IOBC and its commission "Guidelines for Integrated Production"

Aude Alaphilippe
Bärbel Gerowitt, Carlo Malavolta, Frank Wijnands

IOBC

www.iobc-wprs.org

International Organisation for Biological and Integrated Control

- **IOBC is a non-profit, scientific organisation of individual and institutional members since over 50 years.**
- **Devoted to**
  - ✓ Biological control,
  - ✓ Integrated Pest Management (IPM) and
  - ✓ Integrated Production (IP)
- **IOBC promotes research and implementation of sustainable control methods**
  - ✓ environmentally safe
  - ✓ economically feasible
  - ✓ socially acceptable

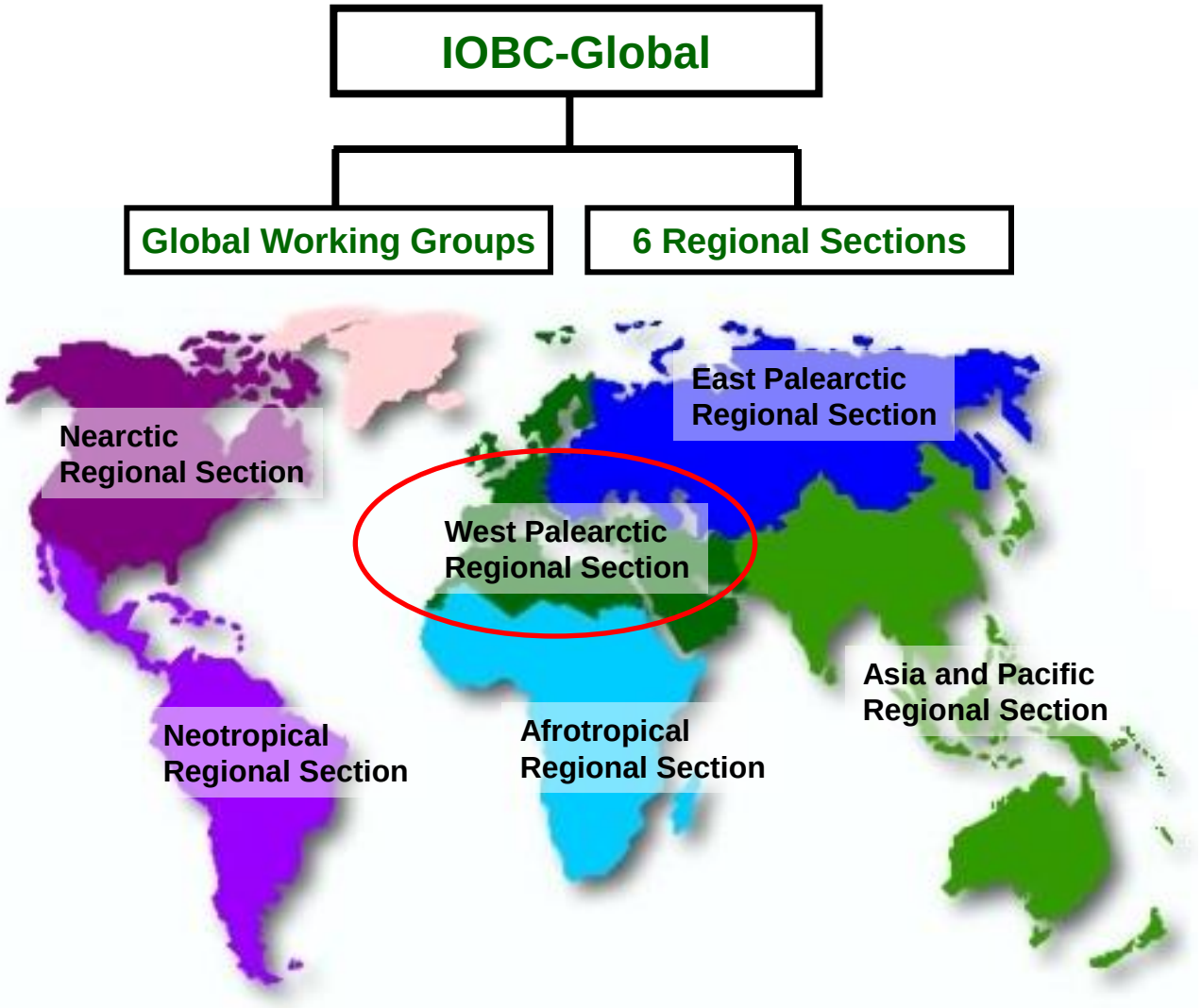
IOBC mission and objectives

- **IOBC promotes international cooperation in research and development of biological and integrated control and its application in IPM and IP by**
  - ✓ offering a platform of international working groups and commissions on specific crops or themes
  - ✓ organising conferences, meetings and symposia
  - ✓ training in biocontrol and IPM

