SACURIMA CA16123 Safety culture and risk management in agriculture

WG4 Report (first year)

Aim: To analyase strenghts and weaknesses of existing data collection mechanisms and propose improvements on the national and European levels of effective surveillance of health, safety and risk management indicators in the agriculture sector.

Monitoring occupational or work related diseases

Most EU countries register occupational diseases in a national registry, while some have additional schemes for the surveillance of occupational diseases. National registries are usually set up within the context of a financial compensation system for occupational diseases and are a part of the country's social security system. At the same time, such systems are intended to provide policy information for the prevention of occupational diseases. National registries are only one source, but mostly an authoritative one, of policy information. Various authors have recommended the use of a combination of monitoring systems and other data sources in order to assess working conditions, health effects and trends on a macro level as a more complete information input for preventive policy.

By the Law (OSHA, 2017) the ODs and WRDs have diagnosed by occupational health physician (OHP) in course of regular health surveillance [1]. Also, a doctor (family physician or other specialised doctor) who suspects that an employee is suffering from a work-related illness shall refer the employee to an OHP.

The OHP determine the state of the employee's health and gather information concerning the employee's current and previous working conditions and the nature of his or her work. For such purpose, an occupational health doctor requires from an employer (employers) the decisions concerning previous medical examinations administered to the employee, and the results of the risk assessment of the working environment. If working includes a period prior to the entry into force of this Act, an occupational health doctor requires a letter of explanation from the employer concerning the employee's working conditions and nature of work during such period; and from an employee a statement of his or her medical records.

An OHP shall inform the employer, the local office of the Labour Inspectorate and the doctor who referred an employee to him or her of the employee's occupational disease in writing or in a format which can be reproduced in writing no later than within five days after diagnosing the disease.

In case of OD the OHP send the patient to the expertise commission in the Department of ODs and Health Surveillance, North Estonia Regional Centre. Thorough health and work anamnesis and research on documentation the OHPs expertise group confirm the OD or WRD diagnosis.

The representative of OD expertise group (usually OHP, director of the department) inform the local office of the Labour Inspectorate of an illness caused by work in writing or in a format which can be reproduced in writing no later than within five days after diagnosing the illness, submitting the following information:

1) the given name, surname and position of the employee;
2) the date of diagnosing the illness;
3) the illness and its causes;
4) the employer and the employer's address.

The Labour Inspectorate shall forward the statistical data on ODs and illnesses caused by work in the previous year to the Health Board no later than by 1 March of each year.

In Estonia quite often the employer is not agree with OD diagnose and he/she will assert the claim into court. In the court cases the OHP is defending the patient with OD diagnosis based on the prepared medicinal explanation. The longest court case has prolonged eight years.

In the English version of OSHA there has brought the ODs' and work accidents' registration procedure. In Estonian language still in force the decree on the procedure of OD diagnostics and registration.

OHSA, Chpt 5, Pg 23. … the state of the employee's health and gather information concerning the employee's current and previous working conditions and the nature of his or her work. For such purpose, an occupational health doctor requires - from an employer the decisions concerning previous medical examinations administered to the employee, and the results of the risk assessment of the working environment specified in clause 13 (1) 3) of this Act. If working includes a period prior to the entry into force of this Act, an occupational health doctor requires a letter of explanation from the employer concerning the employee's working conditions and nature of work during such period; - from an employee a statement of his or her medical records.

OHSA, chpt 5§ 24. Investigation and registration of occupational accident and occupational disease
(1) The circumstances of an occupational accident and occupational disease and reasons therefor shall be established in the course of an investigation which is carried out by the employer and in which a working environment representative or, in his or her absence, an employees' trustee shall participate with the right to vote. If the employer lacks necessary knowledge, the employer shall involve a competent expert in the investigation.
(11) If an occupational accident occurs with a sole proprietor in a situation provided for in subsection 12 (8) of this Act, all acts related to an occupational accident provided for in this Chapter shall be performed by the employer who organises the work or with whom the sole proprietor has a contractual relationship.
(2) An employer shall submit a report on the investigation results to the victim or a person representing his or her interests and the local office of the Labour Inspectorate. The report shall indicate the measures targeted to the employer to prevent a similar occupational accident or occupational disease.
(3) An employer shall register all occupational accidents, cases of occupational disease and other illnesses caused by work and make relevant information available to a working environment specialist, working environment representative, employees' trustee and the working environment council.
(31) Information concerning the state of health of an employee obtained in the course of an investigation of an occupational accident, an occupational disease and other illness caused by work is sensitive personal data which shall be processed pursuant to the procedure provided for in the Personal Data Protection Act.
(4) A labour inspector shall investigate all fatal occupational accidents and, if necessary, cases of occupational disease and other occupational accidents. The need for conduct of an investigation shall be determined by the head of the local office of the Labour Inspectorate.
(41) A labour inspector has the right to require that an employer conduct further investigation and amend an occupational accident or occupational disease report if the inspector establishes that the investigation has not been conducted or the report has not been prepared in accordance with the requirements.
(5) Information concerning investigations of occupational accidents and occupational diseases shall be retained for 55 years.
(6) The procedure for registration, reporting and investigation of an occupational accident and occupational disease shall be established by the Government of the Republic.
(9) The Labour Inspectorate shall forward information to the database established under section 81of the Labour Market Services and Benefits Act to the extent corresponding to and pursuant to the procedure established by the statutes of the database.

Reporting and registration

There are two types of systems for reporting occupational diseases: those based on claims for recognition and compensation administered by the national social security systems, and those based on an independent system. Most of the countries come under the first system, other countries come under the second, and in a number of countries, there are several registers of both types.

The system of reporting for compensation purposes is usually characterised by the limitation of cases solely to the diseases included on the national lists. This is more restrictive than a system of reporting of work-related diseases and thus does not allow the warning role that a register of occupational diseases could be expected to fulfil. On the other hand, this type of register often contains uniform data for the whole country and data that is more reliable and precise in certain respects because it reflects claims for compensation.

The reporting systems outside the insurance organisations are by nature more open to the emergence of new diseases, and therefore correspond better to risk prevention and the needs of epidemiology/research. The reporting procedure is generally based on doctors, who are legally required to report all cases of diseases, which could be related to an occupational exposure. In some cases, it is the employers who report cases of occupational diseases affecting their workers for compensation purposes.

