

PROGRAM:	ERASMUS+
ACTION / SUBPROGRAM:	Key Action 2 / Strategic Partnerships
PROJECT TITLE:	“OSH+ for the European Agriculture sector - Stimulating growth in rural areas through capacity building for providers (and beneficiaries) of occupational medicine and OSH services”
Intellectual Output :	O5 “Course 2 Training Materials - Occupational Physicians”
Module:	5 - Occupational diseases in Agriculture – statistics in the countries of the project

5. Module 5: Occupational diseases in Agriculture – statistics in the countries of the project

Elena-Ana Pauncu, PhD, MD, Occupational Medicine Professor, Victor Babes University of Medicine and Pharmacy Timisoara, Romania

5.1. Learning Objectives

- The trainee should be able to understand the concepts of occupational diseases, work-related diseases
- The trainee should be aware of the great diversity in reporting OD in EU
- The trainee should be able to understand and analyze available statistical data on occupational diseases
- The trainee should be able to use the National Occupational Diseases List and to sustain the diagnostic of an occupational disease.

5.2. Introduction

Agriculture is recognized as one of the three most hazardous sectors of activity (along with construction and mining), in terms of fatalities, injuries and work-related ill-health. The agricultural sector employs an estimated 1.3 billion workers worldwide, that is half of the world's labor force [9].

Agricultural workers and farmers are exposed to the effects of bad or extreme weather conditions, noise, vibrations dust, and chemicals. They work with potentially dangerous vehicles and machinery, poorly designed tools, livestock, in difficult terrain conditions, at height or near pits and silos. Same risks may include family members working or living at the farm, including children. Agricultural work remains very physically demanding in some countries and activities. Force, position, and repetitive nature of the work cause a range of health problems.

In agriculture, non-standard employment (NSE) is dominant, as day labourers, migrant workers, temporary jobs, seasonal fluctuations. Agriculture is recognized as a low-wage

sector [10]. In these conditions, health surveillance and recognition of occupational diseases are deficient; statistical data are poor, making difficult to analyze and compare EU countries situation.

To prevent occupational diseases is necessary to recognize them and to analyze the structure of occupational illnesses based on feasible statistical data, to identify and make a hierarchy of the most important problems that must be solved.

5.3. Glossary (Source: Frank van Dijk, Inge Varekamp, Katja Radon, Manuel Parra, Glossary for Basic Occupational Safety and Health, 2011)

Term	Definition
European Statistics on Occupational Diseases (EODS)	The European Statistics on Occupational Diseases collects statistical data on occupational diseases. The project on European Statistics on Occupational Diseases started in 1995 and the first data collected according to the Phase 1 methodology was ready in the year 2001.
EUROSTAT	Eurostat is the statistical office of the European Union situated in Luxembourg. Its mission is to provide high quality statistics for Europe.
International Labour Office (ILO)	International Labour Office is a tripartite U.N. agency, since 1919. It brings together governments, employers and workers of 187 member States, to set labour standards, develop policies and devise programmes promoting decent work for all women and men.
Occupational disease	A disease caused by work. This means that the disease is caused by physical, chemical, biological, ergonomic or psychosocial factors at work. Classic occupational diseases are characterized by a clear, often practically mono-causal relation to a specific exposure.
Personal data	Personal data are any information related to an identified or identifiable person; minimum requirements for confidentiality should be established for health data. [ILO 1998]
Statistics	A branch of mathematics dealing with the collection, analysis, interpretation, presentation, and organization of data.
World Health Organization (WHO)	The World Health Organization (WHO) is a specialized agency of the United Nations (UN) that acts as a coordinating authority on international public health. Members of the WHO are 191 UN

	members. [Wikipedia July 2011]
Work-related disease	A disease for which the work or working conditions constitute the principal causal factor, or a disease for which the occupational factor may be one of several causal agents, or a disease for which the occupational factor may trigger or worsen an already existing disease, or a disease for which the risk may be increased by work or work-determined lifestyles. [Rantanen 2007, adapted]

5.4. Definitions. Occupational diseases. Work-related diseases. Costs' aspects.

Occupational diseases

In the International Labor Organization (ILO) Protocol of 2002 to the Occupational Safety and Health Convention, 1981 (No. 155), the term “occupational disease” represents any disease contracted as a result of an exposure to risk factors arising from work activity (Article 1 (b) [6].

The ILO list of occupational diseases and the criteria for incorporating illnesses in this list were revised in 2010.

There are two main elements, mandatory, in the definition of an occupational disease, which are common in different countries [6]:

- the causal relationship between exposure in a specific working environment or work activity and a specific disease; it is established on the basis of: clinical and/or pathological data, job analysis, professional background and occupational risk factors' identification and evaluation, recognition of the role of other risk factors [6].
- the fact that the disease occurs among the group of exposed persons with a higher frequency rate than the average morbidity of the rest of the population, or in other worker populations [6].

Occupational diseases enhanced in the last years; they represent a sum of human illnesses, many of which are not different from those of non-occupational etiology, from the clinically and/or pathologically point of view. They are the result of exposure to risk factors generated, at least partially, from working activities [1,6].

An occupational disease diagnosis has consequences for prophylaxis, health care, interventions for workplaces, economical sector, implied worker, workers representatives and for the treating physician of the affected worker [11].

The recognition of a disease to be occupational implies clinical decision-making or applied clinical epidemiology. To decide on the cause of that disease is more difficult, not any equation can be applied. To recognize and prove the professional etiology of a disease is a question of judgment “based on a critical review of all the available evidence, which should include a consideration of the following” [6]:

- **Strength of association.** The greater the impact of an exposure on the occurrence or development of a disease, the stronger the likelihood of a causal relationship [6].
- **Consistency.** Different research reports have generally similar results and conclusions.
- **Specificity.** Exposure to a specific risk factor results in a clearly defined pattern of disease or diseases.
- **Temporality or time sequence.** The exposure of interest preceded the disease by a period of time consistent with any proposed biological mechanism.
- **Biological gradient.** The greater the level and duration of exposure, the greater the severity of diseases or their incidence.
- **Biological plausibility.** From what is known of toxicology, chemistry, physical properties or other attributes of the studied risk or hazard, it makes biological sense to suggest that exposure leads to the disease.
- **Coherence.** A general synthesis of all the evidence (e.g. human epidemiology and animal studies) leads to the conclusion that there is a cause–effect relationship in a broad sense and in terms of general common sense.
- **Interventional studies.** Sometimes, a primary preventative trial may verify whether removing a specific hazard or reducing a specific risk from the working environment or work activity eliminates the development of a specific disease or reduces its incidence.

