Improving capacities to eliminate and prevent recurrence of obsolete pesticides as a model for tackling unused hazardous chemicals in the former Soviet Union

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Final report

Protecting farmers and vulnerable groups from pesticide poisoning

Dates:	May 2014 – May 2015
Participating countries:	Armenia, Belarus, Georgia, Kyrgyzstan, Moldova, Ukraine
Implemented by:	PAN-UK / Rotterdam Convention for UN FAO and: Agentia Pro Dezvoltare Rurala, Pro dezvoltare rurala Moldova Agroservice, Georgia Agroservice Georgia All-Ukrainian Environmental League, All Ukrainian Eco League Ukraine Armenian women for Health and Healthy Environment, Armenian Women for Health and Healthy Environment BIOM BIOM Kyrgyzstan Green Cross Belarus, Green Cross Belarus

Author: Dr S Willis, Project Manager, PAN-UK
Pesticide Action Network UK
Brighthelm Centre
North Road
Brighton BN1 1YD
Switchboard: Tel 01273 964230

Direct Tel : +44(0)7534 301157

www.pan-uk.org
www.pan-uk.org
www.facebook.com/PesticideActionNetworkUK
twitter.com/pan_uk
Company No. 2036915 Charity No: 327215

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Acknowledgements

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1 Executive Summary

All the agreed deliverables and objectives of the current work have been delivered within the agreed timeframe (12 months) and under budget.

The current work was designed to contribute to better protection of public health by reducing risks posed by hazardous pesticides in the region, achieved by:

A. Identification of high risk pesticide scenarios and exposure routes in relation to farmers and vulnerable groups
Six baseline studies were undertaken; designed to collect information on pesticide exposure and poisoning in participating countries (Armenia, Belarus, Georgia, Kyrgyzstan, Moldova, Ukraine), with particular focus on the social dimensions of pesticide use and the characterisation of vulnerable groups.

B. Raising awareness of the risk of pesticide poisoning among affected communities and promoting safer practices
A variety of communications resources were developed in the six national languages plus English and Russian. Communications activities also included meetings at local, national and international level; press/media coverage; on-line resources

C. Strengthening regulatory decision-making processes to reduce risk from pesticides, particularly in relation to vulnerable groups.
Good decisions depend on good information. The work captured new information which was shared with key decision-makers in all participating countries. The findings challenged the prevailing assumptions of many participants. Working with the Rotterdam Convention, national NGOs, FAO at international and national levels, focal points and others within government institutions and affected communities themselves helped to bring a range of experience and authority to bear on the issues raised. Pesticide management is a complex issue and this cross-sectoral approach proved to be very positive.

The studies have revealed new information concerning a hitherto rather hidden problem of acute pesticide poisoning. None of the participating countries currently has a system in place to collect data on pesticide poisoning, through health services or by other means. It is doubtful that a full picture of the situation would emerge without collecting data directly from rural families, since participants in the current study indicated that the vast majority of such incidents are not reported to health services. Even quite severe symptoms, it seems, are usually self-medicated (e.g. with yoghurt, activated charcoal and/or bed rest).

New survey tools were developed for this study. A simple, pictoral survey for children and a severity score calculator (which crudely categorises signs and symptoms of pesticide poisoning into mild, moderate and severe cases) were particularly innovative aspects of the methodology. In addition to the small scale surveys, a desk study was completed in each country to gather existing information; and a wide range of stakeholders were consulted in group discussions and semi-structured interviews.

The initial results are alarming. In Kyrgyzstan and Ukraine, for example, **more than half of the adult respondents that use pesticides reported suffering signs and symptoms of acute pesticide poisoning in the last year.** Very few of these incidents are reported to health services or any authorities.
The teams in Kyrgyzstan and Moldova were surprised to find more than a quarter of participating children directly involved in using pesticides (26% and 39% respectively) as well as undertaking other tasks around the

farm that may expose them to these hazardous chemicals.

A rural doctor, Mr Arslanbop, in Kyrgyzstan told us

'While the problem of poisoning of farmers, women and children with pesticides is very urgent, no one is interested with this problem... You are the first people who are interested in this issue. If there is a continuation of your research, we are ready to assist, for example, keep a separate statistical journal and record cases of pesticide poisoning.

Gender roles vary significantly from one country to another, and within countries. Just 4% of the women in the study in Belarus said they used pesticides, for example, while the figure was 56% in Kyrgyzstan. Even women that do not apply pesticides on the farm are often in close contact with them and many report incidents of poisoning. 18% women surveyed in Belarus said they wash clothes that are contaminated by pesticides by hand, for example.

Smallholder farmers across the region are routinely using pesticides without even the most basic knowledge of the effects of these chemicals. Common practices include; very low use of protective equipment; storage of pesticides in food and drinks containers; lack of observance of recommended dosages, frequency of application or post-harvest intervals; lack of suitable disposal options for empty pesticides containers, which are commonly burned or simply left in the field**.** Using highly hazardous pesticides in this context threatens the health of the pesticide users themselves as well as the broader community and the environment.

All six national partner organisations (NGOs) proved adept at drawing attention to this issue and many national institutions have engaged very positively with the problem. In Kyrgyzstan, for example, MPs visited affected rural communities to discuss the issues with farming families and the national partner, BIOM, was invited to speak in the national parliament. In Georgia, the regulatory authorities responded by tightening enforcement of regulations on repacking and labelling of pesticides and also reported a serious poisoning incident to the Rotterdam Convention under Article 6. Armenia is launching a new reporting system for pesticide poisoning.

Seasonal workers proved to be a group from whom it was difficult to capture good data, particularly as the studies were undertaken in winter.
An important group that had not been identified *a priori* were pesticide retailers. They seem to be at high risk of pesticide exposure due to the common practice (in Armenia, Georgia, Kyrgyzstan in particular) of repacking pesticides into plastic bags and bottles without suitable protection. The practice, along with the poor level of advice provided by many retailers, also puts their customers at increased risk.
Having new information on a potentially significant health issue proved to be of interest to several national and local media outlets and of great interest to rural families themselves. A range of leaflets, posters and videos were developed in eight languages during the course of the year (English, Russian and national languages of six participating countries). These were designed to respond to common issues and risky practices in the target communities and to promote risk reduction. These resources were distributed during surveys, consultations and meetings as well as being made available on PAN-UK, FAO and partner websites.

Two partners, in Moldova and Kyrgyzstan, took part in high profile EU Day events. Leaflets were also distributed at the Conference of Parties in Geneva in May 2015, where PAN-UK presented some results at a side event where two DNAs (from Georgia and Kyrgyzstan) made public statements about the value of this work in their countries.

Working with Rotterdam Convention was very valuable in facilitating a close engagement with Designated National Authorities. Further, all the national partner organisations (NGOs) proved adept at engaging with the

relevant authorities and bringing different groups together to consider this complex issue; including farmers' groups, the agrochemical industry, research institutions and government authorities in health, environment, customs and agriculture.

It is very early days for this type of work. None of the participating countries yet has systems in place to collect data on pesticide practices or pesticide poisoning (although Armenia is introducing a new pesticide incident report card for health services) and the experience of collecting this type of information directly from affected communities was also new to all participants. New survey tools were developed for the study and valuable experience gained. The studies were very small scale, but they did raise important questions, challenged assumptions and clearly identified common practices that are serious cause for concern. The activities also served the valuable purpose of bringing key actors together and strengthening linkages between them. Several countries noted the value in this approach and are taking steps to formalise networks or cross-sectoral committees to focus on the issues raised. Further work is needed to build on this success in order to better understand the scale and nature of the problems identified; to gain a better understanding of the products most commonly associate with poisoning; and to take effective action to reduce the significant risks pesticides pose to rural families.

2 Background

Highly Hazardous Pesticide (HHP) and pesticide lifecycle studies, already completed by the project, identified significant weaknesses in relation to pesticide management and management of HHPs across the region leading to significant potential risks to human health from pesticides. Recommendations from these studies included: raising awareness of the risks from pesticides; promotion of safer practices; and, the establishment of monitoring and surveillance systems.

In November 2013 the 2nd Steering Committee (SC) of the FAO-EC project recommended the '*development of targeted regional information and awareness materials on health impacts of pesticides for use by farmers and local communities*'[1]. At the same meeting all countries confirmed their need for '*guidance on surveillance monitoring of pesticide use and impacts including awareness on health impact linked to existing work on poison reporting by WHO*'.

The current activities respond to identified needs for: more information regarding pesticide exposure in the region; increased capacity to respond to pesticide risks; and, increased awareness of the issues. The activities under this LOA bring civil society and decision-makers together in order to promote dialogue between them and a better understanding of the data requirements and entry points in regulatory decision-making processes. Pesticide regulators were key stakeholders in project implementation.

Pesticide poisoning

Acute poisoning by pesticides can be fatal. A range of other serious, permanent effects from acute poisoning by pesticides include malignancy, teratogenicity (foetal abnormality) and organ damage. At lower doses symptoms may be less severe in the short term but chronic exposure is associated with serious impacts such as cancer, nervous system damage, reproductive disorders, developmental problems and disruption of the immune system.

Users of pesticides often have a poor understanding of the impact they have on their own health or the health of others. This undermines efforts to promote safer practices. Pesticide regulators and decision-makers also lack essential information on the scale and causes of the problem of pesticide poisoning that would help them to make more robust regulatory decisions. The work described herein aims to better understand the issues in this country and to share the findings with regulators, affected communities and other important stakeholders.

Vulnerable groups

Some groups are particularly vulnerable to pesticide poisoning such as women, particularly expectant mothers and those who are breastfeeding, and children. These groups form a relatively large proportion of agricultural workers. On average, 20 to 30% of the waged workers are women worldwide and, in the context of family farming, large numbers of unwaged women are actively involved in agriculture. According to FAO, women represent 43 per cent of the agricultural labour force worldwide[1].
It is estimated that over two-thirds (70%) of all working children are found in agriculture (ILO IPEC, 2000). Since many children below the age of employment live on farms, the risk of accidents and pesticide exposure is relatively high.

[1] As noted in **Summary of Findings, Recommendations and Lessons Learnt**. 2nd Meeting of the Programme Steering Committee Kiev, Ukraine November 11 – 12, 2013

Migrant, seasonal and casual workers are also prevalent in agriculture. They may be particularly vulnerable to pesticide poisoning due to language and literacy barriers, as well as lacking the means or confidence to assert themselves in relation to hazardous work practices due to precarious conditions of employment.

In many countries, agricultural workers as a whole are poorly protected in law and often not represented by trade unions, especially casual workers. Farmers and workers often are not aware of workers' rights and responsibilities in occupational protection and there are few resources for labour inspectors to check conditions on farms. Lack of job security, training or information may lead to a reluctance to question hazardous practices or to request additional safety equipment.

Alignment with broader objectives

The work is aligned with broader regional and global priorities and initiatives. The main objective of the three Chemical Conventions is to protect human health and the environment from the harm caused by chemicals. The collaboration between the Secretariat of the Rotterdam Convention and PAN-UK contributed to this effort and it builds on extensive experience of RC working together with PAN to establish and strengthen reporting of pesticide incidents.

The emphasis on vulnerable groups is in line with FAO's social objectives and with the process of the Open Working Group (OWG) of the UN General Assembly, tasked with preparing a proposal on the Social Development Goals. The collaboration with the Secretariat of the Rotterdam Convention and utilisations of PAN's guidance materials offers a valuable opportunity to help countries to strengthen their reporting under international agreements, particularly using the opportunity to implement Article 6 under Rotterdam Convention. The activities are in line with the work of FAO and WHO on HHPs[2].

[2] http://www.fao.org/agriculture/crops/core-themes/theme/pests/code/hhp/en/

3 Deliverables

The current work contributes to Output 2.4 ('awareness raising') of the project titled 'Improving capacities to eliminate and prevent recurrence of obsolete pesticides as a model for tackling unused hazardous chemicals in the former Soviet Union' (GCP / RER / 040 / EC). It is designed to identify and raise awareness of particularly hazardous practices in order to strengthen community responses and regulatory decisions with respect to the reduction of risk from highly hazardous pesticides (HHPs).

The objective of the current work is to contribute to better protection of public health by reducing risks posed by hazardous pesticides in the region, achieved by:

a. Strengthening regulatory decision-making processes to reduce risk from pesticides, particularly in relation to vulnerable groups.
b. Identification of high risk pesticide scenarios and exposure routes in relation to farmers and vulnerable groups
c. Raising awareness of the risk of pesticide poisoning among affected communities and promoting safer practices

The activities contribute to FAO's wider social objectives and aim to give a voice to the needs and concerns of vulnerable groups in order to ensure that they are reflected in the decisions made by policy makers and pesticide regulators.

3a Regulatory decision making processes strengthened in order to achieve risk-reduction

Deliverables:

3a.1 Training toolkit

A training toolkit has been designed to support authorities and organisations interested in replicating the current work, or finding additional information on similar community-based approaches. New training resources have been developed under the current project, and tested by national partners. The training toolkit offers these resources and includes lessons learned and experiences of using the tools and materials as well as suggesting alternative approaches and case studies.

The toolkit contains:

- background material:
- What are pesticides (WHO definition and brief explanation)
- What is pesticide poisoning (from guidance – presentation)
- RC and pesticide poisoning (from RC website)
- The need for data – who needs it? Why?
- Guidance / training materials including *inter alia*:
    - Guidelines developed under this project
    - Relevant excerpts from guidance developed under the Africa Stockpiles Programme
    - A PAN/PIC incident reporting toolkit
    - Survey tools developed under the current project
    - Community based health monitoring system
    - Examples of other projects
    - Case studies giving the experience of end users of pesticides
    - What to do with collected information?

- Promoting risk reduction – examples from recent experience
- Further reading

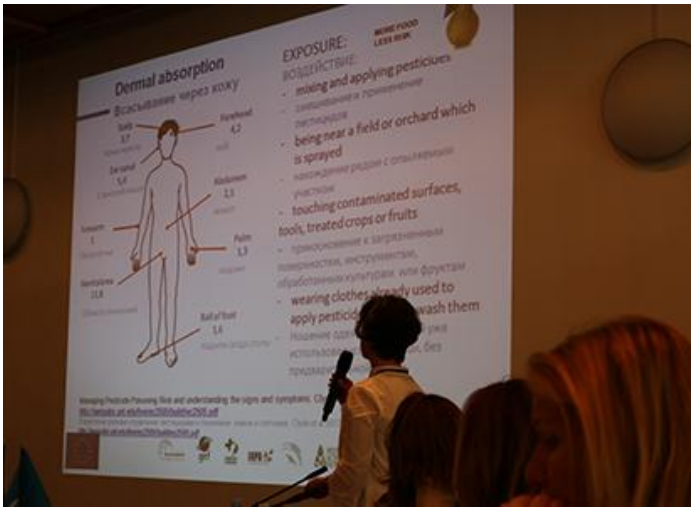
This resource will be reviewed by FAO / Rotterdam Convention before being made available on respective websites.

3a.2 Regional training workshop

Training was delivered by specialist PAN-UK staff and The Secretariat of the Rotterdam Convention. Additional inputs were provided by FAO staff from the pesticide risk reduction group. 45 participants from the six participating countries as well as Azerbaijan, Kazakhstan, Uzbekistan and Tajikistan attended. These included key staff from all the partner NGOs, focal points from government institutions and DNAs.

The following issues were covered in the workshop:

- The problem of pesticide poisoning
- The value of pesticide exposure and incident data
- Defining 'vulnerable groups'
- Introduction to the chemical conventions
- The Rotterdam Convention – opportunities under Article 6
- Capturing relevant data – methodologies, including KAP survey
- Data analysis
- Using data in regulatory decision-making
- Using information in awareness raising with focus on vulnerable groups



PAN UK Toxicologist, Dr Rina Guadagnini delivering training on pesticide exposure at the training workshop (Photo: PAN UK)

Practical training sessions in a farmers' centre allowed workshop participants to gather data from farmers and pesticide retailers. Pictured left: Olena Pashchenko of the All Ukrainian Ecological League questions a Georgian farmer about his use of pesticides.
Pictured above, right: Participants also saw the potential exposure from a backpack sprayer (containing water and food colouring) and witnessed the problems of wearing protective equipment in hot conditions.

Photo of training workshop participants, Tbilisi. July 2014. Photo: PAN-UK

3a.3. National workshops (6) and a regional workshop

Each of the six participating countries organised a national workshop in order to invite key stakeholders from target communities, relevant institutions and researchers to consider the findings of the study in their country and develop recommendations and next steps. The reports of these meetings are available.

A regional lesson learning workshop was held in Yerevan, Armenia in April 2015. This workshop allowed PAN-UK, the Secretariat of the Rotterdam Convention, the national partners, FAO national consultants and DNAs and other government representatives to reflect on the findings and lessons learned under the current sub-project. Lessons learned were shared and each country made recommendations and identified important next steps.

Pictured left: Deputy Minister for Agriculture, Garnik Petrosyan, addresses the workshop in Yerevan in April 2015.
Pictured right: participants from Armenia and Georgia discuss findings and recommendations. Pictures: PAN-UK

Pictured left: participants from Moldova, Ukraine, Belarus in discussion.
Pictured right: participants from Kyrgyzstan and Kazakhstan develop recommendations

The feedback from the meeting was very positive about the studies and the communications resources that were generated under this project. Important lessons learned were captured and recommendations and actions articulated. During the plenary there was agreement that:

- the issue of pesticide poisoning is important and in need of additional work, both in terms of research and action to reduce risks
- inter-sectoral cooperation and also engagement between government and non-governmental organisations are important in this effort.
- awareness raising is important to influence end users of pesticides to reduce risks.
- there is a lack of information on incidents of pesticide poisoning and action is needed to strengthen responses of medical services and to collect data
- the focus of research and action should not be limited to male farmers and farm workers:
    - Women and children are also at risk
    - Retailers were identified as an additional vulnerable group, in Georgia, Armenia and Kyrgyzstan in particular
    - It is not only people who handle pesticides who are at risk, but other family members too

    See Annex 1for the full workshop report

3b Identification of high risk scenarios and exposure routes for farmers and vulnerable groups

3b.1 Methodologies for vulnerable groups tested and refined.

