

**Health Impact Assessment of Food and Agriculture Policies in Slovenia,  
and the potential effect of accession to the European Union  
Report for the Ministry of Health of the Republic Slovenia Health**



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of the Republic Slovenia**

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October 2003

*Published by:* Republic of Slovenia  
Ministry of Health  
Štefanova 5  
SI – 1000 Ljubljana  
Tel: +386 (0) 1 478 6000, Fax: +386 (0) 1 478 6058

*Publication title:* Health Impact Assessment of Food and Agriculture Policies in Slovenia, and the Potential Effect of Accession to the European Union

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*Number of copies printed:* 600

*Year of publication:* 2004

*Lay-out and print:* Tiskarna Pleško, d. o. o.  
Rožna dolina C IV/32–34, SI-1000 Ljubljana

*Translation:* Veris, d. o. o., Stegne 7, SI-1000 Ljubljana

*Photo:* Dr Karen Lock

Report is also available on the websites of the Ministry of Health, WHO – Regional Office for Europe, and the London School of Hygiene and Tropical Medicine:

<http://www2.gov.si/mz/mz-splet.nsf>

<http://www.euro.who.int>

<http://www.lshtm.ac.uk/>

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CIP – Kataložni zapis o publikaciji  
Narodna in univerzitetna knjižnica, Ljubljana

338.43.02:61(497.4)  
338.439.64:61(497.4)

OCENA vplivov prehranske in kmetijske politike na zdravje prebivalcev RS zaradi pristopa k Evropski uniji : poročilo za Ministrstvo za zdravje / uredniki Karen Lock ... [et al.] ; [prevod Veris]. – Ljubljana : Ministrstvo za zdravje, 2004

Vsebuje tudi original, tiskan v obratni smeri: Health impact assessment of food and agriculture policies in Slovenia, and the potential effect of accession to the European Union : report for the Ministry of Health

ISBN 961-6523-06-6

1. Lock, Karen 2. Health impact assessment of food and agriculture policies in Slovenia, and the potential effect of accession to the European Union  
216985088

## Acknowledgements

*This project would not have been possible without the hard work of a large number of people. Thanks must go to all the people who have taken part in the workshops and meetings whose names are too numerous to mention here but who are acknowledged in previous project reports listed in the references. The vital work was undertaken by the HIA working group who were responsible for the overall management of the project. Members of the National Institute of Public Health, regional institutes of public health and other ministries provided essential data. Their names are listed in the appendices. Some of the financial support was provided by the World Health Organisation European region, and specific thanks must go to the WHO Euro staff Marco Martuzzi, Aileen Robertson and Carlos Dora who have all played roles in ensuring that the project became a reality. Several international academics have been provided input at various stages of the work, they are acknowledged in the previous project reports. A special acknowledgment must go to Dr Schafer Elinder from the National Institute of Public Health in Sweden whose report on the public health effects of the Common Agricultural Policy has been an invaluable source of reference material for this project. Finally, the essential role of the Ministry of Health should be acknowledged. This was a new and difficult project for a national government to undertake and would not have been possible without the ongoing vision and energy of the State Secretary, Dr Jožica Maučec Zakotnik.*



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## **Executive summary**

The Republic of Slovenia has been in a period of rapid transition prior to accession to the European Union in 2004. The situation with regard to food policy and public health is complex. There is strong scientific evidence that food and nutrition is a significant factor in the rise in obesity and non-communicable diseases such as cardiovascular disease and some cancers which are major causes of premature death. After accession, national food policy will be significantly influenced by the EU Common Agricultural Policy (CAP). The CAP is one of the most important policy areas in the EU, accounting for nearly 50% of the EU budget and is characterised by producer and trade support. Despite the emphasis upon public health in the Maastricht and Amsterdam Treaties, the public health implications of EU food and agricultural policies are limited. At the same time there is growing public concern about food safety and quality, production methods and environmental contamination. The challenge facing the Republic of Slovenia is to balance the national concerns of citizens, farmers, the food industry with EU law and public health, in a strategy that combines all these issues.

The Ministry of Health set out to undertake a Health Impact Assessment (HIA) of national agriculture and food policies in collaboration with the World Health Organization (European region). Clearly the most important stimulus for the HIA was Slovenia's application to join the EU, and the influence adoption of the Common Agriculture Policy (CAP) legislation would have. However, there were also national priorities including the development of an inter-sectoral national food and nutrition action plan by the Ministry of Health.