ILO, List of Occupational Diseases (revised 2010), Identification and recognition of occupational diseases: Criteria for incorporating diseases in the ILO list of occupational diseases, Occupational Safety and Health Series, No. 74, INTERNATIONAL LABOUR OFFICE GENEVA, 2010

Reportable occupational diseases: are occupational diseases which compose the national lists, decided by national laws. There represent the liable source for administrative provisions for compensation. Preventive measures are applied on the base of these lists. The legal reporting process is specific for each country [1].

The compensation legal provisions for occupational diseases’ victims vary from country to country. Article 8 of the Employment Injury Benefits Convention, 1964 [Schedule I amended

in 1980] (No. 121), which indicates the various possibilities regarding the form of the identification and recognition of occupational diseases entitling workers to compensation benefits, states that each Member shall [4,6,8]:

- (a) prescribe a list of diseases, which must comprise at least the enumerated diseases in Schedule I to this Convention, which shall be regarded as occupational diseases under prescribed conditions (list system) [6,8]; or
- (b) include a general definition of occupational diseases(broad enough to cover at least the enumerated diseases in Schedule I to this Convention) in its legislation (general definition system) [6,8]; or
- (c) prescribe a list of diseases in conformity with clause (a), complemented by clause (b), respectively a general definition of occupational diseases, or by other provisions which establish the occupational origin of diseases not so listed or manifesting themselves under different conditions from those prescribed (mixed system) [6,8].

The “list system” (a) covers only a certain number of occupational diseases. The listed diseases are presumed to have an occupational origin. This simplifies the matter for all parties involved in the recognition of the occupational disease: it is frequently very difficult, if not impossible, to prove or disprove that a disease is directly attributable to the occupation of the victim. The “list system” permits clearly to indicate where prevention should focus [6].

The “general definition system” covers, theoretically, all occupational diseases; it permit the widest and most flexible protection, but leaves it to the victim to prove the occupational origin of the illnesses. It often implies the necessity of arbitration on individual cases. No accent on specific prevention, in this system [6].

The “mixed system” combines the advantages of the other two without their disadvantages and has been favored by many ILO member States [6].

Occupational diseases have a specific or a strong relation to the occupation, usual with only one causal agent. When a clear causal relationship exists between an occupational exposure and a specific disease, that disease is considered “occupational”. Medically and legally it is an occupational disease and can be defined as such [11].

Recognized occupational disease: A recognized case of an occupational disease is an accepted case such as, by the national competent authority responsible for recognition of occupational diseases. That is an administrative procedure [1,5,11].

Work-related diseases

All illnesses that can be caused, worsened or jointly caused by working conditions are considered work-related diseases. This term may be appropriate to describe not only

recognized occupational diseases, but also other sufferings. The working environment and performance of work contribute significantly as one of the several causative factors for other disorders, too (Joint ILO/WHO Committee on Occupational Health 1989) [4,11].

A case of work-related illness *does not necessarily refer to recognition by an authority* [1].

Work-related diseases have a complex etiology. They have multiple causal agents, but factors belonging to the work and/or working environment are recognized to play a role in the development of such diseases [1].

It can be done a more precise distinction between occupational diseases and work-related diseases by calculating their attributable fractions. The attributable fraction of occupational diseases is suggested to be more than 50% and for work-related diseases is less than 50% [1].

A third group of diseases, without a causal relation with work can affect working populations. Their evolution can be aggravated by occupational hazards to health [11].

Usually, the occupational diseases lists are open, new work-related diseases are diagnosed and recognized. Table 1 presents some examples.

Table 1. Categories of new work-related diseases, with examples (Source: van der Laan, G., “New Occupational Diseases, a typology”, presentation at 30th ICOH Congress 2012)[12]

Category	Examples
New diseases due to changes in work and working conditions	<ul style="list-style-type: none"> • Progressive Inflammatory Neuropathy (PIN) in swine slaughterhouse workers • Popcorn disease • Legionnaires' disease • Allergy to preservatives (paint, adhesive) • Allergy to biological pesticides
New risks from known agents	<ul style="list-style-type: none"> • Breast cancer due to night shift work • Cardiovascular diseases caused by fine dust and stress at work • Lung infections due to welding fumes
Consequences of parents' occupational exposure on their offspring	<ul style="list-style-type: none"> • Congenital abnormalities • Cancer in children • Delayed neuropsychological development

The recognition of occupational diseases and a good risk evaluation permit adequate prophylactic measures.

Work related diseases costs and perspectives

Work-related stress and work-related musculoskeletal disorders such as back pain are a major concern in Europe: 37% of workers in the EU report working all or almost all of the time to tight deadlines; 62% carry out repetitive hand or arm movements; and 34% almost always have to work at high speed [14]. Occupational diseases and work accidents cause pain and suffering, family and social disturbances, but financial losses, too.

The economic cost of work-related diseases and injuries is estimated to equate to 3–5% of the EU’s GDP. Occupational disease and work injuries are also responsible for about 4,000 avoidable deaths, due to accidents and about 160,000 deaths due to work-related illness every year. In the last years occupational accidents decreased, but it is not the same situation of work-related illness, such as occupational cancers, mental health problems or musculoskeletal disorders [14].

In 2007, in Europe there were 20 million cases of non-fatal work-related diseases. 8.6% of workers in the EU-27 experience a work-related problem in the past 12 months, which corresponds to 20 million persons [15].

