

# Social security in agriculture

Special  
edition

2015

## In this journal

Prof. Dr. Rudolf Schoberberger

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Dr. Marja Kallioniemi, Hanna-Riitta Kymäläinen

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The importance of agricultural mental health-promoting partnerships and innovations

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Sonderedition der Fachschrift

## Soziale Sicherheit in der Landwirtschaft

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## Dear Readers,

The articles in this SdL special edition are the results of the “Agricultural Health and Safety Innovations & Best Practice” event celebrating the tenth anniversary of the European Network of Agricultural Social Protection Systems (ENASP) on November 4-5, 2015 in Berlin.

The meeting in Berlin was not an everyday event and the occasion was a special one: ten years ago, ENASP was launched at the same location. I was very pleased that delegations were represented from all European agricultural social protection systems – the French MSA, the Austrian SVB, the Finnish Mela, the Greek OGA, the Polish KRUS and the German SVLFG [1].

The European agricultural social system represents more than 12 million insured people, umpteen thousand employees and a financial volume of over 46 billion euros. These figures show the economic significance of agricultural social insurance in Europe and the countries concerned.

ENASP has given the agricultural social security systems a European voice. Three key areas have determined its work over recent years: firstly, there has been an intensive exchange of views and information on the structural conditions and the resulting different innovative provision projects of the insurance systems. Provision projects that had already been developed were then adopted with the necessary changes and adapted to the respective national requirements. Secondly, a large number of technical and political discussions have been conducted at the political level, among others with representatives of the European Commission and other European institutions in Brussels. ENASP has taken over training contracts for the European Council and provided further training, inter alia, to employees from Turkey and Bosnia-Herzegovina. Thirdly, concrete and very weighty projects have been initiated and developed at the European level, one example of which that is worthy of mention is the Pro-Farm application within the framework of Horizon 2020 (more information on ProFarm is available in the article *The Importance of Agricultural Mental Health-Promoting Partnerships and Innovations* on page 45).

The agricultural social insurance systems stand for social security, health and prevention. They stand for reliability in an economic and political environment which urgently depends on this reliability. Working in agriculture means being an entrepreneur who is subject to increasingly difficult framework conditions. The fact that as a farmer I can also rely on the agricultural social insurance system, especially in difficult times, is not just important, it is essential for survival.

All European countries are facing the enormous challenge of continuing to ensure the across-the-board and

high-quality provision of health and social services for people living in rural areas in the future. The insured live and work almost exclusively in structurally weak regions. Looking ahead, I think it is important that ENASP members pay greater attention to this problem within the framework of the three main fields of action described above by exchanging information and searching for possible solutions.

Each agricultural social security system has its specific features and strengths – the diversity and strength of the social campaigns in France, the “health offers” in Austria, the particularly innovative cooperation with the scientific community in Finland, the close relationship with the village community in Greece, the exemplary cooperation with rural medicine in Poland and the intensive cooperation with the professional organisations in Germany. Here I have only cited a few examples of many. Our opportunities and strengths lie in exchanging information with one another and learning from each other.

In which direction should ENASP be developed in the coming years? The exchange of innovative provision projects in the individual member organisations and the enhanced implementation of joint projects will result in the pooling of knowledge and an increase in forcefulness. There will be hurdles to this cooperation in many places, which will result from a wide variety of structural deficits. This will make it necessary to develop joint lobbying activities even more at the European level. Only in this way will ENASP be heard by the political decisionmakers and bring about changes to framework conditions in the sense of strengthening agricultural social security.

My thanks go to everyone who made this landmark event possible; my special appreciation goes to my predecessor as ENASP President, Mr. Gérard Pelhâte, who held the office of President for ten years.

Of great value for the anniversary event were in particular the contributions by the President of the European Social Insurance Platform, ESIP, Dr. Franz Terwey, and the Director of the International Association of Mutual Benefit Societies, AIM, Mr. Menno Aarnout. Good cooperation between the European social organisations is of particular importance.

I would like to express my heartfelt thanks also to Dr. Jana Volkert from the University Medical Center Hamburg, UKE, Ms. Jessica Carreño-Louro from AIM in Brussels, Dr. Véronique Maeght-Lenormand from CCMSA, Dr. Marja Kallioniemi from Luke, the Natural Resources Institute Finland, Dr. Monika Król from KRUS, Ms. Laurance Leruse and Mr. Quentin Triest from Agricall, Professor Rudolf Schoberberger from the Medical University

of Vienna, as well as Professor Venetsanos Mavreas and Professor Petros Skapinakis of the University of Ioannina.

My thanks also go to the sponsors of the conference and conference media. The following supported us:

- Gemeinnützige Haftpflichtversicherungsanstalt Kassel – HAVA
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- Vereinigte Hagelversicherung
- Versicherungskammer Bayern

All of the parties referred to above also feel responsible in one way or another way for the health and social security of the insured people living and working in rural areas. It is also true here that the best possible results for the community can be achieved by a spirit of friendly cooperation. The technical articles in this issue of Professor Rudolf Schoberberger, Dr. Marja Kallioniemi and Hanna-Riitta Kymäläinen, Dr. Véronique Maeght-Lenormand, Quentin Triest, Julia Deipenbrock, Dr. Jana Volkert and Professor Martin Härter provide an insight into relevant and interesting developments and activities in the agricultural social field.

I hope that the informative and inspiring cooperation in the network will not only continue, but also be intensified. The articles in this issue are a further important step in this direction.

I wish you a good deal of inspiration and new insights as you read.

*Leo Blum*

ENASP President,  
alternating Chairman of the board of SVLFG

[1] The agricultural and social security protection systems of Austria (SVB), Finland (MELA), France (MSA), Germany (SVLFG), Greece (OGA) and Poland (KRUS) created the European Network of Agricultural Social Protection Systems (ENASP) a decade ago to facilitate common institutional goals on the European level. The aim of this coalition is the steady exchange of expertise, the pooling of resources and a strong presence of agricultural and social security matters on the European level.

**CCMSA** – Caisse Centrale de la Mutualité Sociale Agricole/Central Agricultural Workers and Farmers' Mutual Benefit Fund, **France**

**KRUS** – Kasa Rolniczego Ubezpieczenia Społecznego/Agricultural Social Insurance Fund, **Poland**

**Mela** – Maatalousyrittäjien eläkelaitos/Farmers' Social Insurance, **Finland**

**OGA** – Οργανισμός Γεωργικών Ασφαλίσεων/Agricultural Insurance Organization, **Greece**

**SVB** – Sozialversicherungsanstalt der Bauern/Social Insurance Institution for Farmers, **Austria**

**SVLFG** – Sozialversicherung für Landwirtschaft, Forsten und Gartenbau/Social Insurance for Agriculture, Forestry and Horticulture, **Germany**



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## Obesity in the Austrian agricultural population and an effective public health approach for weight reduction

Prof. Dr. Rudolf Schoberberger

*Obesity, a risk factor for numerous diseases, has a high prevalence among the agricultural population. In Austria, about 20 % of farmers are obese; additionally, approximately one third of women and half of all men are overweight. Many of them have unrealistic assessments in term of their body weight and do not have the desire to reduce this risk factor. Health awareness, an essential mediator, helps to promote a weight-stabilising lifestyle. The programme “slim without diet”, offered as a public health intervention scheme for weight reduction in one of Austria’s federal states, shows that sustainable changes in the daily diet and physical activity habits can be achieved. Project follow-up carried out 6 and 12 months after the end of the intervention showed that participants were able to maintain an average weight loss of 4.2 kg compared with their weight at programme-start.*

### 1 Introduction

Health behaviour has a significant impact on morbidity and mortality. Body weight is a relatively good parameter for health behaviour. In the European region, obesity – defined by body mass index (BMI  $\geq 30$ ) – is seen as a growing problem [1]. Worldwide, the proportion of overweight or obese adults (BMI  $\geq 25$ ) increased between 1980 and 2013 from 29 % to 37 % in men and from 30 % to 38 % in women [2]. WHO estimates that by 2015 approximately 2.3 billion adults will be overweight, and at least 700 million will be obese [3]. In Austria, about 37 % of men are overweight and another 15 % are obese; among women 18 % are overweight and 10 % are obese [4]. Illnesses associated with obesity are continuously increasing, and generate costs for health and social systems. Experts refer to this as a European public health problem [5]. However, high quality data from representative samples of the agricultural population is sparse. An Austria-wide health survey of the rural population provided interesting results on health behaviour. The aim of this study was to analyse those determinants which have an influence on the development of obesity, with particular attention to the impact of health awareness.

This report also presents experiences of a public health programme for weight reduction, which was carried out in Lower Austria where a high proportion of agricultural people live.

### 2 Health Survey

#### 2.1 Method

In 2010, a structured questionnaire on topics such as health status, health awareness, risk factors, and health knowledge was randomly distributed to 32,927 people with insurance coverage by Social Insurance Institution for Farmers in Austria (SVB) [6]. The high response rate of 36.3 % (54 % women, 46 % men) and the balance in terms of gender and provinces assumes representativeness of Austria’s rural population.

As a very similar survey with a comparable response rate was carried out in 2000, it is possible that this data, at least in some aspects, represents a 10-year trend.

Mean age was 58.9 years (59.2 for men and 58.9 for women). The majority of participants fell in the 41-50 year age group. “Compulsory education” is the highest educational attainment for 57.0 % of women and 40.5 % of men. The remaining participants have a higher level of education. 52.3 % of women and 54.2 % of men are retired.

#### 2.2 Results

##### 2.2.1 Prevalence of overweight and obesity

Respondents provided information on height and weight from which the Body Mass Index (BMI) was calculated. According to BMI categories, BMI results are interpreted as obese (BMI  $\geq 30$ ), overweight (BMI 25.0 to 29.9), normal range (18.5 to 24.9) and underweight (BMI  $<18.5$ ).

According to the calculated BMI respectively 19.8 % of men and women are obese, 35.4 % of women and 48.1 %

of men are overweight, 43.6 % of women and 31.6 % of men are in normal range, and 1.2 % of women and 0.6 % of men are underweight. The percentage of obese people has increased by about 5 percentage points for

both men and women compared to the 2000 survey. The age groups 51-80 years have the highest proportions of obese people (Fig. 1).

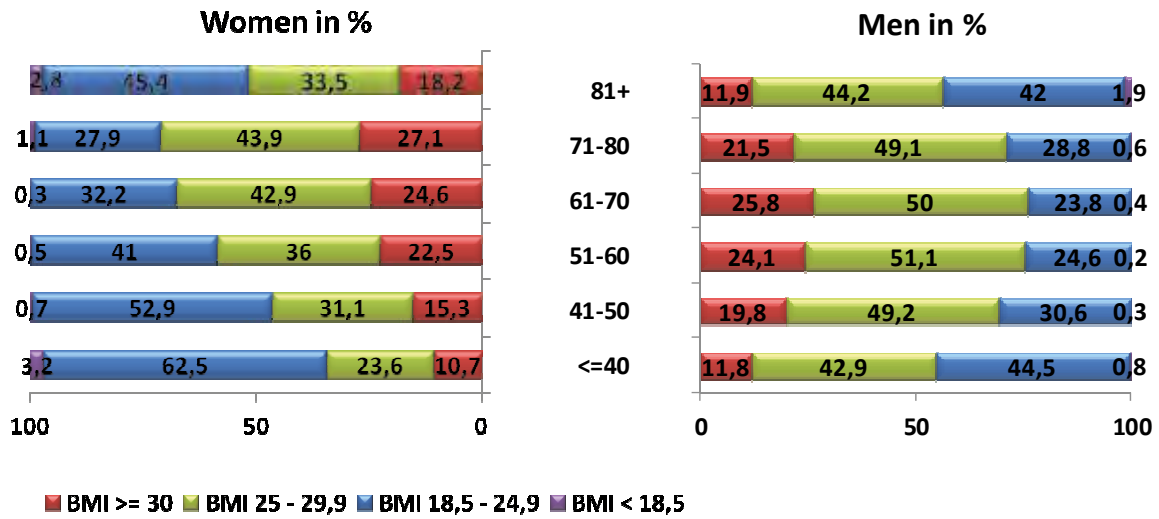


Fig. 1: BMI-Categories by Age and Gender

Comparing the rural population with the general population, a significantly higher percentage of obese people

are found in rural parts of the country compared with the provinces (Fig. 2).

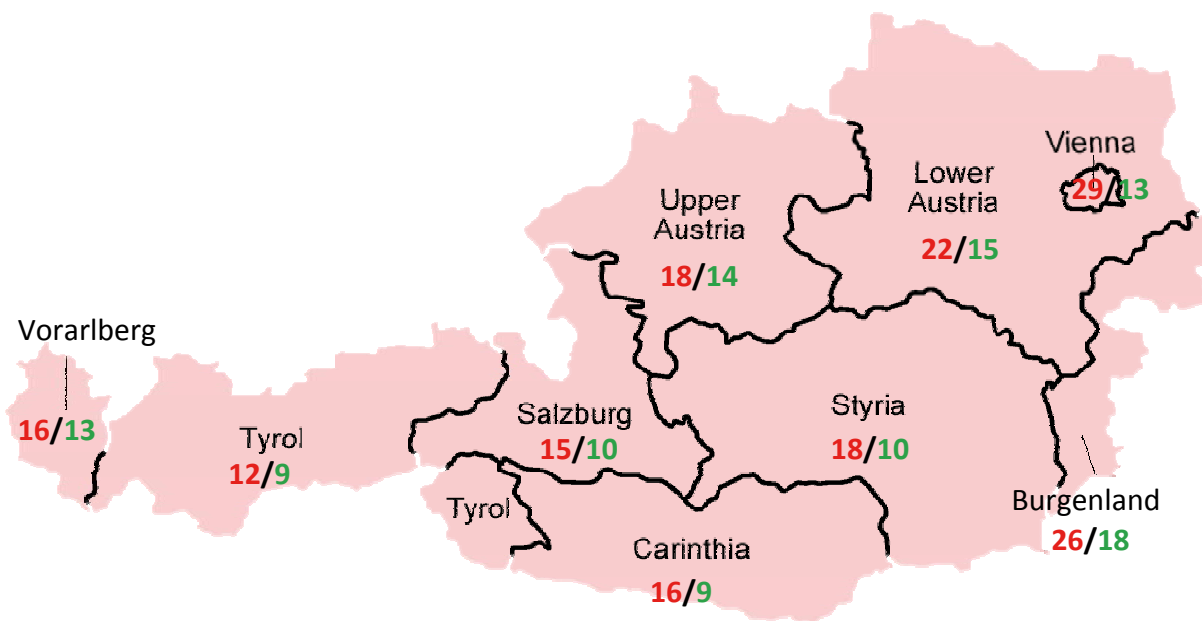


Fig. 2: Comparison of obesity (BMI > 30.0, %) between SVB-sample (RED) and Austrian population (GREEN)  
Source: Survey 2006/07 Statistics Austria



2.2.2 Personal attitude for own body weight

Farmers were also asked to assess themselves in relation to their weight. Overweight and obese individuals

have unrealistic assessments in terms of their body weight compared with individuals of healthy weight (Fig. 3).