The data and sources of national statistical centres, OHS institutions and Eurostat

The data of work accidents, WRDs anf ODs on the national level

The tools are used in your country to get a national overview of incidence and prevalence of work-related and occupational diseases and work accidents?

a) **standardised data on suspected and recognised occupational diseases**

Labour Inspectorate. Annual reports on work environment.
http://www.ti.ee/fileadmin/user_upload/failid/dokumendid/Meedia_ja_statistika/Toeoekeskkonna_uelevaated/2015/tookeskkond_2016_ENG.PDF; http://www.ti.ee/en/media-publications-statistics/statistics/work-accidents-occupational-diseases-work-related-diseases-in-the-republic-of-estonia-in-1995-2015/

Health Board. Occupational diseases and work related sickness in 2013-2016. (only in Estonian)
Kutsehaigestumine ja tööst põhjustatud haigestumine 2016. aastal (annual reviews 2007-2016)
http://www.terviseamet.ee/fileadmin/dok/Tervishoid/tootervis/KH_ja_TPH_statistika_2016.pdf
http://www.ti.ee/fileadmin/user_upload/tookeskkond_2016.pdf
http://www.terviseamet.ee/tervishoid/tootervishoid/aruanded.html

Estonian Statistics Centre. Social life − Worklife quality: Occupational health. http://pub.stat.ee/px-web.2001/I_Databas/Social_life/19Worklife_quality/08Occupational_health/08Occupational_health.asp
Social life − Work life quality: Work accidents. http://pub.stat.ee/px-web.2001/I_Databas/Social_life/19Worklife_quality/02Accidents_at_work/02Accidents_at_work.asp

The Estonian Agency of Statistics (social life, work life quality) – 2009, 2015

a. Working time
b. Employers' and employees' satisfaction
c. Gender equality
d. Work organisation
e. Occupational Health
f. Labor market gaps
g. Accidents at work

http://pub.stat.ee/px-web.2001/I_Databas/Social_life/databasetree.asp

b) Work environment statistics Could be asked bythe questionnaire

The Estonian Agency of Statistics based on work environment survey:

- **Number of enterprises (thousand, %) by type of health risk and employees contact (significant and insignificant extent) with health risks;**
- **Employees (thousands, %) by type of health risk and employees' contact with health risks during working time;**
- **Enterprises (thousands, %) by use of measures for prevention and management of risks;**
- Employees (thousands, %) by measures used for prevention and management of health risks at work;
- Enterprises (thousands, %) by group of enterprises and share of employees who have undergone health surveillance during the last 3 years;
- Employees (thousands, %) by group of employees and visits to the occupational health doctor for health surveillance when working for the enterprise;
- Enterprises by group of enterprises and occurrence of accidents at work during the last 12 months.
- Health promotion, inspection ect

c) **Work accident statistics** Could be asked bythe questionnaire

- Dynamics of work accidents (2009 and 2015) by sex, age, by size of enterprises and economic activity (primary, secondary, tertiary);
- Incidence rate of fatal accidents at work
- Accidents at work resulting in more than 3 days absence from work by sex and economy sector;
- Registered accidents at work by economic activity (EMTAK 2008) where argiculture, forestry, fishing have included.

NB! Missing or old (2001) data: lack of work accidents information by occupation groups

d) The other sources

1. Annual reports of work environment of Labor Inspectorate (http://www.ti.ee/en/media-publications-statistics/statistics/annual-reports-of-work-environment/)
2. European Working Conditions Survey
3. Eurostat metadata of occupational injuries and work related illnesses
4. OSHA year books. Facts and figures. (WA, WRD, OD) [1]
5. Statistical analysis of work accidents in Estonia 2008-2017 (Master Thesis, ergonomics).

The obstacles of data collection

Underreporting of WRDs and ODs

1. New technologies, new symptoms and diseases
   - Nanotechnologies – unknown health risks of nanoparticles;
   - Electromagnetic fields and cancer;
   - Work stress and burnout due to high psychosocial risks (high work space and mental work load);
   - New chemical risks - endocrine disrupters –anomalies of reproductive system, neonatal defects and cancers.

2. Employers have poor resources to invest into work safety and workers health control in small and medium sized enterprises.
3. Lack of national insurance system due to missed Insurance Act on Occupational Diseases and work accidents.

Data collection of health examination depends on different factors:

1. Poorly documented work place risk analysis protect to carry out evidence based WRD and OD diagnostics and plan prevention activities by OH-physicians;
2. Short time contracts with enterprises counteract systematic data collection by OH physicians – possible data missing of regular health surveillance;
3. Different data reporting systems on ODs and WRDs in EU countries;
4. Insufficient funding for expertise on OD diagnostics;
5. Lack of critical number of well-trained OH physicians and other experts;
6. Defected or not protected electronic registration systems (poorly or not linked with various registries);

Metadata in Eurostat – WA, WRD, OD

Work accidents

- Due to long expertise time spent on work accidents the national data may change during the year;
- Difference between the numbers of WA in the national registries and Eurostat

WRDs and ODs

- Poor collection of „real-time“ data – the newest data of ODs and WRDs in Eurostat 1999 and 2007. [2]
- Variability in standard language and definitions and OD and WRD coding systems in the countries;
- Missing key variables in the registries, for ex. the National Cancer Registry does not allow define cancer as OD due to missed link with occupation;
- Self reported job related health problems in general have shown in 2013 [3].

WG4 purpose

To develop means and indicators for monitoring progress and evaluating impact of interventions on injuries and illnesses in agriculture.

Indicators

Background information

1. Farms and employees numbers' dynamics in the country
2. Land square kilometers in use
3. Production parameters(corn, animals, poultry, …)

Work accidents

1. Absolute numbers (total, mild, severe, fatal)
2. Prevalence per 100 000 employees (total, mild, severe, fatal)
3. Age and gender differences
4. Sources and causes of accidents
5. Severity of accidents at work resulting in more than 3 days absence
6. Number of lost days per 1000 employees

WRD and OD statistics

1. Absolute numbers
2. Prevalence per 100 000 employees
3. Age and gender differences
4. Sources and causes of illnesses
5. Health insurance system functioning

Data gathering tools

1. LI data bases
2. Eurostat
3. Questionnaire

Literature and legislation

1. Occupational Health and Safety Act. Legislative Council: First RT I 1999, 60, 616; last 12.04.2017 RT I, 28.04.2017, 1; 08.05.2017, Cpt. 5, pg 23-24 and Cpt. 51, pg 242-245.
2. EU OSHA (2010). OSH in figures: Work-related musculoskeletal disorders in the EU -Facts and figures. Luxembourg.
3. Ikeda, R., Hedegaard, H., Bossarte, R., Crosby, A.E. et al. (2014). Improving national data systems for surveillance of suicide-related events. Am J Prev Med. 47(3) Suppl 2:S122-S129.
4. Eurostat. (2017). Proportion of persons (aged 15-64) reporting work-related health problems, 2007 and 2013. http://ec.europa.eu/eurostat/statistics-explained/images/6/62/Proportion_of_persons_%28aged_15-64%29_reporting_work-related_health_problems%2C_2007_and_2013_%28%25%29_LFS2013.png
5. Eurostat. (2010). Health and safety at work in Europe (1999-2007). A statistical portrait. Luxembourg.