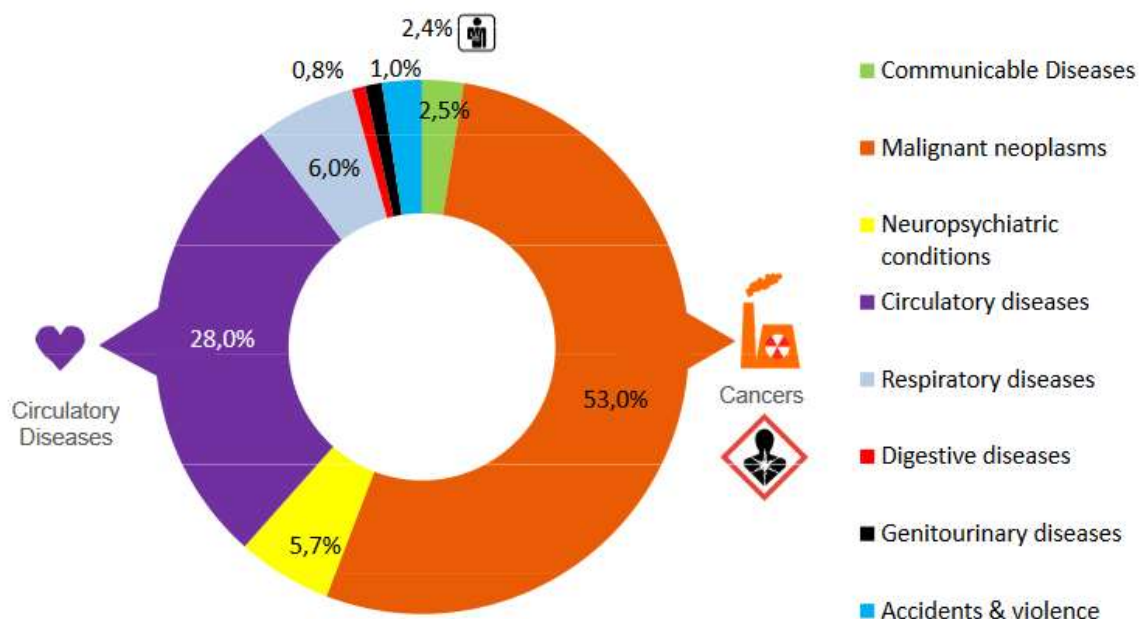


Figure 1. Work-related annual deaths caused by illnesses in the EU28 (Jukka Takala) [15]

Deaths attributed to work, 2.3 million/year

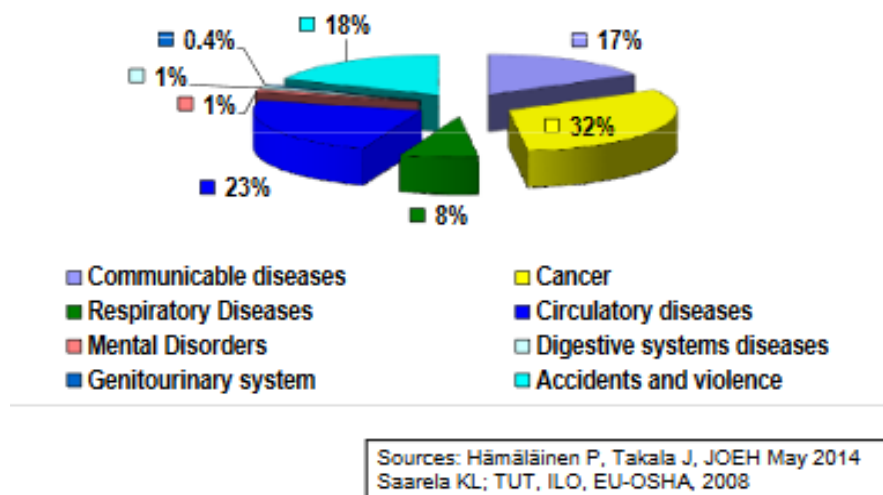


Figure 2. Work-related annual Deaths – World [15]

After Prof. G. Ahonen, adaptation Dr. J. Takala, actual costs for prevention, like training OHS, workplace health promotion, recreation and culture, corporate fitness, communication etc. in EU represent 200 billion Euros/year. The expenses for early retirement, sick-leaves, accidents, permanent disability, presenteeism in EU represent 3,000 billion Euros/year [15].

5.5. Occupational diseases lists and recognizing aspects in EU Member States

In the EU context, the approach to OD statistics is set out in Regulation (EC) no 1338/2008 of the European Parliament and of the Council of 16 December 2008 on Community statistics on public health and health and safety at work: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:354:0070:0081:EN:PDF> [11]. In the same time works the Commission Recommendation 2003/670/EC concerning the European Schedule of Occupational Diseases and gathering of data on relevant related aspects.

26 out of 29 EU countries: AT, BE, BG, CY, CZ, DK, EE, FI, FR, DE, GR, HU, IE, IT, LV, LT, MT, NO, PL, PT, RO, SK, SI, ES, CH, UK have a list of occupational diseases [13].

The degree of exhaustiveness of the lists varies depending on the country. In many countries, the national list is similar in structure to Annex 1 of the European list (Commission recommendation of 19 September 2003, 2003/670/EC, concerning the European Schedule of Occupational Diseases) List of selected diseases is made according to ICD-10 International

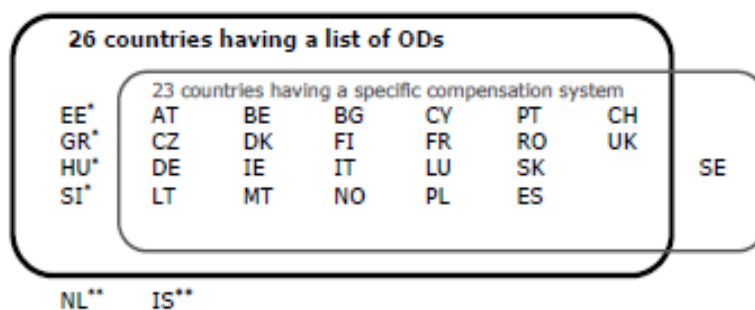
Statistical Classification of Diseases and Related Health Problems (EODS annex with specifications). Article 1 of the Commission Recommendation sets out 10 recommendations concerning the lists in Annexes I and II, and Articles 2,3,4 add some accompanying rules. Annex I comprises 108 diseases or groups of diseases, divided in five groups, according to their causative factors (groups 1, 4, 5: chemical exposure, exposure to germs and parasites, physical exposure) or according to the affected organs (groups 2, 3: skin, respiratory tract, most of which are also related to causative substances). There is a second annex, Annex II that comprises 48 diseases or groups of diseases, like Annex I divided in the five groups; most of them (36) refer to causation by chemical exposure [11].

Compensation for occupational diseases can be covered by different insurance systems, in according with national legislations [13].