Questionnaires / survey tools were developed by PAN-UK in collaboration with the Secretariat of the Rotterdam Convention. New survey tools were required because the focus on the social dimensions of pesticide exposure is a new area, inadequately addressed by existing materials. Once the survey questionnaire was drafted, all partner organisations were trained on relevant issues and on the questionnaire itself. The survey tools were tested on a small scale in each country before being refined and given to national partners to translate (again) and use.

Pictured left:
Tatiana Echim of APDR training the survey team in Moldova. Two members of the PAN-UK team supported this exercise.

The survey questionnaire is actually four surveys in one document. Having established that all respondents live and/or work on a farm that uses pesticides, they fall into categories i, ii or iv, below, each with its own set of questions. Short section iii can be added to i or ii if the respondent is aware of a poisoning incident that happened to someone else.

i. people who handle pesticides e.g. mixing or applying them
ii. people who don't handle pesticides directly
iii. reporting third party incidents (this short set of questions may be added to i or ii if the person is aware of a poisoning incident that happened to someone else)
iv. children (under 18 years)

Two particularly innovative aspects of the methodology included the children's survey and the severity score calculator. The survey for children is short, uses simple questions and pictures. Feedback was very positive, although some improvements were suggested including reducing the number of questions and developing different surveys for different age groups. The severity score calculator scores and weights incidents according to which signs and symptoms of pesticide poisoning occurred and the duration of those signs and symptoms. This provided crude but useful categories of mild, moderate and severe incidents.

The children's survey is relatively short and features simple questions and the use of pictures.

Figure 1. **Showing part of the children's survey (section iv)**

Figure 2. **Severity score calculator**

Sign or symptom	Please insert 1 for the experienced symptoms	Initial score (DO NOT MODIFY THIS COLUMN)	Mild or severe? Insert corrispondent score 1 = mild or infrequent 2=moderate 3=severe or frequent	Duration more than 48 hours? Insert 1 for symptoms that lasts more than 48 h	Severity score (DO NOT MODIFY THIS COLUMN)
Eye irritation		1			0
Fever		1			0
Headache		1			0
Convulsion		3			0
Dizziness		1			0
Shortness of breath		2			0
Unusual heart rhythm		3			0
Memory loss		3			0
Tremor		1			0
Blurred vision		2			0
Excessive sweating		1			0
Insomnia		1			0
Weakness		3			0
Cough		2			0
Skin irritation		1			0
Nausea		1			0
Vomiting		1			0
Diarrhoea		1			0

The severity score calculator is based on a WHO assessment procedure. It was tested as way of rapidly distinguishing the most severe incidents, for potential follow up, from more minor incidents.

All national partner organisations submitted the data collected in the surveys to PAN-UK for checking. Once any anomalies had been resolved, PAN-UK provided all the analaysis and supplied each partner organisation with a template survey report in English and Russian. This report provided generic background information and a description of the methodology, along with all the data presented in graphs. Each partner organisation was asked to provide some information on the specifics of their survey location, target groups and organisation of the survey to their survey report. They were also asked to discuss the results in terms of the local context and other information available to them. These reports were prepared in advance of the national workshops so that the results could be shared and discussed with stakeholders at the meeting.

Survey report template, English and Russian

Each national organisation submitted survey data to PAN-UK in a standardised format. PAN-UK then thoroughly checked the data for anomalies, analysed it and put it into a 'survey report template'. This provided each country with a set of graphs and statistics from their data, as well as some generic information regarding pesticide poisoning. Each partner was tasked with adding some country-specific information regarding their survey and some basic interpretation of the results which could be shared more widely at a national and community level. These were provided in advance of the national stakeholder meetings.

3b.2 Six baseline study reports issued

These reports include:

- results of 6 Knowledge, Attitude, Practice (KAP) surveys;
- results of consultations;
- case studies and testimonials;
- results of search to identify existing sources of data (e.g. health services, poison centres);
- desk studies.

These reports were completed by each national partner organisation, with support from PAN-UK and the Secretariat of the Rotterdam Convention. Key findings for each country are summarised in sections 4 and 5.

3b.3 Video

See communications, section 3C.

3b.4 Data presented to key stakeholders including registrars and Designated National Authorities.

The data, desk studies and results of consultations were presented to a wide variety of stakeholders from all levels, including pesticide regulators and Designated National Authorities. Government representatives and DNAs were invited to the regional training workshop in Tbilisi (July 1014); the Regional Lesson Learning Workshop (Yerevan, April 2015); and the national workshops in each of the participating countries. In addition, PAN and RC made presentations on this subject to the Steering Committee (Tbilisi, January 2015) and the COP 7 in May 2015.

3b.5 Next steps identified

Each national stakeholder meeting was asked to develop recommendations and next steps. These were shared and further elaborated at the regional lesson learning workshop in Yerevan in April 2015.
See Annex 1

3c. Awareness raised of risks from pesticides and risk reduction measures

PAN UK has worked with the partner organisations in each country to produce a range of communications materials in order to:

- Raise awareness of pesticide risks among vulnerable groups
- Co-ordinate and share information between partners
- Support communications capacity building for partners
- Raise awareness among Designated National Authorities and other decision-makers at national level.
- Build working relationships beyond the lifetime of the project.

3c.1 Communications resources:

3c 1.1 Print resources (leaflets, posters etc.)

A range of leaflets and posters were created in the local languages of each partner country – Armenian, Belarussian, Georgian, Kyrgyz, Romanian and Ukrainian - as well as in Russian and English. These were designed to address the insights gained (see introduction above) into the target audience, the issues and formats most likely to engage vulnerable groups.

3c 1.1.2 Reduce Your Risk From Pesticides

Leaflets and posters

Figure 3. ‘Reduce your risk’ materials

4 page A5 leaflet | A3 poster – No.1 Personal protection | A3 poster – No.2 Protecting others | A3 poster – No.3 Before and after using pesticides | A3 poster – No.4 Avoiding exposure

These materials provide practical guidance to those handling pesticides on the behaviours to avoid, and protective measures to take, when handling pesticides. They are designed to be visually appealing and easily comprehensible to the target audience.

3c 1.1.3 Pesticide exposure and poisoning

Figure 4. Pesticide exposure and poisoning materials

4 page A5 Leaflet | A3 poster – No.1 How pesticides can enter your body and cause pesticide poisoning | A3 poster – No.2 The signs and symptoms of acute pesticide poisoning

These materials explain the routes to pesticide exposure and the symptoms of acute pesticide poisoning, in relation to the main pesticide groups. They are designed for use by target communities and primary health services. In particular, they address a widely held misconception that only inhalation or ingestion of pesticides are routes to pesticide poisoning; actually dermal absorption is also an important route to pesticide poisoning.

3c 1.1.4 Can you spot the pesticide hazards?

Figure 5. Spot the hazards poster

This poster is designed for children and families. It seeks to engage them in identifying pesticide risks through a game which requires them to spot hazards in a picture of a typical farm household scene. A key to the hazards in the illustration also provides guidance on risk reduction measures.

A3 poster

3c 1.1.5 Leaflet summarising key findings of baseline studies and suggesting opportunities to reduce risk (English)

A leaflet has been produced describing summary results from the current project and key steps for risk reduction. It is aimed at policy-makers / decision-makers and has been used at the Conference of Parties in May 2015. PAN also plans to distribute it at the fourth session of the International Conference on Chemicals Management (ICCM4) to be held from 28 September to 2 October 2015 in Geneva.

Figure 6. Leaflet for policy makers

3c 1.1.6 Training toolkit

A toolkit has been drafted by PAN-UK, which is designed to support government authorities, researchers and NGOs in their efforts to collect data from surveys / questionnaires on pesticide use, exposure and acute poisoning. See Section A.

3c 1.1.7 Guidance document (English and Russian)

A guidance document was developed in order to provide support to implementing partners concerning the protocols for undertaking the different elements of the study and how to present the findings. This document was an extremely useful reference resource and is an element of the toolkit described above.

3c 1.1.8 Translate published materials into Russian

Figure 7. International Tools For Preventing Local Pesticide Problems: A Consolidated Guide To The Chemical Codes & Conventions

Figure 8. A tool-kit to facilitate the process of listing severely hazardous pesticide formulation as per the Rotterdam Convention on the Prior Informed Consent Procedure for certain Hazardous Chemicals and Pesticides in International Trade

These two substantial PAN UK guidance documents were translated into Russian in order to make them more widely accessible to regulators and other interested organisations in the region.

3c1.2 Short video films

Video material has been collected, edited and subtitled in several languages. It is has been used at national meetings and events (such as EU Day celebrations in Kyrgyzstan and Moldova) and at regional / international events, such as the project Steering Committee in Tbilisi in January 2015 and the COP in Geneva in May 2015. The material can be used in a variety of ways e.g. for training, awareness raising and for TV broadcast.

3c 1.2.1 Reduce Your Risk From Pesticides

Figure 9. Reduce your risks video

A video version of the *Reduce Your Risk From Pesticides* leaflet was produced in each language, utilising the text and illustrations from the leaflet. These are principally for digital distribution through partners' websites and social media channels.

Reduce Your Risk From Pesticides - Armenian
https://www.youtube.com/watch?v=sYIGPh7i84I
Reduce Your Risk From Pesticides - Belarussian
https://www.youtube.com/watch?v=AhK_hB6ah6A
Reduce Your Risk From Pesticides - Kyrgyz
https://www.youtube.com/watch?v=XitYNyH_4lg
Reduce Your Risk From Pesticides - Russian
https://www.youtube.com/watch?v=WpzBpxjf8kg

Reduce Your Risk From Pesticides - Georgian
https://www.youtube.com/watch?v=X4rA2jP3QnY
Reduce Your Risk From Pesticides – English
https://www.youtube.com/watch?v=Ya1ygTe2FV8
Reduce Your Risk From Pesticides - Romanian
https://www.youtube.com/watch?v=1ibZ--_68EU
Reduce Your Risk From Pesticides - Ukrainian
https://www.youtube.com/watch?v=PUkRoF1Ue8E

c1.2.2 Raising awareness of risks from pesticides and risk reduction measures

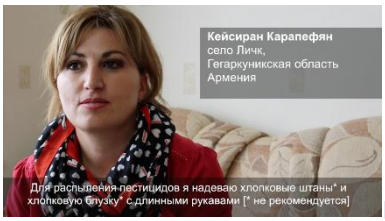


Figure 10. Interviews on pesticides risks video

This video intercut clips of people from vulnerable groups talking about their own experiences of pesticide exposure with the guidance text and illustrations from the *Reduce Your Risk From Pesticides* leaflet. This video was produced primarily for display at national workshops, the regional lesson learning workshop, the project steering committee meeting and other project events.
https://www.youtube.com/watch?v=Pa5489ogMho

3c 1.2.3 Testimonials

Figure 11. Video testimonials 1

A set of short videos of individuals talking about their experiences of pesticide exposure.

Constantin Moldova
https://www.youtube.com/watch?v=CWeRqXfU7Os

3c.2 Media coverage in FSU:

3c 2.1 Online resources

3c2.1.1 Online Forum

PAN UK created an online forum for the use of partners to exchange information, work collaboratively, and as a repository of project resources. The forum is at: https://pan-uk.glasscubes.com/?5


Figure 12. A snapshot of the online forum.

3c2.1.2 TECA - Technologies and practices for small agricultural producers

Copies of the project leaflets, posters and videos in all languages are to be added to the FAO's TECA website, providing practical information – agricultural technologies and practices – to help small producers in the field.

http://teca.fao.org/technology/risk-reduction-while-manipulating-pesticides

3c2.1.3 PAN-UK and national partner websites

PAN UK produced several articles for project newsletters and websites. National partners also included resources and information on their websites (see cover page for links).
E.g. Four articles are currently found on PAN-Uk website http://www.pan-uk.org/projects/blog

The next issue of PAN's Pesticides News (distributed electronically) will feature a long article by Armenian Women for Health and Healthy Environment on the issues raised in this study (available in draft at time of writing).

3C 2.2 Media coverage

PAN UK worked with partners and FAO to produce press releases for each partners' national workshops, as well as for the Regional lesson learning workshop.

PAN UK and partners secured mass media coverage for the project, in particular when holding their national workshops. Key events also included Europe Day celebrations, where our partners were invited to share information about the project in Bishkek, Kyrgyzstan and Chisinau, Moldova (see below).

Armenia	"Agrolratu" newspaper 5/02/15 Elimination of Pesticides as a Necessity (6 pages) Woman and Politics, newspaper 4/02/15 Women for Health and Healthy Environment (4 pages) Most Women in Armenian villages are being affected by pesticides 6/03/15 http://ecolur.org/hy/news/sos/most-women-in-armenian-villages-harmed-with-pests/7092/ a1plusnews - Knowledge for women, money, power and influence for men 6/03/15 https://www.youtube.com/watch?v=kiaC74Z_uEQ "Epikentron" news program, Kentron TV 6/03/15 http://www.kentron.tv/index.php/am/programs/informational-political/epikentron/item/8723-epik-060315.html AR TV - Hazardous gifts 6/03/15 https://www.youtube.com/watch?v=JgfKRp-_LNk&t=15 Armenian Public Radio - Issues of Concern for Women Within the Women's Month 6/03/15 http://www.armradio.am/hy/2015/03/06/%D5%AF%D5%A1%D5%B6%D5%A1%D5%B6%D6%81-%D5%B0%D5%B8%D6%82%D5%A6%D5%B8%D5%B2-%D5%AD%D5%B6%D5%A4%D5%AB%D6%80%D5%B6%D5%A5%D6%80%D5%A8%D5%9D-%D5%AF%D5%A1%D5%B6%D5%A1%D5%B6%D6%81-%D5%B4%D5%AB%D5%A1%D5%B4/ ArTv News Report on Regional Lessons Learned workshop 14/03/15 https://www.youtube.com/watch?v=4A0D9mC4Ntc Aysor Panarmenian News ATV report on Regional Lessons Learned workshop 14/03/15 https://www.youtube.com/watch?v=ceBhpZGbt28

	ArTv - “The chemicals are dangerous.” 15/05/15 https://www.youtube.com/watch?v=WsTZg-PFy4c
Belarus	The press release about National workshop was given to Belta agency (central distributor of news in Belarus), our Belarusian cable Agency, where any representative of Mass Media could take this information for further publishing.
Georgia	Agricultural Service - the population has little information about the adverse effects of pesticides 4/03/15 http://garb.ge/news/agroservisi-mosakhleobas-pestitsidebis-mavne-zegavlenis-shesakheb-mtsire-inphormatsia-aqvs-video/ Georgian TV News report on National Workshop 4/03/15 http://www.myvideo.ge/?act=dvr&chan=ertsulovneba&seekTime=04-03-2015+19%3A04 Families protect farmers from pesticide poisoning! 4/03/15 http://www.for.ge/top_news.php?news_id=3493 "Green Zone" - News report and phone-in discussion 10/03/15 http://www.palitratv.ge/gadacemebi/qmtsvane-zonaq/56342-qmtsvane-zonaq-stumrebi-inga-ghvineria-khathuna-akhalaia.html
Kyrgyzstan	Pesticides: a lot of problems - one solution! (28/12/14) http://www.day.kg/analitic/5488-pesticidy-problem-mnogo-reshenie-odno.html Talking about pesticides 5/02/15 http://www.day.kg/analitic/5489-razgovor-vokrug-pesticidov.html Reducing risks of pesticide use in the Kyrgyz Republic 4/03/15 http://www.photo.kg/galereya/osnovnye/fotoreportazh/4098-snizhenie-riskov-ispolzovaniya-pesticidov-v-kyrgyzskoy-respublike.html The use of pesticides in the Kyrgyz Republic: health risks 12/3/15 http://www.day.kg/analitic/5490-primenenie-pesticidov-v-kr-riski-dlja-zdorovja.html
Moldova	Ministry of Agriculture carried reports of the project on their website http://www.maia.gov.md/libview.php?l=ro&idc=52&id=17022 Ecopresa, a hub for environmental information, carried reports from the project http://ecopresa.md/ MEM (*Mişcarea Ecologistă din Moldova* - Ecological Movement of Moldova) carried information on their website. APDR website www.apdr.vox.md Press coverage included this online article **http://oficial.md**

	Press release- April 3rd, 2015 National Workshop in Chisinau, Moldova The Europe Day event (described below) also received TV and press coverage.
Ukraine	"Handling of pesticides in Ukraine: problems, practice, risk reduction" 09/04/15 http://www.undicz.mns.gov.ua/news/557.html Report on seminar at Department of Environment and Natural and Mathematical sciences, Vinnytsia 12/11/14 http://www.voipopp.vn.ua/index.php/pidrozdili/kafedri/kafedra-ekolohii-ta-pryrodnycho-matematychnoi-osvity/uchast-u-mizhnarodnykh-vseukrainskykh-ta-oblasnykh-konferentsiiakh-seminarakh Report on seminar at Department of Environment and Natural and Mathematical sciences, Vinnytsia 12/11/14 https://www.facebook.com/EUDelegationUkraine/videos/vb.126879227356714/915805961797366/?type=2&theater

Moldova

A highlight of communications activities for our partners in Moldova includes the Europe Day event in Chisinau on 10th May 2015. Organisers estimate that more than 20,000 people attended the event, including VIPS such as EU Delegations, Ambassadors, ministers, president of Moldova and staff from various ministries. The event was widely covered in TV and print media. The EU Delegation Facebook page also covered the event.
https://www.facebook.com/pages/Delegation-of-the-European-Union-to-Moldova/255840324431929
Agentia Pro Dezvoltare Rurala had a popular stand that showed one of the project videos (using footage from this project) and distributed 8800 posters and fliers (300 posters/each + 1500-2000 flyers). The team used the opportunity to engage with the public, and with agricultural specialists, on the findings of the current study and risk reduction.

showing a keen interest in the
'reduce your risk' leaflets and other project materi
Pictures: Courtesy of APDR

3C.3 Project reports

PAN-UK has submitted monthly narrative and financial reports to RC and FAO. The final report will be reviewed by RC before final submission to FAO and circulation to partners and key stakeholders.