- **IOBC provides independent, professional advice on biological control, IPM and IP to policy makers, governments, advisory services and farmers**

- **IOBC raises public awareness of the economic and social importance of biological control, IPM and IP**

Organisation of IOBC and IOBC/WPRS



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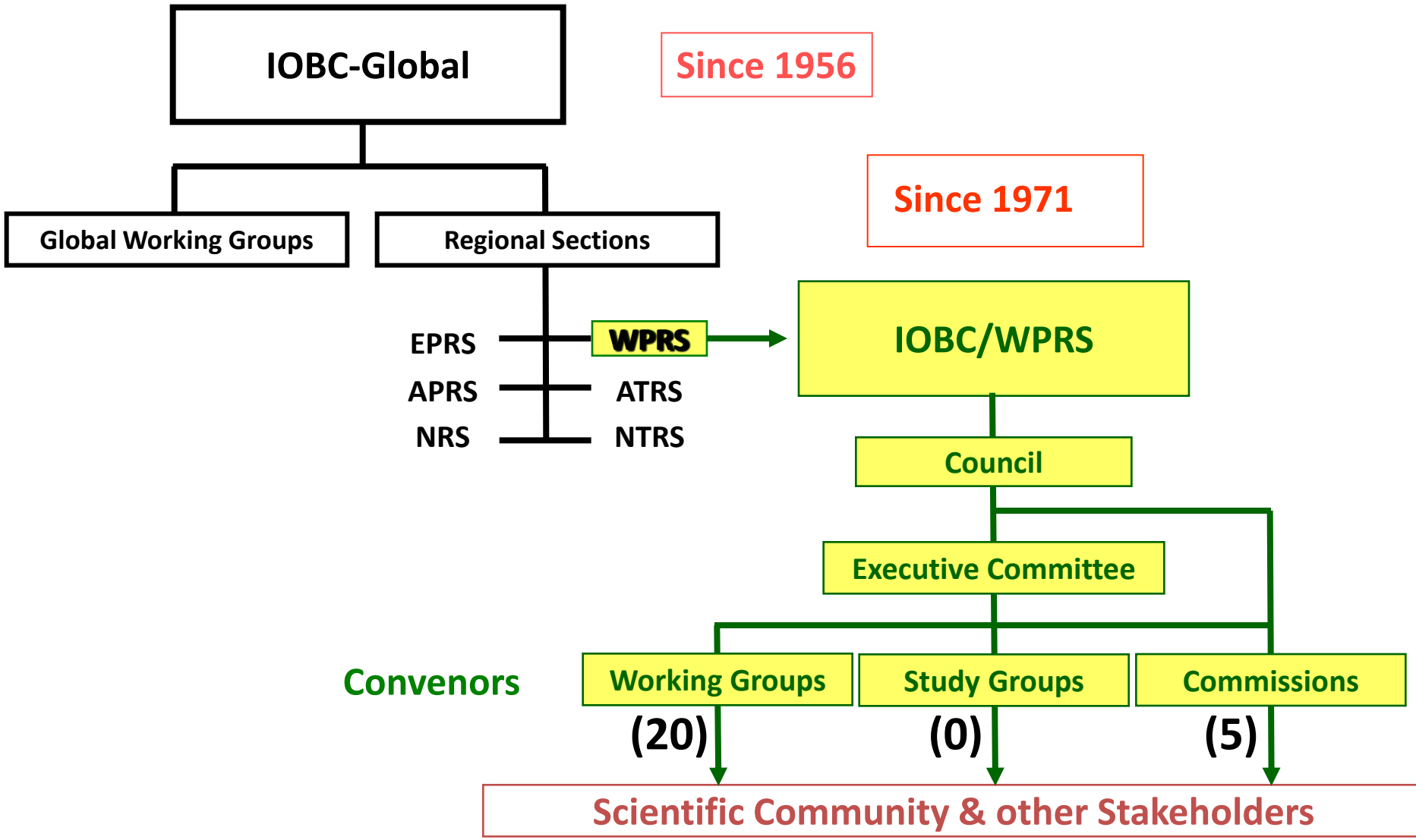

IOBC working groups

20 Working Groups

- **Crop-focused:** Citrus, olives, viticulture, fruit crops, oilseed crops, field vegetables, protected crops, oak forests, stored products, date palms (in prep.)