Not all the EU countries have a specific compensation system for occupational diseases (23 out of 29). Among the 23 specific systems for compensation of occupational diseases there is a great heterogeneity [5,13]. National compensation schemes require both, a well-established causal relationship at general level and a good documentation of the exposure and the disease at individual level [16].

There is a great diversity of recording systems, in their management (insurance organization, Ministry, other ad hoc organization), in the reporting criteria used as a basis for occupational diseases cases, and in their objectives (compensation, statistics, risk and prevention) [13]. It is hard to compare the statistics between countries, starting with the diversity of the registers from one country to another, and even within a given country. [13].

With the exception of Bulgaria, all the countries recognize (BE, CY, CZ, DK, EE, FI, FR, GR, HU, IS, IT, LV, LT, MT, NO, RO, SI, SK, ES, SE, CH, UK) or do not rule out (AT, DE, IE, PL, PT) a problem of under-reporting of occupational diseases" [13].



* these 4 countries have a list of ODs just for recognition and recording (no specific benefits for the victim)

** no list, no specific compensation system

Figure 3. National systems of recognizing and compensating occupational diseases [13]

The complex pattern of national systems is illustrated in the diagram (Figure 3).

There is a great heterogeneity among the 23 specific systems for compensation of occupational diseases. Insurance organizations can be public/private, territorial/sector-based organization, and their management methods differs. The insurance coverage differs with the existence or not of separate regimes for self-employed workers, farmers, public-sector employees, etc. The extent of the range of benefits can include compensation solely for the consequences of the occupational disease or also benefits related to rehabilitation and/or adaptation of the work station, etc. The nature and level of benefits for compensation in kind and in cash, the possibility or not of supplementing the compensation provided for by law with damages resulting from civil liability proceedings against the employer: all these variables make any classification difficult [11].

European Occupational Diseases Statistics (EODS) reported variables are:

- Country of emergence
- Age / Sex
- Occupation at time of harmful exposure (ISCO)
- Economic activity of employer at time of harmful exposure (NACE)
- European Schedule Reference Number (ESOD)
- Diagnosis (disease - ICD)
- Severity of Disease (temporary / permanent incapacity, death)
- Exposure (causal agent; short or long list)
- Exposure - use categories (chemical causal agents – industrial product)
- (Year/severity first recognition)

Some Member States are against dissemination of national data on Eurostat’s web site. In reality, occupational disease cases are under-reported, countries use different definition, some not deliver fatal cases, do not apply post mortem recognition, etc. [13].

There are variations in concepts, using different terms, as “recognized cases” or “reported cases”. Under-reporting of occupational diseases is a consequence of variations in reporting practices and in recognition systems, starting with the content of national lists and the recognition criteria (considering, or not, the intensity of exposure) [13].

Country’s economic activities (agriculture, industry, services) determine the number and the type of the reported and recognized occupational diseases [13].

The national reporting system of workplace risks differs from country to country. There are different sources for epidemiological data concerning workplace related health risks. They can be categorized as following (table2):

- a. Standardized data on suspected and recognized occupational diseases;
- b. Other standardized data from other social security sources (health, retirement, unemployment insurance) – SoSe;
- c. Data from workplace-related screenings and physical examinations;
- d. Data from exposure assessments;
- e. Workplace-related general surveys on exposure and health risks (Questionnaire data);
- f. Epidemiological studies.

Table 2. Sources of epidemiological data used in the different countries [11]

Country	A) Standardised data on suspected and recognised OD	B) Other standardised data from other social security sources	C) Data from workplace related screenings and physical examinations	D) Data from exposure assessments	E) Workplace related general surveys on exposure and health risks	F) Epidemiologic studies
AT	+	+	-	-	-	(+)
BG	+	+	+	+	-	+
BE	+	?	?	+	?	+
CY	+	?	-	-	-	-
CZ	+	-	-	-	-	-
DE	+	+	(+)	+	+	+
DK	+	+	+	+	+	+
ES	+	-	-	-	-	(+)
EE						
FI	+	+	+	+	+	+
FR	+	+	+	+	+	+
GR	-	-	-	-	-	+
HU	+	?	-	-	+	+
IE	+	+	+	+	+	+
IT	+	?	+	+	+	+
LV	+	-	-	-	-	+
LT	+	-	-	-	-	+
MT	+	-	-	-	-	+
NL	+	+	+	+	+	+
NO	+	+	+	+	+	+
PL	+	?	?	?	?	+
PT	(+)	+	+	+	+	+
RO	+	+	-	-	-	-
SE	+	+	+	+	+	+
SI	+	+	-	+	-	+
				(Asbestos)		
SK	-	-	-	-	-	-
UK	+	+	+	+	+	+

Possible answers: yes +, partially (+), no -, ? unclear

More frequent are used standardized data on suspected and recognized ODs and epidemiologic studies.

In Bulgaria are used all the sources, excepting of workplace related general surveys on exposure and health risks; in Greece are used just epidemiologic studies sources, in Ireland are used all of them, and in Romania are used just two kind of sources, respectively standardized data on suspected and recognized ODs, and other standardized data from other social security sources.

The data sources have important variation between countries, which makes difficult the comparing process.

Table 3. Research priorities for occupational diseases by countries [11]

Answer	Country
No, or unclear	AT, BG, CY, ES, EE, GR, IS, IE, LV, MT, PT, SK,
Yes	NL, BE, CH, (CZ), DK, FI, (HU), DE, IT, LT, NO, PL, RO, SI, SE, UK
Examples	
Mechanical risks and MSD	BE, NL, DK, EE, FI, FR, DE, NO, PL, SE
Noise	FR, HU
Radon exposed workers	DE, UK
Exposure to solar UV and skin cancer	CH, DE
Infectious diseases, biological risks	BE, NL, CH, HU, FR, HU, NO, CH, DE
Dermatitis	BE, CH, HU, FR, EE, DE, HU, SE, CH
Feasibility and application studies	CH, DE
Nanoparticles	(CZ), FR, PL, CH, DE
Nightshift work and health (cardiovascular, breast cancer)	DK, DE
Psychological, social and organisational working conditions	BE, DK, FR, DE, NO, SI, SE, UK
Ageing	FR, DE, SE
Risks to reproduction	FR, SE, UK
Biomonitoring	HU, DE
Chemical exposure	GR, FR, NO, PL, DE
Occupational cancers	FR, IT, DE
Waste products and recycling	FR, DE
Asbestos	LT, RO, SI, CH, DE
Effectiveness and efficiency of workplace prevention, OSH delivery	PL, SE, UK, DE
Migrant workers, unprotected workers (e.g. farmers)	PL, SI, DE
Return to work, rehabilitation	CH, DE
Fertility	UK, DE

() in the national plan but very limited research capacity

Research priorities, decided in according with statistical data, by countries, differ with the European region, tradition, economy branch, national priorities, national capabilities, etc. In the table 3 are emphasized only the main national research priorities for occupational diseases; this table is not intended to list all the research conducted in each country.