PAN-UK's Director presented the current project at a side event at the the COP7[3] of the Rotterdam, Stockholm and Basel Conventions. A report of this event is found in Annex 2.

4 Monitoring and Reporting

Each partner received significant technical assistance from the UK as well as visits. PAN completed visits in Armenia (3), Ukraine, Moldova (2), Kyrgyzstan, Georgia (3). A partner from Belarus accompanied field work in Ukraine. PAN attended three national stakeholder workshops in March 2015 for follow up (Georgia, Armenia, Moldova). RC provided technical assistance during the missions to Armenia and Kyrgyzstan.

National consultants attended a regional lesson learning workshop in April 2015 where results and experience were discussed in detail, shared and reported.

Direct oversight of PAN-UK was provided by the Secretariat of the Rotterdam Convention. PAN UK joined monthly conference calls with FAO in order to report on progress and provided monthly reports, delivering updates on progress against agreed milestones. Tools, analytical methods, plans and draft publications were shared with the Secretariat of the RC for review prior to finalisations and use / distribution.

[3] Conference of the Parties

5 Summary comparison of findings across the six participating countries.

5a Reporting systems

Several participating countries have done *ad hoc* studies on DDT in breastmilk, for example, or sampling of soils or crops for pesticide residues. However, all of the participating countries reported that they lack systems for the routine collection of data on pesticide poisoning. And yet, without such information, they explained, it is not possible for them to take robust regulatory action to limit such impacts.

Ukraine had a system for collecting data on serious incidents involving groups of people, but not individuals. The situation has changed in Armenia since December 2014, when the MoH in Armenia launched a new incident report form for cases of pesticide poisoning. 2015 is the first year of its use. It would be interesting to follow this positive development.

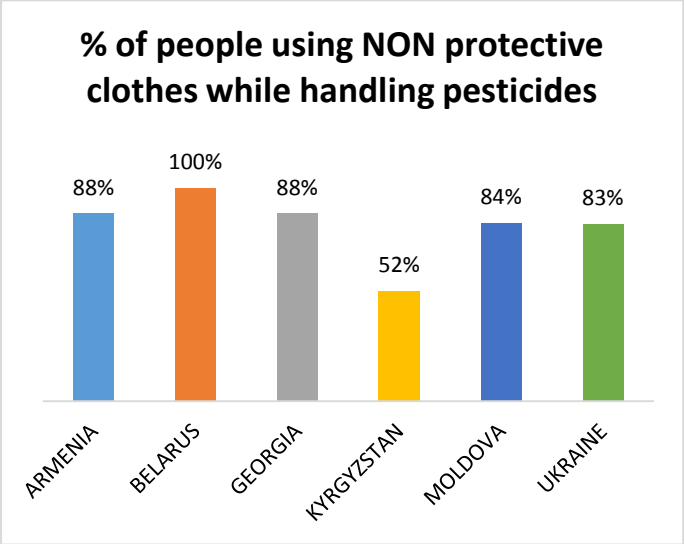
5b Knowledge, attitude and practice of farmers

Consultations, semi-structured interviews and group discussions were valuable in revealing information regarding common levels of knowledge regarding pesticide risks; attitude to risk and practices. Many of the issues that emerged were common to all countries; very low use of protective equipment when using pesticides; storage of pesticides in food and drinks containers; lack of observance of appropriate dosages or frequency of application; lack of observance of post-harvest intervals; lack of suitable disposal options for empty pesticides containers.

All survey respondents said they lived and/ or worked on a farm that uses pesticides. The respondents were divided into groups that directly use/handle pesticides and those that do not.

Most respondents that handle pesticides wear everyday's clothes when they do so. When they said that they wore a mask or gloves, further investigation very often revealed that the gloves were highly permeable and the mask was a simple dust mask, commonly purchased from a builder's merchants. These do not offer suitable protection against chemical exposure. Because of such difficulties with definitions, we have simply presented the proportion of respondents who say they wear normal clothes when they spray pesticides. Some respondents would keep a set of normal clothes for dirty jobs like spraying; others would simply wear what they happened to put on that day.

We were told that in Moldova and Ukraine it is not uncommon for ladies to wear a swimming costume when spraying, since they can get a sun tan at the same time. This illustrates the general lack of concern, particularly with respect to dermal exposure.

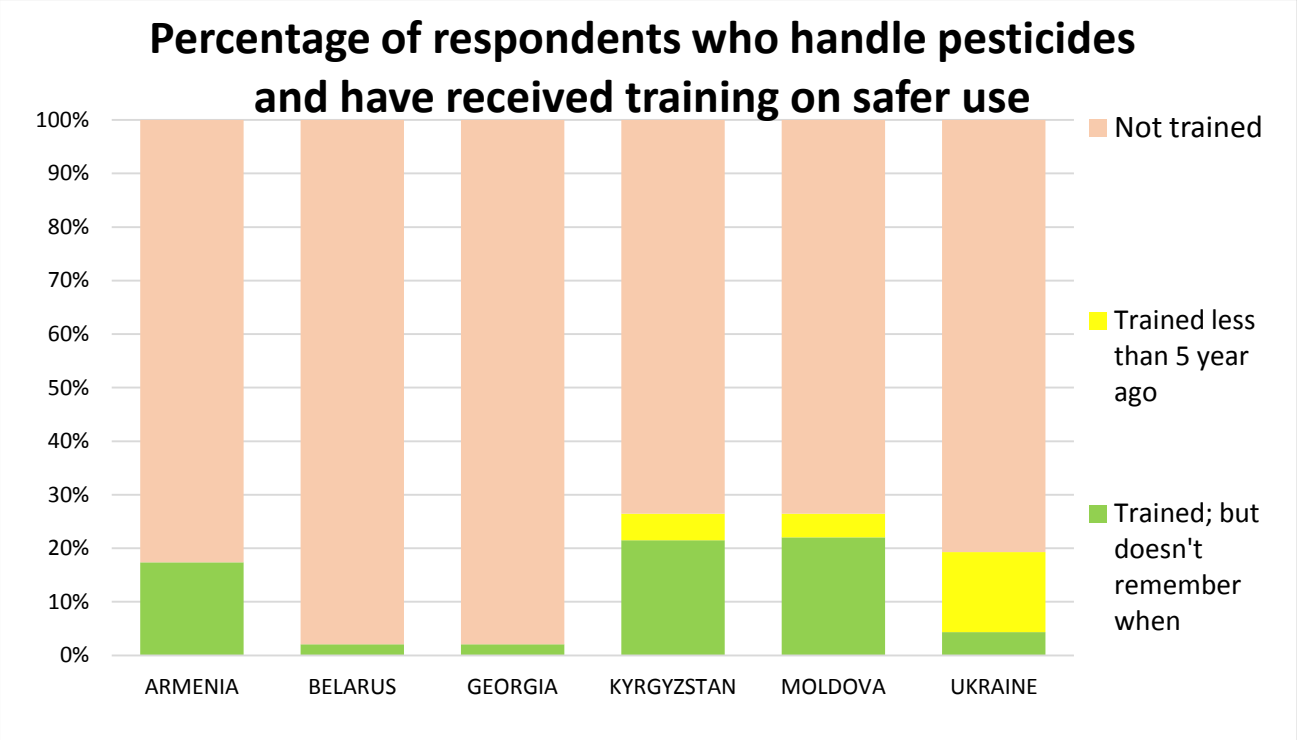


	Using NON protective clothes	Total respondents	%
ARMENIA	22	25	88%
BELARUS	49	49	100%
GEORGIA	103	117	88%
KYRGYZSTAN	64	124	52%
MOLDOVA	61	73	84%
UKRAINE	134	161	83%

Figure 13. Graph showing % people using non-protective clothes while handling pesticides

Few pesticide users in the study were aware of the risks from pesticides or of basic safety precautions. The survey revealed that very few have received any training on this topic. The yellow bars in the next figure show the small proportion of respondents who received such training in the last five years. Most people that received training did so under the Soviet system in the 1980's or earlier.

Figure 14.

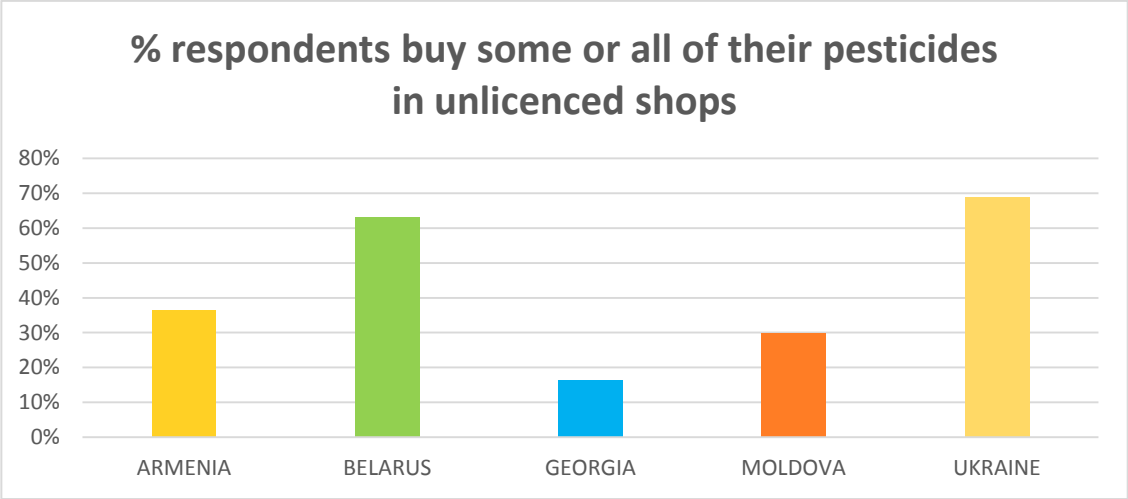


5c Trading standards

During the study it was noted that pesticide retailers are a particularly important and neglected group in terms of pesticide risk. Not only are they often at high risk themselves due to unsafe practices (e.g. handling pesticides

directly with bare hands and no mask; inhaling pesticide fumes throughout the day), they also put end-users at risk due to provision of poor advice on pesticide use; poor quality packaging and labelling; and, often, poor quality product. It has been noted[4] that counterfeit and substandard pesticides are a common problem in this region (and beyond).

Figure 15.



In Kyrgyzstan, there is no licencing system for pesticide traders. General stores in rural areas commonly stock pesticides and store them alongside foodstuffs. 65% respondents in Kyrgyzstan said they purchased their pesticides in these unspecialised stores.

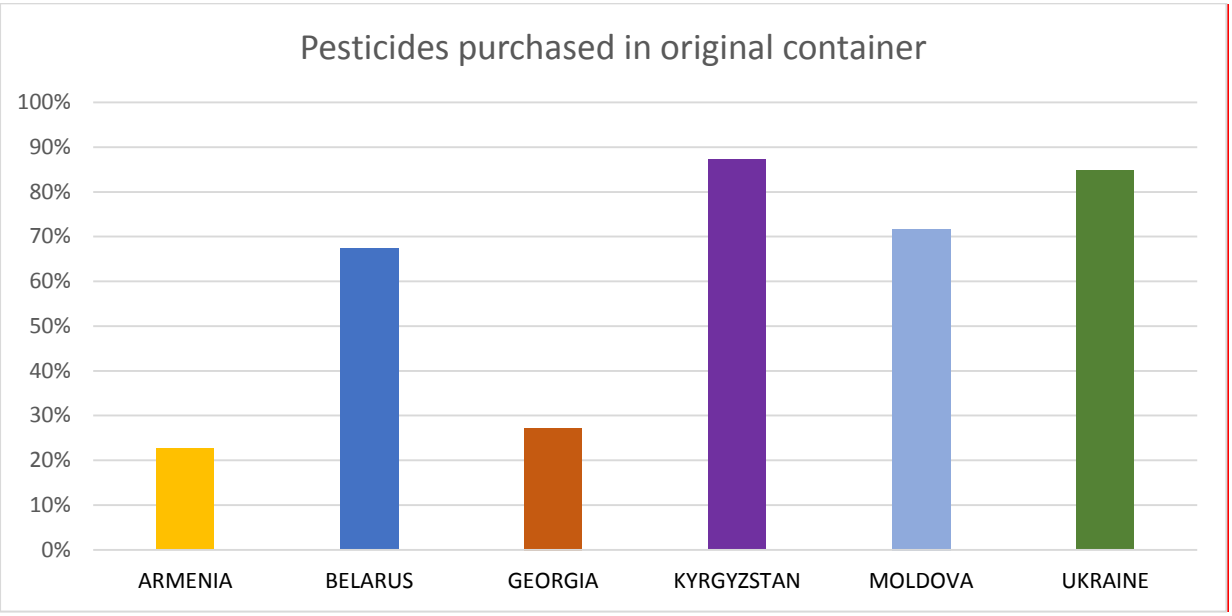
In some other countries the legal framework is there, but enforcement is weak. In Armenia and Georgia, for example, all the pesticides shops that were visited during the study were routinely repacking pesticides into drinks bottles and plastic bags and the shop worker had inadequate protection for the task. Following the current study, the authorities in Georgia undertook a round of inspections of retailers and tightened enforcement of labelling standards.

Pictured left**;** A pesticides shop in Armenia, showing equipment for repacking pesticides into drinks bottles and other containers (shown below). This practice puts the staff in the shop and the end-users at risk.
Pictures: Paul Lievens, PAN-UK

[4] **M. Malkov, S. Prischepa, T. Kutonova (2015)** Contraband And Counterfeit Pesticides Methodology Of Counteraction. EnvSec. OSCE. *In press*

Pesticides that are packed into bags and drinks bottles are more likely to leak, causing potential exposure to the person handling them and contamination of products transported or stored with them. They lack their original label with the instructions on safety and application. Some of the fatal incidents of poisoning reported during the study involved people drinking pesticides from drinks containers, having mistaken them for a drink such as coca cola.

Figure 16.



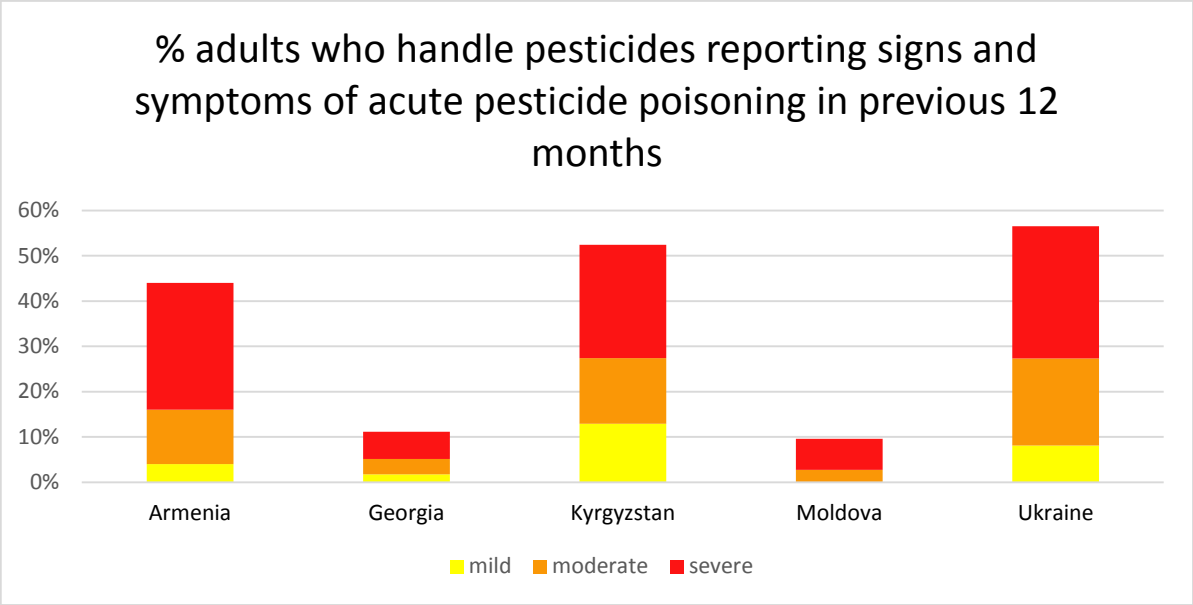
5d Poisoning of people who handle pesticides

The results relating to incidents of acute pesticide poisoning are very concerning. A high proportion of adults who handle pesticides reported suffering signs and symptoms of pesticide poisoning in the previous 12 months. These incidents are cause for concern in terms of the short term effects on their health and ability to work but also the implications for these adults' longer term health due to chronic pesticide exposure.

According to our simple severity scoring system, a high proportion of respondents reported that the signs and symptoms they experienced were severe. Under this scoring system, signs such as convulsions and memory loss score more highly than headaches or skin irritation. Episodes that lasted more than 48 hours also score more highly than shorter episodes.

Very few incidents were reported to health services or other authorities. Very commonly, participants reported that they self-treated by drinking yoghurt, and sometimes activated charcoal, and bed rest; or simply by waiting for symptoms to clear up. Even severe symptoms were commonly treated in this way without any medical assistance.

Figure 17.



It is often assumed that men are at greatest risk of pesticide poisoning because they frequently take on the task of spraying pesticides. However, the studies of farming families showed that, while men are often at high risk, many women and children are also taking on this hazardous work, despite their physiological vulnerability to the impacts of pesticides on their health. See next section.