- **Pest-focused:** Mite pests, plant pathogens, insect pests and entomoparasitic nematodes

- **Method-focused**: Induced plant resistance, GMO's in IPM, landscape management, pheromones and other semio-chemicals, pesticides and beneficials, multitrophic interactions in soils, benefits and risks of exotic biocontrol agents

IOBC:
implementation of IPM & IP
& the European directive

IOBC

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IPM and Integrated production (IP)

- **Integrated Pest Management (IPM) in development since 1959 in IOBC context.**
  - gained momentum in the 70's
  - optimal IPM, using the full potential, requires adaptations on all levels of a farming system → **multi objective farming system**.

- **Integrated Production is a concept of sustainable agriculture.**
  - It emerged in the 70's **from this IPM work** → and developed in 1976 and gained international recognition
  - The **principles and objectives of IP** evolving during the 1980s → compiled and formulated by an IOBC panel of experts in 1992, **first published in 1993 (IOBC/WPRS Bull. Vol. 16 (1), 1993**).

- The 2004 IOBC Standard for Integrated Production is **one of the highest international food production standards** and unique in the way comprehensive frameworks are **coupled with practicable approaches on the farm**.

IP and IPM definitions

- **IP (Integrated Production) is a concept of sustainable agriculture based on the use of natural resources and regulating mechanisms to replace potentially polluting inputs.**
  - The agronomic preventive measures and biological/physical/chemical methods are carefully selected and balanced to safeguard the protection of the environment and the health of workers and consumers.
  - Emphasis is placed on a holistic systems approach involving the entire farm as the basic unit, on the central role of agro-ecosystems, on balanced nutrient cycles, and on the welfare of animals in animal husbandry.

- **IPM (Integrated Pest Management) is the part of IP focusing on pest and disease management.**

IPM strategy

- **Strategic approach to crop protection**
  - ✓ Based on prevention, DSS, and alternative control methods, careful selection of pesticides.
  - ✓ Links crop protection to all other aspects of the farming
  - ✓ Taking into account and optimising interactions within the farm and its related context

- **Agro-ecological intelligence**
  - ✓ To meet economic, ecological, environmental objectives

- **Contributes to**
  - ✓ **Minimal use and impact of pesticides**
  - ✓ Robust / resilient cropping systems

IPM technical point of view

- **Large research efforts done**
- **Excellent IPM methods and tools available**
  - ✓ BUT more is needed
- **IPM (IP) contributed to**
  - ✓ solve very important plant protection and agronomic problems (new pests, resistance, residues etc.)
    - ○ when other methods fail or give secondary problems
  - ✓ Offer sometimes cheaper solutions
- **BUT general adoption is not common**

Pesticide use

Pesticides are a powerful tool in crop protection, however

- **Ongoing challenge** to minimize side effects
  & To reduce their use and impact

- Pesticide risk reduction policies
  - ✓ On health, ecology etc
  - ✓ Necessity to reduce use and impact
  - ✓ While safeguarding quantity and quality of production

- Agro-environmental policies were developed by early ’90s mainly by Europe
  - ✓ Subsidies, payments, cross compliance etc I
  - ✓ PM and IP elements, sometimes IP schemes

EU perspective: SUD directive

- **The EU framework directive on the Sustainable Use of pesticides (SUD Dir. 2009/128) obliges EU member states to develop National Action Plans (NAP) by 2013.**
  - ✓ The objective of these plans is to implement and support IPM.
  - ✓ This development increases strongly the interest in IP and IPM.
  - ✓ The annex 3 of the framework directive gives an overview of IPM and steps that should or could be taken by the member states.

- **The descriptions are fully in line with IOBC publications (notably the general IP guidelines).**

Annex 3 of the SUD directive

ANNEX III

General principles of integrated pest management

1. The prevention and/or suppression of harmful organisms should be achieved or supported among other options especially by:

   — crop rotation,

   — use of adequate cultivation techniques (e.g. stale seedbed technique, sowing dates and densities, under-sowing, conservation tillage, pruning and direct sowing),

   — use, where appropriate, of resistant/tolerant cultivars and standard/certified seed and planting material,

   — use of balanced fertilisation, liming and irrigation/drainage practices,

   — preventing the spreading of harmful organisms by hygiene measures (e.g. by regular cleansing of machinery and equipment),

   — protection and enhancement of important beneficial organisms, e.g. by adequate plant protection measures or the utilisation of ecological infrastructures inside and outside production sites.