No answer, or unclear for Bulgaria, Greece and Ireland, “Yes”, for Romania, which recognize, like research priority, asbestos.

5.6. Occupational diseases data in AGROSH+ countries

A short analyze of occupational diseases in project countries’ shows different systems of recognizing and reporting theses illnesses.

Table 4. Nationally accepted definition of an Occupational Disease (OD) and of a Work Related Disease (WRD)

Bulgaria	Occupational disease (OD) is defined as a disease which appear only in a condition of harmful factors of working environment or working processes and is included in the list of Occupational diseases
Greece	<p>The regulation of the “Social Insurance Institute-Unified Insurance Fund of Employees”, article 40, describes an occupational disease as the acute or chronic poisoning or illness of the employee in case that he/she:</p> <p>a) Has been employed for a minimum working time or employed in any of the following undertakings, professions or occupations for a period of at least equal time to that for the appearance an illness specified in a table.</p> <p>b) The assault has been medically diagnosed, either during his or her employment, after the expiry of the above-mentioned period, or, interrupted, within the sickness period defined in the time table following the pause of employment.</p>
Ireland	<p>In Ireland, there is a list of “prescribed diseases” that are linked to occupation – these should be reported by physicians to the public health authorities. However, there is no widely applied definition of occupational diseases. Currently, the Health and Safety Authority is collaborating in a Eurostat project to define a common European set of occupational diseases.</p> <p>There is no definition provided by the Health and Safety Authority of WRDs, though they do collect data through the Quarterly National Household Survey (formerly the Labour Force Survey) on “work related ill health”. This uses a self-definition of the concept (illnesses or disabilities that you have experienced that you believe were caused by or made worse by work)</p>
Romania	Occupational disease is defined as an illness resulting from the exercise of a profession or profession caused by physical, chemical or biological agents of the workplace and the overworking of the various organs or systems of the body in the work process.

	WRD are multifactorial disease, where some determinants are of a professional nature.
--	---

Table 5. List of OD in AGROSH+ countries

Bulgaria	<p>There is an original reportable list of OD. It is based on national legislation as:</p> <ul style="list-style-type: none"> • Procedure for admission of Occupational disease, • Regulation for information, registration, confirmation, appeal and annual analyzes of Occupational disease.
Greece	<p>There was adopted the EU list by the Presidential decree 41 FEK91 A (19.4.2012) "National list of occupational diseases in accordance to the recommendation of the Commission of European Union 2003/670/19.09.2003, "about the European list of occupational diseases" (EE L 238/25.09.2003)"</p>
Ireland	<p>Not currently, but the HSA are taking part in an EU project to define a common list. As stated earlier, there is a list of prescribed diseases which include some that are related to occupation that are supposed to be reported to public health authorities.</p>
Romania	<p>There is an original reportable list of OD, The Professional Disease Table with Mandatory Declaration. This list has been introduced and later modified through the following pieces of legislation:</p> <ul style="list-style-type: none"> • LAW ON SAFETY AND HEALTH AT WORK no. 319/2006 (Framework Directive); • GOVERNMENT DECISION no. 1425/2006 - METHODOLOGICAL NORM (of 11/10/2006) on the application of the provisions of the Law on Safety and Health at Work no. 319/2006; • GOVERNMENT DECISION no. 955 of 8 September 2010 amending and supplementing the Methodological Norms for the application of the provisions of the Law on Safety and Health at Work no. 319/2006, approved by the Government Decision no. 1425/2006; • ORDER no. 1256/443 of July 7, 2008 for the approval of the component and attributions of the Commission of Occupational Medicine Experts accredited by the Ministry of Public Health and by the Ministry of Labor, Family and Equal Opportunities; • LAW no.346 / 2002 on insurance against accidents at work and occupational diseases - amended and completed; • ORDER no.553 / 2002 for the approval of the methodological norms regarding the establishment in 2003 of the Initial Fund for the functioning of the insurance system for accidents at work and occupational diseases

Concerning the recent occupational diseases, in some countries, like Bulgaria and Ireland, there is described, in more concrete and specific terms than in the EU list, indicating particular working conditions, fields of occupation or dose-response relationships. The consequence is a legal presumption of causation, and the need for a complementary clause [11].

In 10 member states the lists have been changed in some parts and/or some new occupational diseases have been included, like in Greece [11].

Ireland reports that many of the EU list diseases are included in the Irish list, by open formulations in some cases [11].

Trade unions in Ireland, Switzerland and UK ask for: a greater emphasis on occupational health, and occupational diseases affecting mainly women, like dermatitis and breast cancer risks related to shift work [11].

The newly recognized occupational diseases include mainly: carpal tunnel syndrome (Finland and Ireland in 2003), lateral epicondylitis (Ireland in 2003) [11].

In some countries, it is also possible to take legal action against the employer to get compensation for an occupational disease; this possibility is used in countries such as UK and Ireland [11].

Romania have an original national list which covers about the same content as the EU list (Annex I) and reports that many of the EU list diseases are included its national list; that contains 32 specific diseases [11].