5e Vulnerable groups

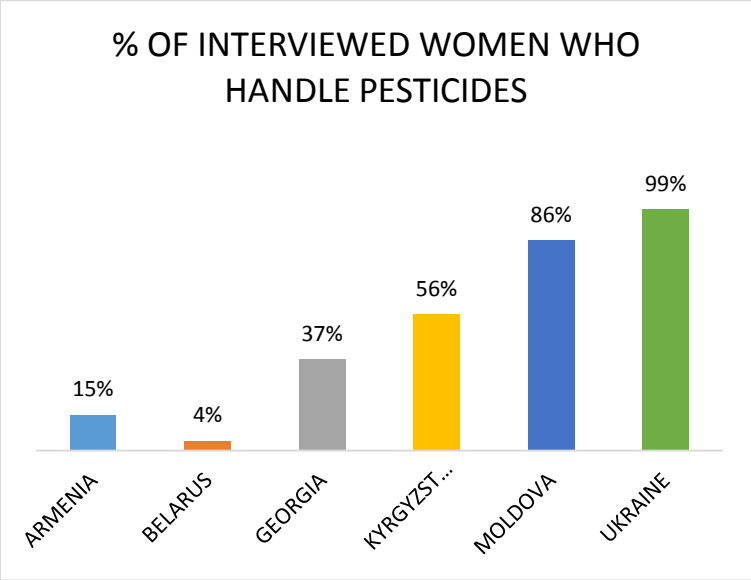
For physiological and/or social reasons, some groups of people may be more vulnerable to the impacts of pesticides than others. The current study was designed to ensure that men, women, children and seasonal workers were included in order to capture information about their exposure to pesticides.

Women

The findings indicate that women's roles and potential exposure to pesticides vary significantly. Just 4% of the women in the study in Belarus said they handled pesticides directly, while the figure was 56% in Kyrgyzstan and higher still in Moldova and Ukraine.

Figure 18.

	Total women	Women handling pesticides	%
ARMENIA	157	23	15%
BELARUS	75	3	4%
GEORGIA	123	46	37%
KYRGYZSTAN	68	38	56%
MOLDOVA	22	19	86%
UKRAINE	85	84	99%



Seasonal workers

Seasonal workers in Ukraine and Georgia were included in the study. Unfortunately, the study was delayed at the start so that the data was collected during winter. This prevented direct observation of pesticide practices. The target groups of seasonal workers were also much more difficult to get accurate information from than others. It is assumed that insecure working conditions make them more reluctant to share information on pesticide practices, for fear of losing their job. A woman in the study in Georgia, for example, responded to the survey that she never used pesticides in her work; she contradicted this statement informally in conversation a few minutes afterwards.

Seasonal workers in Ukraine

In Ukraine, it was found, there are different types of seasonal worker in agriculture. Many seasonal workers are students and teachers taking on such work during the school holidays. A high proportion of this group are women of reproductive age and they may be particularly vulnerable to the impact of pesticides for physiological reasons. A second group is migrant workers. They are socially disadvantaged; and may lack the language skills and security of employment to negotiate safety information or safer working conditions.

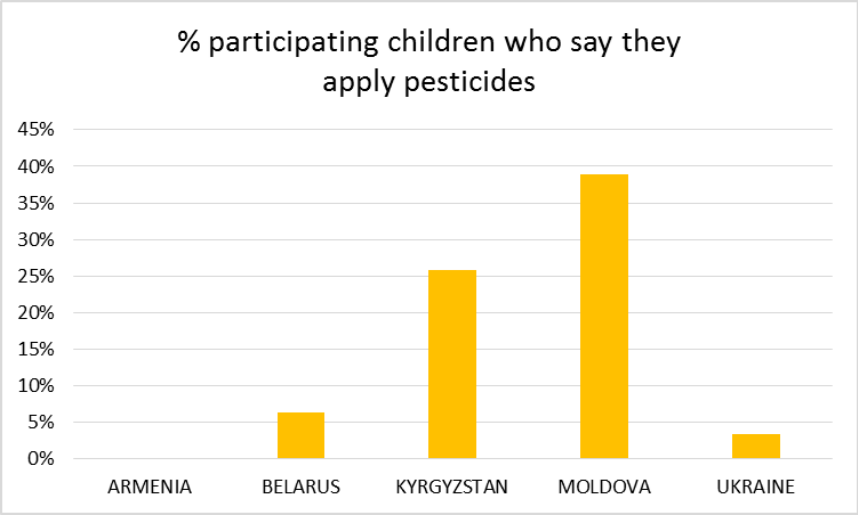
Seasonal workers in Georgia

The seasonal workers in the study were women from Azeri communities settled in Georgia. Whilst there is a language barrier between this group and Georgian speakers (so that most pesticide labels would be unintelligible to them), the women have permanent homes in Georgia and often take agricultural work from people within their own community. There were significant difficulties getting data from these workers, and it is recommended that more work is done to collect data during the growing season. The national partner, Agroservice, found that the task of collecting data became easier with the second or third visit to the same community - as trust grew between them.

Children

The data collected in Kyrgyzstan and Moldova showed an unexpectedly high proportion of participating children directly involved in using pesticides (26% and 39% respectively) as well as undertaking other tasks that may expose them to these hazardous chemicals (see next section).

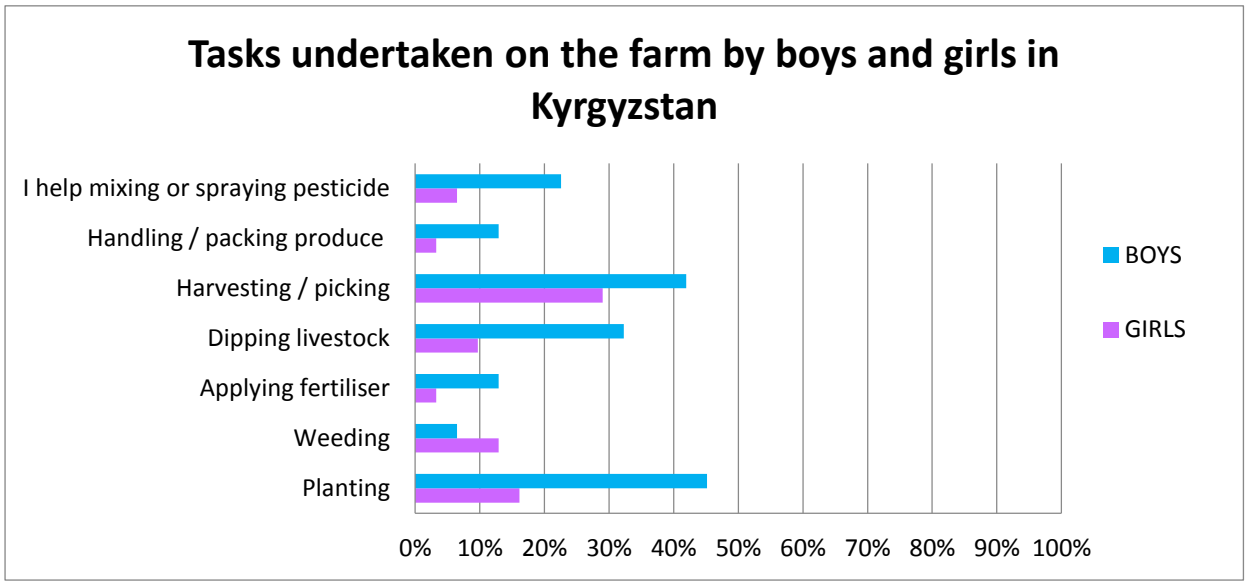
Figure 19.



	Total number of children
Armenia	34
Belarus	79
Kyrgyzstan	31
Moldova	121
Ukraine	30

Gender differences were apparent between behaviour and tasks assigned to children, as well as adults. In Kyrgyzstan, for example, boys tend to be more involved in many of the tasks in the fields than girls, with the exception of weeding.

Figure 20.

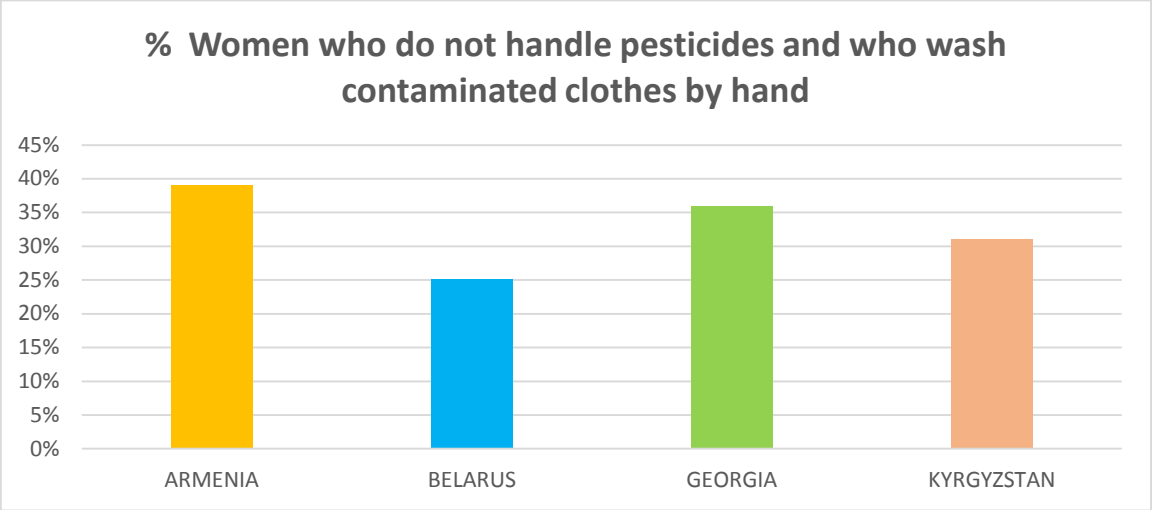


5f Poisoning of people who do not handle pesticides

It is not only the people on the farm who handle pesticides who are at risk of exposure. **7 % of adults who did not handle pesticides in the study reported signs and symptoms of pesticide poisoning in the previous 12 months** (compared to 40% of those who do).

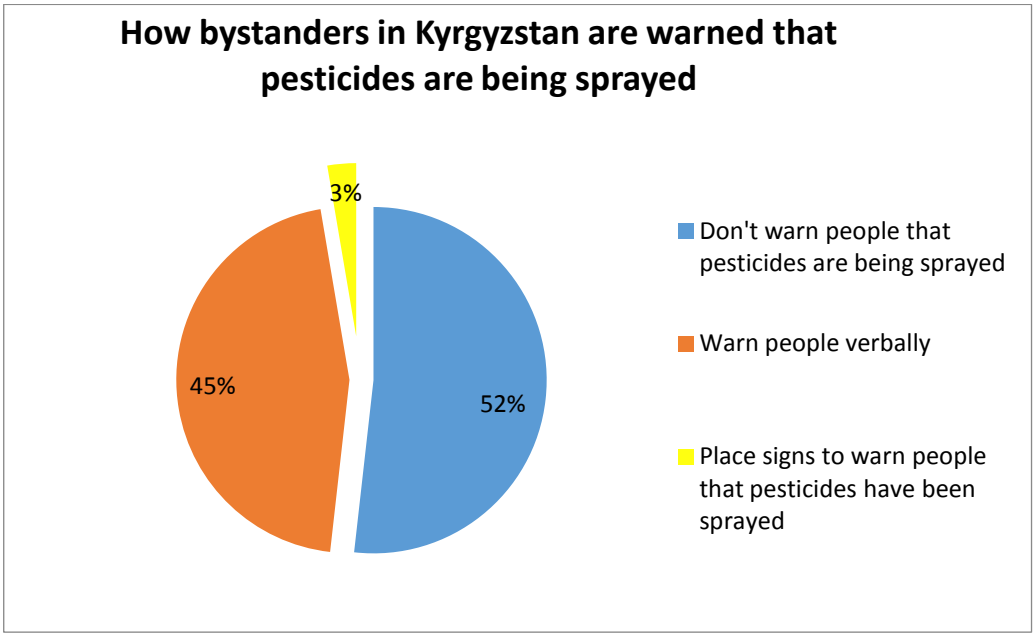
Handling and washing contaminated equipment and clothing can put a person at risk. Participants reported that most washing of contaminated clothes is done by adult women. The next graph shows the % women who do not handle pesticides and undertake this task by hand.

Figure 21.



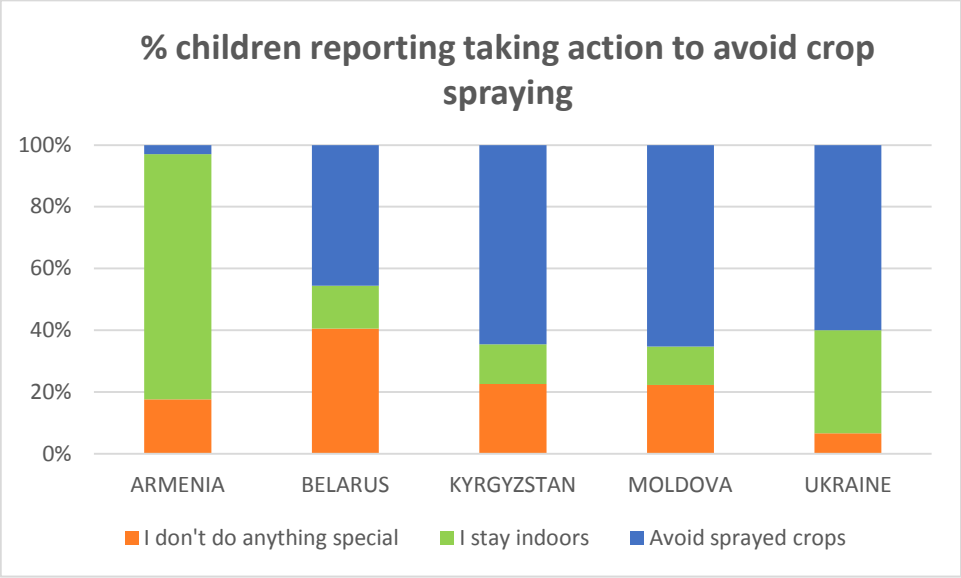
Simply being outside when spraying is going on can expose the bystander to the chemicals. In Kyrgyzstan, for example, 28% participating children said they had smelt crop spray or felt it on their skin. Few participants use warning signs to tell others when crops are being sprayed. Some give a verbal warning, or no warning.

Figure 22.



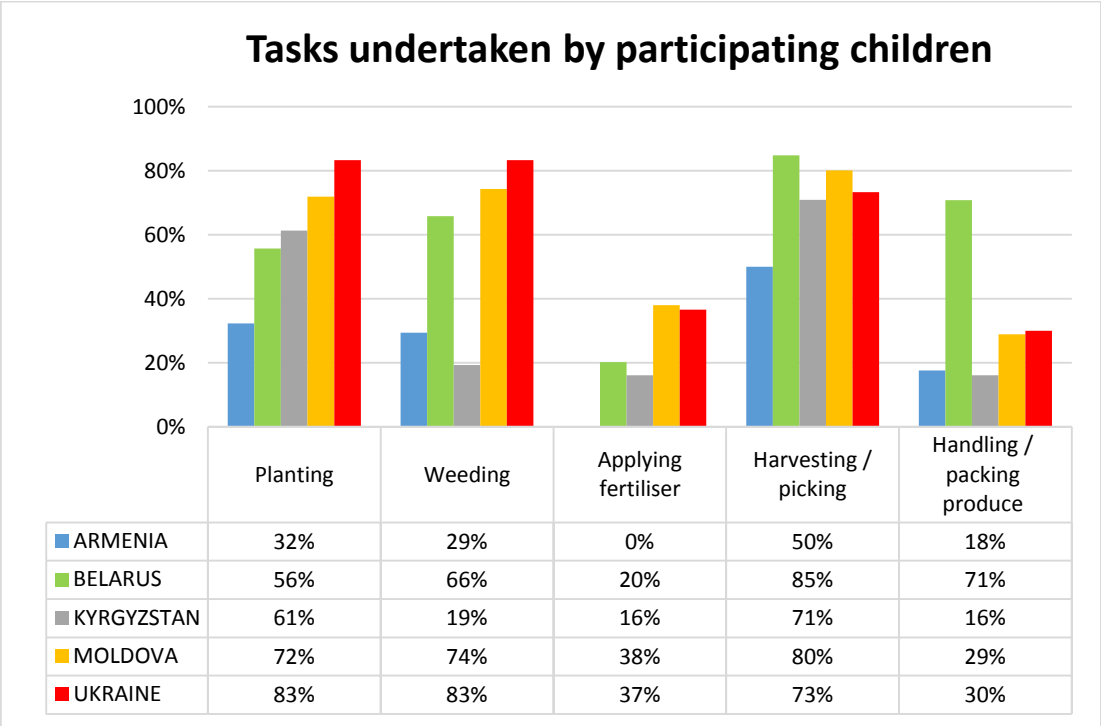
We asked children what they did when pesticides were being sprayed nearby, the results are shown in the next figure.

Figure 23.



Tasks such as weeding, harvesting and handling treated produce also bring people into direct contact with pesticides, particularly if re-entry periods and post-harvest intervals are not respected.

Figure 24.