2. Harmful organisms must be monitored by adequate methods and tools, where available. Such adequate tools should include observations in the field as well as scientifically sound warning, forecasting and early diagnosis systems, where feasible, as well as the use of advice from professionally qualified advisors.

3. Based on the results of the monitoring the professional user has to decide whether and when to apply plant protection measures. Robust and scientifically sound threshold values are essential components for decision making. For harmful organisms threshold levels defined for the region, specific areas, crops and particular climatic conditions must be taken into account before treatments, where feasible.

4. Sustainable biological, physical and other non-chemical methods must be preferred to chemical methods if they provide satisfactory pest control.

5. The pesticides applied shall be as specific as possible for the target and shall have the least side effects on human health, non-target organisms and the environment.

6. The professional user should keep the use of pesticides and other forms of intervention to levels that are necessary, e.g. by reduced doses, reduced application frequency or partial applications, considering that the level of risk in vegetation is acceptable and they do not increase the risk for development of resistance in populations of harmful organisms.

7. Where the risk of resistance against a plant protection measure is known and where the level of harmful organisms requires repeated application of pesticides to the crops, available anti-resistance strategies should be applied to maintain the effectiveness of the products. This may include the use of multiple pesticides with different modes of action.

8. Based on the records on the use of pesticides and on the monitoring of harmful organisms the professional user should check the success of the applied plant protection measures.

1. prevention/suppression of harmful organisms
2. Monitoring of pest & disease
3. Decision support system
4. Sustainable control method preferred

5 to 8. Pesticide use recommendation

➔ **IPM as leading principle of european directive** for crop protection offers a historical chance to **IOBC to support this with its expertise.**

IP commission

IOBC

www.iobc-wprs.org

The IP guideline commission (1991-)

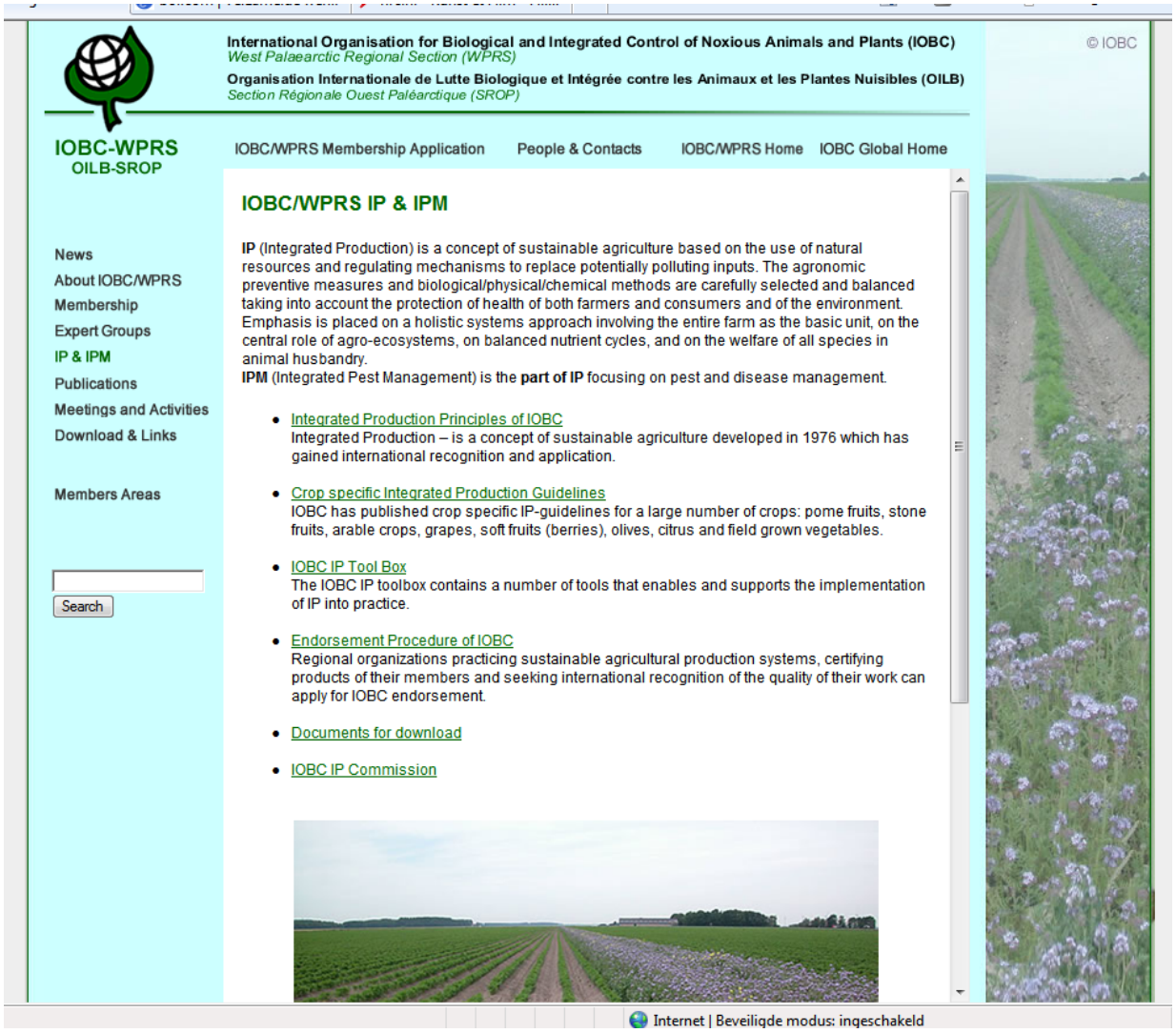
Objectives – support and facilitate implementation of IP/IPM