About new occupational diseases in the national lists which are not yet included in the EU list, musculoskeletal disorders and other diseases caused by physical agents, like degenerative hip diseases (coxarthrosis) caused by lifting heavy loads in agricultural work are recognized in Romania. There is a general formulation in the list: "Chronic arthrosis, periarthrititis, stiloiditis, aseptical necrosis, osteocondylitis, bursitis, epicondylitis. Causes: systematic pressure on those articulations, overtension and trauma, long-term work at low temperatures and humidity", and "Thrombophlebitis of the veins of the lower limbs caused by long-term standing, and thrombophlebitis of the upper limbs caused by effort with large movements of the upper limbs"; skin diseases caused by UV radiation, with the Romanian formulation: "Malignant skin tumors and pre-neoplastic lesions occurring after long-term occupational... UV radiation and others"; diseases caused by electromagnetic radiation (Ireland and Romania; diseases caused by unfavorable meteorological conditions (heat, cold): "Heat shock, heat collapse, heat cramps, caused by body overheating"; damage to the voice, "chronic laryngitis and functional dysphonia by continued use of voice in distress"; diseases caused by psychosocial factors, psychoneurosis caused by long-term care of

psychopathic people in psychiatric units“. In Romania the occupational diseases list was not updated, since 2010. There are just few guidelines for OD diagnosis, made by the Romanian Society of Occupational Medicine and the Ministry of Health, the Occupational Medicine Commission [11].

In Bulgaria, the list of occupational diseases was changed in 2008, in according with the EU list and the occupational diseases system regulations have been renewed substantially [11]. The list of occupational diseases itself contains factors for the diagnosis of diseases entitled to compensation. Available data in the period of 2007-2016 shows that the total number of declared OD decreased in the late years. Just one case was declared from agricultural sector.

Occupational Disease is signaled by any medical doctor who suspects an occupational disease, any doctor of dental medicine and the Occupational Medicine Physician. If they has suspicions for OD in a period of 5 day must send the message to the Territorial Division of the National Insurance Institute and to the manager how is due to the insurance. In a period of 3 days after receiving that message, the Territorial Division of the National Insurance Institute orders the investigation of OD. The commission includes: representatives of National Insurance Institute, of administration of working place, of workers, OM specialist.

Worksite investigation of the case of occupational disease is made by the personal doctors and the specialized laboratories pointed from the personal doctors. The case of the OD is declared (formally) by the Territorial Expert Medical commission (which proves or disproves OD). The OD can be challenged by: the employer, workers representative, relatives of the worker in the case of death.

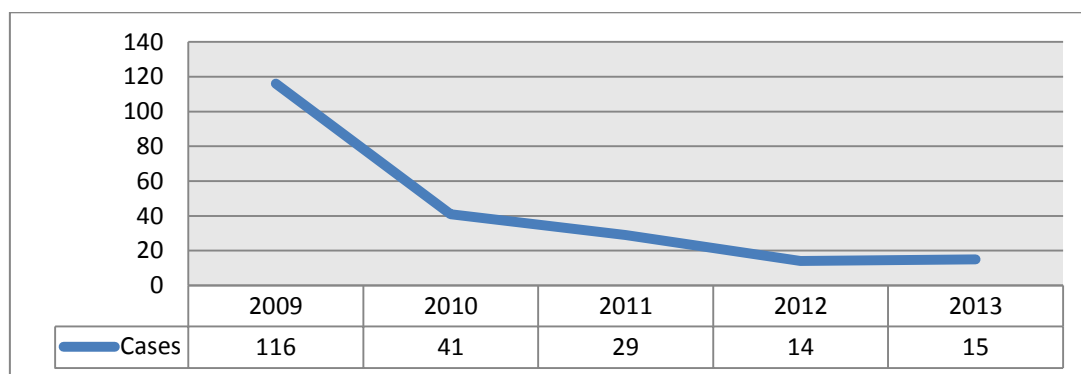


Figure 4. Occupational diseases evolution in Bulgaria, 2009-2013

Table 6. Recognized occupational illnesses, Bulgaria, according with occupation

Professions	2009	2010	2011	2012	2013
OCCUPATIONAL DISEASES - OVERALL	116	41	29	14	15
<u>Qualified workers in agriculture, forestry, hunting and fisheries</u>					
6210 Forest workers and related workers	11				
<u>Qualified workers and similar professions (craftsman)</u>	64	18	12	4	4
7233 Mechanics and engineers of industrial and agricultural machinery and equipment	5	2			
7511 Workers in the processing of meat, fish and similar food products			1		

Table 7. Recognized occupational illnesses, Bulgaria, and their risk factors

PATOGENETIC AGENTS (FACTORS, CAUSATIVE AGENTS)	2009	2010	2011	2012	2013
OCCUPATIONAL DISEASES - OVERALL	116	41	29	14	15
<u>Occupational diseases caused by physical factors</u>	17	10	8	5	10
General vibrations (vehicles, transport-technology sources)	5	5	2	1	4
<u>Occupational diseases caused by biological factors</u>	3	1	1		1
Mycobacterium tuberculosis	1				1
Cotton powder (dust)	1				

Table 8. Recognized occupational illnesses, Bulgaria, after diagnosis

MEDICAL DIAGNOSIS (LEADING CLINICAL MANIFESTATION)	2009	2010	2011	2012	2013
OCCUPATIONAL DISEASES- OVERALL	116	41	29	14	15
<u>INFECTIOUS DISEASES</u>	1		1		1
Tuberculosis	1				1
Hepatitis A			1		
<u>Skin diseases</u>			1		
Allergic contact dermatitis			1		

Table 9. Recognized occupational illnesses, Bulgaria, sex distribution

GENDER	2009	2010	2011	2012	2013
OCCUPATIONAL DISEASES - OVERALL	116	41	29	14	15
Men	72	29	19	9	11
Women	44	12	10	5	4

Table 10. Recognized occupational illnesses, Bulgaria, age distribution

AGE (AGE GROUPS)	2009	2010	2011	2012	2013
OCCUPATIONAL DISEASES- OVERALL	116	41	29	14	15
25-34 age range	10	4	5	1	1
35-44 age range	46	12	11	1	1
45-54 age range	42	14	11	5	8
55-64 age range	18	11	2	6	5
65 years old and over				1	

Table 11. Recognized occupational illnesses, Bulgaria, economic activity distribution

ECONOMIC ACTIVITY	2009	2010	2011	2012	2013
OCCUPATIONAL DISEASES- OVERALL	116	41	29	14	15
<u>Agriculture, Forestry, and Fisheries</u>	3	1			1
01 Horticulture, livestock and hunting; Ancillary activities	2	1			1
02 Forestry	1				

In Greece, the Health and Safety Committee consisted of the elected representatives of the employees, the occupational physician or any doctor who suspects an occupational disease will signalize the case. The Occupational Physician diagnoses the OD. The Health and Safety Committee along with the Occupational Physician and the Health and Safety Technician is investigating on the worksite the case of the occupational disease. The Occupational Physician declares the case of OD at the Labor Inspectorate - "Social Insurance Institute- Unified Insurance Fund of Employees". An occupational disease diagnosis can be challenged by the employer or by his/her representative, the labor inspectorate (SEPE) or the employee's insurer.