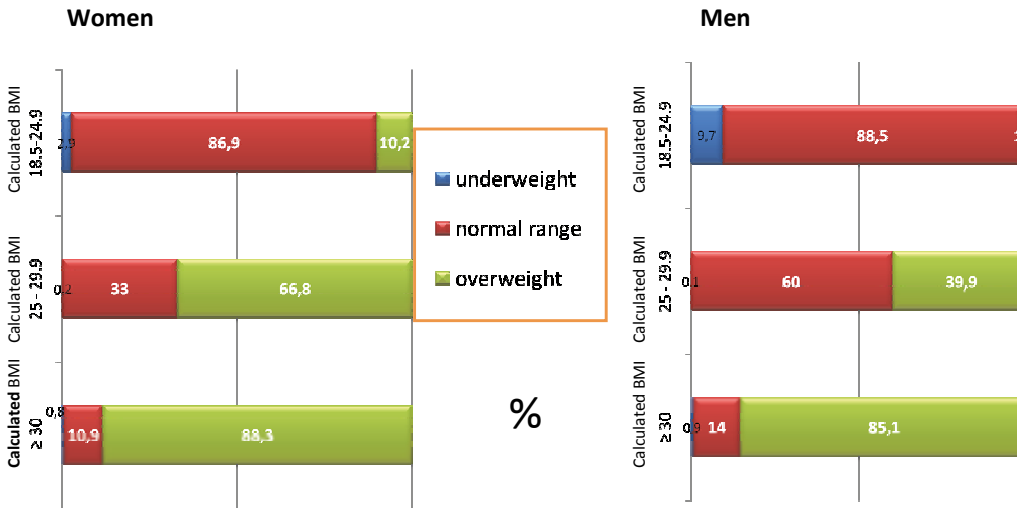


Fig. 3: Calculated BMI and Self Assessment

Overweight and obese people often do not report a desire to reduce their risk factor – excess body weight. In addition to the high proportion who consider themselves in normal range – despite being overweight, not feeling the need for weight reduction – over 10 % of women

and more than 7 % of men ( $p < 0.001$ ), who consider themselves overweight, also have no wish to reduce their weight. These percentages are even higher among obese people (14.6 % for women and 17.8 % in men,  $p = 0.015$  – Fig. 4, 5).

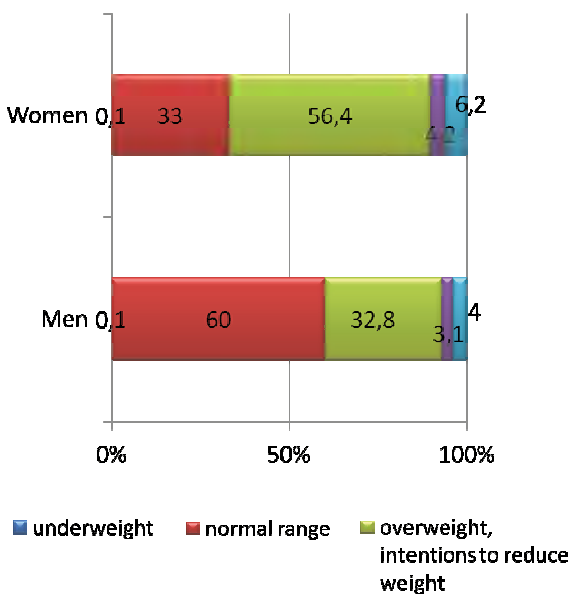


Fig. 4: Subjective weight-assessment at calculated overweight (BMI 25.0-29.9)

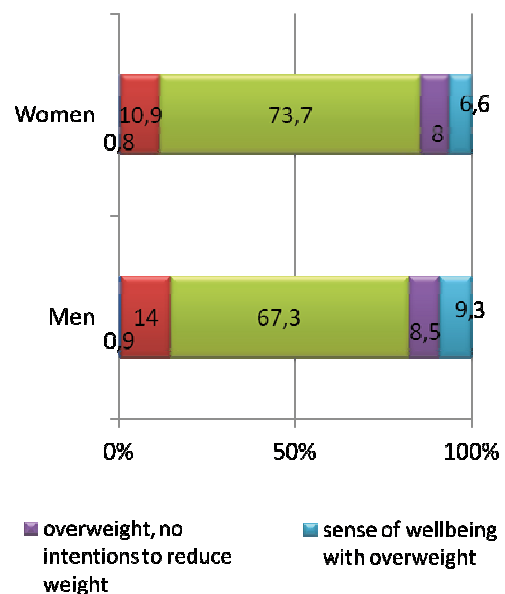


Fig. 5: Subjective weight-assessment at calculated obesity (BMI > 30.0)

### 2.2.3 Influence on overweight and obesity

The results of a logistic regression analysis including all studied determinants, mediators, and health behaviour show that the strongest influences on overweight and obesity in men is their self-assessment of health awareness [7]. Factors of age and very low intake of healthy

food are significant independent predictors on the risk of being overweight or obese. In women, the strongest influence is also the assessment of non-health-conscious living, followed by subjective medium or poor health, and low education. Other significant factors influencing the risk of being overweight or obese are age, predominantly unhealthy diet, and living in Eastern Austria (Table 1).

	Men Odds ratio (95 % confidence interval)	Women Odds ratio (95 % confidence interval)
<b>Determinants</b>		
Age (metric)	1.02 (1.01-1.02)***	1.02 (1.01-1.02)***
Education	1.06 (0.88-1.27)	1.45 (1.18-1.78)***
Region (Eastern Austria)	1.13 (0.96-1.33)	1.17 (1.02-1.35)*
<b>Mediators</b>		
Health awareness (medium or poor)	1.88 (1.56-2.28)***	1.92 (1.64-2.24)***
Subjective health (medium or poor)	1.05 (0.88-1.25)	1.63 (1.38-1.91)***
<b>Health Behavior</b>		
Healthy food (seldom or never)	1.26 (1.05-1.50)*	1.22 (1.03-1.44)*
Fruits and vegetables five times a day (seldom)	1.05 (0.89-1.24)	0.96 (0.83-1.11)
Alcohol consumption (daily or several times a week)	1.07 (0.90-1.26)	0.79 (0.61-1.02)
Recreational sports (seldom)	1.12 (0.89-1.40)	1.02 (0.85-1.22)

\*P<0.05, \*\*P<0.01, \*\*\*P<0.001

Table 1: Factors Influencing Overweight or Obesity – Results of a Logistic Regression Model

### 2.2.4 Health awareness and obesity

As part of the Health Survey 2010, participants were given three categories to choose from and asked to indicate their attitude toward health awareness:

- Good: "... is important for me and I live accordingly ..."

- Medium: "... in principle health conscious but do not always act in this way ..."
- Poor: "... generally less health conscious ..."

Both in women and men with better health awareness significant lower levels of obesity are observed compared with participants with poor health awareness (Fig. 6).



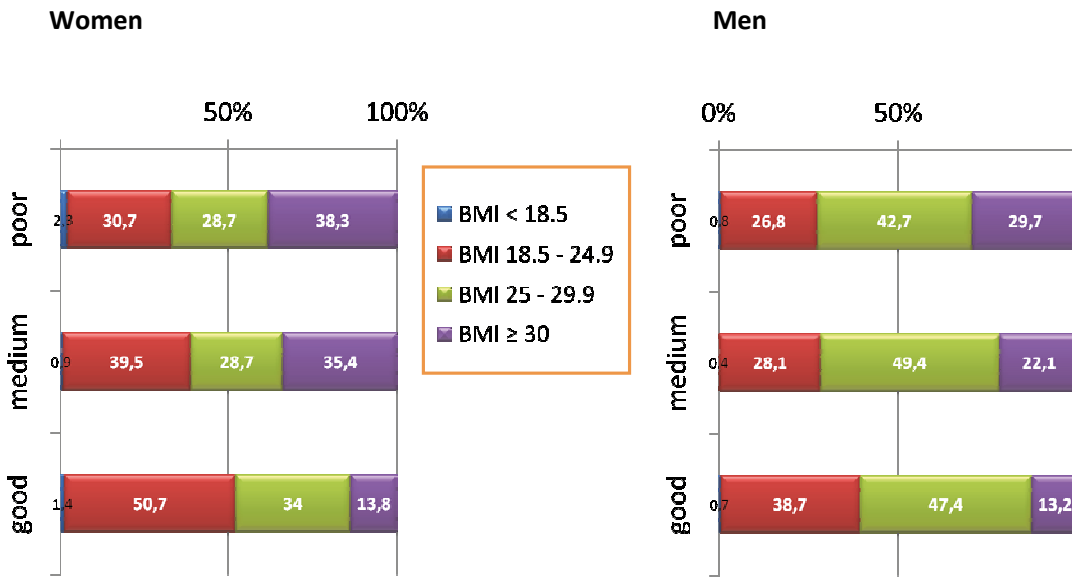


Fig. 6: Health awareness and body weight

Health awareness also has a significant impact on life style variables, which may influence body weight. This applies to the consumption of “healthy” foods – the con-

sumption of fruit, vegetables and salad at least five times a week – as well as the engagement in regularly (several times per week) occurring recreational sports (Fig. 7).

## Health awareness and lifestyle

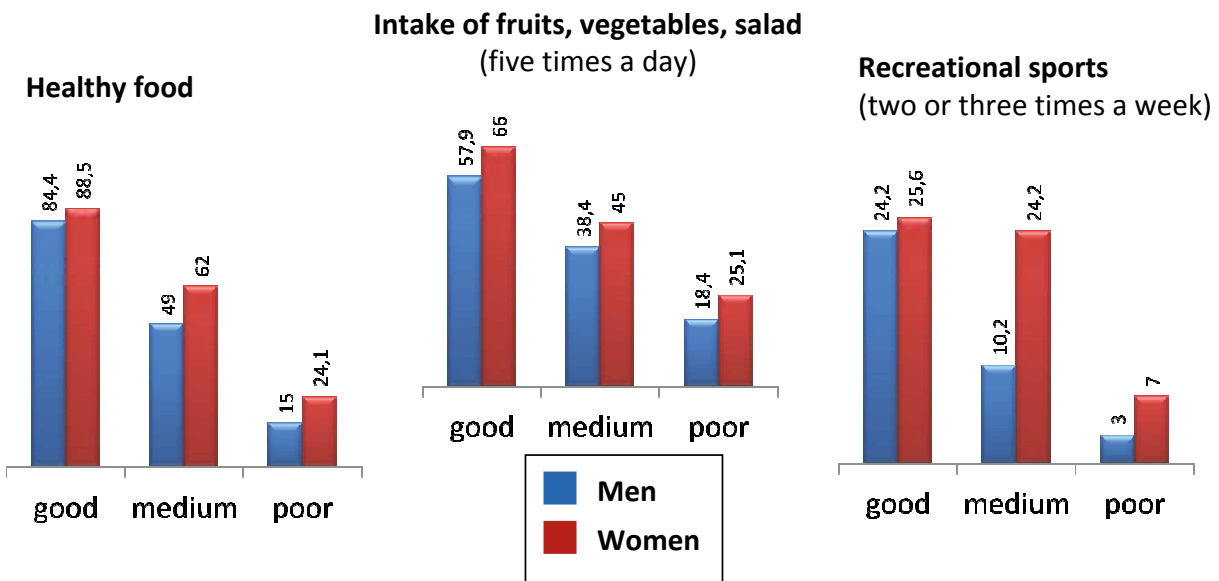


Fig. 7: Health awareness and lifestyle

	BMI 18.5-24.9	BMI 25.0-29.9	BMI > 30	R <sup>2</sup>
Men	N = 1,698	N = 2,584	N = 1,063	
Hypertension	1	1.80 (1.58-2.07)	3.99 (3.39-4.70)	0.071
Hypercholesterolemia	1	1.43 (1.22-1.66)	1.94 (1.62-2.33)	0.015
Diabetes	1	1.68 (1.35-2.09)	2.71 (2.13-3.44)	0.025
Women	N = 2,696	N = 2,190	N = 1,227	
Hypertension	1	2.52 (2.22-2.85)	4.56 (3.95-5.27)	0.105
Hypercholesterolemia	1	1.68 (1.46-2.92)	1.63 (1.39-1.92)	0.016
Diabetes	1	1.63 (1.30-2.05)	3.21 (2.55-4.05)	0.037

Table 2: Health Risks – Logistic Regression Analysis  
Odds Ratio (95 % confidence interval)

### 2.2.5 Weight associated diseases

Compared with farmers who are overweight and obese, farmers in the normal weight range are significantly more likely to report a “very good” or “good” state of health. In fact, the risk of developing one of the known weight associated diseases of overweight and obesity is in healthy weight participants significantly lower than in individuals with higher body weight. For example, hypertension, hypercholesterolemia, and diabetes mellitus are developed in obese people two to four times as frequently as in subjects with a BMI in the normal range (Table 2).

### 2.3 Conclusions based on the results of the health survey

Target groups should be informed about the increased health state experienced by participants of healthy weight compared with overweight and obese people, in order to raise health awareness and motivate people at risk to modify their lifestyle. This, however, can only happen effectively if appropriate counselling and interventions are offered.

## 3 A Public Health Programme for Weight Loss

Between 2005 and 2010, our Institute of Social Medicine cooperated with the Sick Fund of Lower Austria (NÖGKK) to implement a public health programme for weight loss. This health insurance is compulsory for most employees and coverage extends across different districts. For many years our institution had been responsible – programme development, education and evaluation – for a weight reduction programme called “Schlank ohne Diät” (“Slim without Diet”, SWD) [8].

### 3.1 Programme

The core of the programme is based on personal modification of eating and exercise behaviour through self-control. To motivate participants to a steady, slow weight loss is a key goal. It is important to communicate to participants that they need to target long-term success and to aim for sustainable weight loss of 0.5 kg per week, based on international recommendations [9].

SWD is conducted in group sessions. There are 5 sessions in intervals of 14 days. Participants’ aftercare occurs six months after the end of the intervention phase by means of a written follow-up check. One year after the beginning of the programme, participants are invited to a final personal meeting which concludes the programme [10] (Fig.8).

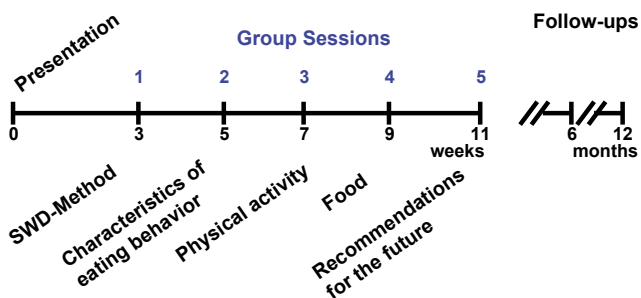


Fig. 8: Public Health Intervention – Design

In each group session the participant is given the opportunity to develop a personal approach to confront established behavioural patterns. Participants share their successes and disappointments, and grant the group insight into their personal experiences, becoming experts of their own health. During the individual group sessions participants are introduced to the principles of SWD. Furthermore, they get introduced to different diets, learn about meal composition, and increase their knowledge about the relationship between food choices and health outcome. Other themes of the group sessions include fitness and healthy eating [11]. Daily protocols are used to record meal time, food type, calories and fat intake as well as physical exercise carried out, and participant’s mood. Thus, participants learn to reflect on their eating and exercise habits, and are able to identify unhealthy behavioural patterns and develop coping strategies. Physical exercise is a key component of the programme.

Participants also receive a mood state questionnaire, which was designed especially for SWD, to assess current eating and physical exercise behaviour as well as subjective account of physical ailments. The same questionnaire is handed to participants present at the last group session before concluding the face to face intervention.

Participants are weighed and measured at the beginning of each group session and at the one year follow-up. At each weigh-in, weight, body fat, and waist circumference measurements as well as Body Mass Index are recorded.