- To establish a reference (**framework and guidelines**)
- To support any organisation or individual that seeks to implement IP in practice by developing tools that enables and **supports the implementation of IP into practice** (Toolbox)

- To endorse any regional organisations that wants to produce certified IP products (endorsement procedure)

- To promote IPM and IP and support steps towards practical implementation of IP and IPM undertaken **by governments, NGO's, farmers organisations, companies or retailers**.

Website: http://iobc-wprs.org



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IP commission and guidelines

Mission: establishing IP framework and guidelines

- To **establish and maintain an integral IP concept** that covers ecological, ethical, social and economical aspects of agricultural production as well as aspects of food quality and safety.

- To **compile from the expertise of the working groups** of IOBC and within the framework of the IP concept, IP guidelines for a large variety of crops ranging from fruit production to field grown vegetables.

IP Guidelines

- **It consists of 3 different documents**

✓ **IP objectives and principles:** general concept/framework of IP

✓ **General technical guidelines for IP production of annual & perennial crop:** provide the general agronomic rules and minimum requirements (mandatory minimum & recommendation)

✓ **Crop specific guidelines:** are prepare on the basis of the *'General technical guidelines for IP production'* with crop specific aspects and contain a list of 'must' and 'should' items.

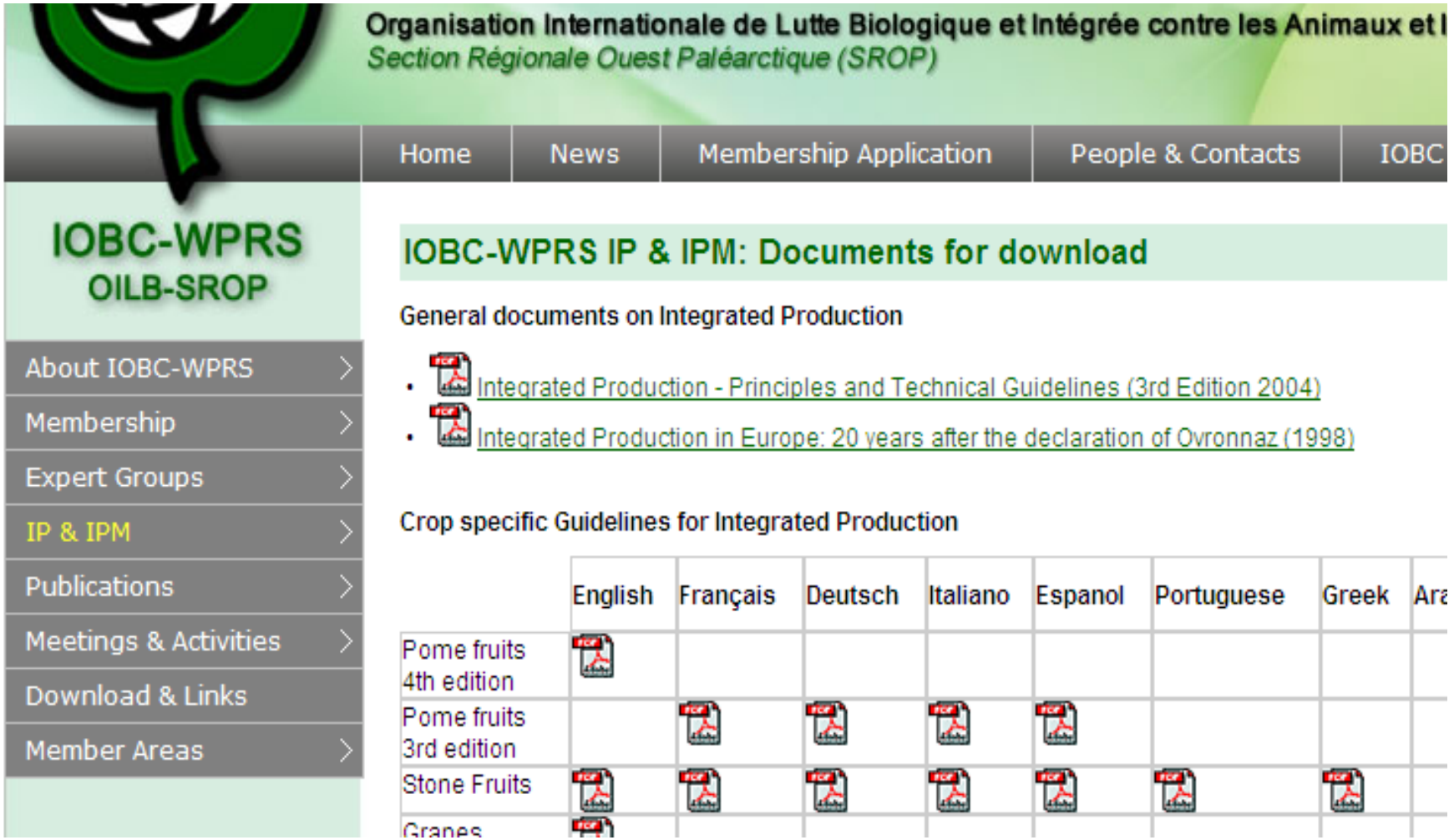
- **Guidelines compiled based on expertise of WG**

IP Crop specific guidelines

Framework – Standard for integrated production
IP crop specific guidelines define the region specific details:

- site selection and site management
- biodiversity and ecological infrastructures
- propagation material, cultivar choice etc.
- rotation/cropping system
- soil management
- fertilisation
- irrigation
- integrated crop protection and weed control
- harvest
- post harvest management and storage
