REPORT

8TH FAO/WHO JOINT MEETING ON PESTICIDE MANAGEMENT

and

10TH SESSION OF THE FAO PANEL OF EXPERTS ON PESTICIDE MANAGEMENT

14–17 October 2014
Rome

World Health Organization

Contents

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Abbreviations

AGPMC	FAO Pesticide Management Group
AIMMS	Agricultural inputs monitoring and management system (PSMS enhancement)
ASEAN	Association of Southeast Asian Nations
CAN	Comunidad Andina de Naciones (Andean Community)
CARICOM	Caribbean Community and the Common Market
CDC	United States Centers for Disease Control and Prevention
CILSS	Comité permanent Inter-Etats de Lutte contre la Sécheresse dans le Sahel
DDT	dichlorodiphenyltrichloroethane (insecticide)
ECOWAS	Economic Community of West African States
EECCA	Eastern Europe, Caucasus and Central Asia
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
GAP	good agricultural practice
GEF	global environment facility
GHS	globally harmonized system of classification and labelling of chemicals
GMP	WHO Global Malaria Programme
HHP	highly hazardous pesticide
ICCM	International Conference on Chemicals Management
ICSC	International Chemical Safety Card
IOMC	Inter-Organization Programme for the Sound Management of Chemicals
IPEN	International POPs Elimination Network
IPM	integrated pest management
IVM	integrated vector management
JMPM	FAO/WHO Joint Meeting on Pesticide Management
JMPR	FAO/WHO Joint Meeting on Pesticide Residues
JMPS	FAO/WHO Joint Meeting on Pesticide Specifications
KemI	Swedish Chemicals Agency
LLIN	long-lasting insecticidal mosquito net
LMIC	low- and middle-income countries
OECD	Organisation for Economic Co-operation and Development
OEWG	Open-Ended Working Group (conference)
PCO	pest control operator
PIC	Prior Informed Consent (Rotterdam Convention)
POP	persistent organic pollutant

PPE	personal protective equipment
PSMS	pesticide stock management system
QSP	quick-start programme (SAICM)
SADC	Southern African Development Community
SAICM	Strategic Approach to International Chemicals Management
SAPReF	Southern African Pesticide Registrars Forum
TCP	FAO Technical Cooperation Programme
UEMOA	Union Economique et Monétaire de Ouest Africaine
UN	United Nations
UNEP	United Nations Environment Programme
WHO	World Health Organization
WHOPES	WHO Pesticide Evaluation Scheme

1. Introduction

The 8th FAO/WHO Joint Meeting on Pesticide Management (JMPM) and the 10th Session of the FAO Panel of Experts on Pesticide Management were held at the headquarters of the Food and Agriculture Organization of the United Nations (FAO) in Rome, Italy from 14 to 17 October 2014. The JMPM was established in 2007 following the signature of a Memorandum of Understanding between FAO and the World Health Organization (WHO) on cooperation in a joint programme for the sound management of pesticides. Since its inception, the JMPM has consisted of members drawn from the FAO Panel of Experts on Pesticide Management and the WHO Panel of Experts on Vector Biology and Control. The JMPM held its first session in 2007. The JMPM advises FAO and WHO on matters pertaining to pesticide regulation and management, alerting them to new developments, problems or issues that merit attention; in particular, on the implementation of the FAO/WHO International Code of Conduct on Pesticide Management.

Panel members invited to the JMPM are selected for their personal expertise and experience in specific aspects of pesticide management, both in agriculture and/or public health. They do not represent the position of governments or institutions they may belong to, but are appointed to the respective Panels in their personal capacity by either FAO or WHO. All Panel members are asked to declare any interests they may have, which could affect their opinion or advice. In addition to Panel members, representatives from intergovernmental organizations, pesticide industry associations and nongovernmental organizations, which by their nature have interests, attend the open sessions of the meeting as observers. The latter may be invited to contribute to the discussions, but it is primarily the views of the Panel members that are taken into consideration.

On behalf of FAO and as joint secretariat of the JMPM, Mr Mark Davis, Senior Officer, FAO Pesticide Management Group (AGPMC), welcomed the WHO and FAO JMPM Panel members, the WHO Secretariat, participants from the FAO regional offices and observers to the 8th Session of the FAO/WHO JMPM at FAO headquarters in Rome. Mr Rajpal Yadav, Scientist-in-Charge, WHO Pesticide Evaluation Scheme (WHOPES), WHO Department of Control of Neglected Tropical Diseases, welcomed the Panel members, participants and observers to the meeting on behalf of WHO. The participants were invited to introduce themselves (see List of participants provided in Annex 1). Panel members Mr Eric Liégeois, Mr Somchai Preechathaveekid and Mr Malverne Spencer were unable to attend the meeting.

Mr Davis invited Mr Clayton Campanhola, Director of FAO's Plant Production and Protection Division, AGPM, to give the opening address.

2. Opening of the meeting

Mr Campanhola welcomed the members of the FAO and WHO Panels, observers, WHO colleagues, FAO regional staff and representatives of the private sector and civil society, to the 8th FAO/WHO JMPM. Mr Campanhola thanked the group for its willingness to continue contributing its experience, expertise and ideas to the improvement of pesticide management worldwide. He highlighted the importance of the group's work by noting that the world "has woken up" to the importance of sustainable agriculture, understanding that it will be essential

to the preservation of the environment and the production of safe and nutritious food in the future.

Mr Campanhola explained that FAO is working to help countries adopt sustainable practices in crop and livestock production and fisheries, and that the Pesticide Management Team is helping countries to address their needs and to formulate and implement projects. The team is currently implementing 38 projects in more than 60 countries, in support of integrated pest management (IPM) farmer field schools, pesticide legislation and registration, obsolete pesticide disposal and environmental monitoring of pesticides. Mr Campanhola explained that FAO is developing new tools and piloting new methods to help pesticide regulators make informed decisions about which products to allow and which techniques to use. He emphasized that the JMPM's expertise and guidance are needed to steer the FAO's work in the most appropriate directions. Mr Campanhola noted that the group had a busy few days ahead, and stressed again that its guidance would be highly appreciated.

3. Election of the chairperson and rapporteurs

Ms Kimberly Nesci was elected Chairperson and Ms Andrea Rother Vice Chairperson of the meeting. Mr David Kapindula and Ms Irma Makalinao were appointed Rapporteurs.

4. Administrative matters

4.1 Adoption of the agenda

A number of minor amendments were made to the agenda for the purpose of timekeeping. In particular, two presentations of work on highly hazardous pesticides (agenda item 9) and two presentations of field activities (agenda item 13) were not given orally, but summaries are provided in Annexes 4 and 5, respectively. The final agenda is in Annex 2.

4.2 Declaration of interest

FAO and WHO had received Declarations of Interest from all the Panel members participating in the 8th Session of the JMPM. The Secretariat of the JMPM had reviewed these and concluded that no circumstances were disclosed that could give rise to a potential or reasonably perceived conflict of interest related to the subjects discussed in the JMPM.

4.3 Terms of reference of the JMPM

The JMPM Secretariat informed the JMPM of progress in developing the Terms of Reference of the JMPM, which are under consideration by the FAO legal service.

5. Developments since the previous session of the JMPM

5.1 WHO

Mr Rajpal Yadav and Mr Richard Brown of WHO Chemical Safety briefed the meeting on the activities of the WHO Department of Control of Neglected Tropical Diseases (Vector Ecology and Management Unit and its WHO Pesticide Evaluation Scheme, WHOPES),

Global Malaria Programme and the Department of Public Health, Environment and Social Determinants of Health (Chemical Safety Team).

Vector ecology and management

In the area of vector ecology and management, WHO has been developing tools and guidelines, organizing events and undertaking activities to support countries.

Tools and guidelines under development include: the integrated vector management (IVM) toolkit, being developed in collaboration with Durham University, United Kingdom; guidelines for laboratory and field-testing of efficacy of molluscicides; and guidelines for testing the effectiveness of long-lasting insecticidal nets (LLINs) for the control of insecticide-resistant malaria vectors.

Events organized since the last JMPM include:

- World Health Day 2014, on the theme of vector-borne diseases;
- the 9th Global Collaboration for Development of Pesticides for Public Health meeting, on the theme of insecticide resistance – monitoring and management.

In its activities to support countries, WHO:

- co-organized and participated in an IVM workshop in Khartoum and prepared the national plan for IVM for Sudan.
- participated in the regional IVM training in Cairo, a workshop supported by the Global Environment Fund (GEF) project and which used WHO documents and curricula. Participants from eight Eastern Mediterranean Region countries took part.
- participated in the 2nd Meeting of the Access to Quality Medicines and Other Technologies Task Force, WHO Western Pacific Regional Office, Philippines.
- supported the Master's degree programme in medical entomology and vector control in Sudan, the Islamic Republic of Iran and Pakistan in which 138 students were trained.
- expanded the WHOPES network of Collaborating Centres in Burkina Faso, Kenya, Nigeria and the United Republic of Tanzania.
- participated in the 7th Meeting of the Regional Scientific and Technical Advisory Committee of the EMRO/UNEP/GEF project, Cairo. Participants from 14 countries (7 EMR and 7 AFR), the United Nations Environment Programme (UNEP) and technical experts involved in the project attended.
- participated in the International Consultative Workshop on Dengue Prevention and Control Strategies, in Addis Ababa. Fifty participants from Ethiopia, Djibouti, Kenya, Senegal, the United Republic of Tanzania and the United States Centers for Disease Control and Prevention (CDC) and the US Army attended.
- participated in the 4th Asia Pacific Dengue workshop in Singapore. A total of 68 participants from 22 countries took part. Major topics covered were vector control, clinical management, integrated surveillance and laboratory training.
- organized the 2nd meeting of the Vector Control Advisory Group on new vector control paradigms and tools.
- published a paper entitled "Strengthening public health pesticide management in countries endemic with malaria or other major vector-borne diseases: an evaluation of

three strategies" in the *Malaria Journal*, 2014, 13:368 (H. van den Berg, R.S. Yadav, M. Zaim).
- for pesticide product assessment, conducted laboratory and field trial of 13 pesticide products.
- conducted a study and organized a consultation on determination of fabric strength standards for LLINs.

Global Malaria Control Programme

Since the last JMPM meeting, WHO's Global Malaria Control Programme (GMP) has published guidelines and recommendations and has undertaken activities to support countries.

The guidelines and recommendations include:

- recommendations on the sound management of old LLINs (March 2014);[1]
- guidance for countries on combining indoor residual spraying (IRS) and LLINs (March 2014);
- an update on the global status of insecticide resistance in malaria vectors, presented to the Malaria Policy Advisory Committee (September 2014);
- (in process) a Framework for National Insecticide Resistance Monitoring and Management Plans (draft released in July 2014 and currently undergoing field testing);
- (in process) an operational and supervision checklist to verify safe and efficient IRS and minimize environmental contamination (to be completed in 2014).