In Greece, were reported occupational diseases in EUROSTAT system for 2007 and 2013. The next table shows the situation for all NACE categories:

Table 12. Greek Work related health problems, 2007 and 2013

Work related health problem	Percent 2007	Percent 2013
Cardiovascular disorders	9.3	9.3
Hearing disorders	NA	NA

Pulmonary disorders	5.9	5.1
Musculoskeletal disorders	54.9	57.3
Infectious diseases	9.3	2.7
Stomach, liver, kidney or digestive problem	NA	3.6
Stress, depression, anxiety	6.7	11.2
Skin problems	2.1	1.6
Headache, eyestrain	5.1	3.5
Other not elsewhere mentioned	5.7	3.3

In the Eurostat system are reported data in table forms: “Persons reporting a work-related health problem by sex, age and NACE Rev. 2 activity in Greece”. Only percentages are reported: 3.9% for all NACE activities for both sexes (ages 15 to 64 years old) were reported.

Eurostat table titled: “Persons reporting a work-related health problem by sex, age and occupation” (ages 15 to 64 years old), for all occupations for 2007: 5.3%, 2013: 3.9%.

Persons reporting a work-related health problem by sex, age and occupation - Skilled agricultural, forestry and fishery workers, craft and related trades workers in 2007 was 8.5% and in 2013, 3.8%.

In Ireland, there is not comprehensive information on occupational disease. Registration is through the THOR system (shared with the UK). It is a voluntary system of registration of disease by physicians. Available data are partial and incomplete.

Occupational physicians and other physicians, notably respiratory physicians, dermatologists, consultants in communicable diseases and some GPs signalize and diagnose the OD case. Usually, the occupational physician, though in theory, the Health and Safety Authority might (especially where a fatal illness has occurred) is investigating on the worksite the case of the OD. Also, the Ministry of Social Protection can accept diagnoses or arrange for their own where people are to receive income support under the Occupational Injury scheme, which also covers occupational illness. These can provide short or long term income support. The group of physicians described above declares the OD. Data is declared to the University of Manchester under the THOR system (The Health and Occupation

Research network). This is a voluntary system for the UK and Ireland under which the group of physicians (or some of them) report cases of occupational disease. An annual report is then produced for the Health and Safety Authority. In theory, employers can challenge the diagnosis. In practice, challenges happen on relation to liability and compensation. This may be done by the Social Protection agency or by private insurers.

Table 13. Rates of illness and injury per 1000 workers, 2015, Ireland
Source: QNHS (self-report data)

Sector	Injury rates	Illness rates
Agriculture, forestry and fishing	41	11
Industry	31	14
Construction	21	13
Wholesale and retail trade	15	17
Transportation and storage	18	28
Accommodation and food	25	33
Information and communication	6	16
Financial, insurance and real estate	9	18
Professional, scientific and technical	9	14
Administrative and support services	-	10
Public administration and defence	15	26
Education	19	14
Health and social work	21	41
Other NACE activities	11	25
Total	19	21

In Romania any doctor who suspects an occupational disease must signalize it. The diagnostic is made by the Occupational Medicine Physician. The Occupational Medicine Physician who works in the Directorate of Public Health (county level – there are 41 such Public Health Directorates in Romania) is investigating on the worksite the case of the OD, and declare it if the professional etiology is confirmed. The case will be reported at the National Risk Monitoring Center - National Computerized Operational Register of Occupational Diseases (within the structure of the National Institute of Public Health) (monthly) Department of Public Health and Public Health Control within the Ministry of Health (biannually). The OD (especially the occupational etiology) can be challenged by the employer or its representative or, as the case may be, the authorized safety worker in the case of liberal professions, or the labor inspector, or the employee, or the insurer of the respective employee. The reviewing of the professional etiology of the OD –could only be performed by the Commission of Occupational Medicine Experts; this commission is jointly accredited by the Ministry of Labor and by the Ministry of Health.

The next table shows the situation of occupational diseases in Romania.

The most common diseases recognized as professional in rural areas were respiratory diseases: chronic bronchitis, bronchial asthma, allergic alveolitis caused by exposure to organic dust (53 cases), musculoskeletal apparatus suffered as a result of its overloading during specific agricultural activities (39 cases), lumbar sufferings, Raynaud's syndrome, Carpal tunnel syndrome and hearing loss due to exposure to noise during specific rural activities (5 cases).

Table 14. New-declared OD in Romanian agriculture (2005-2015) Source: INSP [17]

Year	Total number - OD National level	Total number - OD in agriculture	%
2005	1002	10	1
2006	910	9	1
2007	1353	19	1,4
2008	1286	12	1
2009	1380	29	2
2010	1065	17	1,5
2011	929	5	0,5
2012	879	8	1
2013	982	1	0,1
2014	1036	6	0,5
2015	854	0	