Eurostat statistics

Background data

Table 1. Output, labour force and livestock, 2007–2013

	Standard output (EUR million)			Labour force (1 000 annual work units)			Livestock (1 000 livestock units)		
	2007	2010	2013	2007	2010	2013	2007	2010	2013
EU-28	285 597	308 062	331 044	11 850	9 946	9 509	136 793	135 212	130 174
Belgium	6 638	7 248	8 407	66	62	57	3 788	3 799	3 584
Bulgaria	2 314	2 537	3 336	494	407	320	1 246	1 149	1 025
Czech Republic	3 593	3 852	4 447	137	108	105	2 053	1 722	1 728
Denmark	6 918	8 431	9 580	56	52	54	4 582	4 919	4 133
Germany	44 202	41 494	46 252	609	546	523	17 985	17 793	18 407
Estonia	491	595	676	32	25	22	313	306	310
Ireland	4 570	4 298	5 013	148	165	164	5 918	5 787	5 929
Greece	7 677	6 873	8 070	569	430	464	2 627	2 407	2 143
Spain	33 363	34 173	35 979	968	889	814	14 381	14 831	14 502
France	45 978	50 733	56 914	805	780	725	22 544	22 674	21 871
Croatia	1 373	2 115	2 029	189	184	175	883	1 020	864
Italy	40 543	49 460	43 767	1 302	954	817	9 901	9 912	9 374
Cyprus	604	459	495	26	19	17	247	201	175
Latvia	597	777	990	105	85	82	488	475	486
Lithuania	1 322	1 526	1 919	180	147	145	1 031	900	839
Luxembourg	227	269	314	4	4	4	161	168	165
Hungary	4 655	5 241	5 578	403	423	434	2 409	2 484	2 259
Malta	85	96	97	4	5	4	50	42	35
Netherlands	18 071	18 930	20 498	165	162	153	6 415	6 712	6 602
Austria	5 199	5 879	5 671	163	114	111	2 473	2 517	2 439
Poland	17 035	18 987	21 797	2 263	1 897	1 919	11 118	10 377	9 165
Portugal	3 681	4 640	4 509	338	363	323	2 030	2 206	2 036
Romania	10 120	10 420	11 990	2 205	1 610	1 553	6 042	5 444	4 975
Slovenia	885	913	1 009	84	77	82	554	518	488
Slovakia	1 269	1 731	1 812	91	56	51	747	668	645
Finland	2 729	3 098	3 398	72	60	58	1 152	1 121	1 173
Sweden	3 736	3 733	4 679	65	57	59	1 785	1 752	1 715
United Kingdom	17 722	19 555	21 819	306	266	275	13 872	13 308	13 106
Iceland	:	237	:	:	4	:	:	161	:
Norway	3 030	3 156	3 410	56	46	44	1 268	1 229	1 241
Switzerland	:	5 717	:	117	96	:	1 770	1 794	:
Montenegro	:	127	:	:	48	:	:	118	:

Source: Eurostat (online data code: ef_kvaareg)

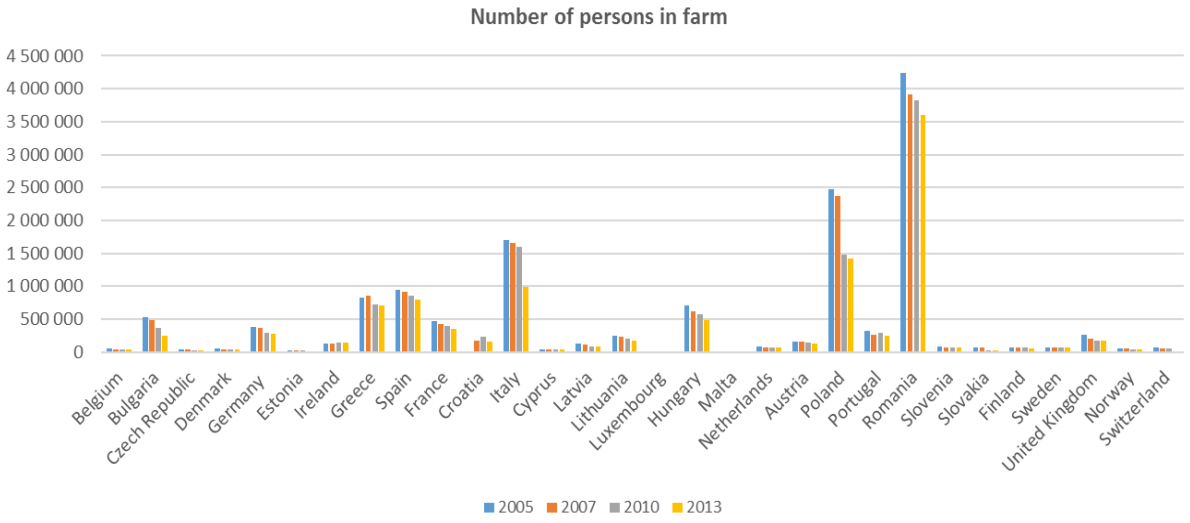
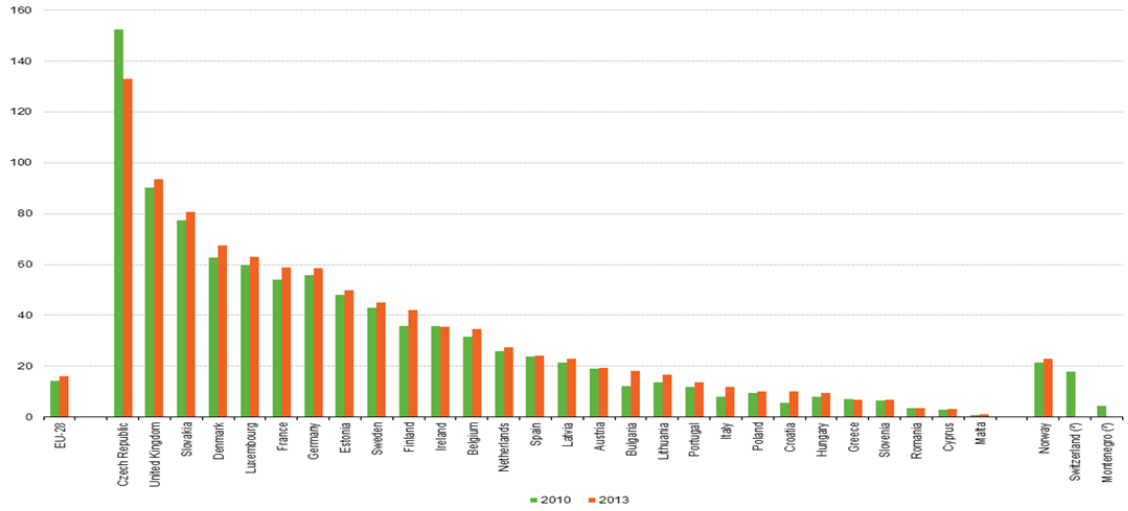


Fig. Number of persons and farm work (AWU) by sex of worker, legal satus of holding and agricultural size of farm (Eurostat, 2017).

