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REPORT ON THE ONLINE PESTICIDE RISK INDICATORS DATABASE (PRIER)

Series on Pesticides
No. 83

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Environment Directorate
ORGANISATION FOR ECONOMIC COOPERATION AND DEVELOPMENT
Paris 2016

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FOREWORD

This report describes the online Pesticide Risk Indicators (PRIs) database and how to use it. This online tool was developed based on a PRI Evaluation Report Form (PRIER) – a web-based questionnaire – that collected information on existing PRIs in OECD member countries. The online-PRIER gathers the survey answers into a database and contains an evaluation and summary of the data entered.

The online-PRIER was developed by the Expert Group on Pesticide Risk Indicators (Belgium, Canada, Germany, Netherlands, Poland, Sweden, Switzerland, United Kingdom, United States and European Commission) established in 2012 under the OECD Pesticides Programme. The online-PRIER is the first step of a project for which the final objective is to develop a guidance document for a recommended OECD suite of PRIs.

This report was prepared by Joern Strassmeyer of the Julius Kühn Institut (JKI); the database is hosted by the JKI, Germany: http://sf.jki.bund.de/oecd-prier/secured/index.jsf

The OECD Working on Pesticides (WGP) approved the report. This document is published under the responsibility of the Joint Meeting of the Chemicals Committee and the Working Party on Chemicals, Pesticides and Biotechnology which agreed to its declassification on 4 February 2016.

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We would like to express our appreciation to all the people who filled out the online survey. Without this information the compilation of this report would not have been possible.

REPORT ON THE ONLINE PESTICIDE RISK INDICATORS DATABASE (PRIER)

INTRODUCTION

1. In 2012, an Expert Group on Pesticide Risk Indicators (EGPRI) was established under the OECD Pesticides Programme. The EGPRI was tasked with: i) developing an overview of existing Pesticide Risk Indicators (PRI); and ii) addressing the question concerning how PRIs can be used as tools to assess the risks associated with pesticide use, including the actual and potential impact of policies to deal with those risks. The overview includes information on the type of indicator, its aims and protection goals, the input of data requirements, purpose of indicator, user-friendliness and further features.

2. In addition to the overview of existing indicators, a guidance document is being developed by EGPRI. Such guidance, in combination with the overview of existing indicators, should help countries that do not yet have pesticide risk indicators established or want to broaden the aspects covered by their risk indicators, to select appropriate indicators.

3. In 2014, a web-based questionnaire was circulated to member countries to collect information on existing PRIs in OECD countries. Based on a **PRI Evaluation Report** Form **(PRIER)** developed by EGPRI, the objective of this online tool was to facilitate, on one hand, the input of the survey answers into a database, and on the other hand the evaluation and summary of the entered data.

Short description of the online PRIER

4. The online-PRIER consists of: i) a graphical-user-interface (GUI) for entering the answers to the questions of the PRIER, i.e. information about the PRI; ii) an online database (Oracle) in which the answers are stored; and iii) a results section, where overviews of the database are given. The GUI was designed as a 1:1-copy of the final PRIER-version from January 21, 2014. A screenshot of the top-level page for data entry with the 18 questions of the survey is shown in Figure 1. The questions of the survey are listed in an Annex to this document; they are further referred to as Q1 for Question 1, etc. The online PRIER is available at: http://sf.jki.bund.de/oecd-prier/secured/index.jsf

5. In general the online-PRIER was designed to: i) fill in answers to the questions of the survey, i.e. information on the PRI; ii) store the entered data in a database; and iii) view and summarize the information of all entered survey data.

6. The available information in the online PRIER can be accessed via the “view PRIERs” tab; however, users who wish to enter their own data should register first.

7. The user can register via the “registration” button. This button will launch an e-mail and within one day the user will be registered and get a password by e-mail to enter the online form. Completing a form may take up to approximately 45 minutes, depending on the number of aspects that the PRI is covering. Each user can enter and save one or more PRIERs and edit them in later sessions. The entered data is stored in an Oracle database which is maintained at the Julius Kühn-Institute (JKI) in Germany. An overview of the database structure is shown in Figure 3. The data can be stored in the database even if the user has not completed the data entry or if the entered PRI is not ready for submission. If the data has been saved the user can continue entering data at a later time.

8. Once the user has finished entering the PRIER, the data can be submitted. The submitted PRIER is immediately available for evaluation and it will be included in the summarizing charts and tables within the report section of the tool. Only submitted PRIERs will be available for summarizing charts and tables.

9. The published PRIERs can be viewed by clicking the tab '*view summary tables*' on the top page of the online-PRIER. Within the summary section the published PRIERs are summarized in a list of tables and charts which can be viewed by clicking various tabs. A screenshot of the summary page is given in Figure 2.

Maintenance of the PRIER

10. The EGPRI decided to keep the online PRIER open for future entries of PRIs. The online PRIER will be run on servers of the JKI. The tool and database will be maintained and updated by JKI. Therefore PRIs can be entered in future into the online PRIER. The results listed in this report are based on the status of the database on 1st March 2015.

Figure 1: Screenshot of the top-level page for data entry of the online PRIER

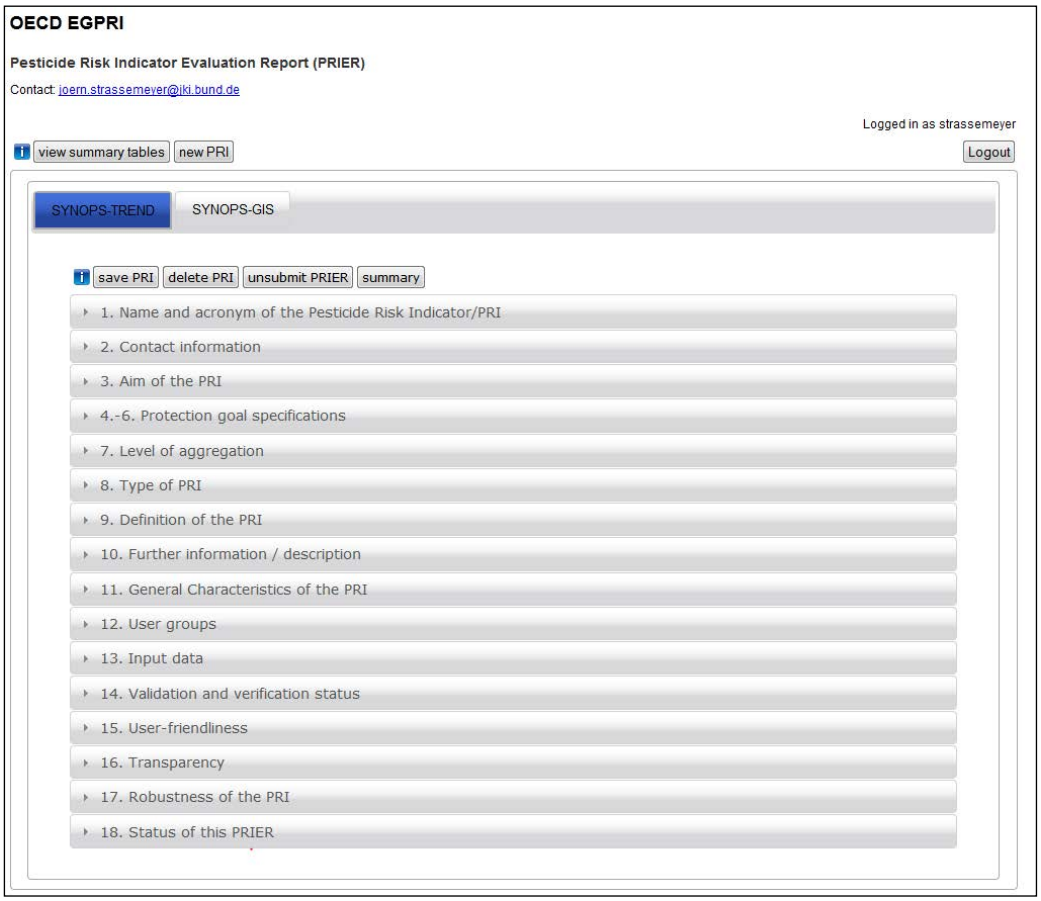


Figure 2: Screenshot of the top-level page for viewing the summary tables of the online-PRIER