The activities of GMP also include:

- a joint WHO/UNEP DDT reporting project to strengthen the capacity of countries that have registered with the Secretariat of the Stockholm Convention (SSC) in order to be authorized to use DDT or remain entitled to reintroduce its use for public health proposes to fulfil their mandatory field monitoring and reporting obligations to the SSC to secure the option of DDT use until it can be permanently replaced;
- establishment of global and regional databases on insecticide resistance in malaria vectors; and
- coordination of a five-country project to examine the impact of insecticide resistance on the effectiveness of malaria vector control (to be completed in 2016).

Chemical Safety

WHO Chemical Safety has been engaged in the following activities relating to pesticide management since the previous JMPM:

- The development of International Chemical Safety Cards (ICSCs) has continued. The ICSCs summarize essential health and safety information on chemicals aimed at employees in the workplace. ICSCs are made available in 10 languages via the Internet at [www.ilo.org/icsc], with further languages in development. When updating

[1] http://who.int/malaria/publications/atoz/who-recommendation-managing-old-llins-mar2014.pdf

and creating ICSCs in recent years, highly hazardous pesticides (HHPs) have been a priority. All recent ICSCs carry GHS (globally harmonized system of classification and labelling of chemicals) classification information, and hence are a mechanism to increase the GHS information available for pesticides. Approximately 240 pesticides are currently covered by ICSCs, of which approximately one quarter (64) has GHS information. Of the 64, 38 are Class 1a or 1b.

- A generic risk assessment model for insecticides used for disease vector control in aircraft (known as aircraft disinsection) was developed to complement the risk assessment models for public health insecticides on the WHOPES website. This document was published during 2014.

- A review of the scientific literature relating to the human health effects of DDT (relevant to IRS) is undertaken each year, to update the previous DDT evaluation by WHO dating from 2010. The findings are reported to each Conference of the Parties to the Stockholm Convention when the continued use of DDT in disease vector control is considered. WHO will continue to monitor the DDT literature on an annual basis to identify major points of concern.

- WHO contributes to a number of capacity building activities relevant to pesticides:

  – Through the Inter-organization Programme for the Sound Management of Chemicals (IOMC), WHO is contributing to the development of the IOMC toolbox for decision-making in chemical management. This web-based toolbox of tools and guidance materials developed by IOMC organizations includes a module for developing a national management scheme for pesticides. A pilot version of the toolbox is available at iomctoolbox.oecd.org.

  – A SAICM (Strategic Approach to International Chemicals Management) funded "*e*-Distance Learning Tool for chemical risk assessment" (an online multi-media training tool for chemical risk assessment) was developed by WHO and partners and remains available to users in developing countries, which could include pesticide registrars. It can be accessed via www.chemdlt.com.

  – WHO has contributed to the human health aspects of the pesticide registration toolkit under development by FAO.

- WHO continues to promote the setting up and maintenance of poison centres, for example through a SAICM-funded project to examine the feasibility of establishing a sub-regional poisons centre for the eastern Africa region. This project, completed in 2014, makes a number of recommendations for establishing poison centres and collecting data on poisonings.

5.2 FAO

Mr Mark Davis informed the meeting about FAO's activities related to pesticide management since the 7th Session of the JMPM in October 2013.

International processes

FAO has been active in various activities organized under the Strategic Approach to International Chemicals Management (SAICM), notably (i) the SAICM regional meetings, some of which have been attended by representatives of FAO regional offices and all of which have addressed the issue of HHPs; (ii) the Second Open-Ended Working Group (OEWG) conference, to be held in December 2014, at which FAO will participate in a technical briefing on HHPs; and (iii) the SAICM Quick Start Programme (QSP), which has mainly received requests for funding of pesticide projects in response to its new call for project proposals that promote alternatives to chemicals.

FAO has continued its active participation in the IOMC, which brings together nine international organizations working on chemicals to facilitate coordination and cooperation in their activities. Recent IOMC activities have included coordinating with a new Issue Management Group on chemicals created by the UN's Environmental Management Group, and contributing to the development of the IOMC Toolbox for Decision-Making in Chemicals Management (see www.who.int/iomc), which refers users to resources available to deal with different issues, and as such refers to all of the JMPM guidance on pesticide management.

FAO is also engaged with the GEF, whose financing of work on chemicals aims at helping countries meet specific obligations, for example under international conventions and SAICM. FAO's work on obsolete pesticides and a number of its projects related to the Stockholm Convention and persistent organic pollutants (POPs) are funded by the GEF. In the next funding period, FAO will have access to approximately US$ 50 million for chemical-related projects in the next 4 years.

FAO is continuing its engagement with the Organisation for Economic Co-operation and Development (OECD) Pesticide Working Group, whose risk reduction steering group works on IPM, pollinators and other topics relevant to the work of the JMPM.

Engagement with partners

FAO has continued its engagement with a number of partners including the International Biocontrol Manufacturers Association and World Vision International, who are working on alternatives to pesticides and with whom FAO has discussed the development of small-scale enterprises and activities in rural communities. FAO was also invited to speak at the plenary of the AgChem Forum, where it urged the pesticide industry to pay more attention to the developing world, noting that this represents a growing market for pest management products and is a market that should be treated with care and not abused. FAO explained to the Forum that the world is now "circular" and that "bad" products considered unacceptable in OECD countries but produced in or sold to developing countries will end up in food imports to developed countries. FAO encouraged the industry to work with pesticide regulators in developing countries in order to understand their needs and ensure that products sold to these countries are supporting sustainability and not merely extending the life of bad products.

FAO's collaboration with the University of Cape Town has continued, with preparations for a fifth round of students in the postgraduate course on the FAO/WHO International Code of Conduct on Pesticide Management. Created in 2009, this is a 2-year part-time course

delivered largely through distance learning, with modules covering the different sections of the Code. The students emerge as pesticide risk managers. The course is now developing a new module with support from the Swedish Chemicals Agency (KemI) on container management.

FAO has also been collaborating with CropLife International on obsolete pesticide elimination in selected countries and on container management, and held a discussion on CLI's proposal for industry action on HHPs.

Tools, Guidelines, Systems

The International Code of Conduct on Pesticide Management has been published in English, and FAO is now working on the translations so that the Code can be published in all of the official UN languages.

Development of the Registration Toolkit is progressing, and FAO is moving towards making the toolkit usable and migrating it into the FAO platform as an online tool. This year (2014), FAO has held workshops on registration by analogy, occupational risk assessment, and pollinators and beneficial organisms, and is planning a fourth workshop on evaluating risks to ground water and drinking water.

FAO is also working on a crop typology tool for pesticide regulators and decision-makers as an enhancement to the existing PSMS (pesticide stock management system) called AIMMS (agricultural inputs monitoring and management system). The system is meant to be a tool for use by countries for the monitoring and management of seeds and fertilizer as well as pesticides, including the following modules: Registration, Import controls, Monitoring and Management of stocks in distribution channels, Use (using the typology of farming systems and networks of representative farmers), and Safeguarding and Disposal.

The FAO team continues to provide substantial input into the development of guidelines.

Field projects

The FAO team is currently implementing 38 projects in approximately 60 countries, with a cumulative budget of US$ 70. The projects include work on: pesticide legislation, regulation and registration; pesticide life cycle management; pesticide waste management; sustainable production intensification; integrated pest management; reduced dependence on pesticides; highly hazardous pesticides; reducing risk from pesticides; improving rice production; cleaner cotton production; and adapting to climate change.

Inter-sessional meeting

The group thanked Jan Breithaupt for organizing the inter-sessional meeting (skype conference) in May 2014 and for his continued follow-up work on the JMPM action table. The group agreed that inter-sessional meetings were a good way to keep up the momentum during the year without waiting for the next full JMPM to work though issues. The group also agreed to keep future inter-sessional meetings focused on specific subjects and avoid turning them into a 'mini-JMPM'.

6. The revised International Code of Conduct on Pesticide Management

6.1 Endorsement and publication

The Governing Bodies of WHO endorsed the revised International Code of Conduct on Pesticide Management in January 2014 and the Code has been published on the WHOPES website. Hard copies will be published by December 2014.

FAO has published the revised Code in hard copy and electronically on FAO/AGPMC's website, including for e-readers, and is now translating the Code into all of the official UN languages.

Although UNEP has not yet given its endorsement, the revised Code has received IOMC badging, indicating that it was developed in the IOMC context and has been reviewed by the nine IOMC participating organisations.

6.2 Promotion of the Code

JMPM members and observers reported on their activities to promote the revised Code as follows:

- WHO has been distributing and promoting the Code through its regional meetings, has launched a joint activity with CropLife International to promote its use, and is negotiating with donors to finance additional activities.
- The Comunidad Andina de Naciones (CAN, Andean Community) has adopted the revised Code as a reference for pesticide registration and post-registration, has agreed to harmonize legislation accordingly, and is using it in training courses, notably in its current self-training *e*-courses involving 235 students from 19 countries.
- The University of Cape Town is using the revised Code in training exercises in four provinces where malaria spraying takes place, for example by asking the trainees to identify problems in the field and then find the sub-articles of the Code that provide related advice.
- Meso America has begun a project to develop indicators to measure progress in implementation of the Code.
- One of many FAO activities has been to promote the revised Code in an EU-funded project in 11 Eastern European, Caucasus and Central Asian countries (EECCA), notably to address pesticide regulation/registration needs and challenges faced by the countries.
- KemI offers various courses which includes parts of the Code, in addition to participating in the courses given by UCT.
- China uses the Code as a basis for its laws and trade restrictions, and has promoted it in various activities including a recent Asian workshop attended by 17 countries. China's approach to training, like that of UCT, is to address the Code section by section.

- CropLife International has primarily been promoting the Code via its vector-control team and has developed a training module.
- The Pesticide Action Network has also developed a training module and has been promoting the Code for some time.

6.3 Discussion and recommendations

The JMPM applauded the efforts to promote the revised Code of Conduct on Pesticide Management undertaken by individual Panel members, observers and secretariats, and recommended that:

- The Panel members, observers and secretariats, whenever possible and where appropriate, encourage and promote the use of the Code and its technical guidelines and tools, bearing in mind that the resulting activities should be simple.
- Panel members, observers and secretariats target promotion of the specific articles of the Code to organizations/associations during meetings and other organized activities.
- Countries consider translating the Code into other national languages (unofficial, not FAO/WHO).
- Secretariats and others consider ways to monitor achievement of expected outcomes and changes as a result of successful implementation of the Code, e.g. by tracking residues, poisonings, awareness of the Code, use of guidance, qualitative impacts. Use the FAO survey on the awareness and use of the Code as a basis to develop better indicators.

