepts

3.1. Meetings and documents acknowledgements

During the meetings and reading the different documents, it became obvious that IPM is a complex and difficult concept to understand. The different techniques (pest control and management tools) are adopted by the farmers with different speed and different level. The acceptability of the whole new techniques seems to be impossible to complete in a very short term in the majority of the situations because the adaptability of a majority of farmers is not so high.

IPM can be divided in two parts:

- General IPM principles;
- crop specific IPM elements.

But IPM is often developed within the Integrated Production (IP) concept and is a part of a larger training covering all the aspects of production. In fact IPM is not a “stand-alone” training topic because this concept appeals to several disciplines like agronomy, biology, biochemistry,...

About the trainings, trainers, from different countries, gave some relevant information:

- they want to build their training material because they want to adapt the form and the content of the training session to their public,;
- they are always searching for information to build their training material; internet becomes the more practical system to find information but in the case of agriculture, national or regional conferences, newsletters are important information sources as well. The language of this material can be a limiting condition to trainers. There are fewer problems with English in the northern European countries, whereas the central or southern Europe has larger language problems, even at the advisory level. It's important to take this fact into account and perhaps to consider to translate the outputs of the Training core team for some countries;
- there's a lack of methodology for training approaches. Participatory methods are very promising for IPM learning because they allow the sharing of farmers' or advisors' experience and experimentation. Participatory methods have an interest into the continuous aspect of IPM.

E-learning was developed essentially for pesticides certificate. There are some examples in Denmark and Spain and French Agriculture Ministry wants to develop the same concept. E-learning has a poor interest for IPM, because it's only a one way communication tool for the trainee. Otherwise e-learning must be combined with regular meetings. The preference goes to participatory approach combined with e-information. ENDURE can offer this possibility with some tools like the ENDURE Information Centre.

So, in conclusion, we can say that IPM is:

- **a progress attitude and a continuous process;**
- **a complex concept;**
- **always integrated in IP (Integrated Production) courses.**

IPM isn't:

- **always considered as a discipline by the advisors; advisors and trainers need some specific elements about IPM practices.**

Trainers:

- **want to create their own material;**

- **search some information to do this;**
- **want to know how information could be shared with farmers, that they implement it in their daily practice.**

3.2. RA 3.5 acknowledgements

The Milestone MR 3.10 of the RA 3.5 sub-activity [Basic description of the advisory systems in NL, Italy (Tuscany), Denmark, France, and Hungary through a questionnaire addressed to researchers] has some interesting conclusions about the training activity:

- 1.1.1 1) There is little organized training on IPM;
- 2) There is no advisory organization specialized in IPM and the amount of farmers' groups mobilized on this issue seems scarce;
- 3) The influence of EU program in the implementation of IPM seems weak maybe with the exception of Tuscany.

There is a lack of training for advisors about IPM topics.

3.3. Conclusions for IPM trainings needs and wishes: missing content and tools for IPM learning

It is very difficult to build a training standard due to very different climatic conditions, cultivation and management practice and economic contexts even for the same crops. It is also unthinkable at our level, to build crop specific IPM elements training but we could offer some general principles or specific topics trainings developed for IPM within Endure research.

So, it is preferable to build tools to help trainers, because:

- such tools are difficult to find at present;
- useful experiences have not been centrally collected;
- there are some difficulties with languages at the advisors' level all over Europe (mainly in southern and central Europe) and even inside countries like Switzerland, Spain and Belgium because there are more than one official language.

Another fact is that there are two forms of states in Europe: "federal" and "national". In the first case, the regional governments have a strong influence on the continuous training organization like in Belgium, Germany, Spain, Switzerland and UK. In the second case, the decisions are made at the national level like in Denmark, France, the Netherlands and Hungary.

So, we need more local contacts in the first countries to inform about our dissemination tools. We have to take care, as UdL realized for Spain that we need to diffuse information about our work at the regional level if necessary.

The wishes and needs are:

- to have some **arguments** to convince in favor of IPM: arguments are very useful to initiate changes, to establish a group or to allow to continue the process;
- to have more **information** to create own material: this information can have the form of elements (sheets, leaflets, manuals, articles) to allow the trainer to build own modules.
- to take some ideas to apply participatory **methodologies**: into a continuous process, participatory methodologies and sociological approaches seems the better way to facilitate the capacity of knowledge learning with sharing of experience and

experimentation. So, we need to work much with the RA 3.5 sub-activity to develop training material;

- to propose some **tools** to use to facilitate the “after-training” activities: into a continuous process, trainers have to maintain the contact with the trainees. These tools have to facilitate trainees’ experimentations and allow to sharing the new experiences.