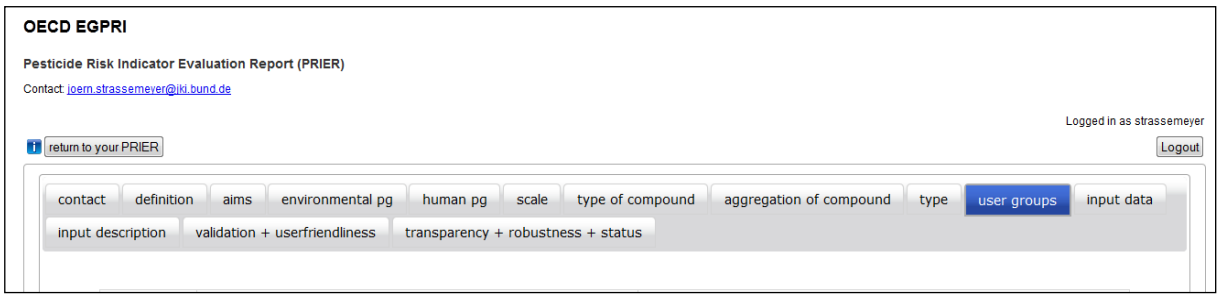
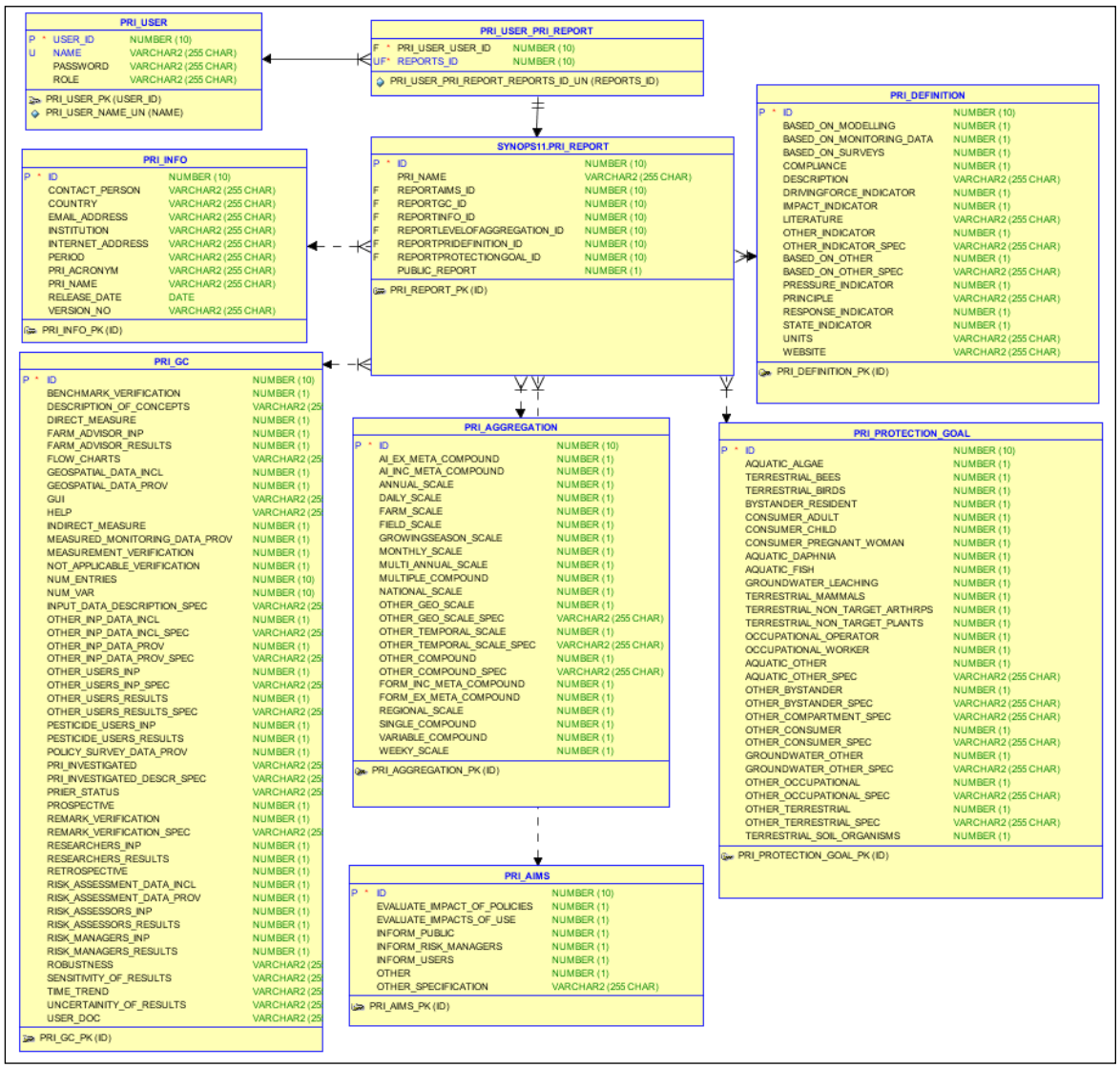


Figure 3: Structure of the database linked to the online-PRIER



Reported Pesticide Risk Indicators

11. As of February 2015, thirteen pesticide risk indicators (PRIs) from ten OECD member countries – Belgium, Canada, Finland, Germany, Netherlands, Poland, Sweden, Switzerland, United Kingdom, United States – and the European Commission have been entered and uploaded for summary with the online PRIER. All published pesticide risk indicators (PRIs) have been filled out completely; the entered information is available in the PRI-database (Figure 1) and can be viewed in summary form in tables and charts, generated automatically within the web-tool.

12. The following table summarizes the entered PRIs (answers to Q1 and Q2). For more details about the listed indicators and the links to the responsible institutions, the web sites of the PRIs can be viewed by login in the online PRIER and clicking the button 'view summary tables'. In the table 'contact' the web sites of the PRIs and institutions can be opened by mouse click or the complete set of entered information can be downloaded as pdf- or excel-file by clicking on the corresponding button in the column 'summary'.

Table 1: Overview of contact information provided for the entered PRIs (Q1 and Q2)

Name	Institution, web	The acronym of the PRI	Country	Contact Person	Email	Summary
UK PRIER	PF	UK-PRI	UK	Tracey Ware	pesticidesforum@hse.gsi.gov.uk	pdf xls
PRI-Nation	Kemi	PRI-Nation	SE	Peter Bergkvist	peter.bergkvist@kemi.se	pdf xls
SYNOPS-TREND	JKI	SYNOPS-TREND	DE	Jörn Strassemeyer	Joern.strassemeyer@jki.bund.de	pdf xls
PRI FI	Tukes	PRI-FI	FI	Mervi Savela	mervi.savela@tukes.fi	pdf xls
The Pesticidesatlas of the Netherlands	CML	BMA	NL	Maarten van 't Zelfde	zelfde@cml.leidenuniv.nl	pdf xls
Dutch Environmental Risk Indicator for Plant Protection Products NMI 3	WUR	NMI 3	NL	Roel Kruijne	roel.kruijne@wur.nl	pdf xls
environmental yardstick	CLM	EYP	NL	Peter Leendertse	pele@clm.nl	pdf xls
PRiME.com	IPMI	ipmPRiME	US / CA	Dr. Tom Greene	ipmworks@ipminstitute.org	pdf xls
SYNOPS-GIS	JKI	SYNOPS-GIS	DE	Jörn Strassemeyer	Joern.strassemeyer@jki.bund.de	pdf xls
EPRIF	IPP-NRI	EPRIF	PL	Stanislaw Stobiecki	ior@ior.gliwice.pl	pdf xls
AUI-PSM-Use	Agroscope	CH-Use	CH	Laura de Baan	laura.debaan@agroscope.admin.ch	pdf xls
HAIR2014	Alterra	HAIR2014	EU	Roel Kruijne	roel.kruijne@wur.nl	pdf xls
CEP	FASFC	CEP	BE	Wendie Claeys	wendie.claeys@faw.be	pdf xls

Description of the surveyed PRIs

13. The published PRIERs are summarized in a list of tables and charts which can be viewed by clicking on the different tabs as listed in Figure 2. In this chapter some sample output of the database and selected summarizing tables are listed to describe the PRIs and give an overview of the surveyed PRIs. It is foreseen to include 'mouse-over-functions' for all listed tabs and button in order to make them more comprehensible.