7. Pesticide registration

7.1 Development of the registration toolkit

The JMPM was briefed on progress with the further development of the registration toolkit since the October 2013 meeting. The group was reminded that this is a web-based decision support system for pesticide registrars in developing countries for their day-to-day use, and not an automated system for evaluating pesticides. More specifically, the toolkit will provide information and advice on the different steps of the registration process and will allow users to: access data requirements and test guidelines for evaluating specific types of pesticides for specific uses; access evaluation methods for the various aspects of the registration dossier; obtain advice on decision-making principles and procedures; summarize evaluations; and build a registration record for each application. The toolkit will include: links to other registration databases, which will allow users to check existing registrations and reviews; links to restrictions and bans; links to hazard classifications and labels defined by other registration authorities; and links to databases on pesticide properties. It will offer assessment methods at different levels of complexity, starting with relatively simple methods requiring fewer resources. As a registration authority gains staff resources and scientific capacity for the evaluation of dossiers, more complex but precise methods may be chosen. For each assessment method, the underlying assumptions and the potential for under- or overestimation of pesticide risks or efficacy are explained.

Four technical working group meetings have been held since the last JMPM to discuss the contents of the Toolkit modules. The meetings focused, respectively, on residue evaluation, registration by analogy, occupational risk assessment, and risk assessment for pollinators and other beneficial arthropods. Typical questions discussed were: which existing (risk) evaluation methods/models can be used by developing country registrars; what the assumptions are behind these methods and how outcomes should be interpreted for developing country situations (e.g. climate, agricultural practices, application equipment); how input data in the evaluation methods/models can be extrapolated between countries and situations; how (risk) assessments can be bridged between countries and situations; whether data requirements should be adapted to allow assessments in developing countries; and what models, methods and databases should be included in the Toolkit.

Key outcomes of the working group meetings included:

- development of a decision scheme for adapting pesticide residue evaluations based on JMPR (FAO/WHO Joint Meeting on Pesticide Residues) or other evaluations to the national situation
- identification of a limited set of exposure models that could be used in developing countries to assess operator exposure
- development of a checklist to extrapolate occupational risk assessments between countries and situations
- the conclusion that existing lower tier risk assessment methods (e.g. EU, USA) could also be used in developing countries as they are sufficiently conservative
- suggestions for appropriate higher tier assessments that could be used in developing countries
- identification of key factors for bridging risk assessments between countries and situations
- a recognition that "registration by analogy," i.e. accepting the registrations or assessments of other countries, is already common practice, and suggestions for formalizing the process and providing guidance to countries
- a suggestion (to be carried forward in future) that the FAO/WHO guidelines on data requirements for pesticide registration should be amended and the guidelines on residues harmonized with the JMPR data requirements (current differences concern the requirements for metabolism and residue trials)
- a recommendation to include guidance on risk mitigation measures and risk management in the Toolkit.

The next steps on the Toolkit will be to: incorporate the outcomes of the working groups; peer review the modules; conduct further working groups, for example on ground and surface water, birds and mammals, soil organisms, and physical-chemical aspects; start field testing and implementing the toolkit, for example at regional and national workshops; migrate the Toolkit to the FAO web platform; and translate the main levels of the Toolkit into other languages. JMPM members were invited to continue to provide comments and suggestions.

In response to questions from the Panel members and observers, it was noted that the Toolkit will include a procedure for registration by equivalence and will be applicable to public health and household pesticides. In addition, if it is technically and legally possible, the

Toolkit may include a procedure for notifying developing countries when the EU cancels a pesticide they have registered by analogy. The group noted that acceptance of registration by analogy is not universal; whereas some countries and regions have been using it for years others are not willing to do so.

Discussion and recommendations

The JMPM members expressed their continued support for further development of the Registration Toolkit, and acknowledged the importance of the work being done on the Toolkit by the working group, including the sub group meetings that were held to enhance its contents. Further to this, the JMPM:

- supported inclusion of registration by reference in the Registration Toolkit, and agreed to include in the Toolkit criteria and guidance for adapting such registration considerations[1] to the national/local situation
- noted that regulatory officials from some low- and middle-income countries (LMIC) countries have been involved in developing the Registration Toolkit, will continue to be involved, and will be asked to field test it when ready
- recommended that the Registration Toolkit working group explore development of a software package to assist with the application of registration by equivalency
- noted that the Registration Toolkit is a living system and should evolve to take account of emerging scientific knowledge (such as genetic susceptibility to specific toxic effects) as accessible information becomes available.

7.2 Regional experiences in pesticide registration

The JMPM was briefed on regional initiatives to strengthen registration supported by FAO in Latin America, Southern and Western Africa, the Caribbean, the Pacific and Asia, which it considered in light of the previous JMPM recommendation on regional harmonization of public health and agricultural pesticide registration.

The Andean Community (CAN)

The Andean Region has been implementing an FAO project to strengthen pesticide registration and re-registration in Bolivia (Plurinational State of), Colombia, Ecuador and Peru, in an effort to further the development of sustainable agriculture. A final report of the project is to be delivered to the Secretary General of the Andean Community in late November 2014. Among its many results, the project has:

- developed plans for capacity building in registration and re-registration, terms of reference for a pesticide management information network, and a technical tool for identifying highly hazardous pesticides;
- developed technical and policy instruments for post registration activities, notably a proposed Andean Regulation on Pesticide Re-Registration, which would be a "supra-national" law;

[1] Registration considerations may include reviews for the purposes of re-registration, de-registration and changes in registration status.

- carried out training courses, workshops and events on pesticide registration and re-registration in accordance with Andean regulations and the International Code of Conduct;
- undertaken surveys and studies, for example on trade, poisoning cases and export rejections due to pesticide residues;
- undertaken a diagnosis of pesticide laboratories in the sub-Andean region, developed quality control guidelines, and proposed establishment of an official Andean network of pesticide laboratories;
- evaluated the registration process for biological control agents, surveyed experiences, and proposed an Andean regulation for registration of biological control agents;
- proposed updating the Andean technical manual for pesticides.

The Andean Region is now trying to address a problem created by an official decision that allows the direct importation of "generic pesticides" by farmers and farmer associations, by-passing regulatory controls. Individual countries have the authority to suspend the Decision, but an Andean Working Group plans to address the problem at the regional level by recommending a new regime to facilitate registration and control of chemical pesticides in the region.

In addition to the work on pesticide registration, projects in Paraguay and Ecuador are targeting the problem of obsolete pesticide stocks. The project in Paraguay has completed the disposal process, repackaging and shipping some stocks to Europe and treating pesticide treated cotton seeds through biodegradation. The project in Ecuador is conducting an inventory of stocks in preparation for disposal in the coming months.

Finally, an SAICM-funded project in Paraguay is identifying and evaluating HHP formulations on the basis of JMPM criteria.

Southern Africa (SAPReF)

The Southern African Pesticide Registrars Forum (SAPReF), established in 2011, has since the last JMPM been officially recognized by the regional body (the Southern African Development Community, SADC), a political recognition that is essential to its status and ability to act in the region. Having achieved this crucial step, SAPReF is now reviewing its workplan and is seeking support from FAO, KemI and others to implement different activities.

The Caribbean (CARICOM)

FAO's project in the Caribbean has successfully rejuvenated the coordinating group for the pesticide control board of the Caribbean, a group that had not met for some time and whose meetings were attended by only a few countries due to insufficient resources. The FAO support for the group's annual meetings has enabled the regulators to re-establish a forum in which they can talk to each other and advance work of common interest. As a result, the group is now moving toward establishing some kind of regional mechanism to deal with pesticide legislation and registration. It appears that the countries that are members of the Organization of Eastern Caribbean States, which are smaller islands with similar capacity and state of development in pesticide registration and management, may move first towards cooperation. In the past, these countries have attempted to harmonize pesticide legislation,

and FAO is now helping them to move forward and put in place a harmonized system of registration. FAO is also considering how to bring on board or harmonize with the other Caribbean countries, which are quite different in size and status. In addition to this, FAO has obtained agreement for GEF funding of approximately US$ 4.5 million to eliminate historical stocks of obsolete pesticides and build capacity for pesticide management and sustainability in the Caribbean.

West Africa (CILSS)

FAO is currently in dialogue with the regional organizations ECOWAS (Economic Community of West African States) and UEMOA (Union Economique et Monétaire de Ouest Africaine) to secure commitments to co-finance the regional project for expanding the CILSS regional pesticide registration process to include the full grouping of ECOWAS countries, which would bring it from 13 to 17 countries, making up essentially the whole of sub-Saharan West Africa. The goal is to have a coordinated pesticide registration system for all of these countries. As soon as the co-financing issues are addressed, FAO will submit the project to GEF for its endorsement and release of funds.

With the launch of several interconnected GEF projects in West Africa, FAO will use the second phase of the EU project to support MEA implementation in ACP countries to give more attention to other regions that may need support, such as SAPReF and the East African Community (including Burundi, Kenya, Rwanda, Uganda and the United Republic of Tanzania), which had started an initiative but stopped due to lack of funds.

The Pacific region

FAO is also working in the South Pacific to support work already initiated there to establish a regional pesticide registration system under the auspices of the Secretariat of the Pacific Community (SPC).

Asia (ASEAN)

China has progressed in its effort to resolve problems resulting from the proliferation of trade names on the labels of pesticide products sold in that country. As reported at the last JMPM, the result of this proliferation was that products with the same active ingredient could have different trade names (i.e. lots of names for one kind of pesticide product), and products with different active ingredients could have similar trade names. Given that China had 622 registered pesticide active ingredients, 23 000 pesticide products, 2400 enterprises, 16 000 trade names and a large number of low content (poor quality) products leading to repeated use, farmers were understandably confused. Following a 2008 Decree, China has implemented a new rule governing product labels that specifies the size and placement of the product name, active ingredient and trade mark. The result has been: a drastic reduction in the number of pesticide names, from 15 000 to 1700; control of the amount of active ingredient to reduce repeated applications; an improvement in the quality of products on the market; and creation of a healthy competition among pesticide manufacturers to develop new formulations and technology.

Discussion and recommendations

The JMPM reiterated its support for the good work being done at the regional level and recommended that the JMPM promote the inclusion of advice relevant to regional bodies, where appropriate, in guidance documents.