Another benefit from these training needs assessment exercise is that the persons interviewed can now serve as a group of contact persons in six different counties. We will maintain contact with this group, and continue to consult with them regarding the quality and the dissemination of our outputs.

4/ The ENDURE IPM training guide

In order to answer to the needs and wishes, it is proposed to develop a guide composed of sheets and leaflets.

This guide could be in progress and we could develop documents as we have new information to give to trainers.

This guide is a tool:

- to produce elements to allow the building of trainings;
- to give a clear vision for trainers to the possibilities of methodologies approach to develop to IPM learning;
- to show that IPM is actually a continuous process and to involve trainers into this type of process.

This guide will be composed of four parts in which we can develop

- **1/ arguments:**

- the objective is to make IPM more attractive to farmers and to explain why they should be interested.
- One argument is one sheet on one page.
- The arguments can be divided in three main topics:
 - Social (e.g. farmers' image, anticipating change; MRL, service to the farmers);
 - Environmental (long term effects, new constraints to farmers);
 - Economic (Regulatory, economic visibility).

- **2/ participatory methods:**

- the objective of this section is to develop a maximum kind of methodologies. These methodologies can be divided into three aspects:
 - training tactical techniques: these are short-lived techniques (circa 20 minutes)
 - build tools: these are more elaborated techniques like card games, questionnaires, check-lists,...
 - sessions: these include more elaborated contents about complete sessions developed to get a special objective like field visits, experience groups, mediation.

- **3/ tools:**

- this is post-training information that could be used by the trainers;

- sources could be identified at the EU or the national levels;
- there are some topics that could be developed: DSS,...
- case studies of implemented IPM sharing programs : farming with future (NL), IPM for WCR (HU), Orpesa (FR).
- **4/ training modules (ppt) and/or checklists:**
 - “ready-to-use” modules: we have to think that the advisors work at the local or regional level; so, an European network can concentrate on general principles or general methods in thinking how to adapt the module locally. So, it is better to have sheets on topics developed by ENDURE research teams and to complete with a “ready-to-use” module;
 - Checklists: these elements can give the information how to build training on a more specific topic;

To gather this information, the best way is to use the EIC and to develop the guide into the “training” category.

The trainers could set up a folder with sheets and leaflets available from this guide site.

The minutes of the SA 1 Kleinmachnow minutes will precise the entire organization to build this guide (who, when, how).

Bibliography

Documents available on the Endure workspace SA 1.1

DAAS / Using experience groups to share knowledge and reduce pesticide use

J.JIGGINS / Desk study with analysis of existing different training programmes and proposal for their feasibility under ENDURE activities

LSN – Learning and Skills Network / Professional development framework for e-learning: a guide for advisers and practitioners

RELU – Rural economy and land use programme / Common knowledge? An exploration of transfer of knowledge

SZIE / Participatory training: principles, methods, experiences to be used under endure project

SZIE / Farmers' training manual

Other documents

M. BAYOT, J.C. MOURET, R. HAMMOND, B. NOUGAREDES / Formation professionnelle et recherche participative. Actions combinées pour développer la riziculture biologique en Camargue (France) (Innovations Agronomiques (2009) 4, 447-455)

Ellen A. M. BEERLING and Abco J. DE BUCK / Implementation of biological control in glasshouse horticulture in the Netherlands (Second International Symposium on Biological Control of Arthropods, 333-342)

John RODWELL / Activity – based training design (2007, 194 pages, Gower editions)

John RODWELL / Participative training skills (1994, 192 pages, Gower editions)

ANNEX: meetings, contacted persons and collected information with the following organizations:

- **SZIE (Hungary)**
- **DAAS (Denmark)**
- **UdL (Spain)**
- **ENESAD & IFV (France)**
- **AGRIDEA (Switzerland)**
- **JKI (Germany)**

SZIE (Hungary)

SZIE is a Hungarian university and an Endure partner. Some people are involved in training programs. An example is given with the IPM management for WCR. The Central Hungarian Regional Advisory Centre is located at this university.

Contacted persons:

- J. KOZARI (Regional advisory centre)*
- P. BANKA (Representative of Department of Educational Methodology)*
- Z. PALINKAS, J. KOMAROMI (SZIE)*

Collected information:

M. Kozari is the head of the Central Hungarian Regional Advisory Centre and describes the advisory system in Hungary (for more information see RA 3.5 Milestone 3.10). Additionally, he mentioned the following facts:

- there are 80% of private advisors with some advisors who have contracts with the local centers;
- the farmer age in Hungary is high (around 60 years old) and the capacity to change is difficult;

The ability to talk and write English is low even, also among advisors, where the average age is 40-45 years;

The crop sector more innovative is in grapes production.