14. The table which is viewed by clicking the tab '*description*' summarizes the entered PRI descriptions and their calculation principles (Q9a and Q9b). It was expected that a short description of the indicator and a short explanation of the calculation principle be entered in these fields. A short and comprehensive description is available for all indicators and for most indicators the principle of calculation was entered or given as web link.

Table 2: Description of PRIs, principles and references (Q9a and Q9b)

Acronym	Description	Principle	Literature
UK-PRI	This suite of indicators gathers information on: the practice of pesticide users, advisors and distributors; incidents arising from the misuse or abuse of pesticides; pest, weed and disease pressures and associated pesticide usage; residues in water and foodstuffs; the availability of controls; and impacts on wildlife.	Various	Obtained via hyperlinks in document
PRI-Nation	PRI-Nation can be used to show the impact different measures have had on the risks associated with plant protection products in Sweden. Risk indicators are calculated for each active substance contained in plant protection products. There is one indicator for health risks and one for environmental risks. Updating, maintenance and reporting of PRI-Nation are dealt with by the Swedish Chemicals Agency. http://www.kemi.se /en/Content/Pesticides/Plant-Protection-Products/Plant-protection-products-in-Sweden/Risk-indicators-for-plant-protection-products/	PRI-Nation is based on the principle, where hazard and exposure are scored and multiplied by the number of treatments. Further information on the indicator's methodology, its basis of calculation etc. can be found in Kemi PM No 6/04: http://www.kemi.se/Documents /Publikationer/Trycksaker/PM/PM6_04.pdf	
SYNOPS-TREND	SYNOPS-TREND was developed to calculate risk-trends on the basis of usage or sales data on national level. SYNOPS evaluates the risk for terrestrial (soil and field margins) and aquatic (surface water) organisms. It combines use data of pesticides with their application conditions and their inherent properties. The exposure of organisms is calculated by more or less sophisticated sub- models for the exposure pathways of drift, runoff and drainage. Defined worst case environmental scenarios are used as input for environmental and field data	The risk is expressed as exposure-toxicity-ratios (ETR) by calculating the quotient of the predicted exposure concentration (PEC) and toxicity concentatrations as the 'no effect concentation' (NOEC) for chronic risk or the 'lethal concentration' (LC50/EC50) for acute risk. ETR=PEC/TOX	Strassemeyer J., Gutsche V. (2010) The approach of the German Pesticide Risk Indicator SYNOPS in the frame of the National Action plan on the Sustainable Use of Pesticides, OECD Workshop on Agri-Environmental Indicators, Leysin, Switzerland, http://www.oecd.org/tad/sustainable-agriculture /44806454.pd
PRI-FI	In the indicator the environmental pressure is assessed combining the weighed property data with the sales volume.	The hazard weighing is calculated using information on biodegradation in soil (DT50), bioaccumulation (log Kow), leachability (GUS index) and acute aquatic toxicity (LC/EC50). The property data is scaled based on NSDB. The Hazard Index is calculated by multiplying the scaled property data. The results are calculated by multiplying the Hazard Index with the sales volumes.	Updated results of PRI will be published at Tukes website (www.tukes.fi) during 2014. The results of the time period 1990-2006 have been published in the publication: Ympäristö 6/2007.
BMA	The pesticidesatlas of the Netherlands (BMA) presents all available yearly pesticides measurements in the surface water of the Netherlands. These pesticides are evaluated against several environmental standards. The results are presented in maps, graphs and tables on individual compounds (a.i. or metabolites). or a combination of compounds (e.g. herbicides). Also the possible cause (landuse) of presence and standard exceedances of compounds is analysed and presented.	The BMA contains many different products. The main principle is testing against environmental standards of yearly or monthly concentrations of individual compounds. For the calculation of the yearly of monthly concentration different aggregation methods are used depending on standard and product.	
NMI 3	The NMI 3 focusses on indicators for emissions to surface water and the related aquatic risk resulting from agricultural use of pesticides in the Netherlands. The model also considers the risk to groundwater, soil organisms and the terrestrial ecosystem. The model calculates emission to surface water resulting from atmospheric deposition, spray drift, drainage flow, point sources, discharge from greenhouses. The model combining a wide range of information about pesticide sales, usage, spray drift mitigation, emission factors, crop maps, surface water, soil, climate, and substance properties. The primary goal is to produce a trend line connecting two points of annual risk at national scale, at the starting and end year of the policy period. The results can also be used for ranking, for comparing applications of similar type and for visualisation of spatial patterns. For surface water, the value of the exposure toxicity ratio at a specific location and time does not express the level of risk.	http://edepot.wur.nl/199114 (EN) http://edepot.wur.nl/242738 (NL/EN) http://www.rivm.nl/bibliotheek/rapporten/607059001.pdf (NL, with EN Abstract)	
EYP	The environmental yardstick for pesticides has been developed as a tool for farmers to select pesticides with the least environmental impact and to quantify the environmental impact of the use of pesticides at the crop/farm level, regional level and national level. For each pesticide the yardstick assigns environmental impact points for the risk to water organisms, the risk of groundwater contamination and the risk to soil organisms. It is presently used in the Netherlands as a management tool for farmers and technical consultants, as a tool for monitoring the environmental performance of farmers, as a tool for setting standards for ecolabels and as a policy evaluation tool.	The environmental yardstick indicates the risks associated with the presence of pesticides in three environmental compartments: groundwater, surface water and soil. These three compartments are considered separately. The yardstick produces three output values: - acute risk to water organisms (most sensitive organism); - risk of groundwater contamination; - acute and chronic risk to soil organisms. The potential risk is expressed in environmental impact points (EIPs). The more environmental impact points a pesticide gets, the higher its impact on the environment. The EIPs are based on the Predicted Environmental Concentration (PEC) in a certain compartment and the Maximum Permissible Concentration (MPC) set by the Dutch government for that specific compartment (1): score yardstick (EIPs) = (PEC/MPC) * 100 (1) The EIP are initially assigned for a standard application of 1 kg active ingredient per hectare. For different rates of application, the number of EIP is multiplied by the actual dose. To facilitate the use of the yardstick by farmers, the EIP for active ingredients are transformed into EIP for formulated products by multiplying the active ingredient content of the product by the number of EIP for the active ingredient.	The Environmental Yardstick for Pesticides: a Practical Indicator Used in the Netherlands Joost A.W.A. Reus & Peter C. Leendertse Published in: Crop protection 19: 637-641.
ipmPRiME	Environmental indicators as probability that impact threshold will be reached (impact indicators) Health indicators as risk quotients based on accepted allowable intakes (more of a compliance indicator).	Depends on sub-indicator. Where possible, application is placed in context of body of field work available for taxon.	Series of 'white papers' on website https://ipmprime.com/ Tried to enter in space above but returned 'URL is not valid.