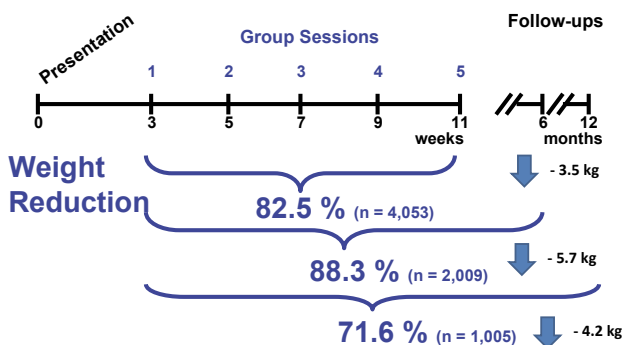


Fig. 9: Public Health Intervention – Long-Term-Results

### 3.2 Sample

Between March 2005 and Dec 2010, 4,509 individuals (696 men, 3,813 women) took advantage of the prevention service offered by NÖGKK by participating in the programme “Slim without Diet”. 4,053 individuals attended at least two group sessions which is the minimum requirement to measure weight change. Only these participants were included in the programme evaluation. Participants who only attended a single group session were defined as “programme drop-outs”. The percentage of “drop-outs” according to this definition is 10.1 %.

The average age of the participants at the beginning of the programme was 47.5 years (minimum 9 years, maximum 83 years); the average Body Mass Index (BMI) was 32.3. Although there were no restrictions for participation, data show that the target group “obese people” was reached; only 7.6 % of participants (n = 308) were in the BMI-group “normal range”.

### 3.3 Results

#### 3.3.1 Short-term success

Average BMI was 32.3, which is significantly above the limit for clinical obesity (BMI > 30 obesity) [12]. At the end of the intervention average BMI was reduced to 31.04 (men from 32.7 to 31.2, women from 32.2 to 31.0). During the period of “group-lessons” participants achieved an average weight loss of 3.49 kg (-4.42 kg for men, -3.32 kg for women), however, overall, weight change ranged from +8.0 kg weight gain to -24.0 kg weight loss (Fig. 9).

Besides these objective results we also inquired about self-reported modifications. There had been key changes concerning eating behaviour. At the beginning of the intervention 38 % reported that eating was a spontaneous habit. At the end of the programme this percent-

age was reduced to 14.6 %, which means that more and more people had started to eat more consciously. Very similar results were observed regarding the items “eating for problem solving”, and “overeating during holidays and social festivities/celebrations”.

Regular physical activity increased during the intervention. Many participants felt motivated to bike, or engage in Nordic walking or gymnastics.

As a consequence body-weight associated complaints decreased – very impressive concerning backache but also for cardiovascular diseases or stress symptoms.

### 3.3.2 Long-term success

The first follow-up check (FU1) was carried out 6 months after the end of the intervention phase by means of a written questionnaire. 4,053 participants who attended at least two group sessions received a questionnaire. 1,951 (48.1 %) of the 4,509 participants (318 men, 1,633 women) returned the questionnaires.

The change in weight from programme start to FU1 was, on average, -5.69 kg (-6.42 kg for men, -5.54 kg for women). 87.8 % of participants lost weight, 6.9 % maintained their weight, and 5.4 % gained weight. Average BMI at FU1 was 29.63, falling into the category of pre-obesity (men 29.93, women 29.58).

The FU2 took place at the premises of NÖGKK, and all attendants were weighed and measured again. 1,005 individuals attended FU2. The average weight change from programme start to FU2 was -4.26 kg (-4.78 kg for men, -4.15 kg for women). 71.7 % of participants lost weight, 14.4 % maintained their weight, and 13.9 % gained weight.

About 75 % of the people who started with the programme failed to attend FU2. This percentage, which certainly is a limitation for the interpretation of the results, is comparable with other programmes. Our experience is confirmed by literature which also reports low participation rates in follow-up checks [13, 14]. However, considering the fact that about 40 % of participants indicated that their main priority is to stabilise their weight combined with a drop-out rate of about 10 %, it can be assumed that about 33 % of participants who initially stated the desire to reduce their weight show an evaluated (measured) sustainable success.

Regardless of follow-up attendance the majority of participants reported satisfaction with the SWD-programme, group sessions, organisation and written material.

### 3.4 Conclusions based on the SWD-programme

The offer of such a public health weight reduction programme:

- reaches the target group even without special recruitment
- is well accepted
- shows good short-term and long-term effects

## 4 Discussion

The rural population is one of those sections of the Austrian population with the highest percentage of overweight – particularly obesity. Since 2000, there has been an increase in the proportion of obese people. Overweight and obese farmers are much more affected by diabetes, hypertension, and hypercholesterolemia compared with farmers of normal weight. Measures that focus on addressing the “overweight crisis” can not only prevent overweight and obesity but may also be used for successful intervention in the case of consumers with a currently unhealthy weight. Objectives of prevention of unhealthy weight include stable BMI in affected group, prevention of further weight gain from overweight to obesity, and putting a brake on age-dependent BMI upward spiral.

Health awareness is identified as essential mediator, which helps to promote a weight-stabilising lifestyle. Adverse health behaviour is often due to unrealistic assessment of an overweight person identified as “risky” due to a negative attitude towards weight loss.

In more recent studies it is discussed whether or not experiential avoidance – the non-permitting of thoughts, feelings, memories, physical sensations, and other inner experiences – as well as the stigma of obesity contribute to overweight people “negating” their body weight [15]. It should be possible, therefore, to reduce the stigma and to encourage people at risk to assess their body weight in a realistic way. Perhaps this can be accomplished through a system of personal invitation or a wider range of “weight-checks”.

Target groups should also be informed about the health benefits in healthy weight compared with overweight and obese people, in order to raise health awareness and motivate people at risk to modify their lifestyles.

But this also includes the availability of specific offers to make lifestyle changes. On the basis of a public health programme for weight reduction, this evaluation shows that great interest and acceptance exists among

the rural population, and that a considerable number of people who originally had a very unhealthy weight managed to achieve sustainable weight loss.

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## Well-being at work in agriculture

Dr. Marja Kallioniemi, Hanna-Riitta Kymäläinen

*The following text first presents recent results from the Fifth European Working Conditions Survey in order to provide current information on the well-being of farmers at work in Europe. After this, we assess these results based on crucial theories concerning well-being at work. Finally, we focus on problematic issues and on elements that should be taken into account when aiming at improving the well-being of farmers at work.*

*A survey among European workers revealed an image of farmers as having a high workload, low earnings and a low state of physical health. Agriculture was also among the sectors having more workers with poor mental health than on average in Europe. As positive features, farmers assessed their work as useful, felt at home on their farms and enjoyed the feeling that their work was well done.*

*In order to help farmers to cope with stressful situations, physical strain or even with burnout, different identities, emotional rules and special features of the operational environment in farming should be taken into account. The social status of farmers needs to be enhanced in societies, promoting their well-being and reducing the risk of mental health problems.*

### Farmers' well-being at work according to a Europe-wide survey

The Fifth European Working Conditions Survey in the member states of the European Union (EU27) and in neighbouring countries provided recent information on working conditions in Europe [1, 2, 3, 4, 5]. The survey was conducted in 2010, and included 44,000 respondents from 34 European countries. The respondents were interviewed in their homes, and the sample was assessed as representative of European workers [5].

Unfortunately, the information concerning farming and agriculture in the European survey is discrete in several aspects. An occupational group 'skilled agricultural workers' (later in this text abbreviated to SAW) is described in this survey as comprising 'market-oriented skilled agricultural workers' and the related industry (including different worker groups) as 'agriculture, forestry and fishing' (later in this text abbreviated to AFF or 'agricultural sector', AS).

The working days reported by farmers were long. Among all the respondents, the proportion of persons working over 48 hours per week was highest among farmers (SAW). Nearly 60 % of male farmers and nearly half of female farmers worked over 48 hours per week [5]. However, the farmers (SAW) were among those who as a group least seldom reported (24 %) that they rarely have enough time to get the job done, while the corresponding figures in the most prevalent work sectors were up to 38 % [1]. More male (34 %) than female farmers (10 %) felt that they did not have enough time to get the job done.

The survey results also revealed the average number of hours spent on paid or unpaid work. Among all respondents of the survey, females worked on average 64.0 hours and males 53.4 hours per week [5]. The hours

spent on paid or unpaid work were greatest (74.6 hours a week) among female farmers (SAW), while the corresponding time for male farmers (SAW) was 57.4 hours per week. Female farmers spent quite a lot of hours carrying out unpaid care work (27.4 hours per week), and the greatest number of hours on primary or secondary work (46.1 hours a week) [5].

Despite the long working days, the monthly earnings among male farmers (SAW) (on average about 900 Euros per month) were on a rather low level. Female farmers (SAW) earned only 600 Euros per month on average, which was the lowest amount in the whole sample [5]. These sums can be compared with the average earnings of those working in a workplace employing 2-4 persons, for whom the average monthly earnings were 1,323 Euros among males and 927 Euros among females.

Well-being was measured in this survey on the basis of five-items (WHO-5, scale 1-5), in which the following feelings experienced in the previous two weeks were assessed: positive mood, including feeling cheerful, in good spirits, calm, and relaxed, and vitality, including feeling active, vigorous, fresh, rested, and being interested in things [2]. On average, well-being was better among male (4.36) than among female (4.24) respondents in the whole sample. The lowest level of well-being (WHO-5) was measured among females in the agricultural sector (about 3.9), while among males the corresponding score was about 4.2 [5]. Furthermore, the proportion of workers who were satisfied or very satisfied with their working conditions was lowest among farmers (SAW), with values of about 66 % among males and about 62 % among females [2]. Agriculture has been observed to be one of the sectors with the highest exposure to combined physical risks and the least satisfaction with the working conditions [1].

Both female and male farmers also reported high emotional demands of their work and low job rewards [2]. Agriculture was among the sectors in which workers were the least likely to have a good friend at work and in which the work roles were most often unclear, meaning not knowing the expectations in the job [1]. Consequently, agriculture was among the sectors having more workers with poor mental health (women 30 %, men 22 %) than on average in Europe [1]. In addition, agriculture was among the sectors having more workers with their mental health at risk (women 30 %, men 22 %) than on average in Europe [1].

The state of physical health is a crucial element of human well-being. The health status of farmers stood out in the Fifth European Working Conditions Survey [2]. In general, 2.5 % of European workers reported poor general health, while among farmers (SAW) this proportion was clearly higher, being 12.0 % among females and 8.1 % among male farmers. In the sample of European workers, health status was revealed to be poorest among female farmers. In addition, workers in agriculture most typically reported that their work affected their health (women 46 %, men 40 %) [2].

Fortunately, some positive elements of well-being among farmers or the agricultural sector could also be observed. In agriculture, workers were among the most likely to feel at home in their organisation and to have no difficulties in arranging time off for emergencies [1]. Most of them also reported frequently having a feeling of doing useful work (89 %) and a feeling that their work was well done (approximately 85 % always or most of the time).

The analysis of the survey results also included establishing job quality indices [4]. These indices comprised four dimensions: earnings, working time quality, intrinsic job quality and prospects. The dimensions of the job quality indices were reported as average means in the whole sample and in different occupational sectors, including the group 'skilled agricultural, forestry and fishery workers' and the industry 'agriculture, forestry and fishing' (Table 1).

**Earnings** took into account the net earnings after taxes and social insurance contributions. In order to improve the comparability of the results from different countries, monthly earnings were divided by the Purchasing Power Parity Index (Eurostat).

**Working time quality** was used to describe the typical number of hours worked per week, the frequency of unusual working times (night work or weekend work) and short-term flexibility (opportunity to stop working for personal or family matters).

**Intrinsic Job Quality** described the skill use and discretion of workers, the social and physical work environment, and work intensity.

Work sector and gender	Job quality index			
	Earnings	WTQ	IJQ	Prospects
In general:				
All	1230	58.4	67.5	64.5
Male	1376	56.9	66.7	64.8
Female	1048	60.3	68.6	64.1
Skilled agricultural, forestry and fishery workers:				
All	696	64.1	-	55.0
Male	773	63.2	-	56.4
Female	527	65.8	-	51.7
Agriculture, forestry and fishing:				
All	713	62.5	65.4	52.8
Male	776	62.0	65.5	54.4
Female	586	63.5	65.0	49.4

Table 1: Job quality indices, including four dimensions (earnings, working time quality (WTQ), intrinsic job quality (IJQ) and prospects) in the sample of the Fifth European Working Conditions Survey. The results of the indices are presented in general and for the occupational sector 'skilled agricultural, forestry and fishery workers' as well as the industry 'agriculture, forestry and fishing'. Source: [4].

**Prospects** included the future continuity and enhancement of the work. The questions concerning these issues inquired about the probability of losing the job, the respondent's career prospects and about the ease of getting another similar job [4].

The established indices, working time quality and intrinsic job quality, were approximately on the same level (Table 1) as on average among all European workers, but in line with earlier reports of low monthly earnings, the index related to earnings was clearly lower among farmers than in general measurements [4].

As a conclusion from the survey among European workers, the workload among farmers was considerable and the financial compensation received was low compared with other sectors. Farmers on average reported a poor health status and low satisfaction with their work conditions. Agriculture was also among the sectors having more workers with poor mental health than on average in Europe. However, the same survey also revealed positive aspects of farmers' working conditions, e.g. feeling that the work is useful and feeling at home in their organisation. An unexpected survey result was the information on female farmers, whose hours spent working and carrying out unpaid work, e.g. care work, were the highest. In addition, the financial compensation received for the work was lowest among female farmers, and their state of health was the poorest in the sample of European workers.

### Model of effort-reward imbalance (ERI) and farming

The model of effort-reward imbalance (ERI) [6] is often described as a set of scales in a worker's mind, with the efforts needed for work being weighed against the work rewards. Work efforts, such as the amount of work, the physical energy required, coping with unusual working times, adverse working conditions or long seasonal working periods, should be more or less in balance with the work rewards, such as economic compensation, respect, career development and job security.

The ERI model is based on social exchange related to human social behaviour; an agreement and understanding exists about reciprocity related to costs and benefits. If a worker assesses the required efforts to be greater than received rewards, the end result may be negative feelings and weakening of human well-being [6]. This type of negative emotional state may stimulate the autonomic nervous system, and if the stimulation is prolonged, the situation may lead to the onset of an illness [7].

The ERI model has been tested, and those who assessed the work efforts to be greater than the work rewards also assessed the state of health to be poorer than those who had a better balance related to the ERI model [8]. Among those workers who considered the efforts greater than rewards, the risk of developing cardiovascular disease was 1-9 times greater and the risk of suffering from psychosomatic symptoms was 1-18 greater than among those who assessed the efforts and rewards as being in balance [7, 8].

If the situation among European farmers is evaluated based on the ERI model [6], the low level of earnings combined with the high workload can be recognised as an alarming situation. The observation of a high workload among farmers is also supported by a study on time use

among Finnish citizens; according to all three follow-up surveys (1987 - 1988; 1999 - 2000 and 2009 - 2010) in that study, the working time among male farm entrepreneurs (2,452 hours a year in total in 2009 - 2010) was the highest compared with other entrepreneurs, senior/junior salaried employees and employees [9].

A high workload increases the risk of exhaustion, and if the situation develops towards burnout, a farmer may no longer be able to wisely take care of the farm issues, e.g. the economic situation [10]. This may develop into a negative cycle. Job insecurity and a weak economic situation have earlier been observed to be associated with burnout [11]. An ongoing practical project in Finland is focusing on farmer well-being [12]. The project aims to help farmers in time, before their difficulties are too complicated to solve.

On the other hand, farm work may have other valuable rewards apart from income. Farmers work as small entrepreneurs, so they may enjoy the freedom related to their daily tasks, they are able to observe the end results of their own work [13], and they may enjoy working close to nature and farm animals [14]. Overall, the rural environment may provide a social and safe living environment [15]. Farmers may also assess their own work as a continuum following in the footsteps of their parents, grandparents and so on. These elements may improve the rewards of farm work. However, in the long term, running a farm has to be economically sustainable.