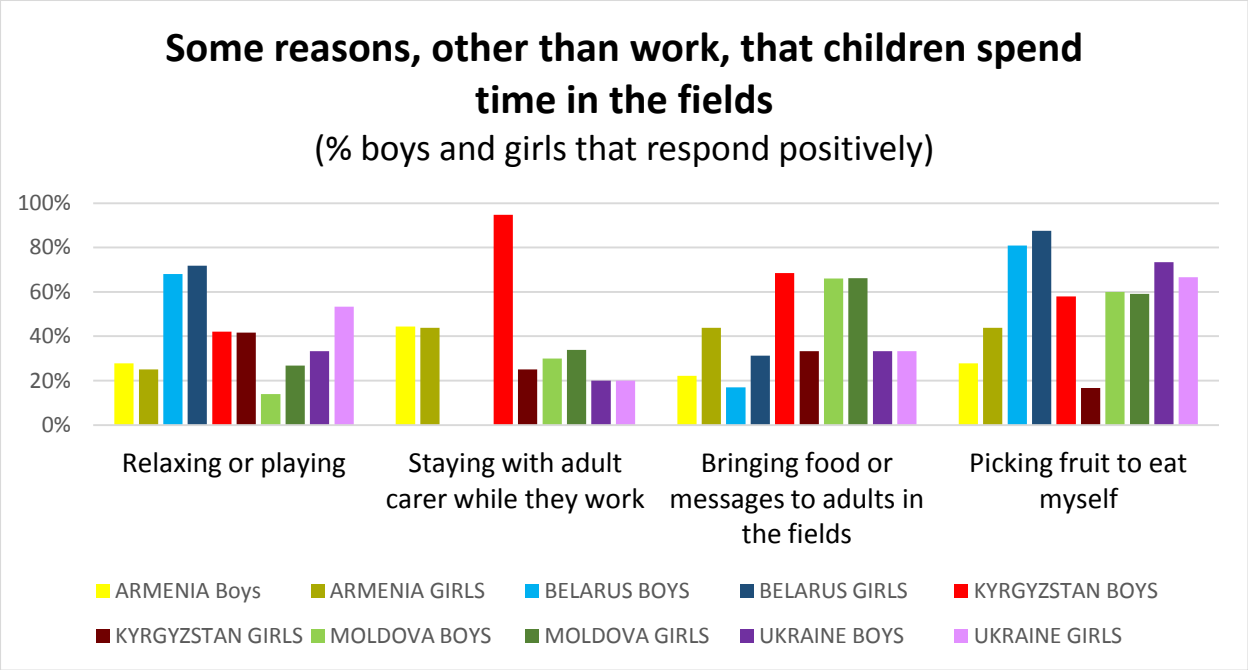
	Planting	Weeding	Applying fertiliser	Harvesting / picking	Handling / packing produce
ARMENIA	32%	29%	0%	50%	18%
BELARUS	56%	66%	20%	85%	71%
KYRGYZSTAN	61%	19%	16%	71%	16%
MOLDOVA	72%	74%	38%	80%	29%
UKRAINE	83%	83%	37%	73%	30%

Children enter fields for reasons other than work. Four such reasons are shown in the next graph. One can see differences between countries and boys and girls. Some of the differences between countries may be due to different age profiles in the different studies, and more work is needed to understand these issues. Some gender differences stand out. Boys in Kyrgyzstan seem to spend more time with adults in the fields than girls.

This coincides with the discussions with adults which indicate that girls tend to be more involved in tasks in and around the home.

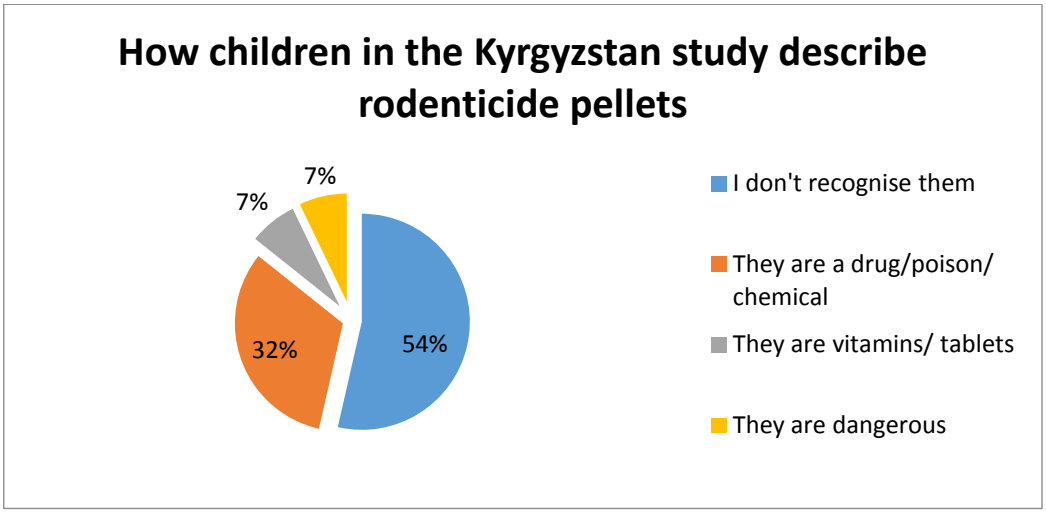
Picking and eating fruit in the field seems to be quite common among children. This could be hazardous if the fruit was recently sprayed with pesticides.

Figure 25.



Different members of the farm household may have quite different exposure risks. Children can be at particular risk from rodenticides, for example, because they are more likely to put unknowns in their mouths and are less aware of the risks. In Kyrgyzstan 39% children described rodenticide pellets as poisonous or dangerous and 7% described them as vitamins or tablets.

Figure 26.

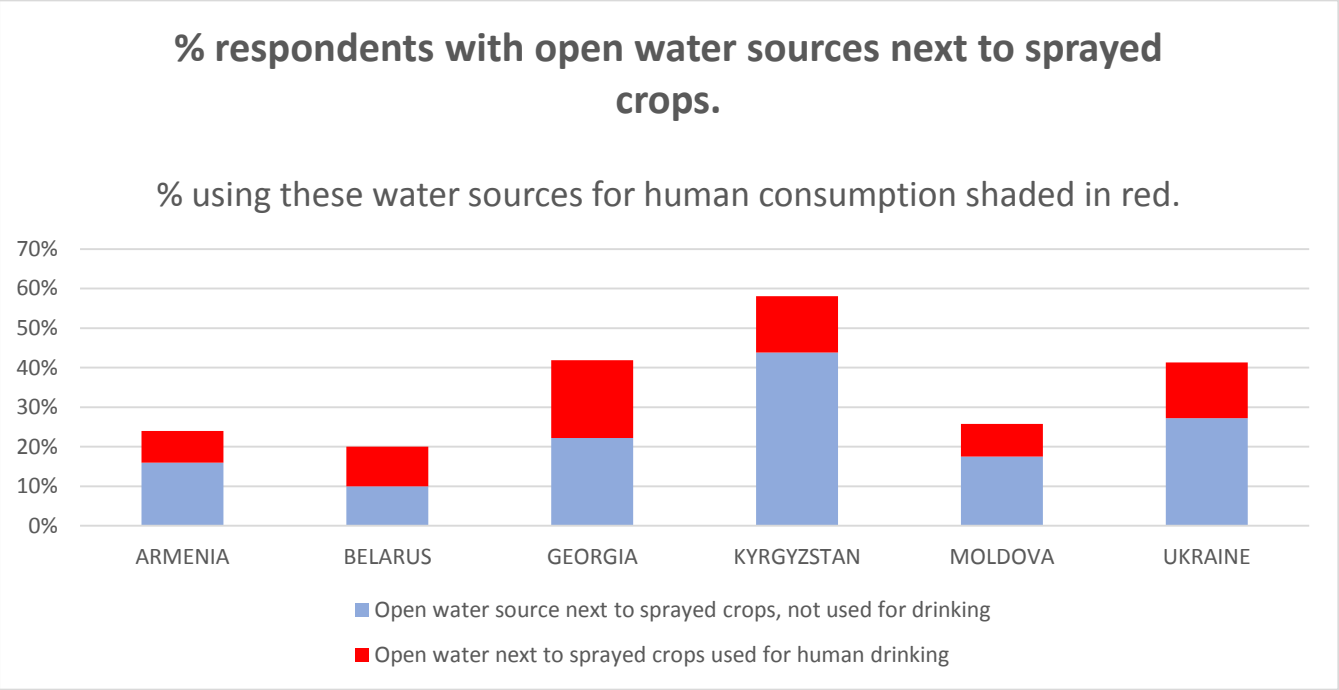


5g Potential environmental contamination by pesticides

Two aspects of environmental pollution were included in the study; potential pollution of open water with pesticides; and, disposal of empty pesticide containers.

Respondents were asked whether they had an open water source next to sprayed crops. The graph shows that many do have such a source – and that it is often use for human consumption. Other common uses of such water included washing, fishing and as a water source for livestock.

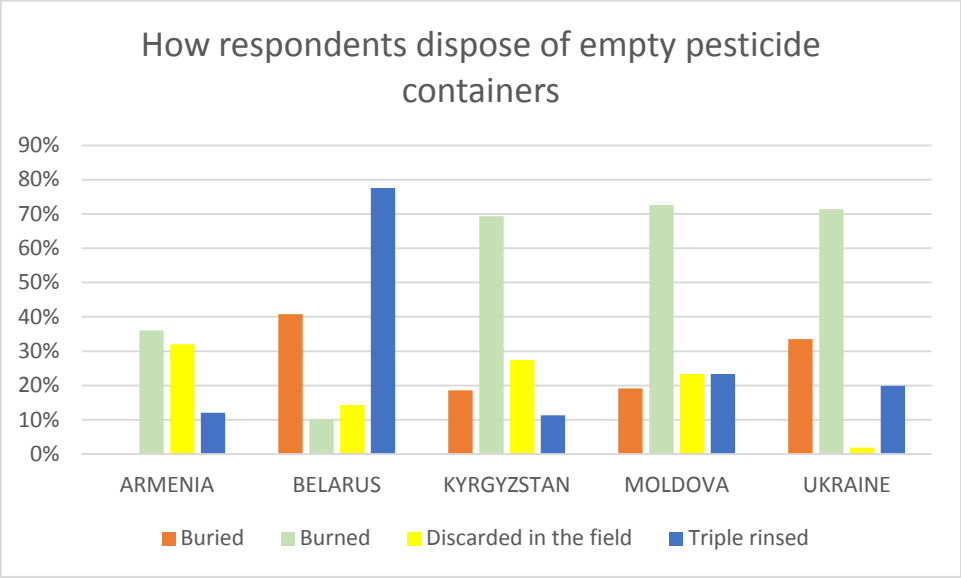
Figure 27



Respondents were asked what they did with used pesticides containers. In the absence of suitable disposal options, the containers disposed of on the farm or reused (mostly for fuel or pesticides; sometimes for animal feed). There is a widespread misconception that burning containers is a good option, but this can release hazardous fumes into the atmosphere. Burying following triple rinsing, although far from ideal, is probably the least worst option if there are no suitable collection and disposal schemes in operation.

The survey teams in Georgia reported a problem with this question, so we have left the data out of this comparison.

Figure 28.


How respondents dispose of empty pesticide containers
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
ARMENIA
BELARUS
KYRGYZSTAN
MOLDOVA
UKRAINE
Buried
Burned
Discarded in the field
Triple rinsed

6 Summary findings for each country

6a Summary findings – Armenia

Lilik Simonyan and Emma Anakhasyan (AWHHE) interviewing a farmer in Litchq Village, Gegharkunik Province (Photo: Paul Lievens, PAN UK)

The partner organisation in Armenia was the Armenian Women for Health and a Healthy Environment (AWHHE). The baseline study captured data concerning high risk practices and exposure scenarios with a particular focus on women and children as the main target group. They conducted surveys and discussions in selected communities in the marzes of Armavir, Ararat, Tavush and Gegharkunik.

The KAP survey methodology was developed by PAN-UK together with RC and tested and adapted to the Armenian context in cooperation with AWHHE and the Ministry of Agriculture of Armenia. The survey team included 4 people (AWHHE experts and invited interviewers). A survey using a short questionnaire was conducted in October-November 2014 in 20 rural communities of Gegharkunik, Armavir, Tavush and Ararat provinces with the involvement of PAN-UK, RC and AWHHE representatives. The short survey helped identify the aspects of the questionnaire that needed to be refined and plan the large KAP survey which was conducted in November and December 2014 in 5 communities of Ararat and Armavir provinces. Electronic data collection made it possible to get the necessary tables and graphs for analysis within a short time.

According to data from the surveys, observations of AWHHE staff and discussions with various stakeholders, pesticide poisoning is an important issue for Armenia. Poisonings do take place, however, there is no registration and referral system, neither is there an appropriate service provision mechanism. Users of pesticides often have a poor understanding of the impact they have on their own health or the health of others. Pesticide regulators and decision-makers also lack essential information on the scale and causes of the problem that would help them to make more robust regulatory decisions. The project helps better understand the issues in Armenia and to share the findings with regulators, affected communities and other important stakeholders.

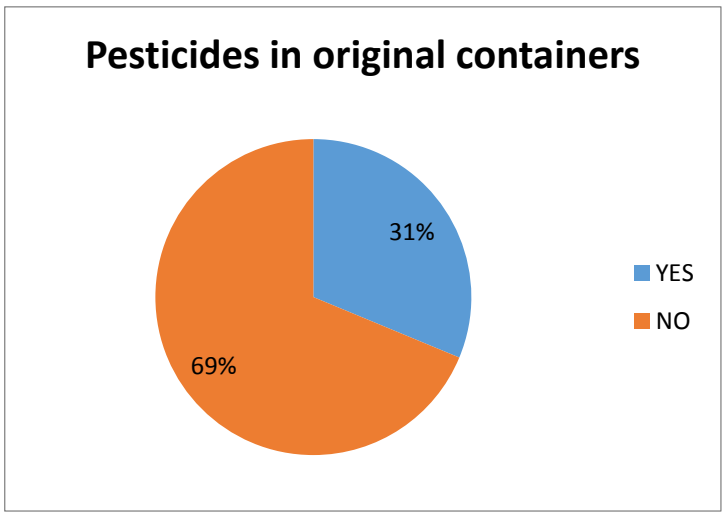
Points Emerging from the survey in Armenia

Pesticide use

- 36% of respondents buy pesticides from unlicensed premises. Visits to pesticide retailers revealed poor practice even in licensed premises (particularly repacking into inappropriate and unlabelled containers and poor compliance on labelling in general). In addition, 48% express difficulties with pesticides labels.

Figure 29

Proportion of respondents buying pesticides in their original containers
n=22



Discussions indicate that farmers may not be following recommended dosages, harvest intervals, safety precautions and there may also be an issue of quality control.

- The focus was on women who live and work on farms that use pesticides, but tend not to handle them themselves. However, of the 25 people that *were* handling pesticides, 11 reported signs and symptoms of acute pesticide poisoning over the previous year (44%)
- There is a lack of suitable options for empty containers (most are burned, buried or simply discarded in the field)

Incidental / bystander exposure

- The focus of the study was primarily on women who live/work on farms that use pesticides but do not use them themselves. There are various ways that these women could be exposed to pesticides. 41% hand wash contaminated clothes, for example. 1% reuse the containers for purposes other than fuel or pesticides – a small proportion, but potentially very hazardous.
- 33% report open water source near sprayed crops that is used for human consumption
- Children in the study were generally not involved in handling pesticides, but could be exposed by handling contaminated produce for example, or as bystanders exposed to spray drift for example.

Based on this information, a communications plan was developed in Armenia jointly with the PAN-UK team. The communications materials developed by PAN-UK in English were translated into Armenian. The materials were distributed at various events and during the survey work. Electronic versions were made available on the PAN-UK and AWHHE websites.

The most important impact of communications efforts includes the increased awareness of vulnerable groups in areas covered by this initiative in issues such as the risk of pesticide poisoning; the need to report health concerns related to pesticide poisoning; the need to consider safer alternatives and the need to use PPE. There is growing awareness of the safety requirements related to safe storage of pesticides, treatment of contaminated clothing and disposal of used containers. The decision-makers and regulators are committed to reduce risks from pesticides particularly in relation to vulnerable groups (e.g. the urgent need to adopt the list of SHP, the need for training programmes, etc.)

The baseline findings were shared at various events (e.g. National Workshop, International Lessons Learning Workshop); meetings with decision-makers at various levels (e.g. RC Designated Authority, ministry authorities; authorities at marz and community levels). The findings were also made available to wider public through TV and press coverage of events (achieved through press releases, media briefings) and interviews.

The Armenian participants in the International Lessons Learning Workshop (April, 2015, Yerevan) noted the following priorities/recommendations:

- improving legal regulation on control of pesticides;
- strengthening potential/ capacity building – Intergovernmental Chemicals Committee (ICC);
- assessing the list of registries pesticide and finding alternatives for SHP;
- promotion of IPM;
- awareness rising and informational campaign regarding IPM and alternatives of SHP on legislation and regulation;
- registration/licensing of farmers - establish a database;
- business operators who are active in the trade of Pesticides (importers, shops).
- Establish a cross-sectoral committee or forum is needed to bring together relevant ministries, institutions and organisations to coordinate and address the issue of pesticide poisoning

Additional issues include the currently “active” decision related to banned and severely restricted chemicals in Armenia from 2005 contains Annex III of the Rotterdam Convention but new chemicals added to Annex III after 2005 are not on the banned list, thus it should be updated with a new decision of Armenian government and/or harmonization with the list of banned/severely restricted chemicals in Customs union countries.

6b Summary findings – Belarus

Two girls help on the family farm in Gomel Region.
Photo: Green Cross Belarus

The national implementing organisation in Belarus was Green Cross Belarus.

Belarus has ratified the Stockholm Convention on Persistent Organic Pollutants and the Basel Convention on the Trans-boundary Movement of Hazardous Wastes and Their Disposal. However, the country has not ratified the Rotterdam Convention on Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade. Belarus has no special agreements with other countries concerning pesticides. However, legal acts have introduced requirements on the movement of hazardous wastes in the framework of Customs Union.

Consumption of pesticides of pesticides has grown from $ 162 million (13.8 thousand tons) in 2008 to $ 235 million (15 thousand tons) in 2012, or in 45% (9%). Belarus imports around 50% of its pesticides but is also manufactures and exports pesticides. The average production is around 33,000 tons; much of which is exported to Russia and Ukraine.

Currently over 700 pesticides are registered for use in Belarus, many with 2-3 active ingredients. The register is available online.

Arable crops cover a significant percentage of total agricultural land in Belarus (62%). Winter crop-based cropping system CS1 (winter oil seed rape/winter wheat/maize/spring barley) is the most intensive agricultural system targeting high yields and using the highest quantity of pesticides per ha.

Belarus lacks effective diagnostic and data collection procedures for pesticide poisoning.

There are no special facilities for disposal (destruction of pesticides waste) in Belarus and, in the absence of disposal options for empty containers, it is assumed that most are burned, discarded or buried on the farm or sent to landfill. The survey revealed a relatively high proportion of respondents triple rinsing containers (78%) and that 41% reported that they bury empty containers, 10% burn them and 14% said they simply discard them in the field.