Training of advisors

An annual training is mandatory for all the advisors and these trainings are organized by the Regional Centres.

The topics of these trainings cover all aspects of plant productions (technical, regulation, economical) and there's no specific IPM training.

In advisory system, there are two types of advisors:

- plant protection advisors;
- advisors for agri-environmental programs.

IPM is a part of the second type.

One should note, that above advisors are (mostly) general agricultural advisors and only some of them is specialist for plant protection. In Hungary, as of yet, plant protection has been advised by Plant Protection Advisors fulfilling specific professional requirements, such as:

- MSc in Plant Protection Major
- Member of Plant Protection Chamber
- Obligatory update training (credits to be acquired in a 5 years period).

The situation could be different in other eastern countries:

- there's no specific system in Rumania and Serbia;
- in Slovakia, the role of the state is more important;

- in Latvia, the system is close to Hungary.

II.) Representative of Department of Educational Methodology (P. Banka) summarized the methodology and results achieved in “project method” program. In this program, secondary agricultural students are trained with participatory, discovery based learning approach.

Some characteristics of the program are:

- the students have a problem to work out;
- small field experiments are settled;
- there's no theory approach;
- students work on documents and search information on websites;
- teachers organize the return session to check if the students found the right information.

The method was used during GTFS/RER/017/ITA FAO IPM of WCR project as well, and could be useful in ENDURE Secondary School Network program.

I think that this system, very time consuming, is difficult to transpose into farmers' training but it could be interesting to have a more precise description of this return session because it's also a key point into a participatory way of training.

SZIE implemented a special training under the FAO/GTFS/RER/017 project on WCR (Western Corn Rootworm) in Hungary. Aim of the project was the development and implementation of IPM strategies by farmers based on sound understanding of local agro-ecosystem. Activities were conducted by establishment Farmers Field School groups.

Document URL and title on the project:

<ftp://ftp.fao.org/docrep/fao/008/af156e/af156e00.pdf>

<http://www.pan-uk.org/pestnews/Issue/pn78/pn78p8-9.pdf>

The main remarks about farmers' learning processes are:

- they have a wide range of experiences, knowledge and skills and learned much from life;
- they need to see immediate results to validate the information based on their experience;
- adult learners go through some phases of a learning cycle: analyzing, processing, generalizing, experiencing...
- the trainer's role is to facilitate the sharing of information and experiences from every participant.

Main comments of the project regarding and training activities and due to this regarding IPM training needs are as follows:

- scientifically and methodologically properly prepared facilitator;
- participatory approach;
- discovery based learning
- season long activities on the field;
- agro-ecosystem analyses on the field;
- group work
- continuous discussion;
- results, which could be implemented in the field.

Due to different way of learning of farmers and students, IPM training needs are different in the case of advisors and teachers.

IPM learning needs of advisors:

Way of advising on IPM for farmers could be conducted i.) with group of farmers or ii) with personal advice.

With group of farmers:

There are some organized meetings for farmers group, where farmers can listen presentations on IPM. Meetings are organized mainly by Secondary Agricultural Schools, Agricultural Chamber, etc. or by the advisor itself. Advisors with different institutional background (e.g. agricultural chamber, village officer, private advisors) can give presentation on IPM during these meetings. On the other hand, advisors of Agricultural Chambers are in charge to give presentation for farmers on recent laws, decrees of Ministry of Agriculture and Rural Development, etc., among others on Agri-Environmental Programs and IPM. These presentations are focusing on legal, technical background of IPM, or on specific issues as well. Advisors use ready to use presentation on legislation background of Hungarian IPM (Agric. Chamber) or prepare their own presentations focusing on legislation background and technical requirements of IPM.

Personal advice:

Those advisors, who can give advice regarding Agri-Environmental Programs (e.g. IPM), mainly have contract with farmers. Due to personal advice, presentations are not used. In this case advisors are interested in new IPM methods Europe wide.

Considering the above mentioned facts advisors needs are:

- i. Database on current, innovative IPM technologies in main crops (e.g. EIC);
- ii. Slides and photos on the development stages of main crops, pests, beneficial organisms, to be able to prepare more expressive presentations;
- iii. Methodology support on how to find balance in balance in theoretical, in hall education and information flow and practical field based training.

IPM learning needs of teachers:

Since education of the students took part mainly in autumn and winter there is bigger need to prepare in hall, but discovery based learning materials. Nevertheless, systematic approach and field based observation is also an aim.