Table. Farm indicators by agricultural area, type of farm, standard output, legal form and NUTS 2 regions [ef_m_farmleg](Eurostat, 2018)

	Farm number	Utilised agricultural area, ha	Farms with livestock	Farms with livestock	Standard output, €	Labour force directly employed
Belgium	37 760	1 307 900	27 770	3 584 440	8 406 674 190	56 730
Bulgaria	254 410	4 650 940	184 030	1 024 910	3 335 670 170	320 230
Czech Rep	26 250	3 491 470	18 840	1 728 360	4 446 963 820	105 080
Denmark	38 280	2 619 340	23 400	4 133 390	9 580 213 710	53 170
Germany	285 030	16 699 580	199 200	18 406 910	46 252 042 690	522 730
Estonia	19 190	957 510	8 380	310 110	676 317 090	22 060
Ireland	139 600	4 959 450	128 310	5 929 360	5 012 538 820	163 690
Greece	709 500	4 856 780	256 400	2 142 980	8 103 007 120	463 860
Spain	965 000	23 300 220	217 150	14 501 690	35 978 946 920	813 550
France	472 210	27 739 430	274 620	21 871 300	56 914 191 760	724 690
Croatia	157 440	1 571 200	123 080	864 020	2 029 135 280	175 050
Italy	1 010 330	12 098 890	173 350	9 374 270	43 793 881 650	816 920
Cyprus	35 380	109 330	10 450	174 520	495 411 360	16 550
Latvia	81 800	1 877 720	43 920	485 990	990 012 640	82 090
Lithuania	171 800	2 861 250	117 610	838 750	1 919 223 290	144 770
Luxemb	2 080	131 040	1 610	165 400	313 811 850	3 530
Hungary	491 330	4 656 520	312 430	2 259 080	5 577 723 710	433 700
Malta	9 360	10 880	2 780	34 930	96 790 090	4 450
Holland	67 480	1 847 570	46 440	6 602 050	20 498 061 340	153 310
Austria	140 430	2 726 890	101 790	2 439 090	5 671 213 540	111 160
Poland	1 429 010	14 409 870	797 750	9 164 570	21 797 461 420	1 918 550
Portugal	264 420	3 641 590	169 920	2 035 510	4 509 024 200	323 470
Romania	3 629 660	13 055 850	2 727 720	4 975 310	11 989 578 640	1 552 630
Slovenia	72 380	485 760	58 300	487 960	1 009 230 010	82 450
Slovakia	23 570	1 901 610	17 090	644 820	1 812 222 660	50 600
Finland	54 400	2 282 400	19 900	1 172 960	3 398 060 700	57 550
Sweden	67 150	3 035 920	37 600	1 714 530	4 678 580 280	59 320
UK	183 040	17 326 990	140 940	13 106 290	21 818 581 460	274 520
Norway	43 270	996 270	30 530	1 251 700	3 410 100 700	44 000



(*) Iceland not shown for reasons of scale: 2010 value was 616 hectares.
(*) 2013: not available.
Source: Eurostat (online data code: ef_kvaareg)

Fig. Average utilised agricultural area per holding, 2010 and 2013 ([1]) (hectares) YB16.png

Work environment

Persons (%) of total group reporting exposure to risk factors that can adversely affect mental well-being in age 15-64 [hsw_exp1]

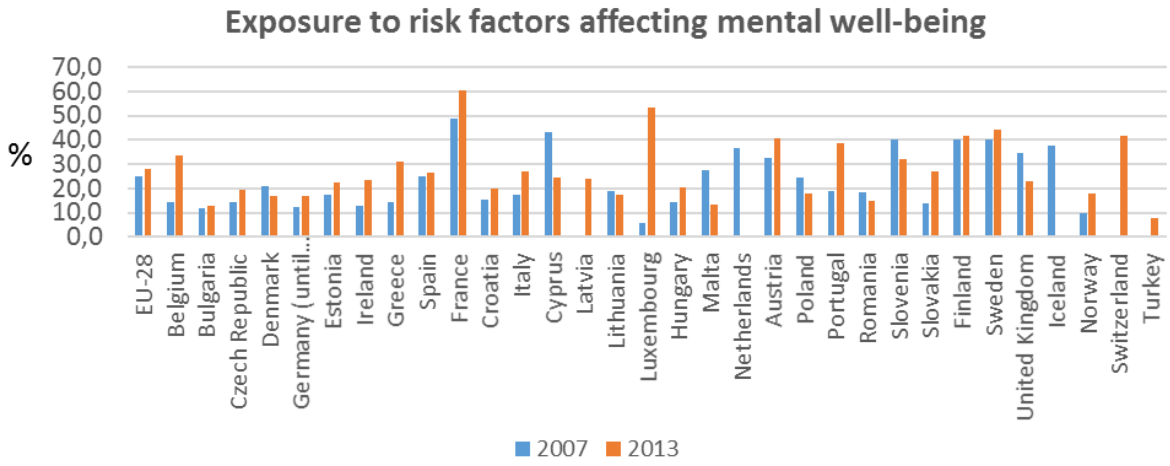


Fig. Propotion of persons (%) reporting exposure to risk factors adversely affecting mental well-being

Lack of data by gender and occupation or activity sector.

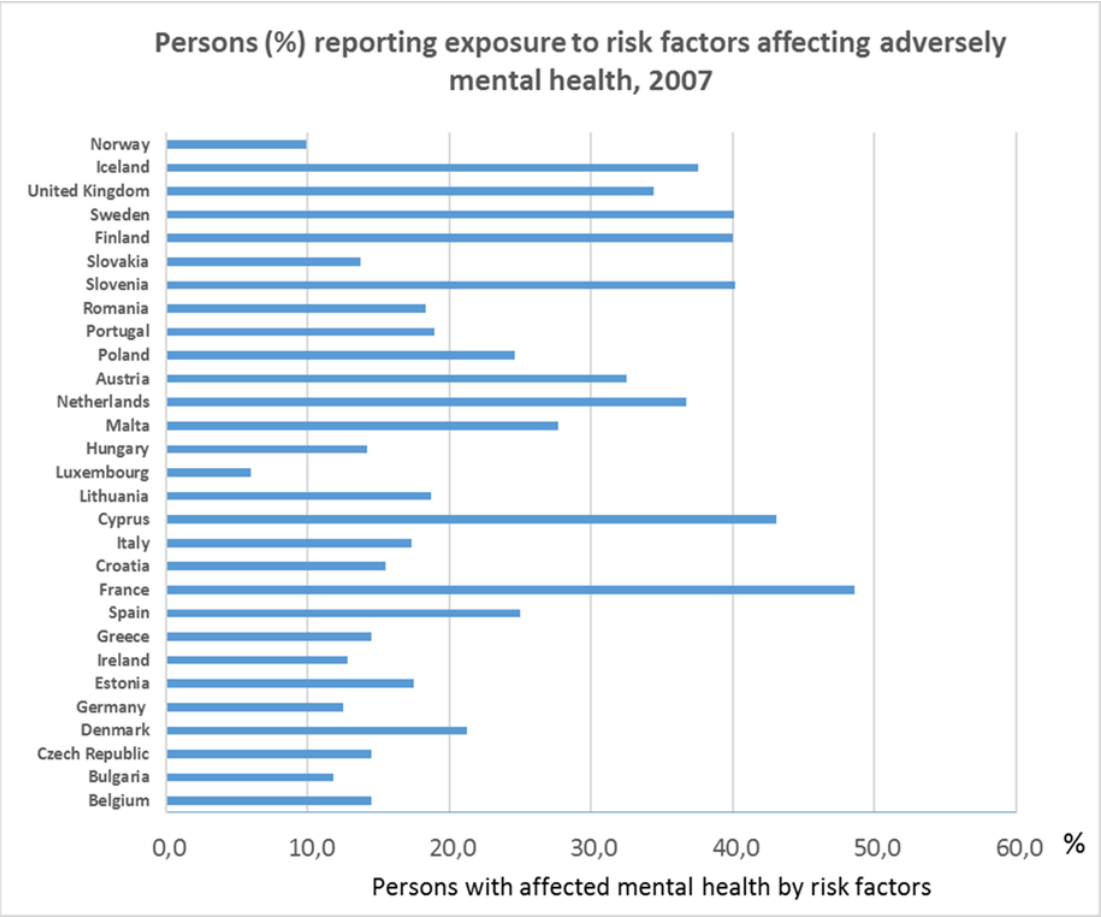


Fig. Employed persons (%) reporting exposure to risk factors that can adversely affect mental well-being by sex, age (15-64) and NACE Rev. 1.1 activity [hsw_exp5a]