Acronym	Description	Principle	Literature
SYNOPS-GIS	SYNOPS-GIS was developed to assess the environmental risk potential of plant protection strategies on landscape level using GIS functionalities by linking it to geo - referenced databases for land use, soil conditions and climate data and to a dataset of regionalized surveys of pesticide application. The GIS databases were established by integrating all environmental information on field level which is necessary to estimate the environmental exposure by drift, run - off and drainage. SYNOPS evaluates the risk for terrestrial (soil and field margins) and aquatic (surface water) organisms. It combines use data of pesticides with their application conditions and their inherent properties. The exposure of organisms is calculated by more or less sophisticated sub-models for the exposure pathways of drift, runoff and drainage.	The risk is expressed as exposure-toxicity-ratios (ETR) by calculating the quotient of the predicted exposure concentration (PEC) and toxicity concentatrations as the 'no effect concentation' (NOEC) for chronic risk or the 'lethal concentration' (LC50/EC50) for acute risk. ETR=PEC/TOX	Strassemeyer J., Gutsche V. (2010) The approach of the German Pesticide Risk Indicator SYNOPS in the frame of the National Action plan on the Sustainable Use of Pesticides, OECD Workshop on Agri-Environmental Indicators, Leysin, Switzerland, http://www.oecd.org/tad/sustainable-agriculture /44806454.pdf
EPRIF	The primary objective of creating the set of indicators is to use numbers to provide a picture of the year-after-year changes in pesticide risks to safety of foods available on the national market. More information: www.ior.gliwice.pl/docs/EPRIF.pdf	Calculation of number of irregularities (excess of MRLs) discovered during official inspections and controls in relation to the number of tested samples with consideration of testing capabilities of individual labs (expressed as the testing quality coefficient).	-
CH-Use	The usage of pesticides is recorded annually in Switzerland based on field records of about 300 farms. The farmers are volunatrily engaged in the monitoring and are reimbursed for their extra work. With these data, the number of spray rounds and the amount and type of sprayed pesticides are assessed. Results are specified per culture.	- Number of spray rounds: Each time a farmer sprays PPP is recorded as one spray round. Application of multiple products as tank mixtures are recorded as one spray round. - Amount of PPP applied: The amount of active ingredients applied per ha and year. - Ranking of active ingredients: for each culture and class of PPP (e.g. insecticides) it is calculated, which active ingredients are used how frequently.	http://www.agroscope.admin.ch/publikationen /einzelpublikation/index.html?lang=de&aid=33229& pid=33199&vmode=fancy . Spycher S., Badertscher R., Daniel O. Indicators for pesticide usage in Switzerland. Agrarforschung Schweiz. 4, (4), 2013, 192-199
HAIR2014	HAIR calculates risk indicators of the Exposure Toxicity Ratio type on an annual basis and in European countries. The results are intended for evaluating objectives on the sustainable use of pesticides over multiple years. A suit of indicators is available for several environmental compartments and human groups. Input data is stored in four databases; 1) Usage; 2) Compound data, and 3) Geographical data need to be provided by the user; 4) Crop calendars and other input data in a database provided with the software package. The user selects the combinations of regions, crops, compounds adn risk indicators to be processed. The regionalisation may be adapted to the pesticde usage data available	Exposure is calculated for regional average applications, using compound properties, map information, crop (calendar) data and other input parameters. The exposure is related to a toxicity value. For each regional application, the risk indicators are calculated at locations (gridcells) contributing to the area of the crop treated. In addition, for each regional application, the area weighted average exposure toxicity ratio is calculated.	Available at the website
CEP	The PRI provides the pattern of the risk taken by consumers of fresh fruits and vegetables in a given place (Belgium) for a given period (yearly). The pattern of risks is obtained by combining the output of the annual monitoring of pesticides residues in food with the average diet of the population. The annual monitoring of pesticides residues in food is realised by the authorities. The average diet of the population comes from an inquiry.	Calculation is done on a selection of the most frequent found residues. The distribution of the residues detected in foodstuff and the distribution of the observed diets are combined in a determinist approach (based on the average values) and a probabilistic approach (based on multiple combination of individual data according to the Monte-Carlo simulation).	"Claeys, W.L., et al., Exposure assessment of the Belgian population to pesticide residues through fruit and vegetable consumption. Food Additives & Contaminants: Part A, 2008. 25(7): p. 851-863. URL: http://www.tandfonline.com/doi/abs/10.1080 /02652030701854741. Claeys, W.L., et al., Exposure of several Belgian consumer groups to pesticide residues through fresh fruit and vegetable consumption. Food Control, 2011. 22(3–4): p. 508-516. URL: http://www.sciencedirect.com/science /article/pii/S0956713510003294."

15. The tab '*aims*' summarizes information on the aims of the entered PRIs (Q3). The results of the query are listed in Table 3 and Figure 4. All entered indicators, except the BMA, have the aim to evaluate the impact of policies. Ten of the thirteen indicators have the aim to evaluate the impact of the pesticide use. Nine PRIs aim for informing the public and five PRIs for informing pesticide users. Only one PRI is suitable to inform the risk managers (BMA).

Figure 4: Summary chart of aims of PRIs (Q3)

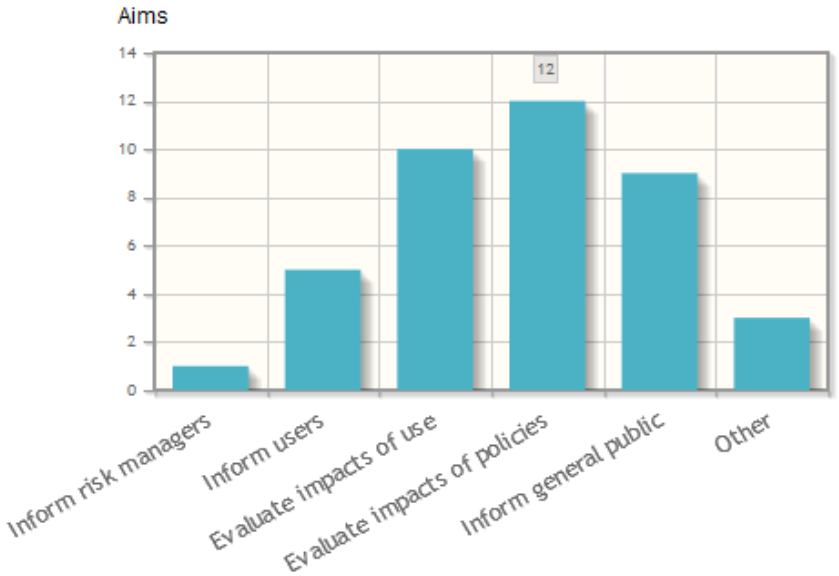


Table 3: Aims of PRIs (Q3)

Acronym	inform risk managers	inform pesticide users	evaluate impacts of pesticide use	evaluate impacts of policies	inform general public	other	other specification
UK-PRI			✓	✓	✓		
PRI-Nation			✓	✓	✓		
SYNOPS-TREND			✓	✓	✓		
PRI-FI		✓	✓	✓	✓		
BMA	✓	✓			✓		
NMI 3			✓	✓	✓		
EYP		✓	✓	✓			Tool for sustainable certification systems
ipmPRiME		✓	✓	✓		✓	Pesticide component of food certification or labeling systems
SYNOPS-GIS		✓	✓	✓	✓		
EPRIF			✓	✓		✓	assessment of the quality of the laboratory control
CH-Use				✓	✓	✓	Better understanding of the PPP use as a basis for designing risk reduction measures.
HAIR2014			✓	✓			
CEP				✓	✓		

16. Information concerning the protection goal (pg) of the PRIs is summarized in the Tables 4 and 5 and Figures 5 and 6 which can be viewed by clicking the tab '*environmental pg*' (Q5) or '*human pg*' (Q6). Seven PRIs cover the compartment groundwater from which six assess the risk of leaching into groundwater and one considers other exposure pathways. Ten PRIs cover the risk for aquatic organisms in surface water from which six address the risk for fish, algae and aquatic invertebrates and eight consider other aquatic organisms. In total eight PRIs assess the risk for at least one terrestrial organism. For the terrestrial organisms six PRIs cover soil organisms and bees, four PRIs consider the risk for birds and only two the risk for mammals. None of the PRIs considers the risk for non-target-plants.

17. Overall the human risk (human protection goal) is addressed by eight PRIs, where five consider the risk for consumers, three the risk for bystanders and five address the occupational risk. The risk for consumers is divided into different consumer groups. Three PRIs cover the risk for children further three PRIs for adults and only two PRIs for other consumer groups.

Figure 5: Summary chart of environmental protection goals (Q5) – Types of risks considered

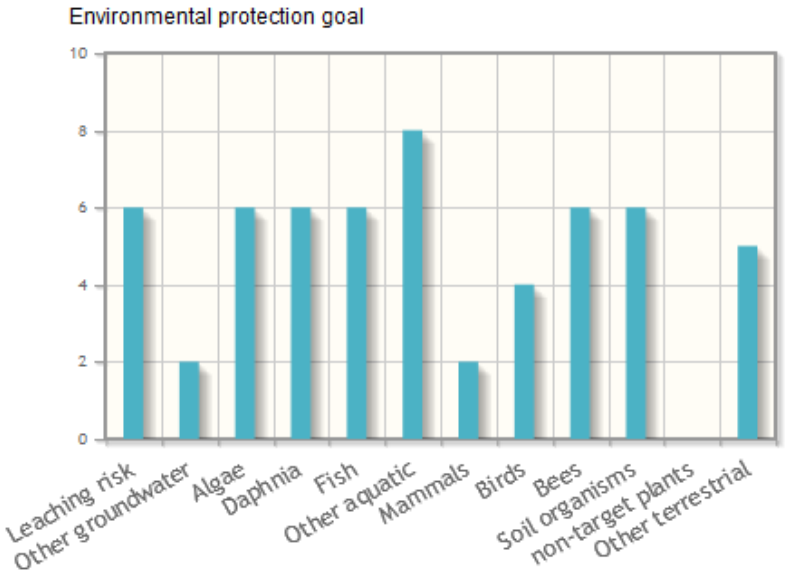


Table 4: Environmental protection goals (Q5) – Types of risks considered

	Groundwater		Surface water				Terrestrial environment					
Acronym	Leaching risk	Other groundwater	Algae	Daphnia	Fish	Other aquatic	Mammals	Birds	Bees	Soil-organisms	(non target) Plants	other terrestrial
UK-PRI		✓				✓						✓
PRI-Nation	✓	✓				✓		✓	✓			✓
SYNOPS-TREND			✓	✓	✓	✓			✓	✓		✓
PRI-FI	✓		✓	✓	✓	✓						
BMA						✓						
NMI 3	✓					✓		✓		✓		
EYP	✓		✓	✓	✓				✓	✓		
ipmPRiME			✓	✓	✓	✓	✓	✓	✓	✓		✓
SYNOPS-GIS	✓		✓	✓	✓	✓			✓	✓		✓
EPRIF												
CH-Use												
HAIR2014	✓		✓	✓	✓		✓	✓	✓	✓		
CEP												