7.3 Registration by reference or analogy: the Australian example

The JMPM considered a paper on registration by reference or analogy based on Australia's experience and insight into the various issues entailed. These included: the criteria and requirements for registering a chemical pesticide based on its registration in another country, products to include in or exclude from a registration by reference scheme, consideration of products containing new vs existing active ingredients, legislative requirements, the establishment of links to pesticide regulators in other countries, the acquisition of supporting data, the management of domestic residue limits in food and stakeholder considerations.

The JMPM expressed its appreciation for the paper and again noted that registration by reference is already widely used, not only by smaller countries that lack the resources needed to do full registration reviews but also by the OECD countries that have evaluated and approved the sharing of pesticide registration reviews. The JMPM therefore reiterated its support for the inclusion of registration by reference in the Registration Toolkit, accompanied by criteria and guidance for adapting such registration considerations to the national or local situation, for example to take account of genetic differences in the local population that could affect vulnerability.

7.4 Implementation of PSMS

The JMPM was briefed on the FAO Pesticide Stock Management System, an Internet-based tool developed by FAO to help countries with pesticide management. The PSMS does three main things: it helps countries to inventory their stocks of obsolete pesticides, assess the risks and identify safeguarding or disposal strategies; it provides a repository for information about pesticides registered in the country, helping countries to maintain updated inventories of what pesticides they have and what risks they pose; and it helps countries monitor pesticide imports and exports and manage stocks. Currently, some 48 countries have used or are using the system for obsolete pesticide inventories, 24 for a repository of pesticide registrations and 15 for stock management. Countries can use the system to share information about pesticides, but each country owns the data it has in the system and can decide who can have access to it.

The PSMS is a management tool for all pesticides, but it was initially developed for dealing with pesticides used for locust control and since 2004 has been used effectively for "triangulation," which entails moving stocks from where they are to where they are needed. Locust control pesticides from Morocco and Mauritania, for example, are currently being used in Madagascar. Triangulation not only helps to prevent the build-up of stocks but has greatly reduced FAO's purchasing of new pesticides.

FAO's current plans are to move the PSMS to a less expensive and more reliable platform, and to develop a new component to cover agricultural inputs. The latter is intended to support

a new methodology FAO is piloting in Benin to identify where best practice is being used and what it is. The "typology" study in Benin has identified a representative group of some 200 farmers, has mapped their fields and is surveying the farmers on their knowledge, attitudes and practices throughout the cropping season, e.g. on crops planted, seed varieties used, fertilizers applied, irrigation, pests and pest management practices. At the end of the season, the study will collect information on yields. FAO will be piloting this methodology in several countries and then plans to develop a module in the PSMS that can take in and analyse the resulting data. This PSMS enhancement has been named "*agricultural inputs monitoring and management system*" (AIMMS).

8. Draft guidelines pending finalization

8.1 Pesticide legislation

The JMPM was informed of progress with the guideline on pesticide legislation, which was first drafted in 2009–2010, was reviewed during 2010–2012 and was discussed by the JMPM in 2012 and 2013. As recommended by October 2013 JMPM, the guideline has been substantially revised in close collaboration with FAO's Legal Office to incorporate comments received to date as well as input from the FAO and Rotterdam Convention Secretariats. Substantive changes include:

- the addition of a box with relevant articles in the Code of Conduct and a box on terminology;
- the addition of sections on the process of reviewing pesticide legislation, on the role of the pesticide registrar and on incident reporting;
- an expanded section on scope to emphasize the recommendation for one law covering all pesticides;
- a clearer separation of the functions of the registration board and advisory groups;
- improved consistency with new technical guidelines and improved references to the Rotterdam Convention;
- an improved section on registration decisions;
- clarification of various points; and
- a change of the final section title from Conclusions to Final Remarks, and consideration of whether this section is needed.

Discussion and recommendations

The JMPM noted the significant progress made in developing the guideline, commended the drafter for having greatly improved it, and expressed satisfaction that the revision would be completed and the guideline sent for endorsement in early 2015. Following a detailed discussion, the JMPM recommended that the final guideline explain the life-cycle approach in the introduction (noting that the rest of the guideline is in fact structured around the pesticide life-cycle) and that it include summary boxes on secondary issues, with reference to any guidelines that address them. The group agreed that any further comments from JMPM panel members and observers should be sent to the guideline drafters by mid-November 2014, after which the drafters would determine whether final revision could proceed or further discussion was needed to address the comments.

8.2 Pesticide labelling

The JMPM was informed of progress with the guideline on good labelling practice for pesticides. The draft circulated for review prior to the 2014 JMPM incorporated comments made by the 2013 JMPM and subsequent comments from members of the guideline working group.

The author highlighted the substantive changes and outstanding issues in the current (6th) draft of the guideline, namely: the addition of the word "pesticide" in Braille on household products; the use of tactile warnings for the blind and visually impaired on products sold to the general public; changes to the hazard and safety instructions; the addition of new text on chemically treated seeds; harmonization of text related to insecticide treatment of mosquito nets with WHO procurement guidelines; elimination of duplicative precautionary statements; deletion of most of the annexes on classification of physical, health and environmental hazard, judged by the 2013 JMPM to be duplicative of GHS; harmonization of the health hazard colour bands with GHS and WHO for toxicity classes GHS 1/WHO Ia, GHS 2/WHO Ib, GHS 5/WHO III and GHS (no category)/WHO 'U'; and the approach to be taken for other acute toxicity classes where GHS and WHO are not harmonized. The authors also noted that the annexes containing examples of label formats and precautionary pictograms still needed to be updated to conform to new guidance.

Discussion and recommendations

The JMPM endorsed the changes proposed by the author of the labelling guideline and:

- recommended that the difference between advisory versus mandatory label statements be addressed in the guideline,
- recommended that household pesticide labels include the word "pesticide" in Braille and that products in WHO/GHS toxicity categories 1 and 2 also have tactile hazard/danger warnings for the blind and visually impaired,
- highlighted the need for a prominent label warning on hazard and use of personal protective equipment (PPE) on any household pesticides that require PPE, and
- recommended that the guideline provide both GHS and WHO colour coding for labels, giving regulators the choice. The JMPM agreed further that the guideline should recommend that regional bodies resolve country differences by moving toward the GHS coding.

The JMPM expressed its appreciation for the work accomplished on the guideline and agreed to the author's proposal to complete the text and annexes by the end of the year and to circulate a final draft to the JMPM for endorsement in January 2015, followed by publication.

9. Highly hazardous pesticides

9.1 Results and developments in HHP projects

Pilot project in Mozambique

The JMPM received an update on progress made in the project on HHPs in Mozambique. The project, carried out by FAO and funded by SAICM with support from the ministries of agriculture and environment, began in 2012 with the objective of identifying HHPs and developing a risk reduction plan. As reported at the 2013 JMPM, the project began by screening the approximately 650 pesticides registered in Mozambique to create a short list of 42 highly hazardous or "close to" highly hazardous active ingredients. The project then carried out a round of meetings with pesticide distributors in the country to determine where and on what crops these products were used. Based on this, the project collaborated with the country's extension service to carry out a field survey of 355 farmers in seven provinces, to look at actual conditions of use of the products on key crops.

The results proved that the level of farmer protection was inadequate, and an independent risk assessment confirmed the actual level of risk to farmers' health. Based on those findings the project finalized the list of products of concern and developed recommendations for cancelling their use or conducting further research. These recommendations were discussed with the pesticide industry in Mozambique, commodity groups, civil society, and the farmers. The Mozambique government then took a decision, and in August 2014 the national director of agronomic services issued a declaration cancelling 27 active ingredients immediately and 4 additional active ingredients by 31 December 2014. The declaration also noted that there was an additional group of HHPs that needed attention due to suspected health or environmental impacts.

Interestingly, the project confronted little concern from growers, who were of a consensus that they could continue to produce. There was also no opposition from the pesticide industry, which not only did not oppose the project but requested extending it to neighbouring countries so as to create a "level playing field" and assure the legality of imported and exported products.

The JMPM was reminded that the original idea was to use the HHP pilot projects in countries as a basis for developing JMPM guidelines. It has however become clear that the pilot projects are slow to initiate and implement, and that the work on the guidelines must proceed without waiting for them.

Pilot project in Paraguay

The meeting was briefed on the status of the second HHP pilot project, in Paraguay, which is also a SAICM project. The project is gradually getting underway, with five objectives: The first is to identify pesticides and pesticide use situations that are considered highly hazardous under Paraguayan use conditions. The second is to elaborate a plan of action to reduce the risk posed by these pesticides. The third is to initiate and carry out risk reduction. The fourth is to review, monitor and evaluate the results of the risk reduction activities. The fifth is to develop longer term policies, programmes and projects to reduce the risk associated with the use of pesticides in Paraguay.

Discussion and recommendations

The JMPM was reminded that the original idea was to use the results and lessons learnt from HHP pilot projects in countries as a starting point for developing JMPM guidelines.

However, because of the considerable time needed for the pilot projects, it has become clear that development of the guidelines must proceed with only the results from Mozambique for the time being. Lessons learned from that project highlight the following key areas that should be addressed in the JMPM guidelines:

- *Environmental impacts*: The guidelines should address not only human health effects but also the environmental impacts of pesticides, which the Mozambique project found to be of concern and "less straightforward" than health impacts.
- *Data and record keeping*: The guidelines should emphasize the importance of data and record keeping, for example on pesticide imports and exports as a proxy for use.
- *Field reports*: The guidelines should consider how to follow up on reports from the field on problems farmers have observed with other pesticides not listed as HHPs.
- *Stakeholder involvement*: The guidelines should emphasize that work on HHPs in countries should involve local stakeholders, including the extension service and pesticide industry, to the greatest extent possible.
- *Capacity building*: The guidelines should stress the importance of capacity building in countries.

9.2 SAICM

The meeting was briefed on SAICM, whose interest in HHPs has been growing steadily since the Third International Conference on Chemicals Management (ICCM3) in Nairobi. The subject of HHPs has been discussed at every SAICM regional meeting since then, and as previously mentioned it will be the subject of a technical briefing at the SAICM Open-Ended Working Group in December 2014, which is a precursor to the fourth ICCM, in 2015. FAO has been and will continue to be involved in all of these events, which present an opportunity to discuss with countries how to raise awareness and move the topic forward.