HIA was proposed as an appropriate approach that could be used to investigate the health concerns in the development of agriculture, food and nutrition policy in Slovenia. This is the first time that any country has attempted to conduct an assessment of the health effects of proposed national agricultural and food policies using HIA. As this was a new application of HIA this work was conducted as a pilot project.

Part One of the report gives the background to the issue of the health effects of agricultural policy.

Chapter one summarises the rationale for the health impact assessment project and Chapter two gives details of the methods used.

Chapter three outlines the general background to the EU Common Agricultural Policy including organisation of the funding and structural mechanisms and how Slovenia has been adopting CAP requirements as part of the accession process.

Chapter four gives an overview of the public health issues that are relevant to the food and agricultural policies being considered, while chapter five briefly summarises the evidence for some of the main health effects of food.

Part two discusses the specific agricultural policies that have been assessed and presents the results and recommendations. The three main commodity regimes assessed were the fruit and vegetable regime, the wine regime and the dairy sector which are discussed in chapters six, seven and eight. Chapter nine briefly outlines how the rural development measures have the potential to improve public health.

Part three of the report reviews the HIA process and assesses the lesson learnt from the health impact assessment project. The project was started as a pilot project to assess the feasibility of assessing health impacts of complex national policies using HIA. It was acknowledged at the start of the work that there would be a need for methodological development and that the final analysis would not be fully comprehensive. An important part of the project has been evaluating and learning lessons for the future progress of HIA and policy development between health and other policy sectors both in Slovenia and other countries. There have been several limitations to the methods used which are discussed. However, HIA has been a useful method of improving inter-sectoral collaboration. It is clearly not the only method available to tackle this, and future work needs to be done to make the methods more applicable to large complex policy areas such as the CAP.

Finally the conclusions and the full recommendations are set out in chapter 11. Overall, the HIA proposes that the current Agricultural Policy model in Slovenia is likely to be better for the health and socio-economic

## ***Executive summary***

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wellbeing of the population than the situation which will occur after adoption of some policy changes due to the CAP. The current model of agriculture should be protected and strengthened to improve the public health of the population.

The specific recommendations of the HIA can be summarised in four main policy areas below; fruit and vegetables, wine, dairy produce and rural development. It is important to mention that these actions are not necessarily actions that can be undertaken solely by the Government of Slovenia, but will require changes in CAP policy centrally in the EU and could potentially benefit the populations of many countries across Europe.

### **Fruit and vegetables**

1. Aim to increase Slovenian production of fresh and frozen fruit and vegetables to meet increased market demand stimulated through healthy eating campaigns. This will have to involve determining what fruits and vegetables will be most suited to both the agricultural system and the market demand.
2. Evaluate the possibility to restructure current production from products like grain, to labour intensive but high value added products such as fruit and vegetables. One approach may be to encourage smaller farms to convert to horticulture production with support from rural development instruments (e.g. in Pomurje) to help maintain rural livelihoods with added health benefits.
3. Improve inter-sectoral collaboration including better statistical databases jointly shared between the agricultural, economic, statistical and health sectors looking at food production. These databases could be the basis of well-planned joint policies to improve consumer education and better market research to improve producer marketing with the aim of increasing Slovenian consumption of fruit and vegetables.
4. Focus on improving product quality. Across Europe there is increasing concern for food safety including pesticide levels in foods. This is particularly true in the fruit and vegetable sector which includes a rising demand for organic produce. Support through various 'pillar 2' instruments could potentially be used to help Slovenian farmers take advantage of producing highest quality and organic fruit and vegetables.
5. If EU withdrawal compensation mechanisms are introduced after accession then this should only be at times of extreme local, seasonal overproduction. It is also recommended that any withdrawal produce should be used for human consumption (according to EU regulation although this is not common). For example, supplying schools.

### **Wine regime**

6. The new alcohol policy from the Ministry of Health should ensure that health promotion is evidence based (and specifically refutes the EU funded promotion of wine drinking to 20-40 year olds).
7. Ministry of Agriculture, Forestry and Food should aim to reduce surplus wine production by converting vineyards to other production. There should be encouragement for farmers to convert vineyards to other produce. The Ministry of Health and Ministry of Agriculture, Forestry and Food should collaborate to discourage the use of EU funds for distillation support for surplus wine production, but to increase use of EU wine budget in Slovenia for conversion aid.
8. A register of vineyards should be created in Slovenia to monitor wine production, and use of surplus wine production.