Figure 6: Summary chart of human protection goals (Q6) – Types of risks considered

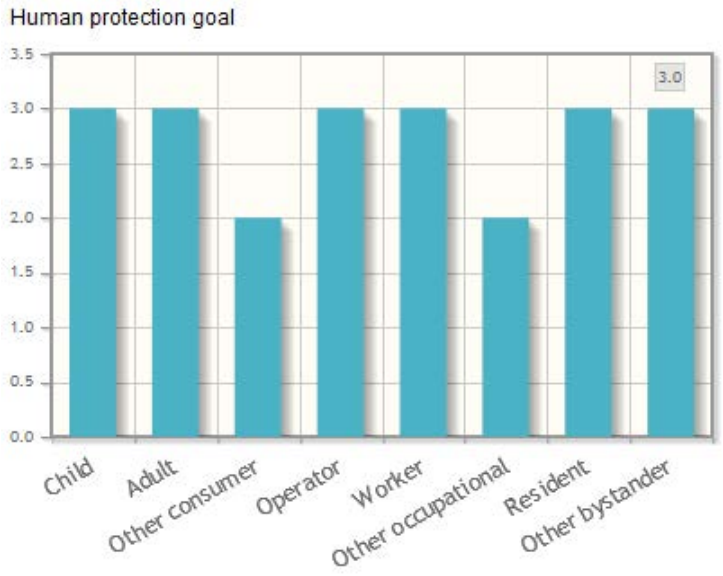


Table 5: Human protection goals (Q6) – Types of risks considered

	Consumer				Occupational				Bystander		
Acronym	Child	Adult	other consumer	specification	Operator	Worker	other	specification	Resident	Other bystander	specification
UK-PRI			✓	All consumer groups cover through summary of national food residue monitoring programme.			✓	Incidents investigated by Pesticide Incident Appraisal Panel.	✓	✓	Incidents investigated by Pesticide Incident Appraisal Panel.
PRI-Nation					✓						
SYNOPS-TREND											
PRI-FI											
BMA	✓	✓	✓	All: Standards include human safety via drinkwater water quality and food							
NMI 3											
EYP					✓	✓					
ipmPRiME	✓					✓	✓	Dermal index	✓	✓	Inhalation index
SYNOPS-GIS											
EPRIF	✓	✓									
CH-Use											
HAIR2014					✓	✓			✓	✓	1) Bystander; 2) Child bystander
CEP		✓									

18. The tab 'scale' summarizes information on the temporal and spatial scales of the PRIs (Q7c and Q7d). The majority of the PRIs express the risk on an annual basis (eleven PRIs). Only three PRIs are able to address the risk on monthly and growing season time scales (EYP, BMA and SYNOPS-GIS). The indicator ipmPRiME uses flexible time sales and gives the user the option to determine the timescale.

19. Concerning the spatial scale, most PRIs (twelve) address the risk on a national level. Five PRIs are able to express the risk on a more detailed regional scale (UK-PRI, HAIR2014, EYP, BMS and SYNOPS-GIS).

Table 6: spatial and temporal scales of PRIs (Q7c and Q7d)

	Temporal								Spatial					
Acronym	day	week	month	growing season	year	multi annual	other	specification	field	farm	region	country	other	specification
UK-PRI							✓	This will vary depending on the indicator selected. The majority cover more than one year.			✓	✓	✓	This will vary depending on the indicator selected. The majority are regional (i.e. England/Scotland /Wales/Northern Ireland) or national.
PRI-Nation					✓							✓		
SYNOPS-TREND					✓	✓						✓		
PRI-FI					✓							✓		
BMA			✓		✓	✓					✓	✓		
NMI 3					✓	✓						✓	✓	Spatially distributed output based on national average usage data
EYP				✓	✓	✓			✓	✓	✓	✓		
ipmPRiME							✓	Per-application or per-field for flexible time period determined by user	✓					
SYNOPS-GIS			✓	✓	✓					✓	✓	✓		
EPRIF					✓							✓		
CH-Use					✓							✓		per crop group
HAIR2014					✓						✓	✓	✓	Supranational scale: Countries of the European continent
CEP					✓							✓		

20. The tab '*type of compound*' summarizes information on the type of compounds considered by the PRIs (Q7a). Seven PRIs calculate the risk for active ingredients excluding the metabolites whereas six PRIs include the metabolites in the assessment. Information on products is included only in six PRIs where only one indicator assesses the risk of products including the metabolites and five do not include the metabolites. For the UK suite of indicators (UK-PRI) the information on the type of compound is not relevant.

Table 7: Type of chemical compounds considered in the PRI (Q7a)

	Type of compound					
Acronym	Active ingredient ex. metabolite(s)	Active ingredient inc. metabolite(s)	Product formulation without metabolite(s)	Product formulation with metabolite(s)	other	Specification
UK-PRI					✓	This is not relevant for the UK suite of indicators. Though statistics on pesticide usage (total weight of active substances applied to certain crops) is reported. As are finding of active substances in waterbodies.
PRI-Nation		✓	✓			
SYNOPS-TREND	✓		✓			
PRI-FI	✓					
BMA		✓			✓	Active ingredients and metabolites are not summed up
NMI 3	✓	✓				
EYP		✓		✓		
ipmPRiME	✓		✓			
SYNOPS-GIS	✓		✓			
EPRIF		✓				
CH-Use	✓		✓			
HAIR2014	✓					
CEP		✓				

Table 8: Aggregation of compounds in PRIs (Q7b)

	Aggregation of compound		
Acronym	Based on a single compound	Based on multiple compounds	Variable
UK-PRI			✓
PRI-Nation	✓		
SYNOPS-TREND	✓		
PRI-FI		✓	
BMA	✓	✓	
NMI 3			✓
EYP		✓	✓
ipmPRiME			✓
SYNOPS-GIS	✓	✓	✓
EPRIF		✓	
CH-Use		✓	✓
HAIR2014			✓
CEP	✓		

21. The tab '*compound aggregation*' summarizes information on the level of aggregation of the assessed compounds (Q7b). Three PRIs do not aggregate on compound level and express the risk indices for single compounds (PRI-Nation, SYNOPS-TREND and CEP). All other PRIs (ten) express the risk indices based on multiple compounds from which seven PRIs are variable on this aspect. For these seven PRIs the user has the option to decide on the level of aggregation.

22. Under the tab '*type*' a set of information is summarized which describes the type of the PRI (indicating if the PRI is based on surveys, monitoring data or models calculations, Q8), the type of indicator categorized according to the DPSIR-scheme of the EEA (http://www.eea.europa.eu) and if the compliance of pesticide use is assessed. In addition some general characteristics of the indicator like the perspective of the PRIs (Q11a) are included.

23. Concerning the categorization according to the DPSIR scheme the majority of the PRIs (ten) are impact indicators. Seven PRIs are considered as state indicator, three as driving force indicators, four as pressure indicators and two PRIs assess the compliance. Seven of the thirteen entered PRIs are based on models which calculate risk indices, five of the indicators are based on monitoring data and two are based on surveys. Concerning the perspective all thirteen PRIs are able to do retrospective assessments, whereas only three PRIs are suitable for prospective assessments (UK-PRI, EYP and ipmPRiME).