9.3 CropLife International approach

The meeting was briefed on CropLife International's policy on HHPs, which encourages its members to react when an HHP is identified by doing a risk and/or use assessment and possibly undertaking voluntary action to mitigate risks. CropLife outlined its criteria for identifying HHPs, which are similar to the JMPM criteria in referring to WHO and GHS classification and the Montreal Protocol, but differ as follows:

- listing under the Stockholm Convention is included in the CropLife criteria, but not "*active ingredients meeting all the criteria in paragraph 1 of annex D of the Convention"*;
- listing in the Rotterdam Convention is excluded from the CropLife criteria;
- the "Incident" criterion is, for FAO, "*Pesticide active ingredients and formulations that have shown a high incidence of severe or irreversible adverse effects on human health and the environment*" and for CropLife, "*Products causing high level of severe and/or irreversible incidents under recommended use scenarios are deemed to be HHP and trigger a use assessment.*

CropLife's overall approach, to which companies would commit on an individual basis, is to:

- identify HHPs based on the industry definition of HHPs

- assess risks under local conditions of use
- support risk management based on risk mitigation (including voluntary withdrawal of use, if risk cannot be mitigated)
- encourage stakeholders to establish mechanisms to help all parties adhere to similar measures (risk management and mitigation) to manage HHPs
- support capacity building in risk/use assessment.

9.4 Rotterdam Convention listing of SHPFs

The meeting was briefed on the Rotterdam Convention, which is co-hosted by FAO and UNEP. Article 2 of the convention defines severely hazardous pesticide formulations as causing severe health or environmental effects observable in a short period of time under the prevailing conditions of use. Article 6 invites countries that become aware of such pesticides to notify the Rotterdam Secretariat, which will then submit the pesticides for review and possibly list them under the convention and include them in the Prior Informed Consent procedure. In addition to the formal review and listing procedure, the country proposals, announced in the Pic Circular, also alert other countries to problems with hazardous pesticides. Challenges to implementing the convention include: dealing with anecdotal information, the need to have clear information about pesticide formulations and active ingredients, the absence of a link between country proposals and the collection of information on pesticide poisoning incidents, the lack of political will to submit proposals, and the need to link the FAO/JMPM work on HHPs and the Rotterdam Convention's work on severely hazardous pesticide formulations.

9.5 WHO perspectives and engagement

WHO briefed the JMPM on three subjects related to pesticide poisoning: worldwide statistics and trends in pesticide poisoning, the role and development of poison centres, and the WHO World Suicide Report, 2014.

Pesticide poisoning

WHO began by showing examples of available estimates from the scientific literature of pesticide poisoning rates around the world, such as estimates focusing on children (e.g. 57 poisonings per million children in Central America), agricultural workers (25 million per year), unintentional acute poisonings (estimates in the literature vary up to 1 million per year), and total cases in a country or worldwide (estimates vary), and estimates focusing on the public health impact, such as deaths due to self-poisoning (186 000 per year), years of healthy life lost (4.4 million per year), or cases of acute poisoning (18.2 per 100 000 agricultural workers in developed countries). WHO noted that these estimates are probably too low, as available data on pesticide poisoning worldwide are limited, recording methods are inconsistent, only acute effects are likely to be reported, and surveillance systems are lacking in low resource settings.

Poison centres

Poison centres can help by providing advice and training on the treatment of poisoning, by collecting information on poisoning cases, and by acting as a sentinel for problems caused by chemicals. A SAICM-funded feasibility study for a sub-regional poison centre in Eastern Africa has estimated that there are tens of thousands of poisonings per year in the sub-region, that a significant portion of these are due to pesticides, and that these have a high rate of fatality. The project also found that countries prefer to have national poison centres that network with other countries rather than a sub-regional centre. WHO has developed tools for harmonized data collection that would make this possible.

World Suicide Report

Pesticides figured prominently in WHO's World Suicide Report, released in September 2014 in a global event with extensive media coverage. One of the report's conclusions was that low-cost evidence based solutions such as reducing access to highly toxic pesticides can be effective. An example that bore out this conclusion occurred in Sri Lanka, which saw a tremendous reduction in suicides by pesticide poisoning between 1995 and 2012 in a period which followed the banning of several pesticides. Self-poisoning continued but survival rates increased independent of education or storage and with no decrease in agricultural output. The implication is that removing the pesticides implicated in poisonings could possibly save as many as 200 000 lives per year globally.

9.6 HHP case studies

A summary of case studies on HHPs from 40 countries in five regions, covering regulatory procedures implemented and criteria applied for reaching regulatory decisions, was not presented during the JMPM due to lack of time, but the summary paper on the results, which may be included in the future JMPM guideline on HHPs, is attached in Annex 4.1.

9.7 Pesticide risk assessment and phasing out of HHPs in Asian countries

A presentation on a May 2014 regional workshop in Asia on the risk assessment and phasing out of HHPs was similarly not heard due to lack of time, but a summary of the presentation is attached in Annex 4.2.

Discussion and recommendations

The JMPM noted the achievements of the various projects and activities in identifying HHPs and reducing risks from their use or replacing them with less harmful products or non-chemical alternatives, and:

- further encouraged pesticide regulators in all countries and regional bodies to take similar action;
- called upon continued support from donors for the INTOX data management system which is under threat of closure;
- recommended that the Rotterdam Secretariat explore the establishment and use of electronic incident reporting systems for use by countries;
- encouraged the establishment and sustainable funding of poison centres in countries where they do not exist, and where necessary provide a legal basis for this;
- welcomed industry's recognition that HHPs are problematic and its willingness to develop and implement a protocol of action on HHPs. The JMPM recommended that CropLife include the Rotterdam Convention in its criteria for taking action/working with companies on hazardous pesticides. The JMPM also encouraged AGROCARE to formalize its position with regard to action on HHPs;
- noted that real conditions of use are critical in the consideration of HHPs and should be taken into consideration in decision making processes related to HHPs;
- noted that HHPs present a disproportionately high level of risk in low and middle income countries and therefore should remain a special focus of attention for the JMPM and other bodies addressing chemical management.

10. Draft guidelines under development

10.1 Highly hazardous pesticides

The JMPM considered the detailed outline for the guideline on HHPs, which had gone through two rounds of comment and revision since the October 2013 JMPM. The meeting agreed that development of the guideline should continue with the aim of having a full draft for review in early 2015. More specifically, the JMPM:

- acknowledged that the current criteria for identifying HHPs are not set in stone and could be reviewed in light of new scientific understanding as it emerges;

- noted that the HHP Guideline was not specifically aimed at banning pesticides, but rather at guiding regulators to take appropriate action to eliminate the risks that HHPs present in their uses;
- recommended that FAO develop a tool to help countries identify HHPs in their national registers;
- recommended that the guideline provide more guidance on how countries can use the 8th criteria for defining HHPs, i.e. *Pesticide active ingredients and formulations that have shown a high incidence of severe or irreversible adverse effects on human health or the environment*;
- recommended that the guideline maintain a section on evaluating risk;
- recommended that stakeholder consultation be included in the guideline, for example in the needs assessment and in the definition of HHP given in the current draft (criteria 8 in Section 2.2.1), noting that stakeholder consultation should be part of the HHP identification and risk mitigation process from the beginning;
- recommended using the terminology 'progressive ban' and describing an appropriate process to achieve it. This should include a stepwise or tiered approach to HHPs, focusing first on immediate elimination of products listed on the Stockholm Convention and Montreal Protocol followed by consideration of other products;
- encouraged pesticide producers to voluntarily withdraw products identified as HHPs, as the cancelation process is very time consuming and resource intensive;
- agreed that the process for identifying alternative pest control options (non-chemical and chemical) to HHPs be included in the guideline.

10.2 Microbial pesticides

The JMPM reviewed, and noted its satisfaction with, the revised outline for the guideline on microbial pesticides prepared by a consultant with expertise in biopesticide registration. A first outline was reviewed by the JMPM in October 2012, and a second draft in October 2013. At the October 2013 meeting, the JMPM agreed that the guideline should be completed as quickly as possible and should be aligned with the work of the OECD to facilitate future cooperation among countries and regions in the review of microbial pesticides. The group noted that the use of microbial pesticides has developed rapidly in developing countries and that in the absence of guidelines, companies have often been faced with "self-regulation" and farmers have been reluctant to use products that are potentially less stable than chemical pesticides.

The JMPM discussed at length the possible inclusion of the various types of biological products that are used for agricultural pest control, including home-made products that can be important in organic and small-scale local production but can sometimes be quite toxic, and that do not fit easily into any regulatory category. In conclusion, the JMPM:

- recommended that the guideline include micro-organisms, botanicals and semio-chemicals but not GMOs, and that they cover plant protection and public health uses.

The group also agreed that the guideline include a paragraph noting that genetically modified organisms present special considerations and should be treated separately;

- recommended that governments address traditional, home-made pest control products on a case by case basis, as some of those products can be toxic.

10.3 Household pesticides

The JMPM reviewed the annotated outline for a guideline on household pesticides developed at the request of the October 2013 JMPM by a working group formed for this purpose. The JMPM noted that existing regulatory systems seem not to adequately cover household pesticides, which comprise a range of products used not only in homes but also in "home-like" places such as schools, offices and hospitals. The group therefore:

- agreed that it was critical to clearly identify the scope of the guideline, and agreed to collect information about problems related to the use of household pesticides, to help identify that scope; and
- recommended that WHO develop a model (or identify existing models) for the risk assessment of household pesticide products.

10.4 Licensing and inspection of pesticide distributors and retailers

The JMPM reviewed the detailed draft outline of the guideline on licensing and inspection of pesticide distributors and retailers developed since the October 2013 JMPM. As agreed by the JMPM, the objectives of the guideline are (i) to provide general principles and procedures for licensing and inspection, and (ii) to provide guidance on specific practical issues that many countries face. Work on the guideline therefore began with the compilation of a list of such issues, with input from FAO and members of the guideline working group. A draft outline of the guideline was subsequently developed and reviewed by the guideline working group, and their comments were incorporated. The JMPM ccommended the work done in developing the outline of the guideline and encouraged its further elaboration for review at the next JMPM.

10.5 Licensing of pest control operators

The JMPM reviewed the draft guideline on licensing of pest control operators developed since the October 2013 JMPM. The draft guideline covers: (i) legislation, (ii) practical aspects of the licensing of Pest Control Operators (PCO), e.g. the administrative set up for licensing, types and categories of licenses, requirements, procedures and conditions; and (iii) the role and responsibilities of licensing authorities, e.g. enforcement, training, medical surveillance, ethical issues, offences and penalties. The JMPM agreed with FAO's recommendation that the guideline not address the transportation of pesticides, as the subject is already covered in other guidelines. The JMPM commended the work done in developing the guideline for licensing of PCOs and encouraged its further elaboration for review at the next JMPM.