## **Milk products**

9. MAFF should work with farmers to reduce the fat content of cows milk produced by supporting different feeding practices. This can be achieved through breeding and feeding practices that could be the subject of technical extension programmes in the rural development funds.
10. There should be cross-government marketing of the public health benefits of switching to lower fat milk when the new whole milk standard comes into full effect. There should be clear education campaigns about the new milk fat levels so that consumers are clearly informed that the products they are buying have changed (i.e. from 3.2% to 3.5% fat content).
11. MAFF should proactively work with the dairy industry to lower the amount of surplus milk/ butter fat produced domestically.
12. The national drinking milk guidelines for school children should be supported . This may not be best served by considering any EU funded school milk schemes which promote full fat milk in schools. Only skimmed milk should be considered for any such EU funded scheme.
13. Work with the options in the acquis to 'fine-tune' the policy instrument to support only low-fat milk products in line with national dietary guidelines.

## **Rural Development measures**

14. It is recommended that a separate health project be conducted that assesses the full health effects of the rural development measures.
15. Where appropriate, rural development measures should encourage investment in crops that form the basis of a healthy balanced diet where it is also economically beneficial to producers e.g. fruit and vegetables in small farms currently producing grain products.
16. Rural development measures should support income diversification and rural livelihoods of small farmers to maintain rural livelihoods and the tackle rural unemployment. This will be important in tackling the high rates of mental illness and suicide in Slovenia as a whole, and in farmers specifically.
17. Where possible rural development measures should aim to create sustainable markets to increase local supply and availability of products which form the basis of a healthy diet, including incentives for creating new markets such as producer co-ops or home delivery box schemes for fruits and vegetables, plus preservation of local food markets such as farmers markets.
18. The absorption rates of different agriculture EC funds in Slovenia should be increased. Due to the current lack of knowledge amongst the rural population the application for available funds is relatively low at present. Evaluation of current agricultural assistance should consider why there are still perceived barriers to accessing EU funds in the Slovene population.

## **General measures**

19. A separate working group in the National Council for Health, (responsible for HIA procedures in Slovenia), should be established to conduct specific HIA on agriculture, food and nutrition topics in the future as they arise.
20. The Government of Slovenia should work to develop local procurement schemes for public sector provided meals, for example in schools, hospitals and elderly care homes. This would benefit Slovenian producers, particularly for fresh perishable produce such as fruit and vegetables by creating long term guaranteed markets while also ensuring that public funded meals are healthy.



## **Introduction**

In December 2001 the Ministry of Health proposed to undertake a Health Impact Assessment (HIA) of national agriculture and food policies in collaboration with the World Health Organization (European region). The HIA project was started in March 2002. Clearly the most important stimulus for the HIA was Slovenia's application to join the EU, and the influence adoption of the Common Agriculture Policy (CAP) legislation would have on national agricultural policy. However, there were also national concerns and priorities that supported development of the work. This included the process of developing an inter-sectoral national food and nutrition action plan by the Ministry of Health. It was planned that the results of the HIA would feed into development of the national Food and Nutrition Action Plan.

HIA was proposed as an appropriate approach that could be used to investigate the health concerns in the development of agriculture, food and nutrition policy in Slovenia. This was particularly important in the agricultural sector where public health was not high on the agenda as it is not a directly negotiated factor within the EU CAP.

This is the first time that any country has attempted to conduct an assessment of the health effects of proposed national agricultural and food policies. As this was a new application of HIA this work was conducted as a pilot project. This acknowledges that there would be a need for methodological development and that the final analysis would not be fully comprehensive. An important part of the work was evaluating and learning lessons for the future progress of HIA and policy development between health and other policy sectors.





## **Rationale for the health impact assessment project**

### **Why assess the health effects of policies in other sectors?**

Impacts on human health are not limited to specific health policies. Policies and programmes in all sectors affect – directly or indirectly – on people’s health and well being. Health is a theme that cuts across all sectors although awareness of this by decision-makers is not as high as it could be. While health care services play an important role in improving people’s health by treating disease and ill health, the need to prevent ill health in the first place is an essential requirement for successful sustainable development policy in any country.

Considerable scope exists outside the health sector to help to prevent ill health and to encourage and help people to achieve better health and well being. Increasingly, Governments and institutions like the European Union are acknowledging the wider determinants of people’s health and thus, the relevance of health impacts. In some cases, awareness of health impacts has increased as a result of major issues of public concern. For example, in Agricultural policy, the discovery of the new disease of Bovine Spongiform Encephalopathy in cows and its effect on food safety, have highlighted the impact on human health of decisions made in other policy areas and the knock-on effects that such developments can have, including effects on people’s perceptions of risks and on public confidence in policy makers.