### The job demand-control model (JDC) and farming

The job demand-control model (JDC) [16] is perhaps the most frequently cited model of human strain and stress. Stress is defined as a situation where work demands and requirements are in imbalance with the capacity, skills, resources and needs of workers. This imbalance may lead to harmful physical and emotional responses [17]. The demands of the work are on a higher level than a person is able to cope with or control [18]. On the other hand, positive features of work and personality such as social support, self-efficacy and a positive attitude may safeguard against stressful work situations and enable a person to avoid the negative effects [19].

The JDC model [16] is described as a matrix in which two dimensions, 'decision latitude' or control and 'psychological demands' vary from low to high. *Passive work* exists when both dimensions, 'decision latitude' and 'psychological demands', are at a low level and the work may be assessed as decreasing worker motivation. *High strain work* exists when the psychological demands are high, but the decision latitude is low. The remaining two circumstances are more positive, as work is described as *low strain* when the

decision latitude is high, but the psychological demands are low. The nature of work is *active* when the decision latitude is high and the psychological demands are also high. This type of work may provide new skills and knowledge, thereby increasing the worker's motivation. Active work may also be assessed as a situation where stress is a positive phenomenon, called *eustress*. The JDC model has subsequently been extended to include social support, as social support and respect from colleagues or a supervisor may safeguard against work strain and stress. The model is called a job demand-control-support (JDCS) model [16]. These models have indicated three basic elements related to human well-being at work: control over the work, balance with the work demands and the important role of social support [7].

Saarni et al. [20] investigated with a nationally representative sample the work ability, subjective quality of work and health-related quality of life among Finnish salary earners, farm entrepreneurs and other entrepreneurs. The results revealed that farmers had a poorer work ability than other population groups when measured with all three methods. The assessment of this study result is interesting, since according to the authors, the situation among farmers "does not appear to be caused by physical health problems". In that study, the JDC model was referred to by describing the farmers' situation as "low control, low support, and high demand". Vesala & Vesala [21] state that farmers do not find possibilities to fulfil the demands imposed by society and they do not find themselves capable of affecting this situation. The recent results of the Fifth European Working Conditions Survey informed about the high emotional demands of work and low job rewards among European farmers, but on the other hand, farmers assessed the elements of 'social community' and 'support from colleagues' to be generally on the same level as the other European workers [2].

How can the current European situation be evaluated in relation to the demands on farmers? During the past decades, the role of agriculture has developed towards more diversified societal roles and demands. Farmers are no longer assessed merely as producers of food raw material, they are also expected to take care of environmental aspects and protect nature, produce high-quality food, give more consideration to animal welfare and the sustainability of agriculture, and participate in rural development [22]. These demands may be particularly intense, as special organisations are focusing on environmental protection and animal welfare in many countries. Several reports have noted a decline in the social status of farmers in societies [23, 24]. The situation of these small-scale entrepreneurs and the off-farm work of their spouses, which is a part of everyday life on many farms, probably increases the perception of 'low control' and 'low support' among farmers, because running a farm is currently a more isolated occupation than earlier [25].

In a survey carried out in Finland in 2010, dairy farmers (N = 265) assessed their stressors [26, 27]. All the most important stressors were external: agricultural policy, the treatment of farmers in society and the media, the future of the agricultural sector and the administration of the farm. On the other hand, the most important resource elements among dairy farmers were related to close social relationships and the family, and included good animal health. Silvasti [15] also described the farm family as a source of safety and support, since it provides resources, but is also a source of labour.

### The operational environment of agriculture and mental health

The agricultural sector has undergone restructuring during the past decades in many Western countries. As an example, during the first 16 years as a member of the European Union (1995-2011), the number of farms in Finland declined by 36 % and the size of the remaining farms increased by 64 % [28]. In general, the cultural lifestyle related to farming is currently more diversified than before and farmers' identities may differ considerably. Hangasmaa [29] specified three farmer identities, as on an enlarged farm unit, a farmer may consider him/herself as an *entrepreneur*, while other farmers possibly consider themselves as *part-time farmers* due to having an off-farm job, and some farmers may consider themselves simply as *producers*.

The farm work environment may also include particular exposures increasing the risk of mental health difficulties. Merchant & Reynolds [30] assessed pesticides, especially organophosphates, as neurotoxic. Kamel et al. [31] observed an association between 'self-reported neurologic symptoms' and exposure to fumigants, as well as organophosphate and organochlorine insecticides. Researchers have determined that exposure to pesticides may be a risk factor for depression and even suicide among farmers [32].

On the other hand, the rural and farming lifestyle may still value certain commonly accepted aims and emotional rules that formulate guidelines for thinking, feeling and acting. Katila [33] carried out an ethnographic study among farming families and identified basic values such as the *continuity of farming and taking care of the earlier generation*, a *norm to do work free of charge* and overall to *work hard*, and the *autonomy* in running a farm. These basic values may be contradictory, for example, if a farmer has economic difficulties and the continuity of farming is in danger, or the detailed rules of subsidy payments and controls endanger the autonomy of a farm.

Ådahl [34] also ethnographically investigated the uncertainty in a rural village in Finland. She described many losses, as rural inhabitants were no longer able to decide



for themselves about their life, and they were losing their independence and autonomy. Working was revealed as a meaning of life for farmers. She also observed isolationism, and an aim to keep personal difficulties hidden; personal problems and difficulties were not discussed outside the family. Failure in farming meant failure in everything that was assessed as valuable in life.

Rural living conditions may include features that hinder help seeking; the distances may be long, mental health problems may be considered as part of private life and farmers may value self-sufficiency [35]. Hakanen [11] underlined that an important basic element for human work is esteem; everyone wants to do work that is considered valuable and important. Therefore, the lowered social status of farmers in societies [23, 24] is a difficulty that may increase mental health problems among farmers and lower their general well-being at work.

Well-being at work and mental health among farmers currently include dangers and threats. Models of human strain and stress describe a situation where long-term stress increases the risks of physical or mental health problems. Illnesses and negative results may also lead to alcohol or drug abuse, family violence, or even suicide [36]. When helping farmers to cope with stress, strain or burnout, their several identities, emotional rules and features of the farm/agricultural environment in farming should be taken into account.

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## The MSA National strategy to combat suicide in the Agricultural sector 2011 -2014: Outcomes

### The MSA suicide prevention strategy 2016 -2020: Future perspectives

Dr. Véronique Maeght-Lenormand

*The launch of this national suicide prevention plan was prompted by the abnormal death rates in the overall population due to suicide, with higher rates at work and even higher again in the agricultural sector. Suicide prevention was declared a “National cause” in France at the beginning of 2011. A national suicide monitoring group was created. It pilots a multi-agency initiative made up of experts in the field, institutions and associations. The launch of the National MSA suicide prevention strategy was announced by the Minister of Agriculture, Food and Fishing MAPPRT – Mr. Bruno Le Maire – on March 31st 2011. With over 10,000 deaths per year in the overall population, suicide is the primary cause of death in the 35-44 age group. The rate for farmers is the highest of the socio/professional categories – 32/100,000 compared with 28/100,000 for blue collar workers (workers) and 8/1000 for white collar workers (managerial or professional occupations).*

#### Launch of the plan and definition of work strategies

The MSA National Suicide Prevention strategy started in October 2011. CCMSA was given the task of implementing the strategy.

Three major work strategies were defined:

1. Promoting a better understanding of the reality of suicide in the agricultural sector
2. Introduction of a telephone support line for farmers in distress
3. Setting up of suicide prevention groups in each MSA branch to identify farmers in difficulty

Partners committed to CCMSA are:

- The Ministry of Agriculture, Food and Fisheries – MAAPRAT
- The Department of Health – DGS (Ministry of Health)
- The National Institute for Public Health Monitoring – INVS
- The National Institute for Prevention and Health Education – INPES
- Two associations of volunteer listeners – “SOS Amitié” and “SOS Suicide Phénix”

#### Work strategy 1

Promote a better understanding of the reality of suicide in the agricultural sector.

Partner: INVS (The National Institute for Public Health Monitoring)

Data collected since 2007

The INVS carried out a survey concentrating on the causes of death in the agricultural sector between 2007 and 2009, the aim being to provide regular statistics on suicide deaths in this sector – farmers and large holdings employing agricultural workers. The first findings were presented in October 2013. This current study is a cross-sectional epidemiological survey. It measures deaths by suicide and other external causes in the agricultural sector taking into account socio-demographic and professional variables for farmers and co-workers.

The research from 2007 to 2009 presented in 2013 was continued in 2010 and 2011 and the findings will be published at the beginning of 2016.

It analyses the excessive number of violent deaths especially suicide deaths. Compared with other professions the risk of death by suicide in the agricultural sector is three times as high for men and twice as high for women. Between 2007 and 2009, 485 suicides were recorded. From a total of 3766 deaths the mortality rate from suicide was 15 % for men and 7 % for women.

Cancer, which is the primary cause of death among males in the studied population, is closely followed by other external causes such as suicide.

In women, cancer is by far the primary cause of death, followed by diseases of the circulatory system. External causes come in 4th place.

#### Breakdown by activity

For the 3 years studied, the data shows a high number of suicide related deaths in several sectors including the dairy and beef cattle, cereal, industrial crops, and non-specialised crops sectors. However, the economic and cultural climate of recent years needs to be taken into account when examining these figures (dairy, pork, animal feed crops).

## Work strategy 2

### Setting up of helpline "Agri'écoute" 09 69 39 29 19

Partners involved: The National Institute for Prevention, Education and Health (INPES) and 2 associations: "SOS Amitié" and "SOS Suicide Phénix"

The telephone helpline "Agri'écoute" was set up on October 13th 2014. One telephone number 09 69 39 29 19 is available 24 hours a day, 7 days a week. It is manned by 2 associations: SOS Amitié and Suicide Phénix.

Anyone associated with the agricultural sector including farm owners, employers, employees and their families can make an anonymous call to the number and a volunteer will listen to them in the strictest confidence.

INPES manages the logistical and practical issues linked to the telephone helpline. It also provides statistical data related to the number of calls received.

The volunteer "listeners" receive initial and follow-up training from their associations. They are also regularly followed by psychologists.

An advertising campaign was organised to coincide with the launch of the free "Agri'écoute" number. It included the purchase of media space (web, press, google), promotion through the MSA network (250 branches, MSA magazines, MSA website and publicity through the press, partner organisations and local support groups).

From October to December 2014, the telephone helpline received 200 calls per month during the publicity campaign. This number fell to 90 calls per month from January to the end of July 2015. More calls are received in the afternoon between 12pm and 4pm, with an average call lasting 8 minutes. There are fewer calls at the weekend but the calls are longer, 15 to 16 minutes per call. The volunteer listeners are specially trained to deal with calls

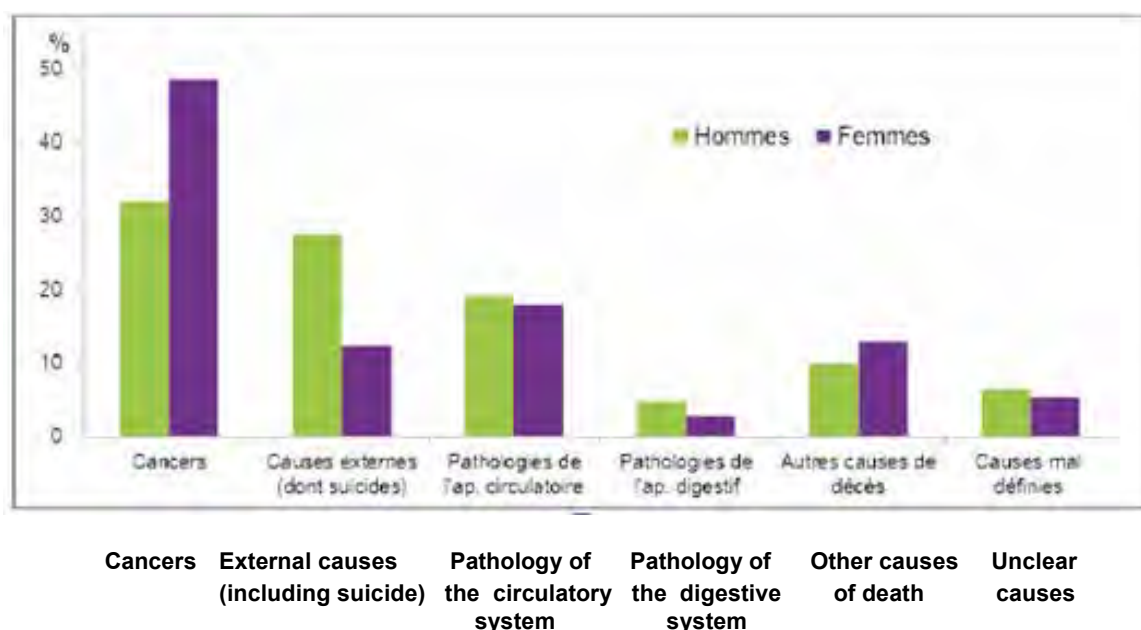


Figure 1: To reach a better understanding of the reality of suicide in the agricultural sector Distribution of important deaths causes according to gender (average percentage, years 2007, 2008 & 2009 – Men/Women)

in the agricultural sector and are well informed in this area. The calls are anonymous.

If during the call, a serious suicide risk is detected by the volunteer listener, he or she can, with the caller's permission, provide him or her with the contact number of the nearest MSA branch. Anonymity, however, is the core principle of this helpline number.

From January to July 2015, 618 incoming calls were recorded, an average of 90 per month giving an average forecast of 1000 per year.

Out of 618 calls, 225 were lost, the caller hung up for various reasons. 63.3 %, that is 2 calls out of 3, were dealt with – a good average for the helpline.

### Work strategy 3

Setting up of suicide prevention units CPP (teams) in each MSA to identify farmers in difficulty

The MSA network is managed by a central office, the CCMISA (head office of the agricultural social mutual fund). It is based in Paris and there are 35 branches throughout the country.

This third objective was to set up multi-disciplinary suicide prevention units (CPP) in each of the 35 MSA local branches. The branch groups put a monitoring system in place within the MSA. This allows them to act quickly if their members are in urgent situations of distress or at high suicide risk.

In December 2011, the National Prevention Unit was set up to oversee the CPP groups in the 35 MSA branches, to collaborate and liaise with different partners, and to evaluate the outcomes of the work carried out in the 35 MSAs. It also participates in the work of the ONS (The National Suicide Monitoring Group).

The CPP (multi-disciplinary prevention units) mobilise staff from different departments – social welfare, occupational health, and medical inspection.

Their main tasks are identification and assessment of the situation, support, guidance and follow-up of cases:

Alerts to situations of difficulty, distress or suicide risk can come from the internal departments of the MSA (branch reception, accounts department, subscriptions, social service, health at work) or from outside (the member him or herself or his close family or friends or other professionals).