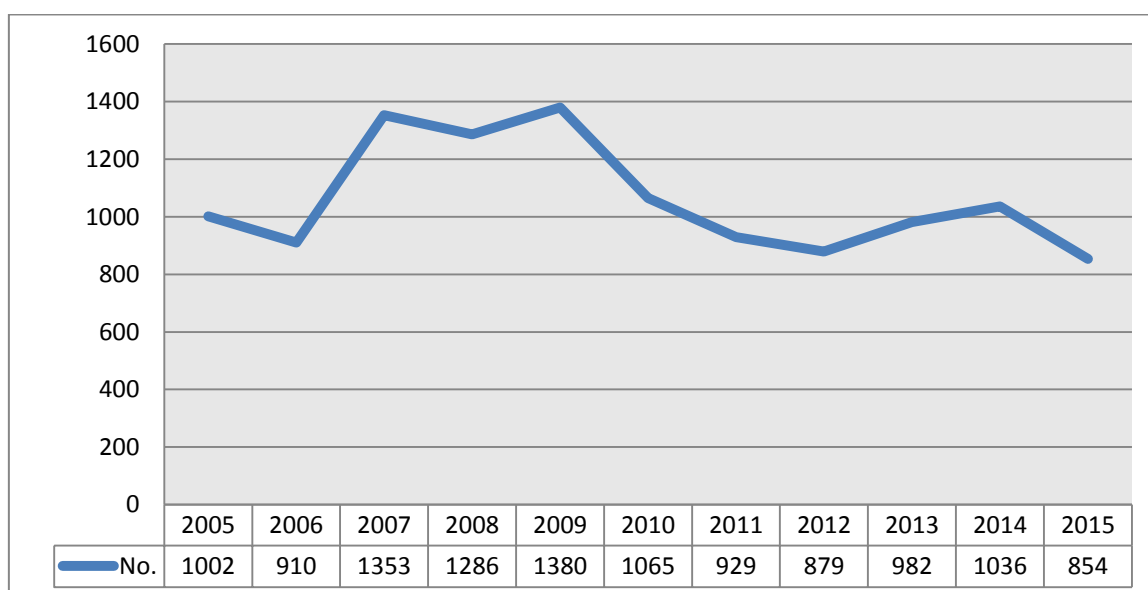


Figure 5. Evolution of occupational diseases in Romania, 2005-2015. Source: INSP [17]

The European Union's social partners in agriculture, EFFAT and GEOPA-COPA made an Agreement in October 2004 on the reduction of workers' exposure to the risk of work-related musculoskeletal disorders [11].

A safe and healthy working environment for agricultural workers is essential to maintaining agriculture as an attractive sector for workers, and hence for the competitiveness of the sector [11].

5.7. Conclusions and recommendations

5.7.1. Conclusions

There is not a unique system of reporting occupational diseases in EU countries. That makes difficult to analyze and compare the occupational morbidity data.

Presented data show, as the EU reports emphasized, that the Member Nations use different definitions and lists for reporting and compensating occupational diseases.

Occupational diseases are under-reported, especially in new member states.

In agriculture, occupational diseases are under-reported and not recognized in all analyzed countries. A possible cause is the poor coverage with OH services, the form of employment and, sometimes, the ignorance of the workers, who are not addressed to an occupational medicine service or physician.

5.7.2. Recommendations

At national level is necessary to make the decision to implement the EU occupational diseases list and to harmonize the recognition system of occupational diseases.

The reporting system must be clear, and unitary, to assure comparability of reported data.

That will permit a good rating of the problems, like base for efficient preventive measures.

For agricultural sector is important to assure OHS services, including workplace health promotion.

References

1. Károly Nagy and Ferenc Kudász, National Labour Office - Department of Occupational Health, Hungary, Introduction to occupational diseases, https://oshwiki.eu/wiki/Introduction_to_occupational_diseases#Definition_of_.E2.80.98occupational_disease.E2.80.99
2. Markku Aaltonen, Timo Kauppinen and Anja Saalo, Reporting and monitoring occupational accidents and diseases in Europe, https://oshwiki.eu/wiki/Reporting_and_monitoring_occupational_accidents_and_diseases_in_Europe
3. Agnès Parent-Thirion, Isabella Biletta, Jorge Cabrita, Oscar Vargas, Greet Vermeulen, Aleksandra Wilczynska and Mathijn Wilkens , Eurofound (2016), Sixth European Working Conditions Survey – Overview report, Publications Office of the European Union Luxembourg
4. European Commission 2000, European Occupational Diseases Statistics (EODS) Phase 1 Methodology, Population and social conditions 3/2000/E/n°19
5. Eurostat – statistical office of the European Union, 'Health and safety at work in Europe (1999–2007) - A statistical portrait', Eurostat Statistical Books, 2010 Edition, Luxembourg, 2010. Available at: http://epp.eurostat.ec.europa.eu/portal/page/portal/product_details/publication?p_product_code=KS-31-09-290
6. ILO, List of Occupational Diseases (revised 2010), Identification and recognition of occupational diseases: Criteria for incorporating diseases in the ILO list of occupational diseases, Occupational Safety and Health Series, No. 74, INTERNATIONAL LABOUR OFFICE GENEVA, 2010
7. Graeme Walker, Farmwise, Your essential guide to health and safety in agriculture, Second edition, published 2013
8. ILO, Employment Injury Benefits Convention, 1964 [Schedule I amended in 1980] (No. 121), http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C121
9. ILO, Agriculture: a hazardous work, http://www.ilo.org/safework/areasofwork/hazardous-work/WCMS_110188/lang-en/index.htm
10. Non-standard employment around the world: Understanding challenges, shaping prospects, International Labour Office – Geneva: ILO. 2016, http://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_534326.pdf
11. Report on the current situation in relation to occupational diseases' systems in EU Member States and EFTA/EEA countries, in particular relative to Commission Recommendation 2003/670/EC concerning the European Schedule of Occupational Diseases and gathering of data on relevant related aspects, March 2013

12. Gert van der Laan, 'New Occupational Diseases, a typology', presentation at 30th ICOH Congress 2012.
13. Bart De Norre, Occupational diseases in the EU, Session 2: diagnostic criteria, data and statistics, European Occupational Diseases Statistics (EODS), 2-3 December 2013 – Brussels
14. Sedlatschek Christa, For more productivity, 'look at occupational safety and health', Financial Times, 13 Sept., 2017, <https://www.ft.com/content/01f5f22c-898b-11e7-afd2-74b8ecd34d3b>
15. Jukka Takala, Work-related Illnesses Identification, Causal Factors and Prevention, "Safe Work - Healthy Work – For Life", http://gr2014.eu/sites/default/files/Work-related%20Illnesses%20Identification,%20Causal%20Factors%20and%20Prevention%20%E2%80%9CSafe%20Work%20-%20Healthy%20Work%20%E2%80%93%20For%20Life%E2%80%9D_0.pdf
16. Karjalainen Antti, Virtanen S., European Statistics on Occupational Diseases "Evaluation of the 1995 Pilot Data", Population and social conditions 3/1999/E/n° 2, Eurostat, European Commission 1999
17. <http://www.insp.gov.ro/cnmrmc/images/rapoarte/Raport-Morbiditate-Romania-2015.pdf>
18. Frank van Dijk, Inge Varekamp, Katja Radon, Manuel Parra, Glossary for Basic Occupational Safety and Health, 2011