Teacher's needs are as follows:

- iv. Interactive program, manageable by touch screen board with topics focusing on IPM (e.g. IPM approach, How agro-ecosystem works, IPM farming, etc.)
- v. Ready to use presentations on IPM of main arable and horticultural crops (winter wheat, maize, sunflower, pea, tomato, etc.)
- vi. Case study presentations and documents on achieved IPM programs (e.g. How IPM farm was built up during the 5 years of IPM program)
- vii. Modules on participatory training programs to enhance practical courses. Case study presentations and documents on how was the project implemented with project method.

DAAS (Denmark)

DAAS is the national organization of advisory service in Denmark and an Endure partner. There are a national centre and regional centres all around the country. The role of the national centre is to generate and disseminate knowledge and information (documents, website) to the local/regional centres that has the direct contacts with farmers.

Contacted persons:

Povl Nørgaard ANDERSEN (Advisor)

Merethe Egelund OLSEN (Information advisor)

Gitte Skovgaard JENSEN (Advisor)

Jeppe MOURITSEN (Farmer)

Poul Henning PETERSEN, Rolf Tholstrup POULSEN (DAAS Centre)

Collected information:

In Denmark, DAAS is the main provider of farmer continuing training with these local advisory centres.

But there are also the agricultural colleges, the suppliers of inputs and some local private consultants.

DAAS local centres use different forms of trainings: short updating courses (from 1 to 4 days), short actual information meetings (½ day), demonstration meetings, farm visits and social meetings (family related). They are also organizer of small groups of farmers (Experience exchange groups).

The role of the national centre is to:

- develop concepts and materials for training;
- improve the skills and competences of the local advisors as trainers, course planners and leaders.

To do this, DAAS developed an organization for advisors' continuing education and to develop the possibility to combine their own expertise with their colleagues' one. So, every year, DAAS produces an educational plan. The interesting point is that all the trainings for advisors are based on the 40-20-40 rule:

- 40% of the spent energy are for the matters regarding activities ahead of training (needs assessment, preparation, goals, motivation);
- 20% of the spent energy are for the matters regarding the training itself (planning, instruction, practices, materials, trainers, location);
- 40% of the spent energy is for the matters regarding activities after the training (high impact learning, feedback from management level, organizational challenges etc.).

The advisors' requests are more focused on:

- more contact with foreign countries and organization of study tours;
- courses with foreign lecturers.

The “experience groups”, born from the 1st national plan, is a concrete action of the DAAS local advisors.

UdL (Spain)

UdL is a Catalan university and an Endure partner. It is involved in the development of IPM techniques and has many relationships with the regional government and agriculture schools.

Contacted persons:

Pilar PANDO (Training organisation, Generalitat de Catalunya)

Jose Luis LAVILLA (Trainer)

Judit ARNO, Joan SOLE, Jesus AVILLA (UdL)

Collected information:

In Spain, the organization for training is at the regional level (called Generalidades). Mrs Pando talks about the organization in Catalonia to obtain the certificate to apply pesticides:

- the training is almost based on self-training with the help of e-learning site; for that, there is a student guide and a manual; they can do auto-evaluations,
- the trainee is followed by a tutor; for that there is a tutor guide;
- the tutors are in relation with regional coordinators and have to have some contacts with the trainees.
- All the system (trainings, evaluations) is under the responsibility of the autonomic regional governments who delivers the certificate.

There are no specific IPM courses but IPM topics are mainly included in pest control courses (continuing training) or into specialist's courses (for example specialists in Arable farming, intensive farming,...). These courses are provided mainly by the agricultural schools.

They can organize specific topic courses on IPM like the use of pheromones and the identification and control of plant pathogens. The trainers are professors or lecturer from universities, plant protection services staff or civil servants of the autonomic governments. The plant protection services of the autonomic governments do not teach courses but produce materials that can be used for trainings (leaflets, technical sheets and advises). Other providers of farmers continuing trainings are the cooperatives (Federació de Cooperatives Agraries de Catalunya (FCAC)), the agrarian unions (*Joves Agricultors i Ramaders de Catalunya (JARC)*, *Unió de Pagesos (UP)*).

ENESAD (France)

ENESAD is an agriculture high school in France involved on the methodologies of trainings. F. Mathey is involved into a French network called “Innovating crop systems”.

Contacted persons:

François MATHEY (Trainer)

Frédéric DELHINGER (Agriculture school Ecophyto program organizer)

IFV (France)

IFV is a French agricultural technical institute involved into grapes production.