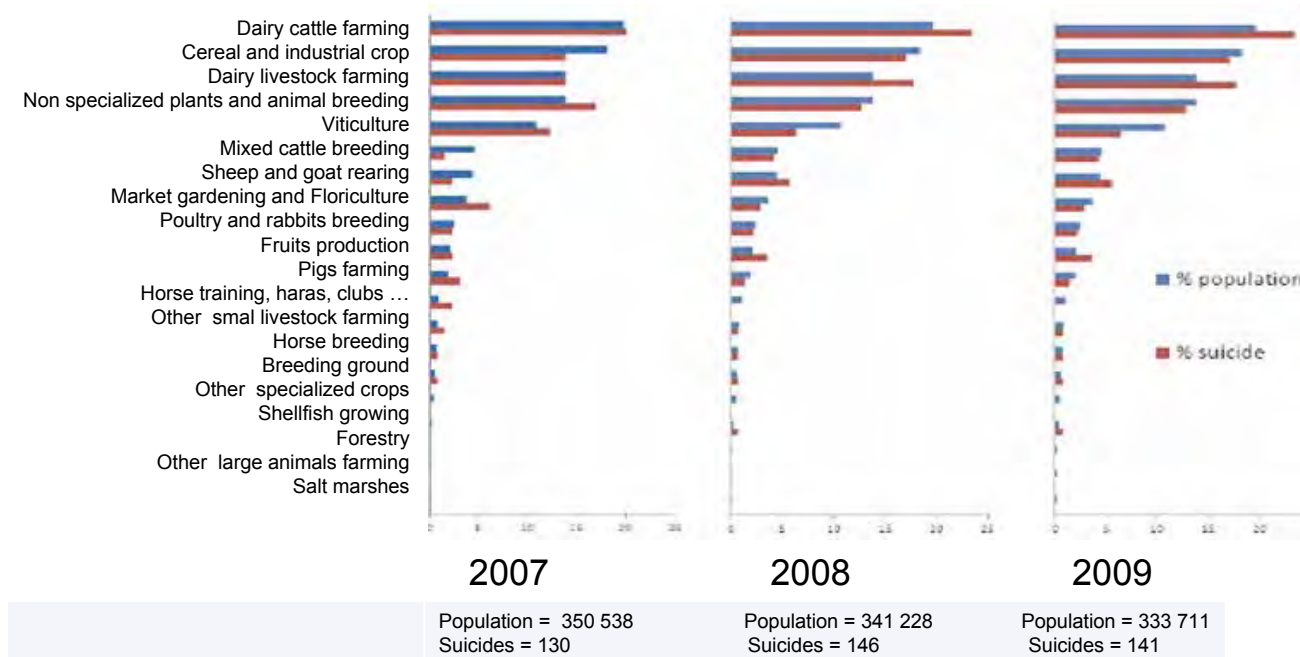


Figure 2: To reach a better understanding of the reality of suicide in the agricultural sector Population and suicide breakdown (in percentage) by risks and year for men (years 2007, 2008 & 2009 – percentage of population/percentage of suicides)

When an alert is given, the CPP meet to study and assess the situation, make contact with the person and provide guidance on the subsequent procedure for further support or specialised care.

Results: end of 2012 = 28 CPP, end of 2013 = 31 CPP, and end of 2014 = 34 CPP out of 35 MSA.

In order to widen the area of alerts, a health watch network of “guardians” has been put in place in certain branches. These are volunteers, who are trained to identify a crisis suicide situation and who are able to detect signs of desperation which can be a suicide risk. This network in the countryside is very important. Its role is limited – simply to alert the CPP.

The CPP cross-agency network allows the MSA to help members in vulnerable situations.

The CPP team can tackle problems related to the vulnerable – insecurity, disability, psychosocial risks, suicidal thoughts. Its main tasks are to identify, support and guide vulnerable MSA members.

Psychologists work closely with the CPP units to help them assess cases, to support members in need, and also to supervise the CCP units.

1009 cases were detected in 2014 compared with 838 in 2013 and 408 in 2012. Of these, 83 % are new cases where support has been provided, 41 % provided guidance and 30 % were emergency cases with a risk of suicide.

62 % of the alerts in 2014 came from the MSA. In 21 % of cases the person in difficulty or family member gave the alert, 9 % were identified by professionals and 4 % by other sources (GP, psychologists). Elected members of the MSA board raised the alert in 11.2 % of cases.

The result is a total of 1489 new supported cases since 2012. There has been follow-up support on some of these cases over several years. This work shows how important it is to have a single point of contact, the MSA, allowing the person to have a wide cross section of support services: administrative, financial, social and medical.

Preparation for the 2016-2020 suicide prevention strategy is already underway. The work strategies will be:

1. Finalise the statistical data on mortality rates for farmers during the 2010-2011 period and also to carry out an epidemiological survey (contract signed for this with the INVS) on agricultural employees from 2007 to 2011.

2. Increase the number of “Agri’écoute” telephone lines.
3. Support the MSA suicide prevention units, encourage local partnerships – health professionals – institutions-targeting primary prevention and early identification of a malaise.
4. Expand the health watch (guardians) network.
5. Develop avenues of research on suicide attempts, care and support on leaving hospital and prevention of relapse.

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*A presentation on the topic of the article – hold during the ENASP conference – is provided here:*



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## Agricall in the context of agriculture in Wallonia (Belgium)

Quentin Triest



*Agriculture in Wallonia is currently faced with major social issues due to the changes in the system of cultural, social and financial values of family farming. Agricall is an organisation whose objective is to accompany farmers and their families in Wallonia who have encountered difficulties while running their farm, whether financial, technical, legal, psychological or social. The interdisciplinary team, made up of agronomists, psychologists, a lawyer and a social worker, accompanies them in the global assessment of their situation whilst helping them to resolve their issues, by establishing appropriate solutions and putting them into action. This global approach, based on an expert knowledge of the realities in the field, allows the team at Agricall to work with and for the farmers, but also in partnership with other players in the European and Walloon agricultural worlds, with whom they exchange views, knowledge and skills acquired over many years of experience.*

### 1. The “social” issues facing agriculture in Wallonia

Agriculture in the twenty-first century is faced with new challenges due to the fact that productivity, energetic shortages, environmental limitations, public health and the values of family-run agriculture must be reconciled. Amongst these issues, the social dimension of agriculture is at the heart of our preoccupations, given the high number of family farms that have continued to dwindle over the last decades in Wallonia. This downward tendency has fundamentally disrupted the cultural, social and financial values of family farming, and yet its primary function, to provide food, remains essential to our society as a whole.

The decrease in number of farms in Wallonia is not a new tendency. Between the years 2000 and 2015, the number of active farms was reduced from 20,000 to 12,500 – this represents a decrease of 7,500 farms in just 15 years [1]. The viable agricultural surface in contrast, has remained constant. The dimension of farms has therefore increased significantly, as their number dwindles. The average size of a farm is currently 56.7 ha in Wallonia [1]. However, this average hides vast disparities between the sizes of farms, speculations and modes of production.

The increase in the size of farms, in parallel with the decrease of agriculture workforce, has major consequences on the management of farms, both from a psycho-social and financial point of view.

From a financial point of view, the increase in the size of farms translates as increasingly large investments. Even though these investments are necessary to maintain the level of work tools, both from the point of view of production and the existing standards in the sector, they represent high financial risks. The capital required per year from the average farmer in Wallonia is € 520,000, with a constant increase of this capital, by 4.4 % per year [2]. It

is currently not unusual for sums approaching a million euros to be invested in assets (land, buildings, equipment, livestock) in order to take over the family farm and to become a farmer.

These expensive financial undertakings by the farmer are to be put into perspective with the increasingly uncertain general economy. The volatility of prices has increased on the international agricultural raw materials markets, but equally on the agricultural inputs markets (fertilizer, plant protection products and food for the cattle), impacting directly on a farm's production costs [4]. The farmer must also take into account the increase in the volatility of the prices of his investments. If the financial returns are uncertain, the production costs have increased on average over the past decades, reducing the farmers' profit margins [4, 5, 6]. This situation means they have to put new strategies in place to maintain their profit margins at a decent level, despite the economic uncertainties. In other words, the uncertainty of the economic context linked to the volatility of prices has a tendency to increase the vulnerability of farms, whilst the sums of money invested to pursue the agricultural activity are increasingly high.

As for the psycho-social repercussions of the increase in the workload per worker, they also have an impact on the management of a farm. The active workforce has continued to decrease proportionately to the increase in the size of farms [7, 8], thus having a negative impact on the management and organisation of work times, so that this becomes a major problem. The stakes are all the higher as the help from within farming families has tended to be reduced, because of aging parents, spouses working outside the farm and children who are less inclined to work on the farm than in the past. The work overload can lead to health problems (sleeping disorders, stress, work-related accidents, ...) and a high number of farmers also admit to feeling increasingly lonely and isolated.

Overwhelmed by the excessive work levels and trapped by the increasing uncertainty, managing the difficulties encountered by farmers is proving more and more complicated. Moreover, other technical, financial and regulatory factors also contribute to the complexification of the farmer's job, by entailing non-negligible difficulties in the management of their farm. Due to working with living assets and being dependant on the whims of the climate, the technical follow-up is always subject to an unforeseen event (illness, death, damages, ...). Farms' financial vulnerability is increasing due to the high investments required and the volatility of prices that directly influence financial revenues. Lastly, the administrative costs also add to the farmer's workload, due to the high number of rules and regulations that oversee European agriculture (environment, animal well-being, sanitation, ...)

The financial vulnerability and heavy workload of family farms have unavoidable consequences on the rate of take-over by the younger generation, who are losing confidence in the future [1, 2]. Currently the vast majority (66 %) of farmers are over 50 years old [1]. Of these, 41 % believe their farm will not be taken over and 38 % do not know whether they will be able to find an interested party to take over their farm when the time comes [3]. The financial vulnerability in regard to the capital invested in the farm is a major drawback for the younger generation who will very often, despite an innate love of farming, turn towards other professions that are more lucrative and have a higher potential for fulfilment.

## 2. Agricall: its public interest missions, in the context of agriculture in Wallonia

Agricall receives support from the Walloon government in the light of these social issues in order to accomplish two major public interest objectives (Figure 2):

1. An "individual" support programme for the farmers and their family in order to help them restart efficiently their agricultural activity or to retrain in another sector of activity.

2. A "collective" help programme with training courses, conferences and prevention campaigns. Feedback to the public authorities is also a priority, given Agricall's privileged position on the field that allows them to understand and analyse the difficulties actually encountered by farmers.

## 3. The Convention between Agricall and the Walloon government

Agricall is a non-profit organisation (asbl) whose activity is supported by the Walloon government in the framework of a convention which is renewed on a 3-yearly basis. Four ministries are more specifically involved in the convention: the Ministry of Agriculture, the Ministry of Health and Social Action, the Ministry of Employment and Training, and the Ministry of Town and Country planning and of animal well-being.

This convention allows Agricall to be entirely subsidised by the Walloon government, which has several major advantages as far as ensuring the quality of its support to the farmers is concerned:

- The first advantage is to be able to provide a totally free service to farmers. Being free of charge means that the financial barrier is lifted, thus enabling the first crucial but difficult step towards seeking help to be taken.
- The second advantage is being able to mobilise a team of interdisciplinary employees, made up of agronomists, psychologists, a social worker and a lawyer, who can deploy the full range of their skills to accompany the farmer and their family in the best possible manner.
- Finally, this convention between Agricall and the Walloon government guarantees the sustainability and the coherence of the support system. Since 2001, Agricall's activities have been financed for 3-year renewable periods, thus maintaining the durability of their services over time. A coherent accompaniment is also necessary in order to improve and constantly adapt their services, thus being able to face the evolution of agricultural issues.

### 1. An « individual » support of farmers

- Restart their activity efficiently
- Retrain in another sector



### 2. « Collective » support and awareness

- Trainings and conferences
- Prevention campaigns



Figure 2: The two public interest missions of Agricall in the context of agriculture in Wallonia



#### 4. Agricall: a constant evolution of the services on offer

Since the creation of their support structure, Agricall has strived to improve its services, learning from the difficulties encountered on the field, in order to sensibly help and accompany the farmers (Figure 3).

##### 4.1. The creation of the support unit in 2001

Initially, Agricall was a support unit destined for farmers who had encountered problems. It was established in 2001, in the context of the mad cow disease crisis where a situation of distress was noticeable throughout the world of agriculture, due to the massive culling of herds. The unit was set up in the framework of a federal project for the prevention of workplace accidents and professional illnesses, including stress, in the sector of agriculture: the "Preventagri" project. This project, supported by the Federal Public Service (SPF) for Employment, Work and Social Dialogue, and the European Social Fund (FSE), was composed of three parts: research and action, work accident prevention and Agricall. Back then, Agricall was a psycho-social support unit set up to help farmers cope with professional and post-traumatic stress and the risk of suicide. A team of psychologists was on call via a call centre open 24/7. The team was also available to go on the field and help stabilise crisis situations. Research that was also being carried out by Preventagri, at the same time in 2001, showed that 29 % of farmers were suffering from intense professional exhaustion (burnout) and that 31 % were experiencing high levels of stress. The main causes identified were linked to financial problems and high administrative loads [9].

##### 4.2. The global approach resting on an interdisciplinary team in 2015

The non-profit organisation Agricall Wallonie was created in 2005, in the framework of a convention signed with the

Walloon government, who took the project over from the federal government, by financing this association that had become essential thanks to its public interest activities, in the context of agriculture in Wallonia. The results of the research carried out by Agricall allowed its vision of support to evolve. If the psycho-social support provided to the farmers remained at the heart of their approach, the complexity of the situations required that this help be completed by other services, in order to wholly face the complexity of the situations. This is how the "global approach" came to be, in order to take into account the social, psychological, financial and legal difficulties entailed by the running and management of a farm. The interdisciplinary team, made up of agronomists, psychologists, a social worker and a lawyer, has been put together progressively in order to analyse the difficulties in their entirety, to highlight appropriate potential solutions and to accompany farmers to put them into action. Working with a network of other Walloon and European players in the sector has also become an important part of Agricall's work, in order to be even more constructive in helping farmers.

#### 5. Agricall's internal structure

Agricall's support system is centred on the farmer and their family. In this perspective, Agricall's actions are articulated around three services that complement each other: a call centre, a team in the field and the collaboration with a network of independent players (Figure 4).

1. The call centre is the main starting point for all farmers who are in need of someone to talk to and are looking for support, advice and information. With such initiatives, it is essential that the farmer should be the person to initiate the request. This starting point allows the team to work from the farmer's request and ensure the quality of the support, based on a friendly exchange and mutual trust. The call centre is open from Monday to Friday from noon until 9pm and 2 people share the

- « *Global* » approach - 2015



Global accompaniment to face the « *complexity* » of the situations



- « *Psycho-social* » support - 2001



Emergence of a support structure in the context of the mad cow « *crisis* »

Figure 3: The evolution of the services on offer

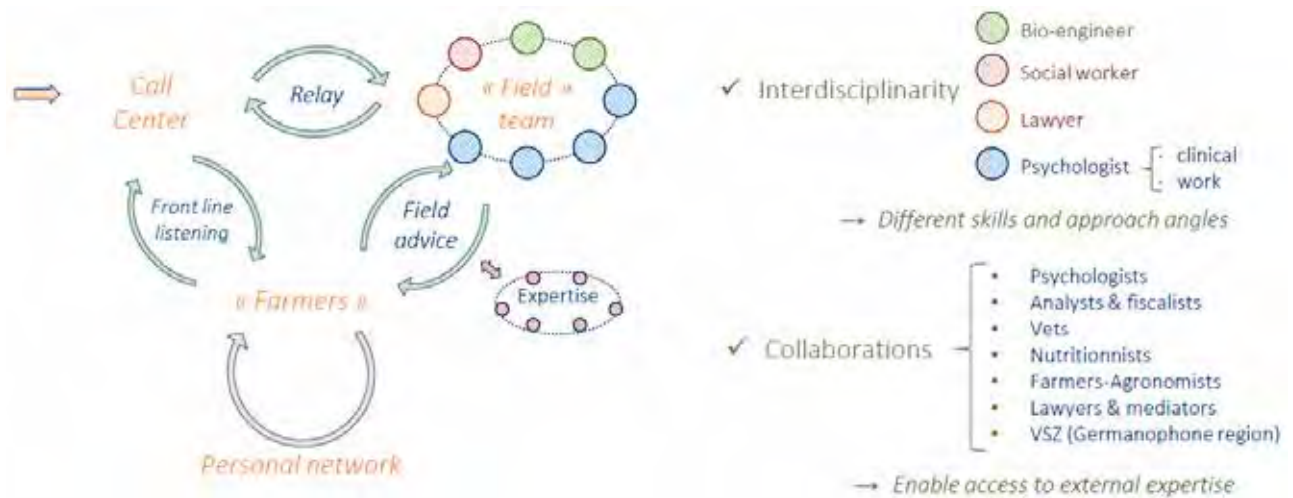


Figure 4: The articulation between the call center, the field team & the expertise

work within the team. Beyond being a first port-of-call for farmers, the call centre also guarantees intense follow-up activities in the case of a crisis. It also ensures a more regular follow-up between meetings, by allowing for feedback between the farmer or their family and the rest of the Agricall team.