Table 9: Type of PRI (Q8), type of indicator (Q9d) and time perspective (Q11a)

	PRI based on			type of indicator					perspective	
Acronym	modelling	monitoring	survey	Driving force	Pressure	State	Impact	Compliance	retro	pro
UK-PRI		✓	✓	✓	✓	✓	✓	✓	✓	✓
PRI-Nation	✓	✓		✓		✓	✓		✓	
SYNOPS-TREND	✓						✓		✓	
PRI-FI					✓		✓		✓	
BMA		✓				✓			✓	
NMI 3	✓				✓	✓	✓		✓	
EYP	✓						✓		✓	✓
ipmPRiME	✓	✓	✓				✓	✓	✓	✓
SYNOPS-GIS	✓						✓		✓	
EPRIF		✓				✓			✓	
CH-Use			✓	✓					✓	
HAIR2014	✓				✓	✓	✓		✓	
CEP		✓				✓	✓		✓	

24. The tab '*user groups*' lists information on the user groups of the PRIs (Q12). The group of users who are supposed to prepare the input or operate the PRI (Q12a) is diverse, but for the majority of the PRIs this is done by researchers (eight PRIs) or risk managers (seven PRIs). For the UK-PRI and the BMA none of the listed groups is relevant to prepare the input or operate the indicator. Specifications for other users were not given. One indicator can be operated by pesticide users and two by farmer advisors and

consultants. Five PRIs are supposed to be operated by risk managers and policy makers and only one by risk assessors.

25. The results of all thirteen PRIs are supposed to be used by risk managers and policy makers and results of twelve PRIs are used by researchers (Q12b). The general public is served by nine PRIs. Pesticide users can use the results of six PRIs. Also farmers, advisors and consultants can use the results of six PRIs. Five PRIs are meant to be used by risk assessors.

Table 10: Intended user groups of PRIs (Q12a and b)

	Who are supposed to prepare the input, operate the tool and generate the results?							Who are supposed to use the results?							
Acronym	Pesticide users	Farmer advisors / consultants	Risk assessors	Risk managers / policy makers / decision makers	Researchers	Other	Specification	Pesticide users	Farmer advisors / consultants	Risk assessors	Risk managers / policy makers / decision makers	Researchers	General public	Other	Specification
UK-PRI						✓		✓	✓		✓	✓	✓		
PRI-Nation				✓							✓		✓		
SYNOPS-TREND					✓						✓	✓	✓		
PRI-FI				✓				✓	✓	✓	✓	✓	✓		
BMA						✓		✓	✓	✓	✓	✓	✓		
NMI 3				✓	✓						✓	✓			
EYP	✓	✓			✓			✓	✓	✓	✓	✓			
ipmPRiME	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓		
SYNOPS-GIS		✓		✓	✓			✓	✓		✓	✓	✓		
EPRIF					✓						✓	✓			
CH-Use			✓		✓					✓	✓	✓	✓		
HAIR2014				✓	✓						✓	✓			
CEP			✓	✓							✓	✓	✓		

26. The tab '*input data*' summarizes information on the kind of input data which is necessary to run the PRIs (Q13) and the tab '*input description*' gives some further specifications on the input of the PRIs (see Table 12). Concerning the two fields '*number of variables*' and '*number of entries per parameter*' it was agreed by the EGPRI that in future categories will be entered instead of exact numbers.

Table 11: Input data provided by the PRI (Q13a) and kind of input data needed (Q13b

	Kind of input data already included			Kind of input data to be provided by the user				
Acronym	Risk assessment data	Geospatial data	other	risk assessment data	measured monitoring data	policy survey data	geospatial data	other
UK-PRI		✓	✓		✓	✓	✓	
PRI-Nation	✓			✓	✓	✓		✓
SYNOPS-TREND	✓					✓		✓
PRI-FI			✓					✓
BMA	✓	✓	✓					✓
NMI 3	✓	✓	✓	✓		✓	✓	✓
EYP	✓		✓					✓
ipmPRiME	✓	✓					✓	✓
SYNOPS-GIS	✓	✓				✓		✓
EPRIF			✓		✓	✓		
CH-Use			✓			✓		
HAIR2014		✓	✓	✓		✓		✓
CEP	✓		✓	✓	✓			

Table 12: Additional description of input data linked to entry of others in Table 11: included data (Q13a), additionally needed data (Q13b) and amount of data required (Q13c)

	Kind of input data already included	Kind of input data to be provided by the user	Amount of input data		
Acronym	specification	specification	number of variables	number of entries per variable	description
UK-PRI			0	0	More than 40 data sets are presented and commented upon, including a number of case studies.
PRI-Nation		http://www.kemi.se/en/Content/Pesticides/Plant-Protection-Products/Plant-protection-products-in-Sweden/Risk-indicators-for-plant-protection-products/	0	0	
SYNOPS-TREND		a)environmental realistic worst case scenario need to be defined. b) usage data on national level of salse data. Before assessments with SYNOPS-WEB the national PPP sales are distributed to the different uses according to a comprehensive assessment procedure developed by Rossberg and Gutsche (1999). Gutsche, V. und Rossberg, D. (1999), A proposal for estimating the quantity of pesticide active ingredients applied by crop based on national sales data. Report of the OECD Project in Pesticide Aquatic Risk Indicators – Report of Phase 1, Annex 1, OECD, Paris, 1999, 44-49.	20	500	a) environmental realistic worst case scenario are defined by about 50 parameters to describe soil, field, surface water and climate conditions. b) 4 parameters (crop, a.i., application rate, date) are needed to describe one use. About 900 uses per year on national level in Germany.
PRI-FI		The indicator is annually updated with the sales data of active substances and with the property data of the new active substances included in the indicator.	0	0	The sales data on about 130 active substances per year are entered in the indicator. On average 5 new active substances with their properties (AquaTox, BioDeg, BioAcc and Leaching) are included in the indicator per year.
BMA		None	0	0	None
NMI 3		Note: The user is the developer of the PRI. The output is handed over to the users mentioned at Q12b.	100	0	Different types of input. The number of entries per variable depends on the spatial resolution of map data.
EYP		-drift percentage -pesticide use	2	0	

ipmPRiME		Crop type, products, rates of application and field location are the main inputs. For some indices, data on crop phenology (e.g. flowering status) or distance to nearest water.	5	0	Do not understand question about number of entries. Depends entirely on number of applications.
SYNOPS-GIS			100	100000	1) detailed regionalized usage data including information on mitgation mearures are needed in form of application calendars on field level (about 10 parameters per application) 2) environmental data on field level or grid level (soil, climate, connectivity to SW, field data) from extended GIS databases. For Germany the GIS data is linked to the indicator-tool (about 1.5 mio fields). For other countries these data sets have to be provided.
EPRIF			0	0	collection of data on the aggregated results of monitoring studies of individual labs, data on lab's testing programme and national a.i. sales data
CH-Use			5	1000	Amount of pesticide applied, date of application, product name, crop type, field size
HAIR2014		Compound data. Geospatial data are provided with the software package. The user may also prepare a geographical database with another map resolution or with a specific regionalization corresponding with the usage data available.	0	0	Regional applications are defined by 12 input parameters and (optional) mitigation factors. Compounds are defined by 27 input parameters. The number of parameters required varies with the risk indicator. A routine for replacing missing values is part of the software. Map data and other input parameters are provided in separate databases.
CEP			3	50	Still to be developped. The numbers here are not representative.

27. The tab '*validation and user friendliness*' summarizes information on validation (Q14) and user friendliness (Q15) of the surveyed PRIs.

Table 13: Validation (Q14) and user friendliness (Q15) of the PRIs

	Validation and verification status						User-friendliness		
	Has the validation / verification status of the PRI been investigated		What type of verification applies to the ristk indicator?						
Acronym		Description	Benchmark	Measurements	not applicable	remark	Graphical user inferface	User documentation	Help function
UK-PRI	NOT_APPLICABLE	Will vary depending on the data collected			✓	We are not sure what this means	NOT_APPLICABLE	NOT_APPLICABLE	NOT_APPLICABLE
PRI-Nation	NO				✓		NO	YES	YES
SYNOPS-TREND	YES			✓		Comparison of the predicted environmental concentration with monitoring data in a small catchment.	NO	YES	NO
PRI-FI	NOT_APPLICABLE				✓		NOT_APPLICABLE	NOT_APPLICABLE	NOT_APPLICABLE
BMA	NOT_APPLICABLE				✓		YES	YES	YES
NMI 3	YES	Partial validation. The groundwater indicator is a regression equation based on a validated model. Other components have no status investigated.	✓				YES	YES	NO
EYP	YES		✓	✓			YES	YES	YES
ipmPRiME	YES			✓		Where possible, indicator has been calibrated to field impacts	YES	YES	YES
SYNOPS-GIS	YES			✓		Comparison of the predicted environmental concentration with monitoring data in a small catchment	NO	YES	NO
EPRIF	NOT_APPLICABLE				✓		NOT_APPLICABLE	NOT_APPLICABLE	NOT_APPLICABLE
CH-Use	NO				✓		NO	NO	NO
HAIR2014	YES		✓				YES	YES	NO
CEP	NOT_APPLICABLE				✓	The same methodology is used by EFSA at the EU level.	NOT_APPLICABLE	NO	NO

28. The tab '*Transparency robustness and status*' summarizes information on transparency (Q16), robustness (Q17) and status (Q18) of the surveyed PRIs.