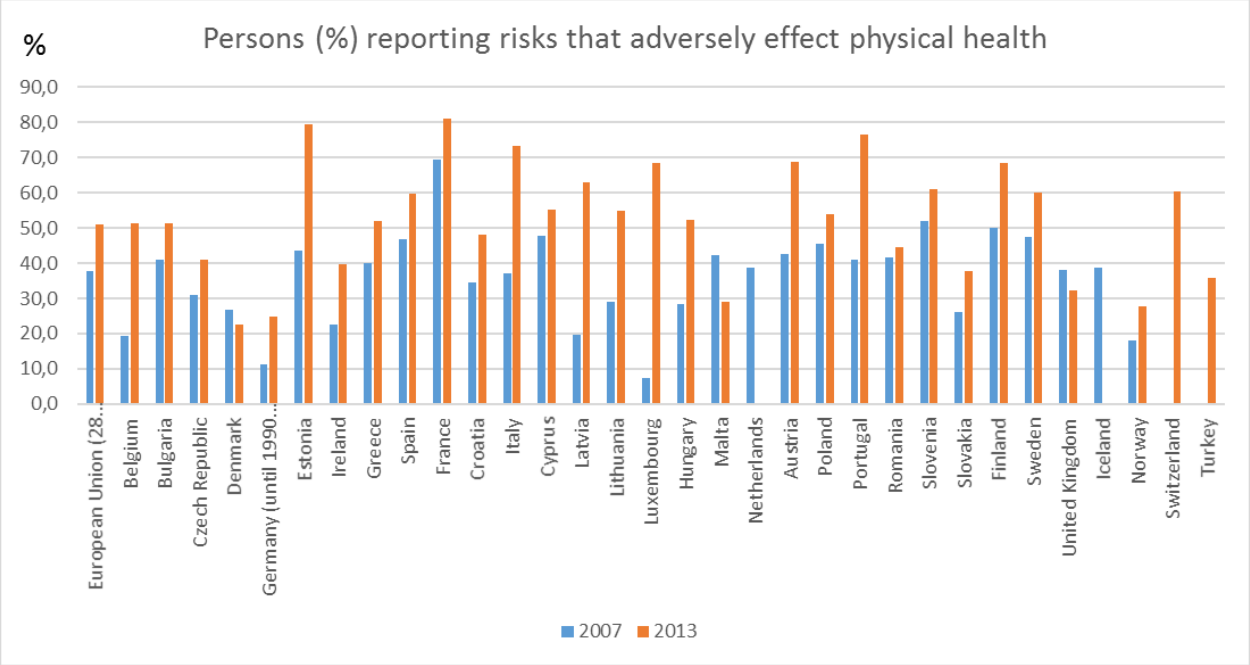


Fig. Persons reporting exposure to risk factors that can adversely affect physical health by sex, age and educational attainment level [hsw_exp2]

Work accidents

Non-fatal accidents at work by NACE Rev. 2 activity and sex [hsw_n2_01]