2. The field team is made up of multi-disciplinary support staff who pay visits to the farms. The team meets every Tuesday to discuss all new calls and to specify the 2-person reference team for each of the families in need. The pair is chosen based on their skill set and availabilities. These two staff members will then be the ones visiting the farms to offer regular or one-off support when needed. The pair will mainly have a "general" approach, but will be able to call upon someone with a "specific" skill set when needed, thanks to the team's internal resources. In some cases they may even solicit external intervention.
3. The collaboration with a network of independent players allows the team to access external expertise when accompanying the farmers. This network is mostly made up of independent psychologists, trained by Agricall for the specificities of the agricultural sector. They can make a total of 5 free visits to a farm. Afterwards, a relay is put in place if longer-term support is needed. Other partners such as vets, financial analysts, fiscalists and lawyers can also be called upon if a specific skill set is needed for a project.

## 6. Transversal actions

In concrete terms, Agricall provides support for all farmers who have ran into difficulties, whether they're financial, technical, legal, psychological or social, whilst



Figure 5: The global approach of Agricall

running and managing their farm. The cross-divisional nature of the actions carried out to accompany and advise farmers is therefore essential in order to be able to face the multiplicity of the needs and the complexity of the situations encountered in the field. If these actions are often intertwined, the following sections will distinguish the five main categories involved, in order to ease the task of presenting them. It must be noted that these actions are tackled in the field with a global approach to the situation (Figure 5).

### 6.1. Human and psychological support

A farmer's morale is the main motivator they need to run their farm. Our approach is therefore aimed at encouraging well-being in agriculture, and more specifically the

farmer and their family's well-being, as the difficulties encountered are more often than not inextricably intertwined at the heart of the family unit. A friendly ear who listens and a human presence focused on the person at the heart of the situation are therefore our priorities when considering our support.

Specifically, this human support translates as a friendly listener, an analysis of the situation and the difficulties encountered, the research of information, help with carrying out administrative tasks or mediation in the case of family conflicts relating to the organisation of farm jobs, the handing over of the business (intergenerational conflicts) or tensions between the couple (conflicts arising from the reorganisation of the business or a separation). Likewise, the psychological effects of the financial pressure and the work overload can have repercussions in the form of stress, anxiety, professional exhaustion, and sometimes even dark thoughts. The human support element is therefore essential in these periods of crisis. Besides the work of Agricall, this situation may also require the intervention of a psychologist.

## 6.2. Financial management analysis

The analysis of the financial management of a farm is also a priority action as its profitability is one of the necessary conditions for its financial viability and sustainability. Yet various productive, financial and human factors can also influence the profitability of a farm. It is therefore essential to analyse them in their globality in order to be fully aware of the financial health of a farm and to take the necessary decisions (reorganisation, investments, ...) with full knowledge of all the facts.

Specifically, this analysis involves the execution of a management audit. This audit is an independent financial analysis that provides a bigger picture of the situation and enables a better understanding of how the cash inputs and outputs are distributed. It is therefore not a fiscal analysis, rather a cash flow analysis, so understanding the money that is actually available at the end of the year. The focus is placed on the profitability analysis as far as annual bank charges and eventually supplier debts are concerned. This allows a better understanding of how the money is actually spent across the agricultural activities in order to allow the family to get by. The main objective is to understand the farm's global financial health, to then be able to outline solutions that could be put in place to remedy the difficulties encountered. The audit is also useful to establish the links between the financial and technical dimensions of a farm. A technical analysis, carried out by an agronomist, can be considered in order to establish the scale of technical measures that could be implemented to increase the profit margin of the farm: either by increasing cash inputs or by reducing produc-

tion costs. This approach can be useful to fine-tune the existing crop practices, or even to develop new ones, in order to ensure the viability of the activity and to adapt to the constantly evolving agricultural context.

## 6.3. Legal accompaniment

Legal support for farmers is another of the main themes and is often seen as a priority, given that the use of legal jargon and the rules and regulations of the legal sector can be difficult to understand in regard to the specificities of the agricultural sector.

This support translates as background help to ease the process of getting in touch with lawyers who are competent in the domain of agriculture. Agricall can also be called upon to accompany farmers in the case of bankruptcy rulings. This approach preferably starts with an amicable contact between the different creditors. However further legal support in the case of bankruptcy may be necessary if the pressure becomes a constraint and if the amicable negotiations with the creditors fail to lead to a constructive dialog aimed at finding realistic solutions. These bankruptcy proceedings (debt collection payments (RCD), legal reorganisation procedures (PRJ) or bankruptcies are voluntary procedures that aim to resolve long-term excessive debt, meaning there are no other short-term solutions, whilst taking care to respect human dignity.

These cases of legal support are increasingly frequent in Agricall's work. This can be explained by the increase in financial risks taken by farmers and the large sums of money involved in agriculture, therefore leading to an increase in the number of excessive debt situations in the agricultural sector. These situations are all the more complicated as the legal personality of many farmers is more often than not the physical person.

Thanks to these initiatives, a collaboration arrangement is generally established, not only with the lawyers, but also with the debt mediation centres and the debt mediators in order to move forward in an optimal manner in the legal proceedings whilst taking into account the possible complications linked to human health or farm management (agronomical or financial).

## 6.4. Social accompaniment

Given the diversity and the complexity of the rules and regulations surrounding European agriculture, social support is also necessary when dealing with administrative procedures: it is essential that all the administrative proceedings relating to the farm are in order whether they concern health matters (social insurance, private

healthcare, hospital insurance), financial matters (credits, subsidies, accounting, fiscality) or improvements (sanitary, animal well-being, environmental).

Agricall can provide support for the farmer in managing their papers, carrying out administrative tasks for their healthcare (social law exemptions, private healthcare, ...) or getting in touch with the competent administration or other players in the agricultural or health sector.

### 6.5. Professional reconversion

The final series of actions carried out by Agricall is that of reconversions within the agricultural sector, or even in other sectors. The agricultural world is a dynamic one and requires the constant acquisition of new skills and knowledge in order to remain competitive, to diversify or to reconvert. It is therefore essential to accompany farmers in these current transformations.

In concrete terms, support can for example be considered in the case of diversification projects. This would entail analysing how the workload is organised and the possibility of acquiring new skills.

Stopping the farm activity in decent conditions and respecting human dignity are another way of intervening and providing support for a farmer in their professional reconversion. In this case, it would entail drawing up an assessment of the farmer's skill set and helping them in the search for a new job.

## 7. Philosophy and values of the support provided to farmers

The quality of Agricall's support is based upon the following fundamental values:

1. A global approach in order to take the diversity of needs and the complexity of situations encountered in the field into account.
2. The farmer willingly requesting help in order to build a relationship of mutual trust between himself/herself and Agricall. The farmer must make the conscious decision to contact us and not do it on the behalf of a third party.
3. Confidentiality and trust are essential to be able to move forward together. We treat with confidentiality everything the farmer shares with us, but we also need to have a clear and complete representation of the situation in order to find an appropriate solution.

4. A free service allows us to remove any financial barrier there may be in accessing our services. This makes that crucial first step much easier.

5. Neutral support means that all farmers are welcome, regardless of their ideologies, crop practices, adherence to an agricultural syndicate, ... We are not accountable to any third party bodies (banks, creditors, ...) and our philosophy is to work with and for the farmer and his general well-being.

6. The collaboration and work within a network with independent players is a main part of our action philosophy because our general approach leads us to call upon other structures in Wallonia with further-reaching competence in certain sectors (bio-friendly agriculture, transformation, ...). Working within a network has also been put in place in the case of the European "Rural Solidarity in Europe" (RSE) organisation.

## 8. European network: Rural Solidarity in Europe

Rural Solidarity in Europe is an association created in 2014 that regroups three European organisations who all provide non-profit support for farmers facing difficulties: Agricall Wallonie Asbl (Belgium, Wallonia), BAG (Germany) and Solidarité Paysans (France).

One of the objectives of this European network is to create shared exchange platforms to improve the skills of the national networks who accompany rural families. The members of this network all share the same philosophy of support and accompaniment, but all have different origins and paths. The aim of these exchanges is to gain mutual enrichment from the sharing of experiences and expertise specific to each of the organisations. For example, Agricall is only made up of a team of interdisciplinary paid employees, whilst BAG and Solidarité Paysans work with volunteers. The exchanges around the shared experiences allow the organisations to improve their support work for rural families on their respective territories.

Another of the network's objectives is to raise public awareness, both amongst the general public and financing authorities about the difficulties encountered by these families. This is why improving the knowledge of the difficulties encountered by farmers across Europe around a central and shared analysis is essential.

Apart from the exchange objectives and the perspective of running projects together, what links the associations in the network even more are their values of support for



people who have ran into difficulties. They each accompany farmers with a global approach, taking into account the financial, technical, legal, psychological or social difficulties that have the greatest impacts on the management of their farm. The voluntary action of the person being helped is equally necessary to ensure the quality of the support. Working closely with other competent players is also essential, in order to improve the quality of the project follow-up.

A few words about our partner associations:

1. BAG – Bundesarbeitsgemeinschaft der Landwirtschaftlichen Familienberatungen und Sorgentelefone

The BAG is a German federal association whose objective is to support, with advice or accompaniment, farming fami-

lies faced with tough financial, family or personal difficulties. In Germany, nearly 1000 families are accompanied each year by 16 employees and around 240 volunteers. [www.landwirtschaftliche-familienberatung.de](http://www.landwirtschaftliche-familienberatung.de)

2. Solidarité Paysans

Solidarité Paysans is a French association that accompanies and defends farming families and helps them to stand their ground from a legal point of view and to preserve their jobs. Farmers were the founding members of Solidarité Paysans. This association has a nationwide reach and boasts a federated structure, with departmental and regional branches. <http://www.solidaritepaysans.org/>

## A few numbers about Agricall Wallonie in 2014

### *The number of farmers who received support*

In 2014 Agricall received over 3000 calls and helped 133 farms, representing a total of 430 people who received support. This number of farms included both the farms followed for more than a year, as well as all new requests. Almost ¾ of all new requests reach us by word-of-mouth, so by the intermediate of agricultural, legal, social and healthcare networks. These relay points are therefore the main point of contact to enable farmers to easily call upon our services.

### *Characteristics of the farms that call on our services*

The vast majority of the people who call upon our services are men, as 77.5 % of requests come from them, compared to 22.5 % from women. The average age of farmers is 47 years old. It should however be highlighted that an increasing number of young farmers who have taken over the family business have been getting in touch with us.

Several elements of analysis can also be pinpointed about the main structural characteristics of the farms that call on us for help. Cattle and breeding farms represent 83 % of the farms we help, which is an over-representation compared to the number of these farms in Wallonia (66 %). Amongst these, dairy farms represent 40 % of the accompanied farms, whereas they represent only 15 % of farms in Wallonia, for an average milk quota of 470.500 liters. This predominance of dairy farms is representative of the financial difficulties they are currently encountering (very high workloads, drop in the price of milk, heavy investments). The average size of the farms is 58.9 hectares, compared to an average of 56.7 hectares across Wallonia.

### *Characteristics of the follow-up actions carried out*

When families call on our services for help, certain difficulties are usually mentioned first and act as a trigger to their initiative. During the accompaniment, other factors often emerge as they are inextricably linked to their difficulties. This multi-faceted nature of the problems encountered is one of the central characteristics of the accompaniment. In 2014, over 250 problematic situations were mentioned during the first call to the call center. The majority of these problems involve financial and/or legal components (47 %). Second are psychological, social, administrative, family-related and work management issues.

As far as the psychological support is concerned, the main causes of issues encountered by the farmers are linked partly to conflictual relationships (sometimes even involving violence) within their relationship and/or family (take-over, indivision), and partly to financial issues and overwhelming workloads that impact on their well-being: fatigue, professional exhaustion (burnout), the feeling that the future holds few promises, that they are exhausted and powerless faced with their problems and are unable to make decisions.

As far as the social accompaniment is concerned, one of the major problems encountered is the access to healthcare. If farmers haven't paid their social contributions for the last 2 years, they will no longer have access to public healthcare. This is a preoccupying situation, especially as agriculture is the fifth sector most at risk of work-related accidents. In these situations, priority is giving to helping recover these personal rights.

More information about the associations that are partners and members of the European network can be found on their website.



Avec  
le soutien de la



Wallonie

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*A presentation on the topic of the article – hold during the ENASP conference – is provided here:*





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## The importance of agricultural mental health-promoting partnerships and innovations

Julia Anna Deipenbrock, Dr. Jana Volkert, Prof. Dr. Dr. Martin Härter

*The agricultural population is confronted with a unique set of stressors and cumulative barriers to mental wellbeing such as weak mental service infrastructures, a specific health seeking behaviour and work-related characteristics. Little is known about the impact and relationship of individual and work related resources as well as stressors on positive and negative aspects of mental health in European agricultural working settings. Especially in structurally weak rural areas with a lower penetration density of psychosocial services, research and service innovations as well as collaborative networks may lead to significant public health effects, also in terms of health-related quality of life and work ability.*

### Foreword

In the rural regions of Europe, also in Germany, health care and health advice services are usually less numerous and the distance individuals need to travel to doctors' practices and other service providers is longer and more difficult to cope with. Especially elderly use services less often because of the distance to services. Besides the disadvantage resulting from where the individuals live, there is a further disadvantage for the agricultural population which is associated with their profession and type of employment (please see below for further information). This has to be dealt with effectively by the agricultural social security system. Therefore, it is necessary in a first step to analyse the environment in which the insured individuals live and work. Only sound and comprehensive knowledge of the individual and contextual determinants of health and illnesses, as well as the job-specific health and safety risks, will enable efficient and cost-effective health and safety management. Strategies that fit into the respective space-time context require innovation adapted to the environment. Increasing information and communication technology performance for example significantly change societies and social structures including company structures and health risk profiles as well as the spectrum of health solutions. Interventions are successful if they can connect to the realities of an individual's work and life, have not been developed in isolation from them, and have the potential for further development and flexible adaptation. Overall functioning solutions are required from which readily implementable individual solutions can be derived. This requires the ability to develop innovations, also on the part of the health and social systems. Innovation partnerships between research and practice enable an intensive and more effective use of prevention, health and care potentials. Furthermore, they enable the necessary feedback loop from the field, including administrative practices, and research – and thus health innovations, which proof practically feasible. This benefits not only an agricultural company's powers of innovation and performance, but also the quality of life and work and hence,

the sustainability of the social systems. Social systems have to stay up to date in order to be able to respond appropriately to health and social trends and make the most of its scope to act instead of delaying responses and consequently having to carry out costly repairs, e.g. obesity.

Within this context, the social insurance systems as part of the health and social systems and significant public health stakeholders play an important role. Their social, relationship and human capital, their expertise, represents an excellent basis for acting as a driver, source of inspiration and cooperating partner for economically and socially sustainable health innovations. Simply through contacts with the insured, in particular the professional associations – for example in the form of consultations, inspections, special events, information and the mediation of contacts – innovations can be effectively transferred to the daily life of the insured. This enables the agricultural social insurance to optimally fulfil its statutory mandate, which in particular is to promote the health of the insured and prevent accidents at work while taking into account the requirement to operate cost-effectively.