The survey was conducted in Bragin, Gomel region. 200 people, including 46 men (working with pesticides), 75 women and 79 children were interviewed. The following key points emerged from consultations and the survey:

- Handling pesticides is seen as a man's job and few women get involved in applying pesticides
- The majority of the farmers buy pesticides in unlicensed stores (63%);

- Only 2% out of 49 respondents have been trained to use personal protective equipment within the last 5 years;
- 43% of 49 respondents handling pesticides reported signs and symptoms of pesticide poisoning in the previous 12 months;
- 26% adult respondents who do not handle pesticides have reported signs and symptoms of poisoning within the last 12 months
- In all cases, contaminated clothes were washed by an adult woman
- 30% of contaminated clothing is washed by hand, and 31% - with other household laundry;
- 83% of children reported that they had noticed empty containers of pesticides lying around the farm.

These studies led to some key conclusions:

1. As a rule, people are not aware of the dangers of pesticide exposure;
2. Reliable data on poisoning and accidents related to pesticide use are not available; existing medical statistics report forms do not identify pesticides as a cause of poisoning;
3. There is a general lack of concern regarding the issue of pesticide residues (both producers and consumers);
4. In general, farmers and gardeners lack awareness of alternatives to pesticides.

The following recommendations were agreed at the national stakeholder meeting:

What	Who, to whom	When
To develop an information policy related to pesticide use at the national level (out of our competence)	GCB will submit the summary of workshop to MoA and MoE	April-May
To raise awareness among communities of the risks from pesticides	GCB will print information materials which the Workshop's participants will spread in the regions where they live (village first-aid stations, hospitals, schools, village administrations, etc.)	May -June
To raise awareness among local specialists and representatives of local authorities of the risks from pesticides	GCB will submit the workshop summary and information materials to Bragin Region Administration	May -June
To promote more sound practices. Authorities at all levels and all sectors of, primarily, rural population (national level)	GCB will submit the WORKSHOP summary to MoA and MoE	April-May
To promote more sound practices (local level)	GCB will provide information materials to the Workshop's participants who will conduct mini-workshops in their institutes of the region	May-August
It's necessary to establish a monitoring and surveillance system	GCB will submit the WS summary to MoA and MoE	April- May
To support production of organic goods and alternatives to pesticides (preferences from the State), their active advertising.	GCB will submit the WORKSHOP summary to MoA and MoE	April- May
To collect and elaborate an information kit on safety of agriculture and healthy diet	GCB, submission to the Workshop's participants to	July-December

	spread in regions	
To disseminate of information through the Internet and media	GCB and partners	permanently
To offer a system of mini-grants for raising awareness in such an area as pesticides and alternatives to them	FAO-EC Project, PAN UK, the project's partners, international organizations, UNDP, WB, etc.	Through this report

6c Summary findings – Georgia

Irma Tskvitinidze , DNA, discussing pesticide use with seasonal agricultural workers in Marneuli District in Georgia
Picture: Akhalaia, Khatuna (FAOGE)

The partner organisation in Georgia is Agroservice, a national organisation that works through farmers' groups and information centres. Agroservice has great strengths in terms of its reach within agricultural communities and its ability to engage well with national authorities. It gained a great deal in its experience of conducting and reporting a study of this kind, and has built some new capacity in this area as a result.

The team found significant problems in terms of pesticide management and safety standards in Georgia. The Government institutions in Georgia, and the DNA in particular, engaged very positively with the study and took immediate action based on the findings, including a clamp down on repackaging and labelling standards among pesticides retailers and reporting an incident of pesticide poisoning to RC under Article 6.

The survey in Georgia was undertaken in the agriculturally productive, southern region of Kvemo Kartli. It is an area with a relatively high number of people of Azeri origin and also internally displaced people from the north of the country. Large agricultural enterprises commonly employ seasonal agricultural workers in greenhouses, orchards and other crops.

The target group in Georgia was women working as seasonal agricultural workers in Kvemo Kartli region. This group were selected on the basis that there are a large number of such women in this part of the country, mostly from the Azeri community. It was considered that they might be particularly vulnerable to pesticide exposure and poisoning because they tend to be socially and economically disadvantaged. The Azeri communities tend to be separated by cultural and religious differences from their Georgian neighbours. They often do not speak Georgian, for example, and may have particular difficulties in accessing safety information. The low levels of literacy and language barriers also limit their employment opportunities, meaning they may be very dependent on income from seasonal agricultural work and have little control of working conditions and pesticide exposure.

The women are typically from communities that settled in Georgia at least one or two generations ago. They usually have their own land to farm as well as taking seasonal work to supplement their income. Although they tend not to speak Georgian, their children usually speak Georgian, because their schools now teach the national language as well as Azeri.

The team in Georgia had particular difficulties in collecting data from the target group. Conversations and group discussions tended to be more revealing than the quantitative survey in this instance, for several reasons:

- None of the survey team spoke Azeri and there were some difficulties in locating suitable people to translate.

- The target group were very hesitant to report information regarding safety standards that might reflect badly on their employer. Therefore we found instances of women reporting on the survey that they wore full PPE and never suffered any health effects from pesticides, while they informally revealed that this was far from the real situation. The team found that repeated visits to the same communities built trust and improved the quality of information, but there were limited resources and time to support this approach.
- The survey was conducted in winter, when it was not possible to observe common practice
- There was some confusion regarding whether women were responding in relation to their practices on their own land, or conditions at work

Despite these difficulties, some very important information was revealed and, very importantly, Agroservice, the FAO consultant and the DNA worked very productively together to generate attention and action on the issues raised.

The survey in Kvemo Kartli revealed the following information:

- Agricultural pesticides are mainly used without personal protective equipment (PPE), the purchase of which is an additional cost for farmers
- The government does not collect statistics on pesticide poisoning
- 11% survey participants who handle pesticides reported suffering signs and symptoms of acute pesticide poisoning over the previous 12 months of the project. Few of these incidents were reported to the authorities.
- People who don't handle pesticides are also at risk of pesticide exposure. All respondents said that an adult women was responsible for washing their pesticide contaminated clothes, and this job is done by hand. 16% respondents wash contaminated clothes along with the household laundry.

Speaking with shop owners and workers, it became apparent that they are an important group. They are highly exposed to pesticides, particularly during [illegal] repacking activities, and also important in terms of the choice of products, labelling standards and information they offer to consumers. There is lack of control and monitoring of the pesticide trade. During the survey the team met with a shop keeper who had been treated for oesophageal cancer, which his physicians attribute to pesticide exposure. He was particularly highly exposed to domethoate. His case was reported to the Rotterdam Convention under Article 6.

The issue of pesticide poisoning is a cross sectoral one, with several ministries and departments as well as commercial and non-governmental organisations having responsibility in this area. The national meeting held under the current project made a unanimous recommendation to establish a cross sectoral council including government and nongovernment sectors, scientific-research institutes and international researchers. It sent a request to the responsible ministries to support the idea.

There is no monitoring and data collection of incidents of pesticide poisoning in Georgia. A recommendation that emerged from the national meeting was that there is a need for a unit to register incidents and review data on which to base sound regulatory and policy decisions.

6d Summary findings – Kyrgyzstan

Conducting the survey in Kyrgyzstan
Photo: BIOM

The study was conducted by the ecological organisation "BIOM" in close coordination with the Department of chemicals and plant protection of the Ministry of Agriculture and Land Reclamation of the Kyrgyz Republic and the State the Agent of the Environment.

BIOM has a great deal of experience with women and children's groups and have run successful campaigns on toxics in toys, for example. They decided to focus on children's exposure to pesticides in the current study. The target areas were agreed with the Ministry of Agriculture and Land Reclamation, based on high pesticide use in the area.

Background information

Pesticides are not made in Kyrgyzstan but imported from countries such as Russia, China, Uzbekistan, France, Germany, India. However, there is an enterprise producing biological pesticides in the Kyrgyz experimental biofactories "Kyrgyzagrobiotsentr." Information gained from consultations in the current study was that the domestic market for such products is very limited due to poor awareness and training opportunities in sustainable agricultural production among producers. The factories export biopesticides and service the small domestic market.

Total shipments of pesticides to the Kyrgyz Republic has considerably decreased since 1990. The pesticide load has decreased over this period, from about 3.7 kg/ha in 1990 to approximately 1kg/ha in 2003 (not counting sulphur).

53 pesticides are banned in Kyrgyzstan. The pesticides register, which lists both allowed and banned pesticides, is used by the Department of chemicals and plant protection at the Ministry of Agriculture of the Kyrgyz Republic at border controls for checks on imported products.

Imports of pesticides to Kyrgyzstan are 150-200% domestic demand for the products. It is thought that the excess is smuggled to neighbouring countries to take advantage of the fact that, unlike neighbouring countries, Kyrgyzstan charges 0% VAT on plant protection products.

Consultations indicate that there have been instances of import and use of counterfeit and smuggled pesticides and agrochemicals, but at present Kyrgyzstan lacks the laboratory capacity and systems for sampling and testing pesticides in order to monitor pesticide quality or detect counterfeit products. Laboratories in Kyrgyzstan also lack the capacity to provide pesticide residue analysis.

The Ministry of Health responded to an information request regarding poisoning, saying that no incidents had been reported in the years 2010-2014.

Results of survey and consultations with target communities

Focus groups of farmers revealed that, during the growing season, pesticides can be bought in most village shops where they are stored and sold alongside food products. Kyrgyzstan legislation does not include provision for a licencing system for pesticide retailers. Because of this, the question about purchasing pesticides in licenced stores was modified. Rather, in Kyrgyzstan participants were asked whether they buy pesticides from specialised shops or from general (non-specialised) stores and markets. 65% of respondents said that they purchased pesticides from non-specialised retailers, such as general village stores or from distributors who bring pesticides to the village.

There is a lack of disposal options for empty pesticide containers. 11% respondents said they triple rinse empty containers. 69% said they burn empty containers, 27% simply left them in the fields.

The results of the survey indicated that pesticide poisoning is quite common in target communities; 46% of respondents reported symptoms of pesticide poisoning. Use of PPE is rare and the majority (74%) of respondents had not been trained in how to apply pesticides and necessary safety precautions for the task. Children are also involved in agricultural work and seven out of 31 (23%) of the participating children reported that they felt the symptoms of pesticide poisoning within the previous 12 months. Children were involved in activities such as spraying pesticides using a manual knapsack sprayer, cleaning equipment, mixing pesticides. Boys were more likely to undertake these tasks than girls.

More work is needed to understand where these problems are most acute and which products are linked with incidents of pesticide poisoning.

Recommendations

The following recommendations were developed by the representatives from Kyrgyzstan[5] at the lesson learning workshop in April 2015.

Local level	National level	Region
To develop a training module for front line health services on the diagnosis of pesticide poisoning	Introduce licensing system for pesticides trade.	Conduct a regional meeting in Kyrgyzstan for Central Asian countries on the risks of using pesticides and cooperation to mitigate those risks

[5] Jamal Kadoeva and Narynbek Myrsaliev, DNAs to the Rotterdam Convention; Mr Vladimir Pak (national focal point in Ministry of Agriculture); Anna Kirilenko, BIOM; Indira Zhakipova, FAO National Coordinator.

Conduct seasonal information campaigns to inform farmers about the risks and impact of pesticide handling. Disseminate information to children through a national newspaper Kut Bilim (which is issued by the Ministry of Education) DHZR conduct seasonal awareness on the use of pesticides for the WUA, farm schools	Build capacity of existing laboratories to test pesticide residues in food and the environment (modern pesticides) Conduct medical research sample cases of poisoning (in Chui oblast) to provide information to the Rotterdam Convention. Continue to study the effect of pesticides on vulnerable groups (the sociological sample) Develop and introduce a module on the risks of pesticides for the students of the Agrarian Academy Develop rules of interaction between DHZR, GETI, the Ministry of Health, Ministry of Emergencies, SAEPF (regulation of interaction) On the basis of the Agrarian University and the National Academy of Sciences to organize refresher courses for GEITB, customs Conduct research (monitoring) the smuggling of pesticides on the market of Kyrgyzstan Hold a meeting of the committee (on Agriculture) on the LCD changes in legislation on pesticides Develop a form for statistical NSC (Statistics imported pesticides poisoning statistics, statistics sold pesticides)	Cooperation with the OECD green LED administration Analyze imported from Kyrgyzstan to Kazakhstan pesticides mirror statistics on the re-export

6e Summary findings – Moldova

Survey and discussion of pesticide risks with teenage schoolchildren in Moldova
Picture: Pro Dezvoltare Rurala

The study in Moldova was conducted by the NGO Agentia Pro Dezvoltare Rurala (APDR). They worked closely with the FAO national project coordinator to the project and with key national authorities, in the Ministries of Agriculture and Environment in particular. The district authorities in Hincesti rayon were also very supportive. Agriculture is a major contributor to the economy of Moldova. Agricultural production and processing account for about 40%- 60% of export incomes. The agrarian sector employs over 40% of economic active population and almost 75% of agricultural land is in private ownership. Legislation pertaining to agriculture is extensive, with 120 legal acts in force in this sector.
The main institutions empowered with plant protection products and fertilizers' regulation, monitoring and control are:

- Ministry of Agriculture and Food industry – www.maia.gov.md
- National Food Safety Agency (including its territorial subdivisions) www.ansa.gov.md
- National Centre for certification and approval of phytosanitary purposes – www.pesticide-md.com

The import and sale of pesticides should be restricted to licenced organisations / businesses and the products that are imported or sold should be in compliance with the National Register of Phytosanitary Products. Testing and registration of pesticides is conducted by the National Centre for certification and validation of phytosanitary products. Monitoring of pesticides record keeping, storage and use is carried out by the National food safety agency. The NFSA, in cooperation with customs, is tasked with preventing the import of counterfeit products and takes measures in this direction.

Several laws are currently being elaborated as a part of process for harmonizing legislation in compliance with the EU Directives that related to pesticide management : Draft Law on environmental protection, Draft Law on chemicals and the Draft Law on waste. It is planned that all pesticides legislation is harmonized with the EU DIRECTIVE 2009/128/EC of 21 October 2009 , establishing a framework for Community action in order to achieve the sustainable use of pesticides.

The establishment of the National Food Safety Association has significantly improved the legislation and normative frameworks, including adoption of codes of practice in compliance with FAO code of conduct and best practice:

- *Code of Practice for the safe storage of plant protection products (NFSA Order no. 215 of 11.28.2013)*
- *Code of Practice for the safe use of plant protection products (NFSA Order no. 215 of 11.28.2013)*

APDR conducted very thorough consultations with a wide range of key stakeholders. The found a lack of data on pesticide exposure and poisoning and, because the existing data is dispersed among different authorities, it proved difficult to access during the current study.

The national authorities for Labour inspection and for Public Health were present at the national workshop, where they shared some information on this subject. It seems that some data is collected in relation to occupational exposure (farmers, pesticide retailers, agronomists) but not in relation to the general population. Between (2008-2012) 92 cases of occupational diseases were recorded of which 13% were linked to the use of agrochemicals.

The survey was conducted by a team of six trained personnel in November 2014 – January 2015. The target area was Hincesti disctrict, both the town of Hincesti and 4 smaller villages: Cărpineni, c. Mingir, s. Voinescu, s. Negrea. Agriculture is the primary economic activity in Hîncești District, which is located in the central part of Moldova, including arable (62.3% land area); vineyards (17.5%) and orchards (6%). The main crops are wheat, corn grain, sunflower, grapes.[6]

About 31% of all agricultural land in Hincesti are large farms (50-100ha). The remaining 69% is represented by small farms. These are mainly small household farms, with land size of less than 5 ha. The latter were the focus of the survey.

Discussions with target communities revealed that:

- Very few farmers use organic methods of production
- Pesticides are being applied several times during the growing
- Some farmers are mixing several products , (including adding of fertilizers) and applying them with backpack sprayers
- Sprayers are often old or defective and leaking is common, leading to heavy dermal exposure for people using them
- Washing of the sprayer (if done at all) takes place either in open water sources next to fields or at home.
- Visual observations denote that sprayers and pesticides are kept next to cattle/birds sheds, and even in cellars next to vegetables , fruits and wine, consumed by family members;
- The cost of pesticides is rather high, so farmers tend to only buy what they need. If the purchased pesticide exceeds the need, it is either re-sold or, if already diluted, sprayed around the household for other types of crops;
- Normally all the pesticide applications are done without the use of any personal protection equipment, with exception of dust masks and rubber boots.
- Being asked what are the reasons behind not using the PPE, usually farmers say that clothing is uncomfortable, useless or very costly.
- Visiting agrochemical shops indicates that PPE can only be viewed in catalogues and ordered from Chisinau.
- Staff of agrochemicals shops visited mostly have no professional training; the training that was accessed by such staff consisted of *ad hoc* technical recommendations concerning pesticide use given by the official pesticides distributors;
- Many farmers were aware that pesticides are hazardous but felt compelled to take risks with their health in order to try to boost yields and income
- As regards the signs and symptoms of pesticide poisoning, the majority of respondents mentioned nasal and breathing issues, feeling of nausea, allergies and skin problems.
- There is a belief that pesticides mainly enter the body through direct inhalation, and that the stronger the smell of pesticide is – the more dangerous it is. Very few interviewed persons had solid knowledge of the direct negative impacts of pesticide or of the risks of dermal exposure.

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[6] Socio- Economic Development Strategy of Hincesti District (http://hincesti.md/wp-content/uploads/2013/11/STRATEGIA-de-dezvoltare-social-economica-a-raionului-Hincesti.pdf)

- Handling pesticides is often viewed as a man's task (although 86% women in the survey said they directly handle pesticides, compared to 95% men). Women tend to be responsible for small kitchen gardens, while men tend to take charge of pesticide use and management on the fields.
- Agricultural workers reported that they could not afford PPE and none were supplied by employers.