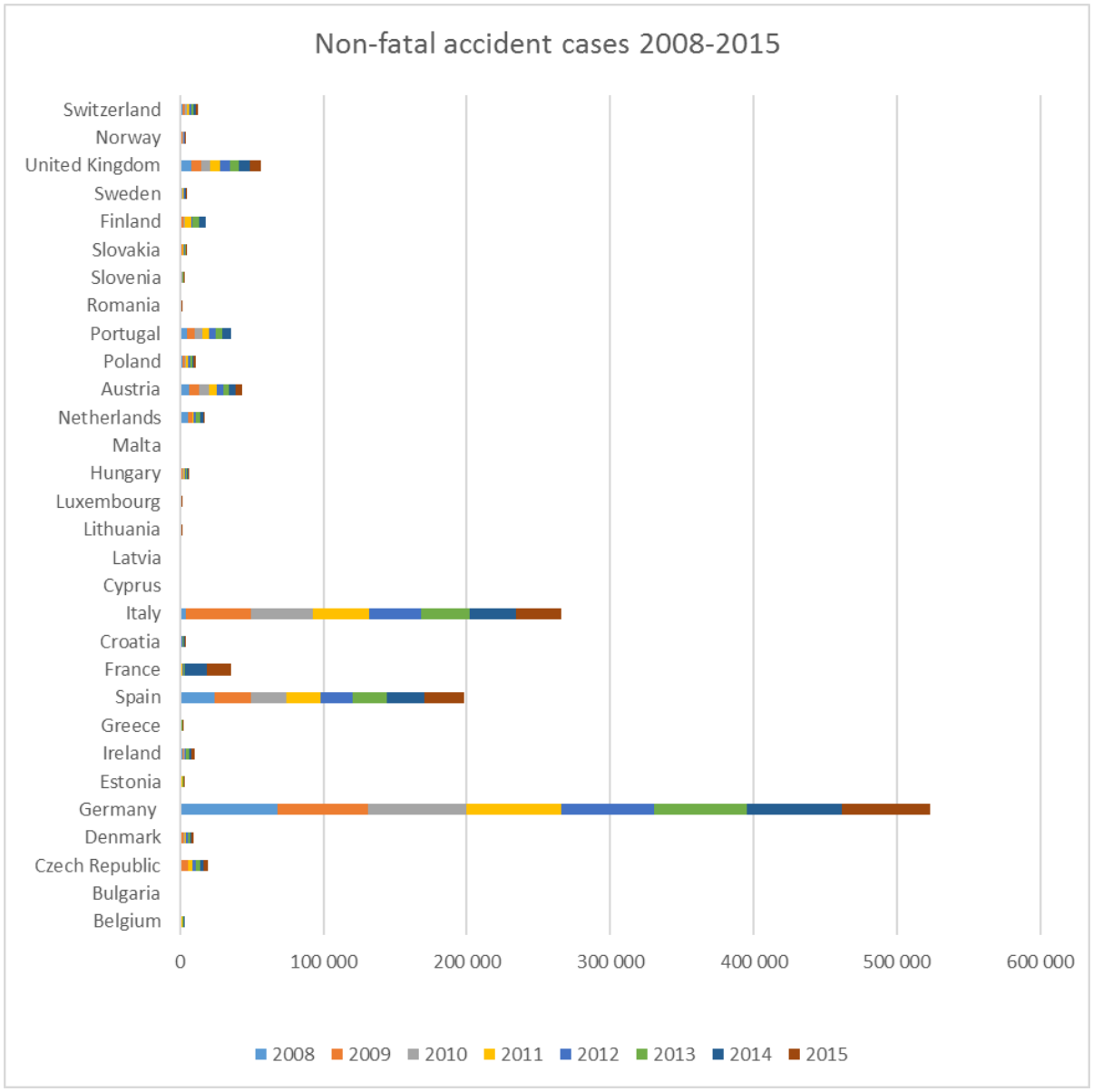


Fig. Non-fatal accident cases at work in agriculture

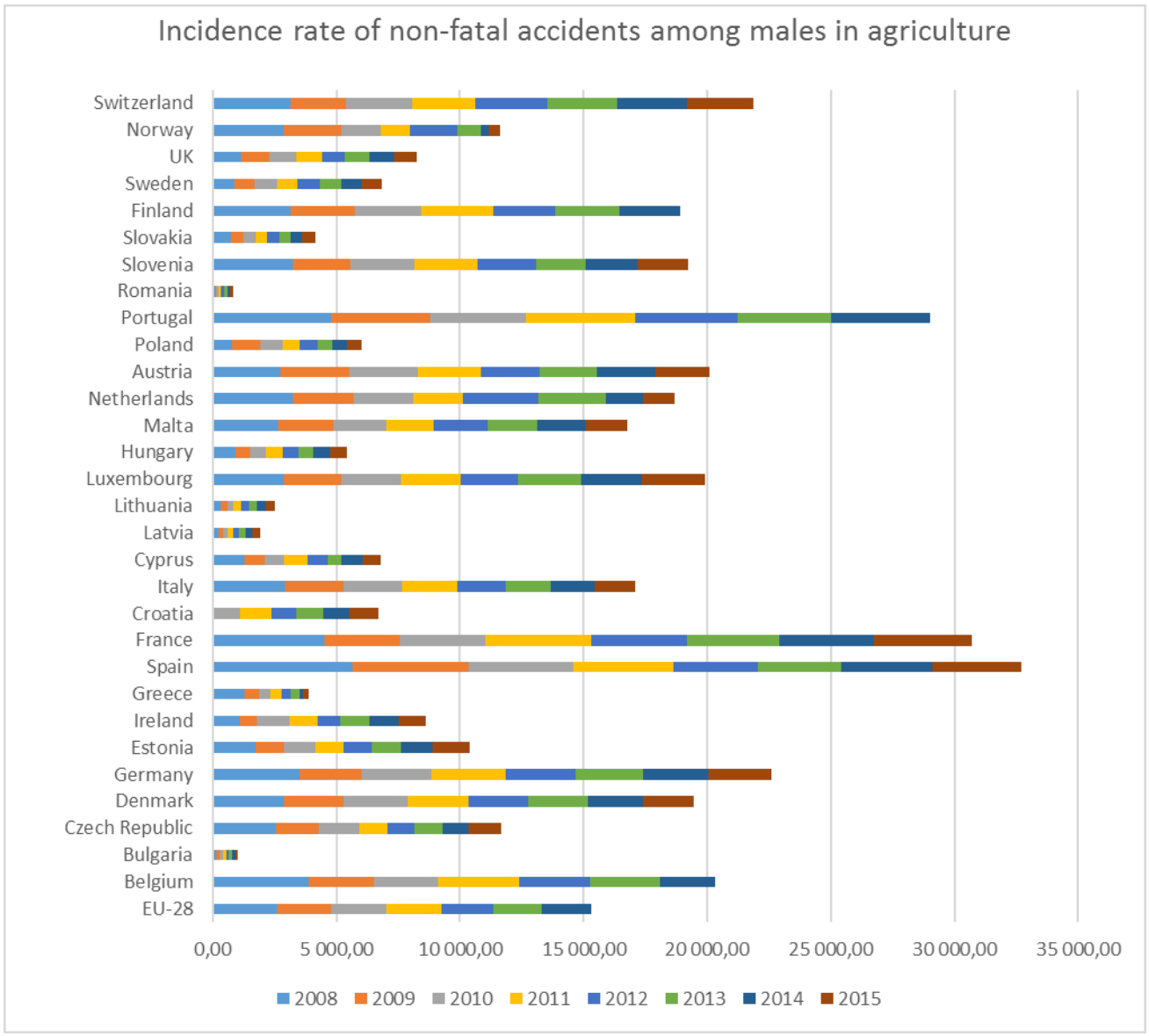


Fig. Incidence rate per 100000 of non-fatal accidents among men in agriculture2008-2015

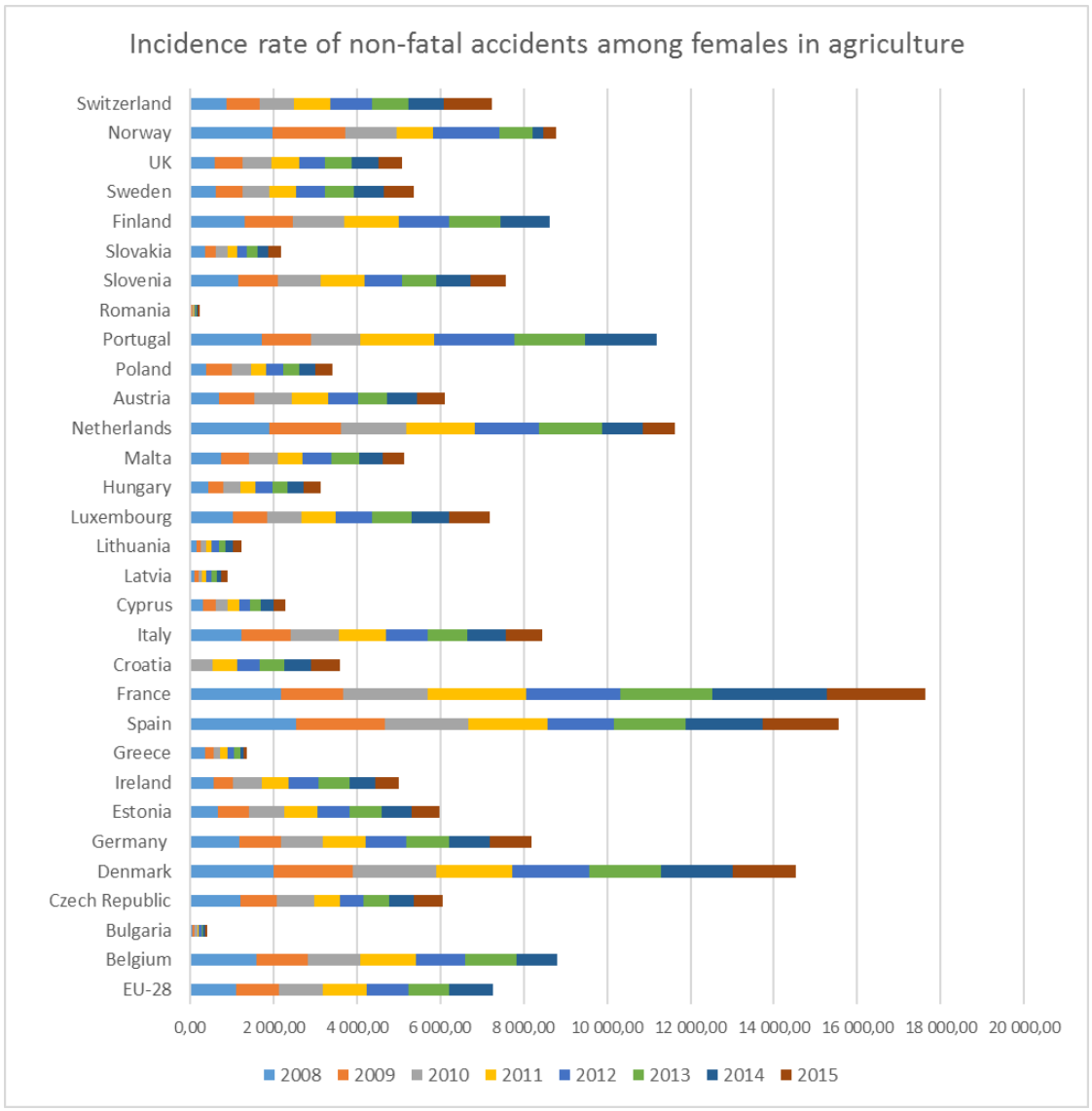


Fig. Incidence rate per 100000 of non-fatal accidents among men in agriculture2008-2015