### Introduction

There is a need for research and innovation with regard to the psychosocial health situation, the health needs and effective intervention strategies relating to the German and European agricultural population. Compared to all other sectors, those working in the agricultural sector are among the ones exposed to the greatest health and stress risks, both physically and mentally, as well as the highest occupational safety risks. In particular, the psychosocial dimension of this risk exposure, its epidemiological, health and socio-economic impact, is hardly known. This also applies to the psycho-social risk and protection factors, as well as efficient and cost-effective health programmes. The complex interplay of the risks in the agricultural sector generally requires a risk management system founded

on evidence-based psychological concepts and effective communication strategies in order to be efficient. Psychosocial, cognitive and communicative factors play a decisive role in risk identification, risk awareness and the use of safety, risk and health knowledge. They influence the motivation of individuals to commit themselves proactively to greater safety and health in their work and life context. The prerequisite for the development of health and occupational safety strategies which have the potential to bring about sustainable positive health and cost-effectiveness is the knowledge of relationships, backgrounds and opportunities to mobilise health resources and reduce risks. For this, practical and scientific knowledge has to be systematically and professionally merged, expanded and evaluated. Research programmes constitute an appropriate framework for this. Such programmes allow the identification of psychological and psychosocial protection and risk factors and – building on these – the development of multimodal intervention programmes for improving health and safety in the agricultural population. Such projects can also contribute towards improving the skills required for individuals to commit themselves to the achievement of a working and living environment, which promotes health. One important goal is the sustained, low-threshold communication of health skills with a high level of target group affinity in order to mobilise psychosocial health resources in working and living environments. In the following we will elaborate in greater detail on the relationships, backgrounds and possible approaches.

The scientific contributions in this text were an important starting point and result of the ProFarm Project Proposal, described later in this text.

### Stresses and health risks in the agricultural sector

The agricultural sector is one of the industries throughout the EU with the highest exposure to biological risks such as bacteria, fungi or viruses, as well as other environmental risks such as agricultural chemicals or extreme temperatures [1, 2, 33, 19]. In terms of work-related health and accident risks, the agricultural profession is consistently in third or fourth place in comparative studies [2]. Furthermore, the members of this profession have the highest subjective levels of ill-health, for example with regard to mental health [1]. Compared with the general population, higher overall levels of psychological distress are found in the agricultural population [3, 4] with the rates of depression [5, 6] and anxiety being particularly high [5]. In job-related suicide statistics, for which the data is not available for all countries, the suicide rate among farmers is generally much higher than in all other occupational groups and compared to the general population [7, 8, 9, 10], especially in the older agricultural population [11].

Mental distress is a scientifically proven risk factor for chronic diseases, disabilities, incapacity for work and invalidity, as well as work-related accidents [12, 13, 14, 15, 16]. Especially in the agricultural field, stress in particular increases the risk of (fatal) accidents at work [17, 18]. Overtaxing stress situations can cause stress-related illnesses such as burnout and depression [13].

The agricultural industry also suffers from above-average levels of ergonomic risks and the risk of pain [19]. Stress perception and musculoskeletal pain correlate with one another and significantly reduce the ability to work [20, 21, 22]. Moreover, Voaklander and colleagues ascertained in their review that taking prescription medications such as antidepressants or painkillers increases the risk of accidents in agriculture [23, 24]. Pain syndromes and depressive disorders display in turn a high level of comorbidity and generally cause high socioeconomic costs [25, 26]. In Germany, the direct costs of mental illnesses (costs of care) have risen from 23.3 billion euros in 2002 to 33 billion euros in 2012 [27], while the loss of gross value added due to psychosocial health costs amounted to around 45.4 billion Euros in 2011 [28].

People with a chronic physical illness (such as back pain, pulmonary disease, cardiovascular disease, diabetes, cancer) have up to double the risk of also suffering from a (comorbid) mental disorder [29]. In the agricultural population, a significant correlation was found between mental distress and physical illnesses such as hypertension and diabetes [30].

Everyday work in the agricultural sector is also affected by changing requirements and new technologies, changes in consumer demands, internationalisation and globalisation processes, as well as shorter innovation and production cycles. Self-employed individuals from the agricultural professions are often isolated in their work, usually work much longer than the standard working week and frequently beyond the standard retirement age, additionally are often subjected to various stresses through having to take care of relatives [19, 31] and often find it difficult to reconcile health services with their profession. Furthermore, the agricultural population in European and many other countries is usually confronted by a number of stressors which result from the social and rural framework conditions, such as family farm structures, social isolation, weak infrastructures, economic pressure and uncertainty, which can also have effects on physical [10] and mental health [32, 33]. The close connection between professional and private living environments on family farms also harbours a particular potential for interpersonal and intrapsychic conflict [34]. Several studies have found an association between the specific working conditions in the agricultural sector and psychopathological symptomatology [35, 36]. Deterioration in mental health is primarily associated with the

intensity and complexity of stress and unfavourable working conditions are associated with a higher probability of impaired mental health [37].

In this context, increasing the understanding of psychosocial risk and protective factors and developing easily accessible, (cost)-effective strategies/interventions to improve psychosocial health, and strengthen cognitive skills is of great interest. Especially in structurally weak rural regions with low availability of psychosocial services, healthcare and prevention innovations play an important role. Studies have also shown, for example, that positive expectations with regard to antidepressant medication significantly reinforce the placebo effect of dummy drugs and the effectiveness of anti-depressants by increasing the activity of the endogenous opioid systems [38]. Psychotherapeutic interventions are also able to trigger neurobiological changes [39]. Evidence-based interventions which include this knowledge, supplemented for example by findings on psychophysiological and neuropsychological factors in work contexts and other relevant living environments, could significantly increase the effectiveness of intervention programmes.

### **Mental health in the ageing agricultural population**

Due to the increasing life expectancy and falling birth rates, the age group of the over 65 year olds in the EU is forecast to increase from 27.8 % in 2013 to 50.1 % in 2060 [40]. In view of this demographic change, the proportion and size of the older agricultural population in Europe will also grow rapidly. The agricultural sector in the EU-27 is already marked by a significant shift in age structures. Many farmers are working beyond normal retirement age. In 2007, for every farm owner who was younger than 35, there were 9 farmers who were older than 55. More than 55 % of the gainfully employed in the agricultural sector are 55 or older [41]. In the peripheral rural areas in Germany there is already a noticeable decrease in the size and increase in the age of the population. The proportion of over 65 year olds is set to rise to more than one third in the medium term [42]. The average age of farmers in Germany is currently 53 years [43]. In a series of studies carried out mainly in the USA and Australia, it was found that older residents in rural areas rarely make use of the professional assistance with mental health problems [6, 44]. Green et al. [45] ascertained in their study that the factor, which has the greatest influence on the delayed use of healthcare services is age. Empirical studies on the mental health situation of the older European agricultural population in particular are very limited in number and there is a lack of knowledge of associated risk factors. For this reason, in-depth studies on the cause and effect relationships of

the mental health, stress and working conditions of older people in the agricultural sector are urgently needed.

While the share and number of older individuals in the European countries are increasing, the capacity to participate in civil society and family commitments in health care is decreasing due to demographic ageing, increased mobility as flexibility and a feminisation of Europeans' workforce. This trend highlights the need to strengthen individual health skills so that health-preserving, protecting and promoting potentials and resources can be better utilised.

### **The role of gender, age and income in agricultural health**

The impact of sociodemographic factors such as age, gender and income, on the mental and physical health of the agricultural population also needs to be considered. On the one hand, studies involving male farmers in particular brought to light a high level of mental distress and a high suicide rate compared to the general population [4], especially in the older agricultural population [11]. Among other things, suicide rates are associated with different attitudes of men concerning self-concept and aging [46]. On the other hand, women in the EU agricultural sector in particular have a low socio-economic status [47] and the highest risk of mental health problems compared to women who work in other sectors [1].

Overall, epidemiological data on mental disorders shows that such disorders are generally diagnosed and treated less often among men compared to women. For example, the lifetime prevalence<sup>1</sup> of diagnosed depression among German men between the ages of 18 and 79 is 7.8 %, while this figure is almost twice as high among women at 15.4 %. Possible study-based attempts at finding an explanation for these gender differences also relate to differences in the perception and manifestation of depressive symptoms, in help-seeking behaviour, and in the impact of social situations. Men tend to react to crises and negative stress with addictive or antisocial behaviour, go to the doctor less often, tell others about their problems less frequently (also out of fear of loss of their masculine role identity) and depression is identified in general practices less often in men than in women [48, 49].

Furthermore, in Germany the agricultural sector is still a classic men's working sector, meaning that nearly two-thirds of the workforce are male [50]. This aspect should be taken into account when conducting analy-

<sup>1</sup> Lifetime prevalence: Proportion of people who have the illness at any time in their lives.



ses with industry-related comparison data. With regard to social insurance data in particular, it can be assumed that the gender and diagnostic bias described here will also be reflected in these statistics. Furthermore, when the social insurance data of employees in the agricultural sector is analysed, other specific aspects of this sector should be included. These are, for example, the high proportion of atypical employment relationships, as the agricultural sector has the highest ratio of fixed-term contracts [51], a high level of job turnover [52] and probably a younger average age of all employees when taken overall (permanent and non-permanent) compared to other sectors. In a comparison of disability pensions, in particular between the self-employed and non-self-employed, the different preconditions for payment of the statutory disability pension have to be taken into account. Self-employed farmers in Germany receive only a partial security pension, the prerequisite for which is the transfer of the farm.

Consequently, the inclusion of sociodemographic and sector-specific aspects in intervention studies is important in order to increase the psychosocial health of the agricultural population so that health measures, which are developed on this basis can achieve a strong effect, i. e. a high level of effectiveness and achievement ratio. It is important for sociodemographic variables to be included from the beginning, for example in interview or questionnaire studies, in order to gain insight on psychosocial health, the association with sociodemographic factors and to determine need for interventions. Based on these findings it is then possible to incorporate, for example, gender and age-specific needs and preferences into the development and implementation of multi-modal intervention programmes, such as stress reduction programmes.

### Low use of health services in the agricultural population

Although serious negative effects on mental health have been observed in the agricultural population, the level of utilisation of mental health services is low. It is also apparent that there are specific barriers to access to health services [10, 53]. These barriers can largely be grouped together into three categories: structural, attitudinal and temporal barriers [44]. The structural barriers include the poor availability and accessibility of health-care services, a lack of transport facilities and high travel costs [7, 53, 54, 55]. The attitudinal barriers include – among others – fears of stigmatisation, cultural ‘stoicism’ and concerns about the protection of confidentiality [9, 54, 56, 57]. These barriers lead men who work in the field of agriculture in particular to believe that they can effectively manage psychological problems themselves. These barriers create a certain degree of resistance to

seeking professional help and prevent individuals from availing themselves of the professional resources, which are available [58]. While in the USA and Australia a number of studies have been carried out on the need for psychosocial health services and access barriers in the agricultural population, there is a fundamental lack of knowledge in Europe.

Jackson and Parry et al. concluded in their studies that psychosocial health services for the agricultural population must be multi-dimensional in their approach and the enormous breadth of stressors and their influence on social life should be included. In the development of such services, simple access to all relevant health information should be ensured for this group in order to improve the awareness of the topics and resources which are available and thereby reduce barriers [53, 57].

### Intervention programmes

In the EU there are no evidence-based intervention approaches, which extensively address the needs of people working in agricultural industry who have an increased risk to become or who are already mentally ill. Outside the EU only a few intervention studies on the promotion of mental health have been carried out so far among the agricultural population. Successful psychosocial health and intervention programmes have been carried out in the USA and Australia (e.g. Mobil Farm Clinic Out-reach, South Georgia, USA; Sustainable Farm Families (SFF), Australia).

The concept of the SFF programme is multi-dimensional, geared to the needs of the agricultural population and includes workshops, focus group meetings, lawyers who represent the interests of patients, an advisory service and the integrative networking of psychosocial healthcare services [59]. This programme has significantly reduced the stigma of mental illnesses, increased health-related knowledge and awareness and improved networking, access and sensitivity in order to enable individuals to improve their approach to the use of effective resources and care services [60].

Conclusion: There is an urgent need to develop low-threshold and affordable preventive therapeutic interventions which promote health and which are tailored to the needs of the agricultural population with an increased risk of mental distress and health problems. These interventions must take into account gender, age and industry-specific aspects and make targeted use of information and communication technologies.



## Intervention innovations

The reduction of various forms of stress, the promotion of resilience and the early detection and treatment of mental distress are gaining importance in the field of occupational health and safety, in securing a sustainable capacity for work overall – including the agricultural sector. This applies in particular against the background of the agricultural structure and demographic changes described above. Stress management, the promotion of resilience and the development of psychological and psychosocial protective factors have a protective effect [61]. Due to the specific requirements and characteristics of the agricultural professions, it is more difficult for individuals working in this field to take advantage of health services than is the case for many other professional groups. Interventions from an agricultural lifeworld and social space perspective thus require a highly integrated and comprehensive approach.

Multi-modal interventions with a preventive and health coaching focus are promising approaches to address the needs of the ageing agricultural population, who have an increased risk for mental and physical health problems and show specific barriers to and demands for health promotion and effective intervention. These approaches have the potential to overcome healthcare barriers and may be particularly suitable for addressing the specific needs of the agricultural population. The aim of multi-modal intervention programmes is the use of various communication methods, which promote psychosocial health and health expertise of the agricultural population in an interactive and participatory manner. Relevant target groups should be equally involved in the development of such programmes to ensure that the interventions address the needs of all individuals of the target group. Depending on preferences, different communication formats can be developed using analogue and digital media. Moreover, a balanced gender ratio should also be aimed for within the research teams, as well as professional health teams. A few components of promising multi-modal interventions are exemplarily described in the following:

Multipliers have a key role to play in the communication of health-related information and the creation of health awareness. They are important, well-connected confidants and protagonists with structuring skills within interest groups and communities such as the rural and agricultural community who can influence the health-promoting development of skills. Multipliers have already been successfully used in health programmes to promote health in the agricultural population, including psychosocial health [62].

Web-based interventions are an innovative, modern approach, which have the potential to overcome barriers of service use lined out in the previous chapter. This

approach makes it possible for people with time constraints because of their profession and who live in areas with a weak infrastructure in terms of mental health services to be reached anonymously and in a cost-effective manner. This is especially helpful to people with concerns about stigmatisation and confidentiality [54].

Telephone-based health coaching makes it possible to reach people in rural areas who have limited time or mobility at their disposal [63]. Furthermore, several studies have demonstrated the efficacy of this intervention, for example with regard to a change in health behaviour [64], healthcare costs [65] and high levels of patient acceptance [63].

Intervention studies, which integrate the different methods and media outlined above have already been successfully carried out in a number of population groups with mental and physical health problems [62, 63, 66, 67, 68].

The strategic basis of such innovations is also supported, inter alia, in Germany from

- the [Concepts and Strategies for Spatial Development in Germany in 2013](#) (2013 draft); in particular the sphere of services for the public
- the [Demography Strategy of the Federal Government "Every Age Counts"](#) (strengthening the family as a community; motivated, qualified and healthy working; independent living in old age; promoting quality of life in rural areas [...]; securing the foundations for sustainable growth and prosperity; maintaining the ability of the state to act)
- the [Digital Agenda 2014-2017](#) of the federal government (e. g. areas of activity of an innovative state, potentials for making health care accessible, strengthening digital media skills for all generations, implementing digital participation, promoting digital volunteer work, using innovation potentials of digitisation)
- the [EU eHealth Action Plan 2012-2020](#) – Innovative healthcare for the 21st century
- the [Europe 2020 Strategy](#)
- such approaches can also readily build on the main priorities of the [EU's rural development policy 2014-2020](#) of the EU in respect of lifelong learning in the agricultural sectors, strengthening the industry's profitability and competitiveness (including economic performance), promoting social inclusion, risk management and economic development. The latter comprises in particular the improvement of access to and the use and quality of information and communication technologies (ICT) in rural areas.