Survey findings

- The survey team were surprised at the high number of children engaged in work that would expose them to hazardous pesticides, such as mixing and spraying. Most of the children were aged 15-18, but some 11-14 year old children also reported undertaking such tasks.
- 15% children reported suffering signs and symptoms of pesticide poisoning in the previous 12 months.
- Boys were more likely to be involved in mixing and spraying while more girls said they undertook jobs such as picking, weeding, planting.
- 57% children said they sometimes smell or feel pesticides on their skin when they are being sprayed
- 13% men said they had suffered moderate – severe signs and symptoms of pesticide poisoning in the previous year. None of the participating women who handle pesticides (n=19) reported such problems.
- 8% men and women who do not handle pesticides reported suffering signs and symptoms of pesticide poisoning in the previous year.
- 30% adult respondents said they purchase pesticides in unlicenced shops and a similar percentage (28%) purchase pesticides that have been repacked into different containers; this may account for some problems with labels
- 65% respondents reported difficulties understanding pesticide labels – 28% said the label was missing or poor quality. 20% complained of labels in foreign languages and 17% said the language was too technical and difficult.
- 100% respondents said that the task of washing contaminated clothes was done by a woman. 8% respondents wash contaminated clothing by hand.
- There are no suitable disposal options for empty containers. Burning is the most common option (73% responses), while the rest are discarded in the field or buried. 23% said they triple rinsed, but only 1% punctured and triple rinsed containers.
- 48% children said they had seen empty pesticide containers lying around the farm and 43% children responded that they sometimes handled these containers.
- 36% respondents had an open water source next to sprayed crops. Of those 22% use the water to drink.

The study revealed that relatively little attention has been paid to this issue at national and regional level, particularly exposure to pesticide risks among children and youth. During the workshop in February 17, 2015 with Hincesti authorities it was mentioned that pesticide risk exposure is well connected with the child labour issue. Even though current legislation prohibits any child labour associated with pesticides (Law on Labour, Labour Safety) there is an increasing number of children and adolescents from poor farmers families that are being involved in all types of agricultural work, including those connected with pesticide mixture, spraying and washing sprayers.

One of the outcomes of the National Stakeholder Workshop held in April 3rd, 2015 in Chisinau, Moldova was the recommendation regarding developing stronger partnerships with the educational sector and pediatrician associations that could support awareness raising and relevant medical checks with the purpose of both investigation but also prevention of the risks. Also, it was proposed to develop support materials for the school curriculum on pesticide risk reduction for all cycles of school: primary school, gymnasium and lyceum.

Even if we know that a pesticide causes severe health and environmental impacts, including cancer and genetic damage, it may still be allowed for use in Moldova. More support is needed for independent monitoring of the adverse effects of pesticides. The results should be utilized by regulatory authorities. Throughout the national

consultations, the representatives of public health centres raised the importance of improving the laboratory network capacity to improve sampling and laboratory data analysis with regards to cases of poisoning. There would be benefts to introducing courses for rural doctors on proper recording and tracking cases of pesticide poisoning among the population.[7]

The real solution for protecting health of the population and the environment lies in agro-ecological agriculture. Technical assistance is needed on non-chemical alternatives to pesticide use.

It is important for everyone within the community to be informed not only about pesticides, but also about the risks for human health and environment.

Based on experience of this study APDR considers it relevant to underline the following recommendations in order to improve the situation:

- To develop a larger, national study on the level of information and awareness of the population on pesticide management issues, particularly in order to identify the gaps in knowledge;
- Develop relevant information and training programs for professional and general public;
- To incorporate necessary changes with regards to reduction of risks associated with pesticide used in legislation, policy and infrastructure[8];
- To maintain regular communication with responsible state authorities and initiate a dedicated information platform / web portal that will include all relevant general information sources for various groups of stakeholders;
- To encourage education and training, particularly among small and individual farmers in order to promote awareness and reduce shortages in pesticide application practices;
- To train and provide more information to authorized retailers on sound practices, protective measures and other useful information that will reduce negative impact of pesticides to general population;
- To have the well- structure mass media campaign, including comprehensive communication strategy in the field of pesticide management in the country;
  To engage all relevant national stakeholders in continuous regional and international information exchange to include and apply best available practices[9].

Next steps identified by APDR

- Thematic issues on the risks and sustainable use of pesticides should be included in the curricula and manuals in schools and professional preparation.
- A draft letter to be sent from the MAFI and MoEnv to the Ministry of Education regarding the revision of school curricula regarding the inclusion of topics related to the risks of pesticides; PPE; sustainable use of agricultural chemicals; into training resources for teachers. Letter to be submitted at the beginning of the new academic year 2015-2016.
- Socially vulnerable groups to be addressed through the social services of the Ministry of Labour, Social Protection and Families. APDR mentioned that as soon as the survey report is final it will be disseminated to the Ministry of Labour and social protection.
- Maintain dialogue between all stakeholders by forming a platform for constant communication. It can be equally maintained by civil society or state body.
- The SAICM Working Group could function as an inter-sectorial Working Group on the reduction of the risks of pesticides. It could include relevant institutions including MAFI, MoEnv, MoH, MLFSP. The next

[7] Recommendation received from Mariana Zavtoni, consultant, toxicology division of the National Public Health Center (GCP/RER/040/EC project National Stakeholder Workshop on April 3rd, 2015, Chisinau Moldova)

[8] List of policy documents proposed for mainstreaming is included in *Moldova National Stakeholder workshop report* document elaborated by APDR

[9] Region-wise actions can be found in *Regional Lessons Learning Workshop Report* – PAN UK

regular interministerial SAICM working group meeting is scheduled for mid August 2015, the exact date shall be reported by Ministry of Environment as the main institution chairing the group – reference person Svetlana Bolocan, chief of Environmental Pollution and Waste Management Division.

- Participate in the consultations of the draft National Action Plan for the sustainable use of pesticides, developed by National Food Safety Agency within the Ministry of Agriculture and Food Industry. The format and progress in the procedure of the development and endorsement within the ministries prior to public consultation of the Draft Document will be communicated by Mr. Negrescu, the chief of the Division for pesticides and fertilizers control, NFSA
- The promotion of organic agriculture in order to reduce the volume of use of pesticides and fertilizers has been outlined by Deputy Minister of Agriculture and Food Industry as one of the country priorities in his welcome speech.
- Integration of the social and environmental aspects of pesticide management is important
- NGOs (environmental, agricultural, rural development) – should be involved in campaigns, workshops for small farmers etc. There are plans to present these topics at the next Environmental NGO Forum (not yet scheduled due to lack of funds).
- APDR shall elaborate project proposals and seek donors in order to continue data collection, particularly on the on exposure and risks among rural population, based on the example of this project
- Search for alternatives to reduce the risks of the exposure of the pesticides.

6f Summary findings – Ukraine

Farmer, Victor Olszewski, explaining to the team which crops he grows and his plant protection strategies and practices. (Photo: PAN UK)

The national partner in Ukraine was the All-Ukrainian Environmental League, one of the largest environmental NGOs in Ukraine (http://www.ecoleague.net/pro-vel).

70% of Ukraine's land, or 42 million hectares, is used for agriculture. Grain crops are the primary crops in Ukraine, particularly in the steppe and forest steppe zones. Corn accounts for almost 15% of the gross grain harvest and other grains include winter wheat, rye, millet, buckwheat, rice, barley, oats. Sugar beet and sunflower are the primary industrial crops. Potatoes are an important commercial crop. Melons (watermelon and cantaloupe) are grown commercially and some areas of the forest steppe specialize in orchard fruits and walnuts.

The quantities of pesticides used is large and growing. It is estimated that USD $300-600m are spent on over 5000 different agrochemicals annually. The use of pesticides on farmland grows every year. In 2009, 24309 tons of pesticides were used, and in 2012 it was 39,040.7 tons. With such high rates of pesticides being used, it is not surprising that the usual problems associated with agrochemicals are reported, including declining soil quality, environmental contamination and incidents of poisoning.

Ukraine does not currently record individual incidents of pesticide poisoning. The latest official data can be found only for 1991-1995. Ukraine registers cases of mass pesticide poisoning, and patients are referred to the Institute of Hygiene and Toxicology. Records of pesticide poisoning in the past 15 years show 13 incidents of mass poisonings, and the total number of victims was more than 400 workers. The lack of medical monitoring statistics related to pesticide poisoning affects the availability of effective medical services for diagnosis and treatment. According to consultations, incidents in beet farms and vineyards seem to be a particular problem. Spray drift is also a common exposure route, according to the Institute.

Our survey indicated that most pesticide poisoning goes unreported, and victims self-medicate. 58% adult respondents to the survey that are working with pesticides reported signs or symptoms of pesticide poisoning in the previous 12 months.

Consultations indicate that, in recent years, there has been a progressive deterioration of working conditions along with a decline in productivity and workers' health. The widespread use of outdated equipment and

technology, labour operations and manual labour, especially in the cultivation of sugar beet, orchards and vineyards, as well as the lack of personal protective equipment, all contribute to the problem.

Pesticide poisoning has been observed in beet growers and wine-growers. Spray drift from neighbouring fields is also, reportedly, a major problem.

Main survey findings:

- High availability of uncertified pesticides
  As many as 69 % of respondents buy pesticides in unlicensed shops and only 31 % of them make their choice in the licensed shops.
- Low level of compliance with safety regulations when seasonal workers are working with pesticides
  81 % of respondents have not had training on the safe use of protective clothing and equipment and 83% say they do not use PPE.
- 9 % of respondents reuse pesticide containers more than 2 times in their household activity.
- 99% of participating workers said that they handle pesticides (spraying crops, spray equipment maintenance).
- 49% of participating men and 67% of women directly handling pesticides reported signs and symptoms of pesticide poisoning during the last 12 months.

Recommendations from the All-Ukrainian Environmental League included:

- The field work needs to continue through the growing season, so that seasonal workers are more apparent and pesticide practices can be observed
- The study needs to be expanded to other parts of the country
- The study needs to be done on a larger scale, including all groups in the farm household as well as farm workers
- The communications resources developed under this project should be used in seminars, trainings and workshops

The national stakeholder workshop concluded that the findings of the present study provide new and valuable information which is not available elsewhere. It was agreed that more work is needed to address the problems raised. In particular[10]:

- Research into pesticide health and environmental impacts
- Tighter control of hazardous pesticides and contaminated waste
- Awareness raising concerning pesticide risks and risk reduction measures at farm level
- Improved health and safety standards for agricultural workers

[10] This is a summary list. The full list provided by national stakeholders can be found in the full report from Ukraine.

7 Impact

The study and awareness raising activities reported here took place over just one year. In that time, new relationships were established with national partners; new survey tools were developed; partners and government staff trained; studies conducted; communications materials developed and distributed. This was intended as an initial coarse-grained exercise that would identify key issues and raise awareness of them. Therefore, it is a bit soon to understand the impact these activities will have, but we have collected some initial feedback that suggests that the work has been very positive. Certainly, all six countries have achieved a good level of exposure for the issues in national media and positive engagement with national authorities. Several countries (Georgia, Kyrgyzstan and Ukraine) have taken steps to formalise networks concerned with pesticide poisoning and Georgia, in particular, has taken steps to tighten regulation of pesticide retailers.

- The Armenian partner, AWHHE, report some early evidence of the impact of communications when revisiting some villages surveyed previously – including evidence of increased awareness of the risk of pesticide poisoning of the vulnerable groups; increased understanding of the need to report health concerns related to pesticide poisoning; increased awareness of the need to use PPE; Increased awareness of the safety requirements related to safe storage of pesticides, treatment of contaminated clothing and disposal of used containers.
- Ukraine – NGOs have decided to form a network focusing on pesticide risk reduction
- Work is under way in Georgia to establish a cross sectoral committee on pesticide poisoning
- Georgia has adopted regulations with respect to provision of small containers and prevention of repackaging
- Georgia has undertaken a round of inspections of pesticide retail premises to discourage stocks of illegal products and repacking.
- Georgia has reported one SHPF incident identified during the study to the Rotterdam Convention under Article 6
- Armenia – AWHHE reported that the study had helped to foster close cooperation with the Ministry of Agriculture
- Kyrgyzstan – the work has fostered good relations between BIOM and the Department of Plant Protection and Ecology
- Kyrgyzstan; a Working Group on pesticide poisoning has been established by the Head of the Department of Plant Protection
- Kyrgyzstan; the issue of pesticide risks has been raised in parliament and there is a good level of awareness of the issues in government
- Jamal Kadoeva, DNA, Kyrgyzstan said that there has been no study similar to this one before. It was very valuable for decision-makers.
- Agentia Pro Dezvoltare Rurala (APDR) in Moldova is seeking new funds to continue work on pesticide poisoning and has identified some important opportunities to raise the issue of pesticide poisoning among government agencies, NGO networks and donor forums over the next few months.
- PAN-UK was invited to present this study to the BRS Conference of Parties in Geneva in May 2015. The event was titled 'Considering socio-economic impacts of chemicals management: protecting vulnerable groups from hazardous pesticides.' Following PAN-UK's presentation of results, the following interventions were made:

- Irma Tskvitinidze, the DNA to the Rotterdam Convention in Georgia stated that she welcomed the EU-FAO project in her country and that it had raised some important issues regarding pesticide management that the Government is currently working to address.
- Jamal Kadoeva, the DNA to the Rotterdam Convention in Kyrgyzstan, echoed the previous point and said that the studies on pesticide use and exposure had revealed important new information to the Government.
- A representative of the Department of Environmental Quality Ministry of Environment, Brazil invited PAN-UK to meet to discuss the potential for this type of study in Brazil.

8 Discussion

The evidence from the studies presented here indicates that smallholder farmers across the region are routinely using pesticides without even the most basic knowledge of the effects of these chemicals. Common practices include; very low use of protective equipment; storage of pesticides in food and drinks containers; lack of observance of recommended dosages, frequency of application or post-harvest intervals**.** Using highly hazardous pesticides in this context is threatening the health of the pesticide users themselves as well as the broader community and the environment.

The studies have revealed new information concerning a rather hidden problem of acute pesticide poisoning. None of the participating countries has a system in place to collect data on pesticide poisoning (although a new report card system for health services has just been introduced in Armenia) and the vast majority of poisoning incidents, it seems, are not reported to health services or other authorities.

The studies of people living and/or working on farms that use pesticides indicate that pesticide poisoning is common. **40% participants from six countries who use pesticides said they had experienced pesticide poisoning in the previous 12 months**. 6% respondents who don't handle pesticides also reported that they had experienced pesticide poisoning in the previous 12 months.

These figures on poisoning are very concerning. Pesticides are known to have a range of potentially serious, even fatal, impacts on human health. Signs of acute pesticide poisoning are bad enough in themselves, but may also indicate a larger problem of chronic pesticide exposure and long-term impacts on health.

Vulnerable groups

Everyone is not equally vulnerable to the impacts of pesticides. Biological factors and social circumstances also impact on environmental health.

Gender differences in toxicity have been reported for many substances. Butter[11] argues that, while most research into chronic toxicity and gender has been directed at reproductive health and reproductive cancers, there is a good case for looking more closely at gender differences in toxicity across a whole range of physiological processes. Women of reproductive age are of particular concern because of potential impacts on their own health and their children.

[11] Butter, M.E. (2006) Are Women More Vulnerable to Environmental Pollution? **J. Hum. Ecol., 20(3): 221-226**

Toxic pesticides are known to cross the placental barrier to the foetus and they are also found in breastmilk. To quote '*babies will continue to be born pre-polluted as long as pregnant women are exposed to pesticides*'[12]. Some childhood cancers like leukaemia have been linked to the exposure of parents to pesticides. Reproductive effects on offspring quality have been reported for both sexes and can have multigenerational effects[13].

The studies challenged prevailing assumptions regarding the role of children in relation to pesticides. The teams in Kyrgyzstan and Moldova were surprised to find **more than a quarter of participating children directly involved in using pesticides** (26% and 39% respectively) as well as undertaking other tasks around the farm that may expose them to these hazardous chemicals, such as picking fruit and washing spray equipment.

Pesticide poisoning disproportionately affects infants and children[14]. Weight for weight, they drink 2.5 times more water, eat 3-4 times more food, and breathe 2 times more air. They therefore absorb a higher concentration of pesticides than adults. They can face exposure during critical windows in their development, when they are at increased risk of damage to the developing immune, nervous and reproductive systems. Fragile developmental processes that regulate tissue growth and organ development in children can be irreversibly damaged by pesticide exposure.

In addition to one's biology, factors such as diet and burden of disease can impact on vulnerability to chemical hazards. These factors may affect poorer families disproportionately. Poverty and social vulnerability can also impact on an individual's control over safety standards and pesticide exposure at work. Seasonal, migrant workers are prevalent in agriculture in many parts of the world and their exposure to pesticides at work and at home is recognised as an issue of continuing concern for public health[15]. They often have poor security of employment and little protection in law. They may also lack the relevant language to understand pesticide labels and safety instructions, or to negotiate better protection. In Ukraine and Georgia we found that a high proportion of seasonal agricultural workers are women of reproductive age and teenage children. They are both biologically and socially vulnerable to the effects of pesticides in the workplace. During the current study it took time to build trust with these groups and get accurate information about their exposure to pesticides. We were also working in winter, which is far from ideal. More work is needed in this area.

An important group that had not been identified *a priori* were pesticide retailers. They seem to be at high risk of pesticide exposure due to the common practice (in Armenia, Georgia, Kyrgyzstan in particular) of repacking pesticides into plastic bags and drinks bottles without suitable protection. The practice, along with the poor level of advice provided by many retailers, also puts their customers at increased risk.

Response of national authorities

Feedback from governments and national partners[16] states '*participants felt that this work is an important initiative. They also appreciated the possibility to hear of experience in other countries and found some of the*

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[12] Watts, M. (2013) Poisoning our future: children and pesticides. Pesticide Action Network Asia and the Pacific. http://www.pananz.net/publications-2/books/

[13] Butter, M.E. (2006) Are Women More Vulnerable to Environmental Pollution? **J. Hum. Ecol., 20(3): 221-226**

[14] UNEP Chemicals (2004) Childhood Pesticide Poisoning Information for Advocacy and Action http://www.who.int/ceh/publications/pestpoisoning.pdf

[15] Arcury TA, Quandt SA. (2003). Pesticides at work and at home: exposure of migrant farmworkers and their families. Lancet 362:2021.
Villarejo D. (2003). The health of U.S. hired farm workers. Annu Rev Public Health 24:175–193.

[16] Stephan Robinson of Green Cross' feedback results in Annex III of Report of Regional Lesson Learning Workshop, Yerevan, April 2015.

ideas interesting to replicate in their own country… Most of them would be very interested (and find it relevant) to continue the work, building on the interest stimulated during this first phase, however, this would in minimum need outside funding.'