10.6 Personal protection when working with pesticides

The JMPM reviewed the draft guideline on personal protection when working with pesticides prepared since the October 2013 JMPM. As requested by that meeting, the draft was developed based on a review of the existing guidelines on personal protective equipment (PPE). It incorporates input from the guideline working group and shows comments where the working group members are not yet in agreement about how to address certain issues. The draft covers pesticide use and PPE in both agriculture/forestry and public health/vector control, and it includes sections on: the choice of pesticides; understanding pesticide risks; principles of personal protection; types and use of PPE; PPE in tropical conditions; cleaning, maintenance and disposal of PPE; first aid; key steps to safe(r) use of pesticides; and resources.

The JMPM discussed a number of technical issues and problems in the use of PPE in developing countries, and requested that the guideline be restructured to be more logical and less repetitive, and:

- recommended that the guideline include PPE use in both agriculture and public health;
- reiterated that the objective of the guideline is to advise regulators on needs and use of appropriate PPE in countries for all circumstances where exposure to pesticides is likely (including accidents, obsolete stock removal, etc.), and on policies to ensure availability of appropriate PPE;
- recommended that the focus of the guideline be on the needs of developing countries, ensuring that advice is very practical and simple, and applicable to warm countries, and
- recommended that the guideline include advice on the safe removal of PPE after their use.

10.7 Pesticide storage

The JMPM agreed that it was premature to consider working on a guideline on pesticide storage.

10.8 Annotated list of FAO, WHO and UNEP guidelines

The JMPM thanked the FAO for its preparation of the annotated list of FAO and WHO guidelines, which was distributed before the meeting. FAO noted that the list would soon indicate which of the listed guidelines are actually joint FAO and WHO guidelines. The JMPM agreed that UNEP should be invited to include their guidelines related to pesticide management in the annotated list.

11. Making JMPM guidelines user-friendly

The JMPM ssuggested that consideration be given to making JMPM guidelines more user friendly and supported proposals for FAO, UCT and KemI to explore options and to gather recommendations. The subject was proposed for consideration at the next JMPM.

12. Emerging and priority issues in pesticide management – alerts and advice to FAO and WHO

The JMPM did not discuss a message from the EU concerning the EU Regulation of Plant Biostimulants under the Fertilisers Regulation but encouraged panel members who wished to comment to do so bilaterally with the EU.

13. Field activities

13.1 Reports on projects and opportunities for collaboration

Due to time constraints, the JMPM did not hear presentations from the panel members on field activities related to pesticide use. The presentations that were provided at the meeting have been summarized and are attached in Annex 5.

13.2 Pesticide resistance management

The JMPM heard and discussed a presentation by CropLife International and noted that the extremely problematic spread of resistance to pesticides is largely due to the intensive use of pesticides. The JMPM therefore recommended that the pesticide industry take responsibility for the proper stewardship of their products and support strategies that reduce reliance on pesticides.

14. Venues and procedures for JMPM meetings

The JMPM reiterated its recommendation from October 2013 that future meetings be held in a low- and medium-income country, and invited panel members to propose possible venues for the meeting in 2015. JMPM secretariat will coordinate this matter.

15. Recommendations

The recommendations of the JMPM referred to in the text above are summarized as follows:

Promotion of the International Code of Conduct on Pesticide Management

The JMPM recommended that:

- Panel members, observers and secretariats, whenever possible and where appropriate, encourage and promote the use of the revised International Code of Conduct on Pesticide Management and its technical guidelines and tools, bearing in mind that the resulting activities should be simple.
- Panel members, observers and secretariats target promotion of the specific articles of the Code, to organizations/associations during meetings and other organized activities.
- Countries consider translating the Code into other national languages (unofficial, not FAO/WHO).
- Secretariats and others consider ways to track achievement of expected outcomes/change as a result of implementation of the Code, e.g. by tracking residues, poisonings, awareness of Code, use of guidance, qualitative impacts. Use FAO survey on use of Code as a basis to develop better indicators.

Registration Toolkit

- JMPM members expressed their continued support for further development of the Registration Toolkit. The JMPM also acknowledged the importance of the work being done on the registration tool kit by the working group including the sub group meetings that were held to enhance its contents.
- The JMPM supported registration by reference, and inclusion of this in the Registration Toolkit, and agreed to include in the Toolkit criteria and guidance for adapting such registration considerations[1] to the national/local situation. The JMPM also noted that regulatory officials from some LMIC countries have been involved in developing the Registration Toolkit, will continue to be involved, and will be asked to field test it when ready.
- Recommended that the Registration Toolkit working group explore development of a software package to assist with the application of registration by equivalency.
- Noted that the Registration Toolkit is a living system and should evolve to take account of emerging scientific knowledge (such as genetic susceptibility to specific toxic effects) as accessible information becomes available.

Support for regional work

- The JMPM recognized the good work being done at the regional level and agreed to promote the inclusion of advice relevant to regional bodies, where relevant, in guidance documents.

[1] Registration considerations may include reviews for the purposes of re-registration, de-registration and changes in registration status.

Legislation Guideline

- The JMPM supported the work on the Legislation Guideline and noted the significant progress made in developing the guideline and expressed satisfaction that it would be sent for endorsement early in 2015.

Labelling Guideline

The JMPM:

- Endorsed the changes proposed by the author of the labeling guideline.
- Recommended that the difference between advisory versus mandatory label statements be addressed in the guideline.
- Recommended that household pesticide labels include the word "pesticide" in Braille and that products in WHO/GHS toxicity categories 1 and 2 also have tactile hazard/danger warnings for the blind and visually impaired.
- Highlighted the need for a prominent label warning on hazard and use of PPE on any household pesticides that require PPE.
- Recommended that the guidelines provide both GHS and WHO colour coding for labels, giving regulators the choice. The JMPM agreed further that the guidelines should recommend that regional bodies resolve country differences by moving toward the GHS coding.

Highly hazardous pesticides

The JMPM:

- Noted the achievements of projects and activities identifying and replacing or reducing risks from HHPs in several countries and regions, and further encouraged pesticide regulators in all countries and regional bodies to take similar action.
- Called upon continued support from donors for the INTOX data management system which is under threat of closure.
- Recommended that the Rotterdam Secretariat explore the establishment and use of electronic incident reporting systems for use by countries.
- Encouraged the establishment and sustainable funding of poison centres in countries where they do not exist, and where necessary provide a legal basis for this.
- Welcomed industry's recognition that HHPs are problematic and its willingness to develop and implement a protocol of action on HHPs. The JMPM recommended that CropLife include the Rotterdam Convention in its criteria for taking action/working with companies on hazardous pesticides. The JMPM also encouraged AGROCARE to formalize its position with regard to action on HHPs.
- Noted that real conditions of use are critical in the consideration of HHPs and should be taken into consideration in decision making processes related to HHPs.
- Noted that HHPs present a disproportionately high level of risk in LMICs and therefore should remain a special focus of attention for the JMPM and other bodies addressing chemical management.

HHP Guideline

The JMPM:

- Acknowledged that the current criteria for identifying HHPs are not set in stone and could be reviewed in light of new scientific understanding as it emerges.
- Noted that the HHP Guideline was not specifically aimed at banning pesticides, but rather guiding regulators to take appropriate action to eliminate the risks that HHPs present in their uses.
- Recommended that FAO develop a tool to help countries identify HHPs in their national registers.
- Recommended that the guideline should provide more guidance on how countries can use the 8th criteria for defining HHPs ("Pesticide active ingredients and formulations that have shown a high incidence of severe or irreversible adverse effects on human health or the environment").
- Recommended that the guideline should maintain a section on evaluating risk.
- Recommended including stakeholder consultation in the guideline, for example in the needs assessment and in the 2.2.8 criteria, noting that stakeholder consultation should be part of the HHP identification and risk mitigation process from the beginning.
- Recommended using the terminology 'progressive ban' and describing an appropriate process to achieve it. This should include a stepwise or tiered approach to HHPs, focusing first on immediate elimination of products listed on the Stockholm Convention and Montreal Protocol followed by consideration of other products.
- Encouraged pesticide producers to voluntarily withdraw products identified as HHPs, as the cancelation process is very time consuming and resource intensive.
- Agreed that the process for identifying alternative pest control options (non-chemical and chemical) to HHPs should be included in the guideline.

Guideline on microbial pesticides

The JMPM:

- Recommended that the guideline include micro-organisms, botanicals and semio-chemicals but not GMOs, and that they cover plant protection and public health uses. The group also agreed that the guideline include a paragraph noting that genetically modified organisms present special considerations and should be addressed separately.
- Recommended that governments address traditional, home-made pest control products on a case by case basis, as some can be toxic.

Guideline on household pesticides

The JMPM:

- Noted that it is critical to clearly identify the scope of the guideline and agreed to collect information about problems related to the use of household pesticides, to help identify that scope.

- Recommended that WHO develop a model (or identify existing models) for risk assessment of household pesticide products.

Guideline on licensing and inspection of pesticide distributors and retailers

- The JMPM commended the work done in developing the outline of the guideline and encouraged elaboration into a full guideline after having received final comments on the outline.

Guideline on licensing of PCOs

- The JMPM commended the work done in developing the guideline and encouraged its further elaboration for review by the JMPM.

Guideline on PPE

The JMPM:

- Recommended that the guideline include PPE use in agriculture as well as public health.
- Reiterated that the objective of the guideline is to advise regulators on needs and use of appropriate PPE in countries for all circumstances where exposure to pesticides is likely (including accidents, obsolete stock removal, etc.), and on policies to ensure availability of appropriate PPE.
- Recommended that the focus of the guideline be on the needs of developing countries, ensuring that advice is very practical and simple, and applicable to warm countries.
- Recommended that the guideline include advice on the safe removal of PPE after their use.

Making JMPM guidelines user-friendly

- The JMPM suggested that consideration be given to making JMPM guidelines more user friendly and supported the proposals for FAO, UCT and KEMI to explore options and gather recommendations.

Resistance management

- The JMPM noted that the extremely problematic spread of resistance to pesticides is largely due to the intensive use of pesticides and recommended that the pesticide industry take responsibility for the proper stewardship of their products and support strategies that reduce reliance on pesticides.

Venues for JMPM meetings

- The JMPM agreed that it would be useful to have a future meeting in a low and middle-income country (LMIC) and invited panel members to propose possible venues for the meeting in 2015.

Prioritization of guideline development

- The JMPM proposed the following priority for finishing guidelines currently under development:

I. Guidelines on Labelling
II. Guidelines on Legislation
III. Guidelines on Microbial Pesticides
IV. Guidelines on HHPs
V. Guidelines on Licensing of PCOs
VI. Guidelines on Distributors and Retailers
VII. Guidelines on PPE
VIII. Guidelines on household pesticides

16. Closure of the meeting

Mr Rajpal Yadav, on behalf of WHO, thanked the Chair, Vice-Chair, rapporteurs, Panel members and observers, and FAO for their excellent collaboration in the JMPM and for a dynamic and productive meeting. Mr Mark Davis, on behalf of FAO, thanked the group members and observers and the regional representatives for contributing their time and expertise to the JMPM, expressed his hope that the work was useful to the regions, said he looked forward to future collaboration, and wished the group a safe journey home.