## eHealth

Within this context, prevention programmes in the internet setting and offers of digital health care are an innovative and promising approach that has so far remained completely unexplored and has high development potentials, especially in terms of the development and integration of new healthcare infrastructures. Web-based health programmes can be accessed at any time and as often as required, can be adopted to individual requirements and have a long reach. Particularly in rural areas, this makes it possible to break down geographical and profession-related barriers.

Today, 87 % of German farmers already use the Internet regularly, especially for professional purposes [69]. This means that a high rate of digital intervention programmes can be achieved, for example in order to strengthen resilience, i.e. improved stress or coping measures in the agricultural setting as well. With its High-Tech Strategy 2020, the German government is also focusing its research funding on health and nutrition, as well as four other areas of need: communication, mobility, security as well as climate and energy. According to the federal government, information and communication technologies (ICT) are key technologies on the basis of which society's current challenges can be overcome. They are considered to be the main driving force behind innovation. In the "ICT 2020 – Research for Innovation" funding programme, e-health applications are also promoted [70].

There is still a considerable need for research not only in terms of user requirements and the potential range of applications, but also the effectiveness of digital health programmes in the agricultural setting, since there is little expertise available. As digital measures for stress prevention and the promotion of spinal health have already been successfully tested in other fields, it is expected that an optimised concept for stress management and back health will also make it possible to achieve significant savings of administrative and benefit costs over the long term in the business area in which the Sozialversicherung für Landwirtschaft, Forsten und Gartenbau (SVLFG), the German agricultural social insurance system, operates. With an eHealth project, online health programmes could be developed which are first tested to determine their effectiveness and then have the potential to reach all gainfully employed individuals in the agricultural sector, which classroom seminars cannot achieve. Initially identified priority areas for action in the triad of mental health (e.g. depression), somatics (e.g. spinal disease) and surroundings (e.g. work-life balance, ergonomic workplace design), which can be readily addressed through internet-based interventions would need to be tested in pilot projects. To maximise the strength of the effects of such programmes, scientific, technical and practical expertise should be combined at a high level from the very

beginning in order to achieve holistic, readily applicable results. This means that the target groups and relevant stakeholders are fully involved in the analysis of tasks and users, as well as the design and evaluation phase. The aim of such programmes is the communication of skills in a manner which is as sustainable and low-threshold as possible with an affinity for target groups which is as high as possible in order to mobilise health resources in working and living environments. Such programmes also have the potential to make health services barrier-free by using audio material, written text and visual material synchronously. Moreover, such projects can improve the media and information skills of the users. Research approaches can be conceived in such a way that the possible transfer potential for similar population profiles in rural areas, e.g. SME businesses – especially in the field of skilled crafts and trades – is exhausted to the maximum extent possible.

## Research programmes and research collaborations

Since in contrast to other German social insurance systems, research in the SVLFG tends to be less institutionalised and has a significantly smaller budget, participation in national and European research funding programmes is an effective means of staying connected in the field of service and cost innovations. In addition, through national and cross-border cooperations it is possible to significantly reduce research and development costs of efficacy-tested strategies and measures in the field of occupational health and safety in the agricultural sector and avoid the duplication of activities. Furthermore, financially sponsored research collaborations represent an important means of access for SVLFG to the necessary, evidence-based special knowledge.

## ENASP – Networking and cooperation potentials

In addition to Germany, there are agricultural social insurance systems in Austria, Finland, France, Greece and Poland. These six European special agricultural social systems see themselves confronted on the one hand with the general phenomena relating to the social insurance systems, such as the increasing necessity to make savings and concentration processes, also against the background of the continual decline in membership figures. The individual systems are therefore going through reform processes of varying intensity, depth and range. On the other hand, all special systems are confronted by a very high risk exposure of their policyholders mentioned at the beginning of this article. Within

the context of scarce resources and the major shared challenges in the field of occupational health and safety in the agricultural sector, significant potentials for synergies, innovation and savings lie in the intensification of project-related collaboration – including the field of research – and the pooling of common resources.

These European agricultural social security systems<sup>2</sup> – Austria (SVB), Finland (Mela), France (MSA), Germany (SVLFG), Greece (OGA) and Poland (KRUS) – form at the European level the European Network of Agricultural Social Protection Systems (ENASP).

The aim of this network is the exchange of knowledge and best practices, the pooling of resources and the sustained presence of topics relating to agricultural social security on European agendas. The special system structures of its members with their many interfaces and high integration potentials offer an excellent starting point for the successful implementation of research funding programmes, health and prevention programmes.

The SVLFG (Germany) has extensive experience in the conceptual design and implementation of various project-related health seminars, such as "Farm Transfer – a Health Issue", a seminar on preventing the consequences of stress and the improvement of the health-related quality of life within the context of the transfer of farms to the next generation, as well as the seminar on "Counseling techniques after traumatic and critical events" and stress management seminars. Furthermore, cooperation projects also benefit from the expertise of the SVLFG in training programmes for businesses and educational institutions on health protection and occupational safety, including spinal health. The SVLFG also participates in the research network funded by the The Federal Ministry of Education and Research (BMBF) on musculoskeletal disorders. The focus of the project is the prevention of falls in older people. Psychosocial and cognitive influencing factors are also analysed here. In cooperation with the German Social Accident Insurance Institutions (DGUV), the SVLFG is currently holding a large-scale campaign on back health lasting several years. The programmes and activities of the SVLFG are based on sound and highly networked expertise which innovatively connects different approaches.

The MELA (Finland) has long-standing expertise in psychological prevention and early intervention models in business settings. Through the early detection and early intervention of, for example, burnout or depression, the aim is to maintain and improve the individual's ability to work and earn a living. Specialised personnel who come to work on the farms are trained in recognising the early symptoms and symptom complexes and addressing these in a manner which is appropriate for the situation. There is a preventive emergency plan in existence if required. The campaign partners are trade unions, the occupational health service, municipal authorities and the Church. The Mela also draws up proposals for businesses on work design which is conducive to good health (workplace enhancement).

The SVB (Austria) has extensive expertise in complex health programmes, seminars and courses. Health campaigns such as "All aspects of the farm transfer", which are aimed at those planning to transfer their farm to the next generation, or for senior citizens "Refuelling to preserve the quality of life" include programme modules on mental and physical health. Important specialist knowledge on psychosocial prevention and health promotion in living and working contexts in agricultural businesses has also been acquired through the implementation of a one-week "Active Health Week" and a "Occupational Health Week". This also applies in particular to the two-week prevention programme "Women/men in special situations". The programme is aimed at farmers who are exposed to psychological pressure for various reasons. Furthermore, the SVB regularly carries out a large health survey on the health status and awareness of its policyholders.

The OGA (Greece) has been able to acquire valuable practical experience through the conceptual design and implementation of social programmes which include modular units for mental well-being, as well as through its general advisory work on occupational health and safety and health protection.

The Agricultural Social Insurance Fund (KRUS) has long-term multiannual plans for the development and continuous improvement of services for KRUS clients, including prevention services. KRUS has long-term cooperation relations with the Polish Institute of Rural Health (IRHL) and are thus already linked to science. The IRHL has many years of expertise in agricultural health research and the transfer of research results into practice, in particular the detection and assessment of hazards and risks in the agricultural sector, accident prevention, the analysis of needs and health care in rural areas. Moreover, the Institute has carried out toxicity and environmental studies on health, including analyses of pesticide contamination levels and – on behalf of the Polish Committee for Standardisation – methods for the determination of the environmental impact of plant protection products.

<sup>2</sup> CCMSA – CCMSA Caisse Centrale de la Mutualité Sociale Agricole / Central Agricultural Workers and Farmers' Mutual Benefit Fund, France  
 KRUS – Kasa Rolniczego Ubezpieczenia Społecznego / Agricultural Social Insurance Fund, Poland  
 Mela – Maatalousyrittäjien eläkelaitos / Farmers' Social Insurance, Finland  
 OGA – Οργανισμός Γεωργικών Ασφαλίσεων / Agricultural Insurance Organization, Greece  
 SVB – Sozialversicherungsanstalt der Bauern / Social Insurance Institution for Farmers, Austria  
 SVLFG – Social Insurance for Agriculture, Forestry and Gartenbau / Social Insurance for Agriculture, Forestry and Horticulture, Germany

The MSA (France) has outstanding expertise in the field of health in old age and in the development of health and social networks. The "Gerontological Network" is a cooperation network between doctors, hospitals and socio-medical services. The workshop "Living well in old age" promotes the health and prevention-related education of the over 55 year olds. The "House of Health in the Countryside" brings together multi-disciplinary health-care experts on a project basis, depending on the health topics selected in each case, in order to continually expand the quality of care. Finally, the MSA has also contributed to the realisation of the European "Agriquadra" project. The target group consisted of people from the agricultural sector who were in the second half of their professional careers. The individuals addressed were all stakeholders from the sector with the aim of strengthening knowledge skills in the field of age management, for example in the identification of age-appropriate fields of activity. The MSA also plays a leading role in the national suicide prevention programme for the agricultural population.

Research collaborations enable ENASP-members:

- access to innovative findings from science and research, as well as valuable practical expertise, also in the individual special agricultural social systems in Europe (inter-professional learning)
- generation of know-how; fundamental for (cost-)effective health promotion, prevention and health care for the agricultural population
- cross-sectoral participation in the formation of health value-added chains from researchers to patients, health professionals, social security institutions and important multipliers (interest groups, social partners, medical profession etc.)
- advancement of knowledge within European cross-national partnerships which would be difficult to achieve within a single national system (and also very expensive)
- future generations to benefit from innovations.

## Horizon 2020 – Tackling Societal Challenges

Demographic change represents a major challenge for the health and social systems in Europe. Europe needs more health efficiency in order to make the social and economic systems future-proof and able to stand up to the competition. For this reason, the EU provides funding with a total volume of almost 80 billion euros to solve

these and other challenges such as climate change, food security and food safety or sustainability in agriculture. "Horizon 2020" is therefore the largest ever EU programme for research and innovation and one of the largest programmes financed by public funds worldwide. Financial support is also provided for the formation of an EU-wide basis of excellence in research and innovation which is also more strongly linked to social responsibility. Within a period of seven years, i.e. 2014-2020, 7.4 billion euros will be used to finance cross-national projects dealing with the topics of health, demographic change and well-being. As a rule, a project consortium has to consist of at least 3 legal entities, all of which must be established in an EU Member State or associated countries (with some exceptions). Specific application criteria and guidelines are laid down in work programmes. The project format, including criteria for the impact of the project, the level of excellence and the quality and efficiency of project implementation, is defined by the European Commission. Project applications can only be submitted within the context of an open invitation to tender which relates to pre-determined funding priorities. The application is always submitted in response to a publicly accessible request – a "call" – from the EU Commission.

The objectives and research priorities [71] are:

- research into factors determining health as well as disease processes as a basis for effective, evidence-based health care
- development of improved monitoring, prognosis and diagnostic methods
- methods, tools and strategies for disease prevention
- treatment of diseases and innovations for disease management
- technologies, systems and services to support active ageing and independent living
- better use of health data
- technologies and concepts for health care, nursing and support.

In the highly competitive EU procedures, the chances of success of EU research applications are generally below the national level of many European countries. Projects are approved which not only meet the high scientific standards set out in the work programme, but also promote the strategies of the EU in the best manner.

H2020 is a unique opportunity for the European agricultural social protection systems to develop specialised knowledge and acquire a more prominent role in EU decision-making processes.



For this reason, in 2014 the European agricultural social insurance systems launched a number of initiatives aimed at creating sustainable professional collaborative structures that establish a basis for a joint and successful participation in such programmes. At the first common application within the current framework of EU research and innovation programmes in 2015 – together with renowned research institutions – the proposal was ranked among the top 5%. This very good result is an excellent starting point for projects of this kind. The invitation to tender was a call to promote mental well-being in the ageing population. The ProFarm consortium was formed and submitted an application to promote mental well-being in the ageing agricultural population. The application and specialist expertise that was acquired represent a valuable knowledge base for future projects. This knowledge is already incorporated in a series of (national) follow-on projects.

The primary objective of ProFarm was the analysis of the mental health situation of the older agricultural population and its specific requirements in terms of psychosocial health services, as well as the development and evaluation of efficient and cost-effective preventive analogue and digital interventions and telephone-based coaching interventions. ProFarm therefore aimed to make a significant contribution to promote the mental wellbeing of the ageing agricultural population across Europe.

The overall objectives included, among others:

1. A substantial expansion of knowledge about risk and protective factors for mental disorders, as well as interactions with comorbid and somatic diseases, particularly with regard to age-specific symptoms and the provision of information to decision-makers, interest groups and experts from the fields of politics, science, social welfare and healthcare, as well as the agricultural population as a whole.
2. Strengthening the health potential of the agricultural population by improving health skills, health awareness, antistigma skills, the early detection of symptoms and the use of psychosocial health services in accordance with requirements.
3. The identification of specific needs and barriers of the older agricultural population to use health services.
4. The development, testing and analysis of the effectiveness and cost-effectiveness of innovative multi-modal interventions specifically adopted to the needs of the ageing agricultural population (interventions using for example the internet, telephone coaching and multi-media campaigns;) following a participatory design approach.

## Conclusion

Long working hours, working beyond the standard retirement age, the care of relatives and isolated working and other socio-economic stressors are often characteristic of agricultural occupations. Additionally agricultural work is associated with high levels of exposure to environmental and occupational risks such as toxins, physically demanding work, natural disasters and animal disease epidemics. At the same time it is this population, which is affected by specific barriers to psychosocial health services, particularly due to weak rural healthcare infrastructures and specific forms of behaviour. Individuals insured by the SVLFG live and work mainly in rural areas, so that the group of insured individuals is geographically widely scattered. Especially rural areas face significant demographic changes. There is already a noticeable decrease in the size of the German rural population and an increase in its average age.

With regard to the mental health of the agricultural population in Europe there are currently hardly any empirically reliable findings available on the range and effects of risk and protective factors as well as population-specific needs for health care. Furthermore, there are no evidence-based prevention programmes or interventions in existence which comprehensively address the specific psychosocial needs of this target group. With the current health and prevention offers of the SVLFG, especially face-to-face seminars, only a fraction of the insured can be reached. Comprehensive programmes, which are interlinked by digital or analogue means, have the potential to bring about a significant health effect for this vulnerable agricultural group, especially when these build on evidence-based measures and excellent practical knowledge. In order to secure the skilled labour base, intact social infrastructures and healthcare infrastructures which are in line with requirements, interlinking and integrating analogue and digital health solutions represent an innovative, promising approach to support maintaining fully functional rural economic and living environments. Various scientific studies also predict that in general the costs of mental distress will rise to a considerable extent [26, 72]. Today, the economic costs of negative stress and musculoskeletal diseases across the EU, for example, run into hundreds of billions of Euros [73]. Initiatives, which are founded on a solid data basis and economically viable concepts, have a good chance of paying off in the long term.

The specific characteristics of the agricultural sector require special health knowledge and infrastructures in order to respond effectively and efficiently to their specific requirements. Research helps to systematically identify health resources and needs and to address these in an effective manner and use resources efficiently. Research collaborations of the SVLFG represent an important means of access to evidence-based knowledge and

innovation. Since in contrast to other social insurance systems, research in the SVLFG tends to be less institutionalised and has a significantly smaller budget, participation in research funding programmes is an effective mean of staying connected in the field of service and cost innovations. For this reason, the SVLFG participates in expertise-generating and interlinking initiatives, which make the system more efficient and improve the quality of life and health of the insured. This also includes participation as a partner in national and European research and innovation funding opportunities such as Horizon 2020.

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*A presentation on the topic of the article – hold during the ENASP conference – is provided here:*



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