Contacted persons:

Joël ROCHARD, Carine HERBIN (Trainers)

Collected information:

In France, a lot of organizations and peoples are involved in farmers' trainings.

The Chambers of Agriculture and the Agricultural colleges are the main providers of farmers' continuing trainings. The agricultural colleges are involved into the Ecophyto plan to develop demonstration farms and pedagogic visits for students and farmers.

The Technical institutes (ACTA, ARVALIS, CETIOM, IFV...) are training providers for farmers as well, but mainly for advisors. They produce also training materials and develop tools like DSS.

The Chambers of agriculture developed small groups called GEDA-Groupes de Développement Agricoles, GVA-Groupes de Vulgarisation Agricole or CETA-Centres d'Etudes Techniques Agricoles. These groups are always under the responsibility of a technical advisor and looks like the “Danish experience groups”.

The French network “Innovating crop systems” works only on arable crops and regroups researchers (INRA), advisors (Technical institutes and chambers of agriculture) and teachers (High agricultural schools and colleges).

On the topic of trainings, this network wants to develop methodological tools for trainers.

They are mainly focusing on the development of a methodology around the field visit (visual learning, way of taking account of environmental and territorial aspects,...).

Another point is to develop the questioning approach about innovating process for advisors and farmers and to propose supporting methodologies. They are less focused to produce training ready-to-use modules for training.

So, with the established fact that we have common objectives, we decided to work together.

ARVALIS Institut du Végétal (Philippe VIAUX) developed a special module called: integrated agriculture: agronomical aspects of the development. This is a one day module; the objectives are to:

- give a definition of the integrated crop systems;
- describe the key techniques to bring into play the integrated systems;
- present experimental results.

All the institutes develop trainings about best crop protection practices, and the methods to use DSS tools and to evaluate the effects of the practices on environment.

AGRIDEA (Switzerland)

AGRIDEA is the Swiss Association for the Development of Agriculture and Rural Areas and organizes trainings and makes some documents.

Contacted persons:

Niels RUMP (Coordinator Agridea Lausanne)

Guillaume FAVRE (Trainer)

André ZIMMERMANN (Plant protection Advisor – Canton de Vaud)

Collected information:

In Switzerland, Agridea has the responsibility to provide trainings for new advisers (basis training) but also to confirmed advisers (continuing trainings). The system is under the responsibility of the state and the regional governments (cantons).

Agridea offers a broad range of technical and methodological courses on agricultural and rural development topics.

They produce a lot of training materials (technical sheets set into a folder, softwares...).

The trainers are Agridea teachers but also researchers from Agroscope or people from the Regional plant protection services.

The other training providers are mainly the industry advisors (very influent) but also growers associations more particularly in the grapes or fruits production sectors.

They are very interested in the methodology approach (participatory methods) of IPM learning and they develop courses called “to accompany changes” or “to start and to accompany development processes”.

JKI (Germany)

JKI is the federal research centre organization. The Kleinmachnow centre works with private advisors on the eastern former part of Germany.

Contacted persons:

Bernd HOMMEL (JKI)

Stephan DEIKE (Private advisor)

Collected information:

In Germany, the farm structures are very different between East former part and West former. Into the western part the structures are more similar to France, are more “familial” and the people less specialist. The advisory system is developed around cooperatives, union farmers and regional technical support (plant protection services, agricultural chambers). The farms are bigger into the East former part than into the western. So, in the first case there are several employees who work in these farms and they are, for the most, very specialized. So advisors have contact with specialists and private advisory companies are more developed. Plant protection service, from the federal states, are responsible for advising and training. Due to staff reduction in the extension service, some plant protection services, mainly in the Eastern part, developed websites where information and advices are given to advisors and farmers. So, there is a lot of information available into these websites.

The training activity is mainly present into “winter schools”. During a week, there are different sessions with industries peoples, JKI trial results and news from the federal states.

JKI, into the BiPRO project, financed by the European commission developed two documents which are the EU IPM concept basis:

- Development of guidance for establishing Integrated Pest Management (IPM) principles;
- Draft guidance document for establishing IPM principles.

This report shows the result of the comparison of the general principles of Integrated Pest Management as proposed in the political agreements on EU level and the existing concepts and their elements developed by other organizations and stakeholders or those in use in countries of the European Union. In addition, a precise distinction of general IPM principles related to crop specific ones has been elaborated.

As a supplement to this report a draft guidance document has been prepared which is addressed to Member States authorities. It provides support related to a better understanding of the principles, to preparatory and continuous work for communication with professional users.

These two documents seems to be very interesting for the training activities developed into ENDURE.