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Annex 2 – Agenda

EIGHTH FAO/WHO JOINT MEETING ON PESTICIDE MANAGEMENT

[& TENTH SESSION OF THE FAO PANEL OF EXPERTS ON PESTICIDE MANAGEMENT]

India Room (A 327, Bldg. A, 3rd floor, room 327), FAO Headquarters, Rome

13–17 October 2014

13 October

Meeting of the FAO and WHO Secretariats

Tuesday 14 October

Closed Session (09:00–10:00)

1. Declaration of interest

2. Panel working procedures and programme of work

3. Any other matter
   a. Terms of reference of the JMPM, panel members and observers

Open Session (starting 10:00)

1. Opening of the meeting and welcome address

2. Appointment of Chairperson and Rapporteurs

3. Adoption of the agenda

4. Introduction of meeting procedure, working arrangements and housekeeping matters

5. Summary of developments and actions taken after the Seventh joint meeting in October 2013

   a. Discussion (Reports by FAO, WHO, UNEP)
   b. Inter-sessional meeting (27 May)

6. Developments in promotion and implementation of the Revised International Code of Conduct on Pesticide Management
   a. WHO endorsement
   b. UNEP endorsement
   c. Adoption and promotion of the Code by other entities
   d. Publication of the Code

7. Pesticide registration

    a. Development of the Registration Toolkit
    b. Ongoing work on Registration capacity development in different regions (CILSS, CEMAC, Southern Africa, Andean countries (CAN); Pacific, Caribbean, individual countries)
    c. Registration by Reference (Australian example)
    d. Update on implementation of PSMS

8. Draft Guidelines pending finalization – for review

    a. Labelling
    b. Legislation

Summary of recommendations - remind everyone on the main recommendations of the day

<u>Wednesday 15 October</u> (starting 09:00)

9. Highly hazardous pesticides (HHPs)

    a. Results and developments in HHP projects
    b. SAICM
        i. Open-ended Working Group
        ii. Agricultural Strategy
    c. CropLife International approach to the management of pesticides identified as highly hazardous
    d. Rotterdam listing of SHPFs
    e. Pesticide poisoning / Poisoning centres & World Suicide Report (WHO)
    f. Summary of HHP Case Studies
    g. Pesticide risk assessment and phasing out of HHPs in Asian countries

10. Draft Guidelines under development – status report (by Working Group Leader)

    a. Highly hazardous pesticides (HHPs) + additional criteria
    b. Microbial pesticides
    c. Household pesticides

Summary of recommendations - remind everyone on the main recommendations of the day

<u>Thursday 16 October</u> (starting 09:00)

10. *Continued*: Draft Guidelines under development – status report (by Working Group Leader)

    d. Licensing and inspection of pesticide distributors and retailers
    e. Licensing of pest control operators
    f. Annotated list of FAO, WHO and UNEP guidelines
    g. Personal Protective Equipment (PPE)

11. Other Guidelines – pending

    a. New pesticide storage guidelines
    b. Discussion on practical ways to make guidance documents more user friendly

12. Emerging and priority issues in pesticide management – alerts and advice to FAO and WHO

    a. EU Regulation of Plant Biostimulants under the Fertilisers Regulation[1]
    b. Regional collaboration
    c. Proposed other issues for discussion

13. Field activities

    a. Reports on important projects in implementation or planned & Opportunities for collaboration and greater synergy among agency projects
    b. Pesticide resistance management (CropLife)
    c. Common approaches to technical issues

14. Any other matters

    a. Venues and procedures for JMPM meetings
    b. Others

Summary of recommendations - remind everyone on the main recommendations of the day

<u>Friday 17 October</u>

Closed Session (starting 09:00–10:30) followed by
Open Session (starting 10:30–12:00)

15. Recommendations

Closure (13:00)

[1] By Eric Liégeois of the European Union via Skype call (was unable to join).

Annex 3 – Follow-up Action Table

Subject (Agenda item)	Action	Responsible party	Timing
Equivalency	• Registration Toolkit working group to incorporate equivalency into the toolkit using outputs of JMPS	Harold & WG	By next JMPM
Promotion of Code of Conduct and indicators of progress	• JMPM members target promotion of the Code, focusing on specific sections, to organizations/associations during meetings and other organized activities	JMPM members	Ongoing
	• Explore the development of quantitative or qualitative indicators to measure the extent to which the Code is being effectively implemented. The indicators should be designed to track progress from a recorded baseline.	FAO/WHO	Next JMPM
Registration Toolkit	• Continued development	Toolkit development team	Ongoing
	• Migration of toolkit to FAO internet platform	Toolkit development team	March 2015
	• Piloting	Toolkit development team	May 2015
Legislation Guideline	• Comment on Legislation Guideline	Panel Members & Observers	- Written comments by mid-November
	• Complete redraft taking account of JMPM recommendations	Harry/Carmen	- Final guideline for endorsement early next year
Labelling Guideline	• Complete the guideline taking onto account JMPM recommendations • Include label templates	Harold	Changes included by 16 October'14; final end of Oct.'14 Circulated for endorsement in January 2015
HHP Guideline	• Comment on current HHP draft guideline	Panel members and observers	1 December
	• incorporate comments from the meeting and circulate the first draft for review	Andrea & WG	1 June 2015

Guideline on microbial pesticides	• Comment on annotated outline	Panel members and observers	- 14 November 2014
	• Draft guideline circulated for comments		- TBD
Guideline on household pesticides	• develop and circulate a table of issues discussed during the meeting	Kimberly, Rajpal	- 31 October
	• Comment on outline	Panel members and observers	- 31 December
	• to revise the annotated outline and circulate	Kimberly	- Early 2015
	• identify a drafter	Rajpal	- Early 2015
Guideline on licensing and inspection of pesticide distributors and retailers	• comments on the outline	Panel members and observers	First week of January.2015
	• draft guideline to be developed	Harry	June 2015
Guideline on licensing of PCOs	• further comments on Soo Hian's proposal	Panel members and observers	1 December
	• Revised draft of the guideline on PCOs circulated to JMPM for endorsement	Soo Hian	January 2015
Personal Protective Equipment	• Internal review	Rajpal, Harry, Richard Brown (CLI)	February 2015
	• Revised draft circulated	Rajpal & expanded WG	March 2015
Making JMPM guidelines user-friendly	• Explore options, gather ideas	FAO lead, all panel members & observers may contribute	Report to JMPM 2015
Biostimulants	• Bilateral correspondence with Eric Liégeois on experience with biostimulants	All	ASAP
Registration by reference	• Comment on Donald's document	Panel members and observers	14 November
Venues for JMPM meetings	• Decide on venue	Rajpal & Mark	End 2014

Annex 4 – Results and developments in HHP projects (presentations not given during the meeting)

4.1 Summary of case studies on HHPs from 40 countries in five regions covering regulatory procedures implemented and criteria applied for reaching regulatory decisions on certain products and including a review on known alternatives in place for regulated products

Methodology

A Questionnaire was used for the development of case studies on pesticide regulatory processes; key questions asked were:

- How is a regulatory decision (on HHPs) reached?
- Which criteria and information sources are used?
- Which alternatives are known?

A total of 45 countries were approached with this survey and 40 government endorsed Case studies, covering 5 regions worldwide have been verified and were compiled in 5 regional case studies and translated into the regional languages.

Summary of overall findings

The surveys showed that most countries refer to a number of well-known information sources before they decide to impose a regulatory measure on products assumed to have adverse effects to human health or on the environment. Among the most frequently mentioned and used information sources for reaching a regulatory decision on a pesticide product are, in order of priority:

- the **WHO Classification of Pesticides by Hazard**: In most countries, all -presently 28- WHO Class Ia (*extremely hazardous*) listed active ingredients with their products as well as all WHO Toxicity Class Ib (*highly hazardous*) products (presently 58) have been banned without imposing a phase-out scheme or granting a restricted use permit;
- the **Stockholm Convention** (Annexes A & B, paragraph 1 of Annex D, on POPs): Many countries have decided to ban all persistent organic pollutants (POPs) listed in the Annexes of the Stockholm Convention (presently 19);
- the **Rotterdam Convention** on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade: Many countries decided to ban all -presently 29- products that are subject to the prior informed consent (PIC) procedure for any use and without imposing a phase-out scheme or granting a restricted use permit;
- the available national or regional **reports on pesticides** that have shown high incidences of severe or irreversible adverse effects on human health (poisoning cases) or the environment;
- the **Registration status** of subject products in countries with an advanced registration systems (frequent reference is made to the EU and US pesticide registrars);
- the **Montreal Protocol** on substances that deplete the ozone layer: All compounds and ozone depleting substances that are subject to the Montreal Protocol (e.g. methylbromide, chlorofluorocarbons (CFCs), bromofluorocarbons (halons), methyl chloroform, carbon

tetrachloride, methyl bromide, and hydrochlorofluorocarbons (HCFCs)) have often been banned in countries;
- the **Code of Conduct on Pesticide Management**: Some countries use the Code and its supporting guidelines covering all aspects of the life-cycle of pesticides as a key information source for making informed regulatory decisions;
- the findings from **simple hazard and risk assessments** and evaluation methods carried out in a (neighboring) country.

Many countries established their own **additional criteria** or parameter to determine the hazard or toxicity status of pesticides as the basis for making a regulatory decision on pesticide products and formulations; the most common practice include the following criteria, in order of priority:

Depending on the strength of **regional organizations** or institutions, countries generally follow- and adopt the regulatory decision made by their respective regional hub for pesticide management.

The survey results underline the importance to promote **regional collaboration** in pesticide management and WHO and FAO therefore recommend:

- the use of regional platforms for collaboration, including the involvement of regional bodies;
- that regional collaboration on pesticide management be addressed in all relevant guidelines;
- to proceed with efforts on technical aspects to harmonize legislation and registration.

One reason for applying regional organizations' regulatory decisions, particularly in developing countries, is the fact that the **size of regulatory authorities** in developing countries or countries in transition in terms of manpower is very small with an average of one to maximal three regulator- or registrar experts in place.