Table 14: Transparency (Q16), robustness (Q17) and status (Q18) of the PRI

	Transparency				Robustness (Does the PRI include features to handle errors)	Status
Acronym	Description of concepts available	Flow charts available	Information on the sensitivity available	Information on the uncertainity available		
UK-PRI	YES	NOT_APPLICABLE	NO	NO	YES	Tracey Ware; Grant Stark; Pesticides Forum; no additional comments
PRI-Nation	YES	NO	NO	NO	YES	
SYNOPS-TREND	YES	YES	NO	NO	YES	SYNOPS-WEB is used in the German National Action Plan (NAP) as an indicator to describe the risk trend on national level for three active ingredient groups (herbicides, insecticides, fungicides). Linked to this indicator is a reduction target of 30% in relation to the base value (average 1996-20056) until 2023 for both the aquatic and terrestrial risk.
PRI-FI	NOT_APPLICABLE	NOT_APPLICABLE	NOT_APPLICABLE	NOT_APPLICABLE	NOT_APPLICABLE	
BMA	YES	YES	NOT_APPLICABLE	NOT_APPLICABLE	YES	Status of the PRI: All BMA-projects are supervised by an expert committee.Two projects have compared modelling results with the monitoring data.
NMI 3	YES	NO	YES	NO	YES	Roel Kruijne, Alterra Wageningen UR. On behalf of the OECD EGPRI. The NMI 3 was used for evaluating the sustainable crop protection policy of the Dutch government of the policy period 1998-2010. For the evaluation of the next policy period, a version of HAIR will be used which replaces the NMI 3.

EYP	YES	NOT_APPLICABLE	YES	YES	YES	The indicator was subject of the European study CAPER. In this study a number of european PRI's were compared and peer reviewed.
ipmPRiME	YES	NO	NO	NO	NO	Since last survey, ipmPRiME has divided into ipmPRiME.com and ipmPRiME.org. The .com is being pursued by the Integrated Pest Management Institute for mostly commercial (e.g. food wholesalers, industry) purposes. The .org is being pursued mostly for extension and academic work by Oregon State University.
SYNOPS-GIS	YES	YES	NO	NO	YES	SYNOPS-GIS is used on regional level to identify hot-spots and to conduct detailed regional risk assessments.
EPRIF	YES	YES	NO	NO	NOT_APPLICABLE	
CH-Use	YES	NO	NO	NO	YES	Laura de Baan
HAIR2014	YES	YES	YES	NO	YES	Roel Kruijne, 04-11-2014. HAIR2014 is a new version with improved software. The methodology of the risk indicators in the 2010 version of HAIR is not modified.
CEP	YES	NOT_APPLICABLE	NO	NO	NOT_APPLICABLE	This PRI is in development to support the NAP.

ANNEX

PESTICIDE RISK INDICATOR REPORTING FORM (PAPER VERSION)

(*) denotes additional guidance / information is provided at the end of the form.

Nr.	Question, comment, output table, etc.			
1	**Name and acronym of the Pesticide Risk Indicator (PRI)** (Table: Contact)			
	The full name of the PRI:			*(text field)*
	The acronym of the PRI (if relevant):			*(text field)*
	Version number (if relevant):			*(text field)*
	Release date (if relevant):			*(text field)*
	Period *(e.g. year)* that is covered (if relevant):			*(text field)*
2	**Contact information (*)** (Table: Contact)			
	Institution responsible for development of the PRI:			*(text field)*
	Country:			*(text field)*
	Contact person: *(e.g. for user support)*			*(text field)*
	Internet address:			*(text field)*
	e-mail address			*(text field)*
3	**Aim of the PRI** (Table: Aims) ***(more than one option possible)***			
	□	Inform risk managers about potential risks before authorisation		
	□	Inform users of pesticides so that they can make a choice		
	□	Evaluate impacts of use		
	□	Evaluate impacts of policies		
	□	Inform general public		
	□	Other	Please specify:	*(text field)*

4	**Protection goal specifications (*)** ***(both may apply)***				
	☐	Environmental			
	☐	Human (if only human: Go to 6)			
5	**Environmental protection goal** (Table: Environmental_PG) ***(more than one option possible)*** ***Either one or two levels of detail may apply:*** *1.* ***General: Environmental compartment (e.g. aquatic)*** *2.* ***Specific: Taxon (group) / Process***				
	☐	Aquatic			
		☐	Algae		
		☐	Daphnia		
		☐	Fish		
		☐	Other	Please specify	*(text field)*
	☐	Groundwater			
		☐	Leaching risk		
		☐	Other	Please specify	*(text field)*
	☐	Terrestrial			
		☐	Soil organisms		
		☐	Birds		
		☐	Mammals		
		☐	Non-target plants		
		☐	Bees		
		☐	Other	Please specify	*(text field)*
	☐	Other compartment		Please specify:	*(text field)*
6	**Human protection goal** (Table: Human_PG) ***Please choose the human group(s)***				
	☐	Consumer			
			Please specify	*(text field)* *(e.g. adult, child, other consumers)*	
	☐	Occupational (operator)			
			Please specify	*(text field)*	
	☐	Occupational (worker)			
			Please specify	*(text field)*	
	☐	Bystander/resident			

			Please specify	*(text field)*
	☐	Other human group		
			Please specify	*(text field)*
7	**Level of aggregation (*)** (Tables: Scale and Type of compound)			
a	Specify the type of compound covered by the PRI *(more than one option possible)*			
	☐	Active ingredient (AI) excluding metabolite(s)		
	☐	AI including metabolite(s)		
	☐	Product formulation, AI without metabolite(s)		
	☐	Product formulation, AI with metabolite(s)		
	☐	Other	Please specify:	*(text field)*
b	Specify the aggregation of compounds in the output *(more than one option possible)*			
	☐	Based on a single compound		
	☐	Based on multiple compounds *(e.g. according to product formulation or crop protection scenario)*		
	☐	Variable, i.e. selection to be made by the user		
c	Specify the temporal scale of output *(more than one option possible)*			
	☐	Daily		
	☐	Weekly		
	☐	Monthly		
	☐	Growing season		
	☐	Annual		
	☐	Multi-annual		
	☐	Other	Please specify:	*(text field)*
d	Specify the geographical scale of output *(more than one option possible)*			
	☐	Field scale		
	☐	Farm scale		
	☐	Regional scale *(e.g. catchment, administrative unit)*		
	☐	National scale		
	☐	Other	Please specify:	*(text field)*

8	**Type of PRI (*)** (Table: TYPE)			
	☐	Based on modelling (i.e. Type I) *(e.g. a software tool like Synops, HAIR)*		
	☐	Based on monitoring data (i.e. Type II) *(e.g. 'Number of MRL exceedances', 'Percentage of groundwater samples with PPP concentration > 0.1 µg/L', ...)*		
	☐	Based on surveys (i.e. 'Impact' or 'behavioural' Type III) *(e.g. 'number of farmers receiving high level training', 'use of drift reducing equipment')*		
	☐	Other	Please specify:	*(text field)*
9	**Definition of the PRI** (Table: Definition) ***Either give a brief description, choose the category, or both***			
a	Description:	*(text field)* *(e.g. The PRI calculates the risk potential for aquatic organisms. It combines use data of pesticides with their application conditions and their inherent properties. The exposure of organisms is calculated by more or less sophisticated sub-models for the exposure pathways drift, runoff, erosion and drainage)*		
b	(Calculation) principle:	*(text field)* *(E.g. survey, calculation of 'Exposure Toxicity Ratio', 'scoring system' or 'area a certain state'*		
c	Units of measurement:	*(text field)* *(% of total, Mass, Length, and/or Time)*		
d	Categorisation (Table: TYPE)			
	☐	**D** riving force indicator		
	☐	**P** ressure indicator		
	☐	**S** tate indicator		
	☐	**I** mpact indicator		
	☐	**R** esponse indicator		
	☐	**C** ompliance		
	☐	**O** ther	Please specify:	*(text field)*
10	Further information / description (PRI_Information Table)			
	Location on the internet / website:		*(text field)*	
	Reference to public literature *(if not given at the website):*		*(text field)*	
11	**General Characteristics of the PRI (*)** (Table: TYPE)			
a	Perspective *(both may apply)*			
	☐	Retrospective		