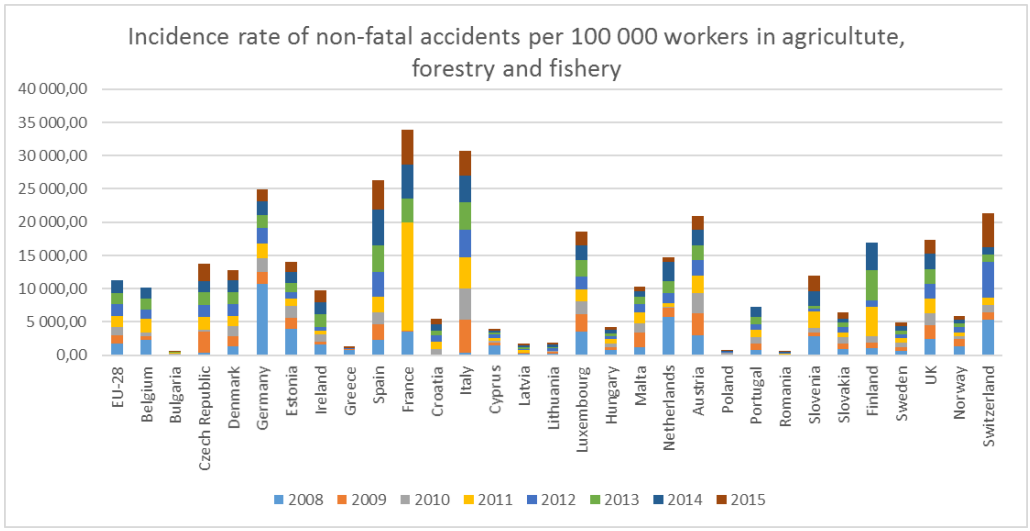


Fig. Incidence rate of non-fatal accidents per 100000 in agriculture, forestry, fishery in total, 2008-2015

Fig.

Work related diseases and occupational diseases

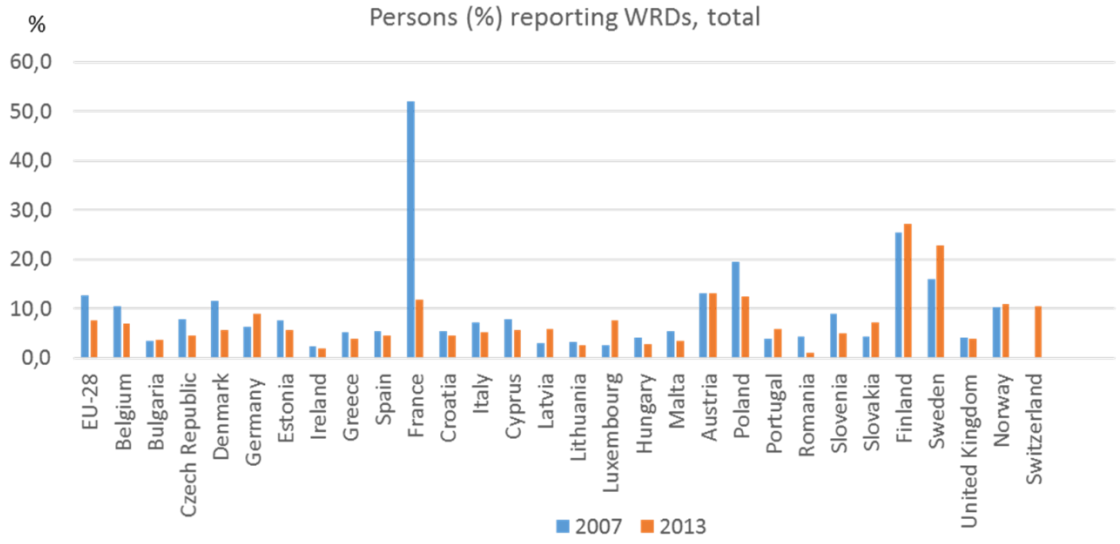
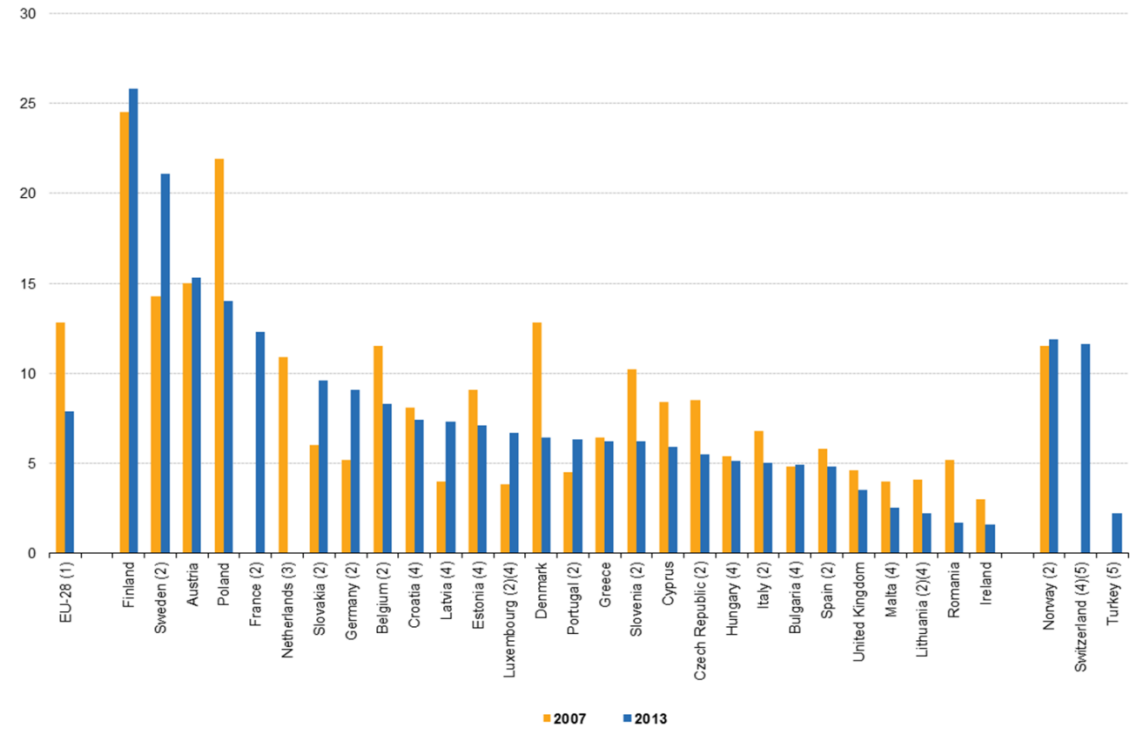