All six national partner organisations (NGOs) engaged positively with national authorities. In Kyrgyzstan, for example, MPs visited affected rural communities and the national partner, BIOM, was invited to speak on the issue in the national parliament. In Georgia, the regulatory authorities responded by tightening enforcement of regulations on repacking and labelling of pesticides and also reported a serious poisoning incident to the Rotterdam Convention under Article 6. Armenia is launching a new reporting system for pesticide poisoning.

At the BRS Conference of Parties in May 2015, the Designated National Authorities for Georgia (Irma Tskvitinidze) and Kyrgyzstan (Jamal Kadoeva) raised points from the floor at a side event on protecting vulnerable groups from hazardous pesticides. They declared their support for the work that was undertaken by PAN-UK/RC and confirmed the value of continuing such efforts to understand the impacts of pesticides.

A useful start, but more work is needed

The studies were very small scale (just 200 surveys per country), but they did raise important questions and clearly identified common practices that are serious cause for concern. They served the valuable purpose of bringing key actors together and strengthening linkages between them. Several countries are taking steps to formalise networks and cross-sectoral committees to focus on the issues raised.

Further work is needed to build on this success in order to better understand the problems identified; to gain a better understanding of the HHPs associate with poisoning; and to take effective action to reduce the significant risks pesticides pose to rural families. On a global scale, there is potential to feed the information into international instruments, such as reporting incidents under Article 6 of the RC.

Annex 1 Report of Regional Lesson Learning Workshop

Forwarded separately, due to size.

Annex 2 Summary of side event at COP 7

SIDE EVENT OUTCOME SUMMARY
Considering socio-economic impacts of chemicals management: protecting vulnerable groups from hazardous pesticides

13 May 2015, Geneva, Switzerland

Background

- While chemicals play a useful role in industrial processes, the impacts of poorly managed chemicals and waste remain relatively unrecognized and substantial.
- Poverty exacerbates vulnerability to the impacts of chemicals, as poor populations are often more highly exposed to hazardous substances due to factors such as where they live, the types of livelihoods in which they are engaged, their low level of education or awareness of toxics-related risks, their lack of or limited access to health care and their poor levels of nutrition. The consequences can range from sickness that may interfere with an individual's ability to work to severe illnesses and death.
- Now, more than ever, agriculture, with a heavy use of pesticides, is one of the three most hazardous economic sectors. It employs some one billion workers

worldwide; accounts for 60 per cent of child labour; and is the largest sector for female employment in many countries, especially in Africa and Asia.

- Risk evaluations and further social impact studies are needed in order to use data collected for an evidence-based decision-making process at national level.
- With the post 2015 development agenda process underway, the side-event was a timely opportunity to discuss socio-economic impacts of chemicals management. Panellists provided the audience with concrete experiences and evidence that there are real social and economic benefits to risk reduction.

The Panel

Moderator: Mr. Jacob Duer, Coordinator, Interim Secretariat of the Minamata Convention on Mercury, and Secretariat of the Strategic Approach to International Chemicals Management (SAICM,) United Nations Environment Programme

- Ms. Leticia Carvalho, Director, Department of Environmental Quality, Ministry of Environment, Brazil speaking on ‘**Government role in protecting vulnerable populations**’

- Ms. Jacqueline Demeranville, Officer, Social Protection Division, Food and Agricultural Organization of the UN speaking on ‘**An integrated approach to protecting children from pesticides**’

- Mr. Simon Steyne, Head of Social Partner Engagement, Partnerships & Advocacy, International Programme on the Elimination of Child Labour, International Labour Organization speaking on ‘**Engaging with labour stakeholders**’

- Mr. Richard Thompson, Officer, Plant Production and Protection Division, Food and Agricultural Organization of the UN and Dr. Keith Tyrell, Director, Pesticide Action Network – United Kingdom presenting a ‘**Case example - Addressing the social dimensions of pesticides use in the former Soviet Union**’

Key messages

- The sound management of chemicals and waste is an essential and integral cross-cutting element of sustainable development and is of great relevance to the sustainable development agenda. Although sound chemicals and waste management is traditionally considered as an environmental issue, it has significant benefits for the economic and social objectives of sustainable development. Thus, there is clear need for multi-sectoral and multi-stakeholder approach to address the

socio-economic impacts of chemical exposure on vulnerable populations, including workers and children.

- There is a strong inter-linkage between the management of chemicals and wastes and poverty eradication, health, sustainable agriculture, food security, water, biodiversity, industrial growth and labour with a catalyzing potential to support implementation of the sustainable development agenda.

- Strengthening chemicals and waste governance at the national level requires actions beyond the direct mandate of an environment ministry; typically a number of ministries and public administrations need to act. In case of pesticides management, collaboration between actors representing agriculture, environment, health, customs, employers and labour, provides concrete opportunities for alleviating poverty and protecting human health.

- Ensuring cost-effective coherence between these actors requires that chemicals and waste priorities are 'mainstreamed' – integrated into national policies and programmes, including sustainable development strategies, so that they may be included in national budgeting and considered eligible for bilateral development assistance.

- Basel, Rotterdam and Stockholm Conventions, and the newly adopted Minamata Convention on Mercury enable and require the effective coordination of local, national, regional and global environmental policies for effective implementation and enforcement of their provisions. Furthermore, SAICM supports efforts in promoting networks and multi-sectoral and multi-stakeholder participation, serving as a platform to be pro-active on chemicals management. It provides an opportunity to enhance engagement and responsibility of stakeholders.

- Children are particularly vulnerable to pesticides and their healthy development needs to be protected. The revised International Code of Conduct on Pesticides Management (2013) pays greater attention to vulnerable groups, with specific recommendations for government and industry with regards to children and child labourers. Pesticide management can contribute to the prevention of child labour, including protecting those of legal age to work. Information on labour conditions and data collection on children's exposure can be used to inform pesticide regulation and risk reduction measures, as well as hazardous work lists for children.

- Opportunities are available for national stakeholders to strengthen their capacity on pesticides management and child labour prevention, for example through the FAO-ILO E-learning course on child labour in agriculture: http://www.fao.org/elearning/#/elc/en/course/CL.

- FAO-ILO awareness raising materials on protecting children from pesticides for use in participatory trainings at local level have been developed in collaboration with the Rotterdam Convention Secretariat. A visual facilitator's guide is now available in English, French, Spanish, and Portuguese and will soon also be available in Russian. Adapted versions for different regional contexts include Africa, Eastern Europe, the Caucasus and Central Asia, Latin America and the Caribbean and Asia-Pacific: http://www.fao.org/news/story/en/item/286506/icode/.

- Labour stakeholders, including ministries of labour, workers' and employers' organizations have a significant contribution to make to protecting children and other vulnerable groups from pesticides' adverse effects. Fundamental rights, such as freedom from child labour, forced labour and discrimination; and freedom (for workers and employers) to organize and freedom to bargain collectively are mutually interdependent and represent both human and enabling rights.

- Occupational safety and health, including pesticide management needs to be supported by national regulations that are enforced by well-functioning labour inspection services and agricultural extension services. Occupational safety and health workplace should be enhanced by good labour relations, including jointly-agreed practices.

- There are promising examples of multi-stakeholder cooperation initiatives addressing the needs of vulnerable groups in managing hazardous chemicals. One of them is the EU-FAO partnership project that focuses on sound pesticide management in Armenia, Belarus, Moldova, Georgia, Kyrgyzstan, and Ukraine. The project demonstrated the value of cooperation at the global and national levels between the government and the civil society. It also highlighted that much has to be done by governments, the industry and farmers themselves to make family farming safer in the region. Priority areas for action include raised awareness among users of safer alternatives to highly hazardous pesticides, the development of policies that encourage sound pesticide management and farming practice.

The floor discussion raised the following points:

- Sue Longley (IUF[17]) asked about the challenges and prospects for agricultural workers to come together to gain better standards of safety in the workplace.
- Irma Tskvitinidze, the Designated National Authority to the Rotterdam Convention in Georgia welcomed the EU-FAO project in her country that had raised some important issues of the pesticide management that the Government is currently working to address.

[17]International Union of Food, Agricultural, Hotel, Restaurant, Catering, Tobacco and Allied Workers' Association

- Jamal Kadoeva, the Designated National Authority to the Rotterdam Convention in Kyrgyzstan, echoed the previous point and said that the studies on pesticide use and exposure had revealed important new information to the Government.
- John Vijgen of the International HCH and Pesticides Association asked FAO about the prospects for continuing the work on social dimensions of pesticide use in the former Soviet Union countries.
- Stephanie Williamson, PAN-UK, raised the issue of school curricula and resources on pesticide risks for children. FAO pointed to some existing resources designed for this purpose.

The moderator closed the session by reminding delegates that improved chemicals and waste management and risk reduction can contribute to the objective of poverty alleviation and the achievement of overall sustainable development goals. He took the opportunity to invite participants to the fourth session of the International Conference on Chemicals Management (ICCM4) to be held from 28 September to 2 October 2015 in Geneva. ICCM4 will provide an inclusive platform for the exchange of experience, including a high level component.

Contact information:		
Ms. Tatiana Terekhova Programme Officer Secretariat of the Basel, Rotterdam and Stockholm Conventions United Nations Environment Programme (UNEP) Email: Tatiana.Terekhova@unep.org Websites: http://www.basel.int / www.pic.int/ www.pops.int	Ms. Brenda Koekkoek Programme Officer SAICM Secretariat Chemicals Branch United Nations Environment Programme (UNEP) Email: brenda.koekkoek@unep.org Websites: www.saicm.org / www.unep.org	Ms. Elisabetta Tagliati Programme officer Secretariat of the Rotterdam Convention Food and Agriculture Organization (FAO) Email: Elisabetta.Tagliati@fao.org Websites: http://www.basel.int / www.pic.int www.pops.int / www.fao.org

Annex 3 Final monitoring report

All activities are under Output 2.4 of the project

A Regulatory decision making processes strengthened in order to achieve risk-reduction			
Task	Deadline	Activity, issues	Date completed
Develop toolkit			
Adapt existing training resources Develop, translate and test new training resources	June- Aug 2014	PAN developed training resources and delivered five day training workshop to national partner organisations in Tbilisi in July 2014.	Completed ahead of schedule
Develop training toolkit, including lessons learned and practical experience of national partners, translate resources and distribute toolkit	May 2015	PAN has added to the training materials (above), new survey tools (tested August 2014) and guidance notes (distributed in October 2015) and has tested and gathered feedback from partners at each stage. This process of feedback and refinement continued throughout the project and the resulting resources are key components of the toolkit. The lessons learned workshop in April 2015 and national workshops also provided valuable information for this resource.	Completed on schedule
Deliver Training			
Deliver training	November 2014	Delivered July 2014	Completed ahead of schedule
Workshops			
National partners organise national workshops (6) to present and review survey results and lessons learned with a wide variety of stakeholders	February and March 2015	Each partner held a national workshop in order to share the findings of the study in each country with key stakeholders and to identify lessons learned, recommendations and next steps. All DNAs were consulted by RC and were involved in the national workshops. All national partners work with relevant government agencies as a matter of course and are keeping them informed about this project, as are the FAO National Coordinators. PAN-UK participated in national meetings in Armenia, Georgia and Moldova. FAO reviewed press releases, drafted by PAN-UK and national partners, and provided input on visibility / branding as well as facilitating the invitation of EU Delegates. Three national workshops were held in the first week of March – Armenia, Georgia, Kyrgyzstan. Partners in Belarus had their meeting in the last week of March. Moldovan partners held their workshop on April 3rd, somewhat later than planned, in order to ensure the participation of key stakeholders. The meeting in Ukraine was postponed to April 9th in order to accommodate the participation of the EU Delegate.	Completed 9th April 2015

		The feedback has been very positive. Partners in Kyrgyzstan and Moldova were asked to participate in EU Day events, which PAN supported them to do.	
PAN to organise one Regional workshop/consultation for sharing of data and lessons learned across region	April 2015	The meeting was completed successfully.	Completed on schedule
B Identification of high risk scenarios and exposure routes for farmers and vulnerable groups			
Task	*Date*	*Activity, issues*	*Corrective action*
Methodology tested and refined			
Methodology tested and refined	Nov 2014	The survey tools were developed in time for training workshop in July 2014. They were tested in all six countries in August 2014 and refined and re-issued to national organisations in October 2014. Accompanying guidelines were developed together with RC and distributed in English (October) and Russian (November 2014). In addition to the July workshop training, all 6 partners have had practical training in the field to ensure they fully understand the survey and were in a position to collect good quality data.	Actions completed ahead of schedule.
Coordination with ongoing communications programme			
Coordination with RC and key institutional stakeholders	Ongoing	<u>RC</u> PAN has communicated with RC several times per week through skype, email and face to face meetings (in Armenia, Moldova, Georgia, Rome, Kyrgyzstan, Tbilisi, Yerevan). RC has reviewed all documents, provided their inputs and reviewed monthly reports prior to submission to FAO. PAN coordinated with RC regarding all mission and workshops agendas and institutional meetings. Involvement of RC Designated National Authorities is coordinated by RC Secretariat. <u>FAO</u> PAN has joined each monthly concall, forwarded drafts of all documents for comment / approval and kept FAO informed of progress. The PAN team has taken opportunities to meet with FAO and other partners face to face in Moldova (March 2014), Tbilisi (July 2014), Rome (September 2014), Tbilisi (February 2015), Yerevan (April 2015), Geneva May 2015. FAO has provided significant input on visibility / branding issues and communications with government stakeholders and EU Delegates. <u>Institutional stakeholders</u> PAN engaged with government stakeholders in the July 2014 workshop in Tbilisi and has met / informed them during subsequent field visits, as advised by National Coordinators and partners. National partners liaised closely with institutional stakeholders through the data collection phase,	N/A

		national workshops in 2015 and the regional workshop in April 2015	
Implementing partners selected and contracts issued			
Select implementing partners	July 2014	National partners were selected by MKI in March 2014. PAN took the opportunity to join them at a workshop in Moldova in March where discussions / consultations were initiated regarding forthcoming work.	Completed ahead of schedule
Technical assistance and monitoring, site visits	Sept 2014 – May 2015	Technical assistance and monitoring was an ongoing task throughout. PAN completed visits in Armenia, Ukraine, Moldova, Kyrgyzstan, Georgia (2). A partner from Belarus accompanied field work in Ukraine. PAN attended three national stakeholder workshops in March 2015 for follow up (Georgia, Armenia, Moldova). RC provided technical assistance during the missions to Armenia and Kyrgyzstan.	Completed on schedule
Data collection and consultations	July 2014 - March 2015	Data collection was completed in January 2015.	Completed ahead of schedule
Data analysis and reporting	December 2014 - March 2015	Data analysis was completed by PAN-UK, discussed with RC and shared with national partners in February 2015. PAN developed a report template with input from RC in order to assist partners to present their data effectively.	Completed on schedule
C. Awareness raising of the risk to pesticide poisoning among affected communities			
Task	Date	Activity, issues	Corrective action
Communication resources			
Training toolkit on data collection for use by regulatory decision-makers and policy-makers	May 2015	PAN, with input from RC, has developed extensive guidance as well as a new survey tool and other components of the toolkit. The lessons learned workshop in April 2015 as well as ongoing national workshops will provide additional, valuable information for this resource.	Completed on schedule
Briefing document on pesticide risk reduction	May 2015	This was produced for the COP in May 2015. Target audience; decision-makers, policy-makers, donors.	Completed on schedule
Written documents (leaflets, posters etc.)	January - April 2015	PAN has produced guidance for its partners reviewed by RC and posters and leaflets in 6 national languages. These have been very well received. Reducing risks leaflet, 7 languages Reducing risks poster 7 languages Pesticide poisoning leaflet 7 languages New household pesticide risks poster 7 languages Leaflet summarising key findings of baseline studies and suggesting opportunities to reduce risk (English) Guidance document (English and Russian) Survey tool English and Russian Survey report template, English and Russian The guidance materials, presentations and other resources form key components of the tool kit (English)	Completed May 2015
Produce short video films	November 2014 – April 2015	Video and photographic material and interviews / testimonies have been collected in Armenia, Ukraine, Moldova, Georgia and Kyrgyzstan	Completed on schedule
Press materials	October 2014 – May 2015	PAN supported partners to secure positive press coverage by helping to draft press releases.	Completed on schedule

		PAN has worked with national partners to produce press releases for each national workshop. RC provided comments on press releases. FAO has provided support on branding issues.	
Review by FAO	January – May 2015	PAN's communications specialist has provided material and input for online resources including PAN's website and national partners and FAO as required.	Completed on schedule
Translate published materials into Russian	June 2014 – May 2015	PAN has had two of its publications translated into Russian for inclusion into the toolkit e.g. International Tools For Preventing Local Pesticide Problems: A Consolidated Guide To The Chemical Codes & Conventions	Completed on schedule
Mass media coverage secured			
Mass media campaign	August 2014 – May 2015	TV coverage was secured for the training in Tbilisi (national TV and press coverage) in Ukraine during the mission 10-12 November 2014, in Georgia in March 2015 and in Armenia in April 2015 PAN has worked with FAO to support its partners to develop press releases and other material. PAN has produced short video films suitable for TV, websites and for use at events. Particular events attracted media attention include the national stakeholder meetings and EU Day events. PAN worked with national partners to use these opportunities to explain the purpose of the project and to promote risk reduction in relation to pesticides.	Completed on schedule
Reporting			
Share data and experience within regional and global forums, including Rotterdam and Stockholm Conventions, SEIS and WHO	November 2014 – May 2015	An online forum has been developed for national partners, RC, FAO and National Coordinators. Its purpose is to foster discussion on technical issues arising in the project; the exchange of experience and information; and a reference resource. PAN presented the current work at the COP7 in May 2015 at its stand, the Science Fair and at a side event chaired by UNEP and titled Considering socio-economic impacts of chemicals management: protecting vulnerable groups from hazardous pesticides, where PAN joined a panel that included representatives from FAO, ILO, UNEP and the Government of Brazil. DNAs the EU-FAO project had been.	Completed on schedule