	☐	Prospective		
b	Risk characterisation *(both may apply)*			
	☐	Direct measure of risk *(e.g. MRL-exceedance)*		
	☐	Indirect measure of risk (*e.g. 'level of "safety" of the consumed food', 'number of farmers receiving high level training', 'use of drift reducing equipment'*)		
c	Can the time trend be calculated based on the PRI outcomes?			
	☐	Yes		
	☐	No		
12	**User groups** (Table: User groups)			
a	Who are supposed to prepare the input, operate the tool and generate the results? *(more than one option possible)*			
	☐	Pesticide users (farmers et cetera)		
	☐	Farmer advisors / consultants		
	☐	Risk assessors		
	☐	Risk managers / policy makers / decision makers		
	☐	Researchers		
	☐	Other	Please specify:	*(text field)*
b	Who are supposed to use the results? *(more than one option possible)*			
	☐	Pesticide users (farmers et cetera)		
	☐	Farmer advisors / consultants		
	☐	Risk managers / policy makers / decision makers		
	☐	Researchers		
	☐	General public		
	☐	Other	Please specify:	*(text field)*
13	**Input data (*)** (Table: INPUT_DATA) ***(both data built into the indicator and data to be provided by the user)***			
a	Kind of input data already included *(more than one option possible)*			
	☐	Risk assessment data *(e.g. fate, toxicity, PEC from registration dossier)*		
	☐	Geospatial data *(e.g. land use, climate, soil)*		

	☐	Other	Please specify:	*(text field)*
b	Kind of input data to be provided by the user *(more than one option possible)*			
	☐	Risk assessment data *(e.g. fate, toxicity, PEC from registration dossier)*		
	☐	Measured monitoring data *(e.g. residue data)*		
	☐	Policy survey data *(e.g. usage, sales volume, number of authorised products, number of trainings)*		
	☐	Geospatial data *(e.g. land use, climate, soil)*		
	☐	Other	Please specify:	*(text field)*
c	Amount of input data *(quantify and/or describe the amount of input data required)*			
	☐	(average) number of variables		*(number field)*
	☐	(average) number of entries per variable		*(number field)*
	☐	Description:	*(text field)*	
14	**Validation and verification status** (Table: Validation + User friendliness)			
a	Has the validation / verification status of the PRI been investigated? *(if applicable)*			
	☐	Yes		
	☐	No		
	☐	Description:	*(text field)*	
	☐	Not applicable		
b	What type of verification applies to the risk indicator? (*) *(If applicable; more than one option possible)*			
	☐	Benchmark		
	☐	Measurements		
	☐	Not applicable		
		Remark:	*(text field)*	
15	**User-friendliness *(PRI Type I)*** (Table: Validation + User friendliness)			
a	Graphical User Interface available?			
	☐	Yes		
	☐	No		
	☐	Not applicable		

b	User documentation available?	
	□	Yes
	□	No
	□	Not applicable
c	Help function available?	
	□	Yes
	□	No
	□	Not applicable
16	**Transparency** (Table: Transparency +robustness +status) ***Easiness to understand the way <u>the input is processed</u> and may contribute to the overall results***	
a	Description of concepts available?	
	□	Yes
	□	No
	□	Not applicable
b	Flow charts available?	
	□	Yes
	□	No
	□	Not applicable
c	Information on the sensitivity of the results to the input data available?	
	□	Yes
	□	No
	□	Not applicable
d	Information on the uncertainty of the results with respect to the input data available?	
	□	Yes
	□	No
	□	Not applicable

17	**Robustness of the PRI** (Table: Transparency +robustness +status) ***Does the PRI include features to handle errors and/or replace missing values in the underlying data:***	
	☐	Yes
	☐	No
	☐	Not applicable
18	**Status of this PRIER** (Table: Transparency +robustness +status) ***Who performed the evaluation; peer-review; context for the evaluation; additional remarks by evaluator on the template, on the evaluation, or on the indicator itself.***	
	(text field)	

ADDITIONAL GUIDANCE AND INFORMATION

General

In the context of this report, an indicator is a tool ((set of) model, database, system, …, or combination of those) that is used to provide information with respect to risks posed by pesticides.

The questionnaire is meant to gather information on pesticide risk indicators, not on policies or policy (evaluation) results.

The questionnaire is limited to pesticide risk indicators, but without further restrictions. That means that any indicator containing information on risks of pesticides, either direct or indirect, may be included.

In the context of this report only pesticide uses are considered that are for the purpose of plant protection in agriculture and related areas (including amenity use, home gardening use, residential areas, forestry).

Q2

This question asks for the institute(s) that were actually building / constructing the indicator, not the institution asking for / commissioning the indicator.

Q4

The indicator may be relevant for protection goals with respects to humans, environment or both. For example, type III indicators (see Q8 below) an indicator concerning adherence to a specific protocol may be relevant for both human and environmental protection goals, considering that better adherence goes along with lower risks.

Q7

a. The PRI may cover the product(s) that is / are on the market (the formulated product) and / or the active substances contained in the product. Some of the indicators take risks posed by metabolites from active substances into account. If metabolites are taken into account, check the appropriate lines.

b. The PRI may address one specific substance (with or without metabolites) as specified in the previous question, a clustered group of substances (formulation or substances with similar mode of action) or a variable number. Check the latter one if the user has to make the selection.

c. The output of the indicator may have a time aspect. For example, several years may be given in a trend line. The underlying information / calculations not necessarily have a time aspect. Check all appropriate boxes if the user may choose the temporal output scale.

d. Check all appropriate boxes if the user may choose the geographical output scale.

Q8

Several types of indicators are possible, all of them may be helpful in better addressing the risk and/or identifying potential measures to reduce the risks. Type I indicators give information on amounts used (when not directly resulting from surveys or registration), exposure and calculated risks for example based on exposure to toxicity ratios. Type II indicators give direct information on specific protections goals based on chemical or physical monitoring of the 'population' for which the protection goal is defined. Examples of populations are: consumers, workers, food commodities, ditches and bee-hives. Type III indicators may contain any information based on surveillance of aspects related to pesticide risks, for example % of equipment fulfilling the minimum requirements, % of farmers maintaining buffer strips, % of farmers holding specific certificates, inspectorate registration of abuses, registration of pesticide incidents. Type III indicators often give indirect information on risks, based on assumed or reasoned relation(s) between the aspect and the risk.

Q9

Several schemes of categorisation of indicators have been developed in the past. Information on the categorisation according to the DPSIR-scheme of the EEA is available at: http://www.eea.europa.eu. Information on the categorisation according to the PSR-scheme of the OECD is available at: http://www.oecd.org/environment/indicators-modelling-outlooks/24993546.pdf

Q11

This question asks whether the indicator addresses / measures the risk directly, for example: relates concentrations to acceptable values, or indirectly, for example: number of people (% of total) that took a course or percentage adherence to a regulation. Indirect aspects are believed to be beneficial (i.e. leading to lower impact on mankind and / or the environment) but not expressed in terms of risk.

Q13

This question is included to gain information on the amount of data that need to be gathered and implemented in order to run the indicator. Input data already included and input data to be provided by the user are addressed in separate questions. If the gathered information is used 'as is', so not used in a tool as input, combined with other information, etc., this question is not relevant and may be skipped.

Risk assessment data usually are data that can be derived from authorisation dossiers.

Q14b

For Type I only (i.e. PRI based on modelling): Has the PRI been tested / how do the outcomes correspond with reality?

- Investigated by comparing the PRI with a benchmark (a more sophisticated model which generates similar output).
- Investigated by comparing the PRI with measured data (e.g. surface water quality data).
- Not investigated.
- Not applicable (i.e. PRI Type II or III).

This may vary for different aspects / modules of the indicator, which can be indicated under ‘remark’.