Fig. Employed persons (total, %) reporting a work-related health problem by sex, age and professional status [hsw_pb8]



(1) 2013: estimate.
(2) 2007: definition differs; for more information see the evaluation report of the ad-hoc modules available on http://ec.europa.eu/eurostat/statistics-explained/index.php/EU_labour_force_survey_-_ad_hoc_modules#Description_of_the_ad_hoc_modules.
(3) 2013: not available.
(4) 2013: definition differs; for more information see pages 46 and 47 (part 4.2.2.1) of the evaluation report of the ad-hoc modules available on http://ec.europa.eu/eurostat/statistics-explained/index.php/EU_labour_force_survey_-_ad_hoc_modules#Description_of_the_ad_hoc_modules.
(5) 2007: not available.
Source: Eurostat (online data code: hsw_pb1)

Fig. Employed persons (total %, in age 15-64) reporting work-related health problems, 2007 and 2013

Statistics of Estonia

Background data

Do we need farm structure statistics of work accidents?

Average utilised agricultural area per holding, 2010 and 2013 (1) (hectares) YB16.png

In 2015 in total 3532 musculoskeletal diseases (M – 1548; F – 1948) causing primary sustained disability among employees. Most of causes are physiological factors – awkward position, repetitive movements, heavy physical work (Health Board, 2016)

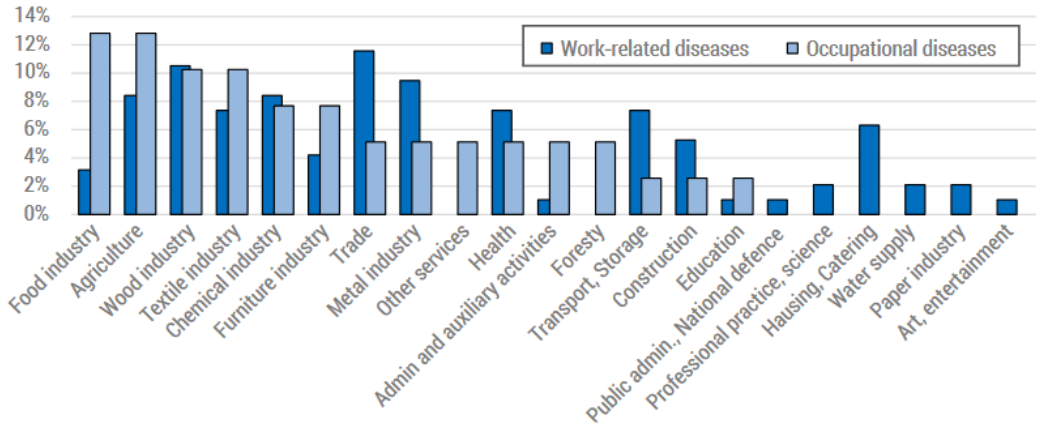


Figure 1. Occupational and work related diseases by economic activity. Annual report on work environment 2015. LI, 2016

By the activities the prevalence ofOD and WRD statistics have presented.

The dynamics of ODs and WRDs by absolute numbers and incidence rate per 100 000 workers; by gender and age have presented in the LI Annual Reports. Underreporting of WRDs and ODs with tendency to decrease we can see in the Estonian LI statistics (fig 2-4).

Figure 2. Registered cases of ODs and WRDs Source: LI. Annual report on work environment (2016).

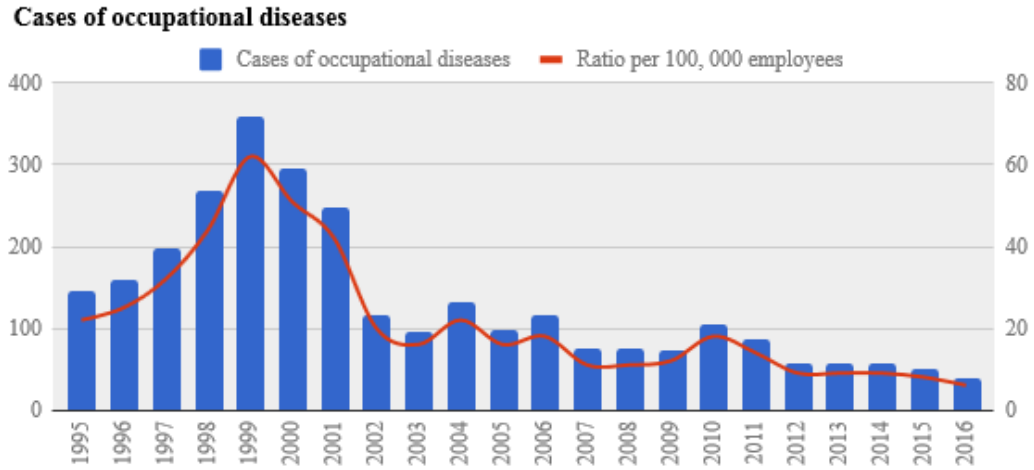


Figure 3. Occupational diseases in 1995-2016 – absolute cases and (OD) incidence rates per 100000 workers. Source: LI; 2017

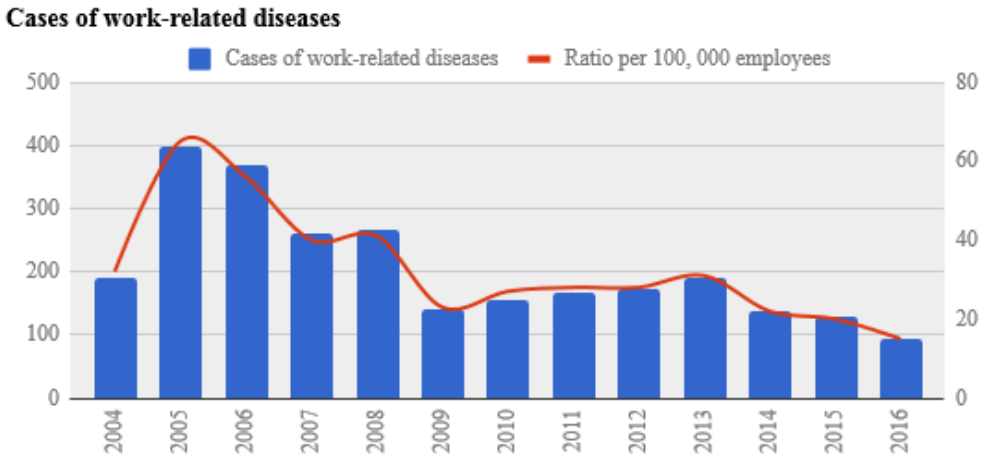


Figure 4. Work related diseases – absolute cases and incidence rate per 100000 by the years 2004-2016 Source: LI, 2017.

Eda Merisalu, 22.03.2018

WG4 leader