- animal production on mixed farm
- worker health, safety, welfare

Available IP guidelines: http://iobc-wprs.org



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IOBC-WPRS IP & IPM: Documents for download

General documents on Integrated Production

- Integrated Production - Principles and Technical Guidelines (3rd Edition 2004)
- Integrated Production in Europe: 20 years after the declaration of Ovronnaz (1998)

Crop specific Guidelines for Integrated Production

	English	Français	Deutsch	Italiano	Espanol	Portuguese	Greek	Ara
Pome fruits 4th edition								
Pome fruits 3rd edition								
Stone Fruits								
Grapes								

2012: A booklet that include the selection of all IPM solutions already listed in the IP guidelines (including preventive methods).

Brussels workshop on 50 years after Rachel Carson
And meeting national representatives for NAP SUD

In conclusion

SUD directive and IOBC IP commission

- **SUD Directive**
  - ✓ EU embraces IPM as masterplan strategy for crop protection
  - ✓ This development increases strongly the interest in IP and IPM
  - ✓ Unique chance to develop IPM/IP application on large scale.

- **IOBC IP/IPM guidelines represent an international standard**
  - ✓ Regularly update with new scientific knowledge
  - ✓ **Guidelines based on expertise of the Working Group members**

→ IPM as leading principle of European directive for crop protection are fully in line with the IOBC IP general guideline

= a way to help IPM adoption and implementation.

Thank you for your attention and join IOBC!

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Round table

"How could research and development contribute to the implementation of IPM"

- **Tito CAFFI.** Pure participant from the Research department of sustainable plant production, Università del Sacro Cuore. Italy. **& Annett GUMMERT.** JKI, Institute for Strategies and Technology Assessment. Germany.

- **Marie-Sophie PETIT & Bertrand OMON,** Farmers'association and french National Action Plan representant. France

- **Nico van Der velden.** LEI (socio-economic research institute), Wageningen UR. The Netherlands.