Regulation/registration by analogy/bridging is among the most commonly applied practice and criteria applied for reaching a regulatory decision on pesticide products and formulations; this is done, in priority order, by:

- using pesticides dossiers from inter-agency organizations & other countries;
- basing the regulatory decision on field reports evaluating the impacts of pesticides on target and non-target;
- using the toxicity data other than WHO, e.g. SAICM;
- referring to other countries' national pesticide registration systems;
- reference to incident reporting on intoxication or poisoning; and by
- monitoring the pesticide residue levels in exported products.

As possible and preferred **alternatives to banned or seriously restricted HHP products**, countries wish to (in order of priority):

- implement Good Agricultural Practices (**GAP**) including especially Integrated Pest Management (**IPM**); It is therefore recommended to prioritize IPM in national agricultural policies and include capacity building and Train of Trainer events on GAP and IPM methodologies in national action plans for extension services;

- use **biological control agents** including **botanical**- and **natural pest control agents** such as neem-extracts and oils. It is therefore recommended to support biological control options and provide assistance in registration, transport and proper storage of biological control agents;
- select **less hazardous replacement-pesticide products** in place of banned HHPs. It is recommended to improve the pesticide registration system;
- establish **surveillance- and monitoring schemes for pests-, diseases prevalence** and for **pesticide application**. It is therefore recommended to establish a pest monitoring system within the extension service covering key pests and quarantine organisms, pest epidemiology (e.g. pheromone traps, spore traps for air-borne pathogens, simple prognosis models etc.);
- have industry involved along with pesticide regulators and traders in pesticide risk reduction (labelling; decanting and (re-)packaging; licensing; quality control; container management; safe disposal). Government should promote and **establish minimal standards for product stewardship**;
- have access to (regional) **certified laboratory for services** (residues, quality control, etc.). It is recommended to identify **regional laboratory** 'Centres of Excellence' that should be mandated with regional pesticide residue testing and quality control;
- have the plant breeding facilities in place for the development of **disease resistant varieties**.

A number of **challenges and key constraints** in the regulatory process for banning HHPs were mentioned as follows (listed in priority order):

- **Lack of funding** and **lack of training** resulting in capacity- and knowledge gaps, as well as missing access to relevant information in local language;
- **Legislation** and **Enforcement** are in-appropriate (this refers to the need for policy guidance);
- **Illegal trade** (smuggling) of mostly counterfeit **bad quality** products;
- **Laboratories** for quality- and residue control are often out of date or non-existing;
- Alternatives to the use of HHPs are often **more costly**;
- Farmers traditionally use chemical pesticide;
- **Storage facilities** for pesticides are inappropriate.

Discussion for JMPM
The JMPM is asked to:

- *note* the summary report on findings from surveys in countries & regions to determine how they reach a regulatory decision to ban HHPs (case study summaries)

- *decide* whether or not to include a summary on the HHP case studies to the draft HHP Guidelines

4.2 APPPC regional workshop on practical aspects of pesticide risk assessment and phasing out of highly hazardous pesticides and a questionnaire survey result

The workshop took place in Nanjing, China from 19-22 May 2014 and was attended by 27 participants from 15 Asian countries. It was divided into three parts: Pesticide registration and risk assessment; phasing out of highly hazardous pesticides (HHP); and cracking down on fake and substandard pesticides. The sessions focused on practical aspects such as checking the registration status in other countries, obtaining risk assessment information and justifications on regulatory actions, sharing lists of HHPs and alternatives, sharing reports on health and environmental incidences, as well as on discoveries of fake or substandard pesticides. To facilitate information exchange in Asia, an electronic working group on pesticide risk assessment was formed. It will establish a platform for information exchange as well as address related issues. Countries were encouraged to take appropriate actions since experience has shown that the phasing out of HHPs would not only reduce the risks to human health and the environment, but would also make the pesticide industry and agricultural production more competitive and sustainable.

A questionnaire survey was conducted among all participating countries before the workshop. The results showed a great diversity of approaches to pesticide registration and banning of HHPs. However, whether formally banned or not, most HHPs identified by international conventions are either not permitted or restricted in almost all survey countries, indicating a high degree of harmonization and compliance. All pesticides listed in conventions (Rotterdam, Stockholm, Montreal) showed a fairly uniform pattern and a high level of compliance. There was a high level of agreement among Asian countries about the criteria for identifying HHPs. Almost all responding countries included the WHO Class I and Convention pesticides in this category. Most survey countries conduct risk assessment as part of the registration procedure, but in most cases only a partial risk assessment based on toxicology data is carried out. Risk information from international sources, primarily from international organizations, is considered. Authorities generally consult the FAO/WHO Pesticide Information Sheets as well as the international conventions regarding pesticides; the registration status of a pesticide in the EU or USA is checked to a lesser extent. When renewing a registration, most countries take new risk information into account. While most countries consider national incidence reports, only three countries have specific surveillance programs to monitor the field impact of pesticides. During the past five years, almost all survey countries either banned or restricted some pesticides because of health or environmental risk concerns.

Annex 5 – Field activities

5.1 FAO field activities in Africa

The relevant and important field projects on pesticides management/risk reduction in Africa include the following:

TCP/KEN/3302: "strengthening pesticides lifecycle management in Kenya"; this FAO Technical Cooperation Programme (TCP) has just ended recently and the terminal report cleared. The project has ended satisfactory even though had a delayed start that required an extension. The project addressed legislation, awareness creation and general issues of pesticides management (contaminated waste/container management) as well as capacity strengthening for pesticide management. The terminal report has provided for recommendations on resource mobilization to sustain the results of the TCP. Other projects with components on management of obsolete pesticides in Botswana and Swaziland have had operational problems though these are being addressed by a consultant recruited by SFS to support plant production and protection work. Following successful implementation of a TCP in Malawi on pesticide management which among others supported legislation, IPM activities, a more comprehensive GEF project has been developed to address pesticides management in Malawi. For SFS, the SAPReF (SADC Pesticides Regulators Forum) is worth mentioning as it has become more and more active particularly with hosting of the pesticides forum discussions on regular basis and it is important to note that the forum has been officially endorsed as a sub-committee of the SADC Plant Protection Technical Committee.

In West Africa, several projects to strengthen pesticide management have been implemented over the years with efforts to improve harmonization of pesticide legislation in the sub-region. Unfortunately, more recent efforts to get a GEF project for the region have been slow due to complications in obtaining counterpart funding from the relevant RECs in the sub-region. Other projects that are of relevance in the region are those that deal with Sustainable crop Production Intensification in which pesticide risk reduction/management as well as IPM/FFS approaches are key components. There are several such CA projects particularly in Southern Africa with weed management and use of herbicides a key issue.

5.2 WHO field activities (since JMPM 2013)

Vector control, pesticide management, country support and capacity strengthening activities of the WHO regions are summarized below.

WHO African Region

Coordinated IVM projects

- Demonstrating cost-effectiveness and sustainability of appropriate alternatives to DDT for Malaria Vector Control in Africa
    - Ethiopia, Gambia, Madagascar, Mozambique, Mauritius, Namibia, Senegal, South Africa and Zambia

- New project planned for strengthening national capacity for innovative implementation of IVM

Country support for IVM implementation

- South Africa: VC needs assessment
- Mozambique: support for VC training and provincial entomological monitoring plan
- Malawi: finalization of the Malaria Vector Control Strategy, 2015–2019.
- Seychelles: Plan review & update of the Pesticide Control Act 1996
- Kenya: IVM business plan 2012–2017.
- GPIRM implementation: Sierra Leone, South Sudan, Eritrea and Namibia.

Regional level activities

- Developed data collection tools to collate country-specific data on malaria vector control interventions (LLINs and IRS) (2008–2013).
- Prepared & disseminated to malaria endemic countries a template for collecting data on status of insecticide resistance in malaria vectors.
- Created regional stock of insecticide resistance test kits and supplies for countries.
- Updating an online course on pesticide poisoning.
- Organized second international meeting for *Aedes aegypti* control, Panama, 18–22 November 2013 in collaborating with CDC/other partners.
- Presented results of the global survey on pesticide management in the Region.
- Prepared insecticide resistance surveillance map for the Region.

WHO Region of the Americas

- Strengthening public health entomology in the Americas – staff at PAHO HQ.
- Organized a high-level meeting in Panama by dengue regional programme, November 2013.
- Produced technical document on integrated malaria vector control
- Malaria Day (6 November) focused on initiatives that have been successfully integrated into programs to control vector-borne diseases.
- Organized Regional meeting of the Integrated Management Strategy for Dengue, in Santiago del Estero, October 2013.
- Undertook 10-year review of implementation of the IMS-Dengue strategy, May 2014.
- Prepared legal framework for the use of public health pesticides in the Americas Region – supported by a WHOPES project.

WHO Eastern Mediterranean Region

  - Organized workshop on pesticide specifications in the Islamic Republic of Iran, 4–6 November 2013: 19 staff (MOH, MoA, MoEnv) were trained.

- Sudan (December 2013) – Prepared strategic plan for the implementation of IVM, 2014–2018.
- Pakistan: Situation analysis of PH pesticide management, December 2013.

  - Safe disposal of DDT and other obsolete stocks in the Islamic Republic of Iran, Jordan and Morocco.

- 7th STAC meeting for the Global Environmental Facility funded project in sustainable alternatives to DDT
- IVM regional training course, August 2014: EMRO organized a 6-day training workshop on IVM for 23 participants from 7 countries.

WHO European Region

Implemented UNEP/GEF project on sustainable alternatives to DDT in Georgia, Kyrgyzstan and Tajikistan, 2010–2014, involving in management of obsolete DDT stocks, creation of a strong evidence to convince decision-makers on the benefits of IVM, and enhanced country commitment for vector control. In Tajikistan, developed National Strategy on integrated management of vector-borne diseases, 2014.

WHO South-East Asia Region

- Collected data on insecticide resistance.
- Facilitated study tour of entomologists.
- Supported study on durability and efficacy of LLINs (Nepal; Bangladesh).
- Published/disseminated documents for the World Health Day 2014 for advocacy.
- Provided regional support for leishmaniasis vector control.

WHO Western Pacific Region

- Prepared Regional Action Plan for Malaria Control & Elimination 2010–2015: enhancing coverage with vector control tools and supporting management of insecticide resistance
- GPIRM implementation: provided country support.
- Insecticide resistance determination in Greater Mekong Sub-region: implemented a PMI funded project in 2013–2014.

- Supported insecticide resistance monitoring by US-CDC and NAMRU-2 in Cambodia, Lao People's Democratic Republic, Myanmar, Thailand, Philippines and Viet Nam.
- Capacity strengthening: organized 3rd IVM training with MOH Malaysia, 2-10 October 2013.
    - trainees were from Malaysia (17), Singapore (2), Lao People's Democratic Republic (2) and Philippines, Viet Nam, Fiji and Solomon Islands (1 each).