The impact(s) of policies, programmes or other developments on people’s health and well being may be positive and/or negative, and may vary in their magnitude. The impact(s) may also vary across different groups of people within the population or between people living in different local communities. Groups in society that can be affected to a much greater extent by the adverse health effects of some policies, plans or programmes include children, elderly people, people with disabilities and people from ethnic minorities.

### **Why use health impact assessment?**

Action to consider the impact of policies, plans or projects on people’s health is not new. It has featured in the development of environmental policies. However, there is clearly a need for much greater notice to be taken of the potential effects on health of policies, programmes and other developments, and of their potential to contribute to efforts to improve health. Making different sectors aware of their important contribution to protecting and to improving people’s health means that public health needs to be taken into account during the development and review of policies and programmes.

Despite the fact that several EU policy instruments including the Amsterdam Treaty and the European Directives on Environmental Impact Assessment have listed human health protection as a major reason to carry out environmental impact assessments, in practice the consideration of health impacts has largely been neglected or has been inadequate.

Health impact assessment is one approach that provides a systematic but flexible means of doing this more systematically. Based on the broader model of health, it enables the wide range of factors that can affect human health – directly or indirectly – to be identified and taken into account at an early stage in planning and decision making. The approach identifies and involves a wide range of stakeholders including the public so that the expertise and/or opinions of those who may be affected by a proposed policy or development are taken into account during planning and decision making processes (Lock 2000).

The most important aspect of health impact assessment is what it can do to improve policymaking by contributing to better informed and more transparent decision making . It can also help to:

- Make decision-makers aware of the links between health and other policy areas, thus helping to generate a better understanding of the interactions between policies;
- Ensure that the potential health consequences of decisions – positive or negative – are not overlooked;
- Facilitate greater integration and co-ordination between policies and action across all sectors by identifying new opportunities to protect and improve health and by informing discussions and decisions on appropriate action.



## **The health impact assessment methods used**

Health Impact assessment is usually conducted as a multidisciplinary and intersectoral process within which a range of evidence about the health effects of a proposed project or policy are considered in a structured framework. Potential health impacts of a proposal are analysed and used to create evidence-based recommendations that inform the decision-making process with the aim to reduce potential negative health effects (Health Development Agency 2002). There is a consensus on the main stages in the HIA process, and the details of this and the terminology used are discussed elsewhere (Parry and Stevens A 2001; Health Development Agency 2002) (Mindell, Ison et al. 2003). There are now many examples of projects and programmes worldwide that have been subjected to an HIA. By contrast, there has been much less experience of the application of HIA to national policy. As we were unable to find any appropriate models of HIA of national agricultural policy that had been used elsewhere we adapted HIA methods used by governments for different policy contexts.

The HIA in Slovenia has basically followed a six stage process; policy analysis, rapid appraisal workshops with stakeholders from a range of backgrounds; review of research evidence relevant to the policy; analysis of Slovenian data for key health-related indicators; report on the findings to cross-government group, and evaluation.

### **HIA working group**

A project working group was formed in March 2002 which included partners from the Ministry of Health, the National Institute of Public Health, Ljubljana, WHO European region and international academics. Its main roles were to determine the terms of reference and to ensure the progress of the various stages of the HIA. The group has been responsible for determining the scope and the methods used, and members have been responsible for conducting and managing aspects of the work. The names and contact details of this working group are given in appendix A.

### **Defining the policy to be assessed**

The major difficulty in the initial stages of the HIA was clarifying the agricultural policy options to be assessed. The HIA had to take into account the effect of adopting the Common Agricultural Policy into Slovenian law. At the start of the HIA project this could not be done with any degree of accuracy or certainty as there were ongoing negotiations with the EU about the nature and amount of common agricultural policy subsidies Slovenia will be allocated on accession, and the date of accession had still not been confirmed. These issues were partly resolved in December 2002 when the CAP subsidies were finally agreed between the EC and the Slovenian government. However, some issues such as the specific types of rural development measures which would be available for Slovenian farmers as part of the Rural Development Policy 2004–2006 was still being discussed even on completion of the final HIA. To assist the analysis, academics for the Department of Agricultural Economics, Policy and Law at the University of Ljubljana provided expertise in modelling and interpreting potential policy scenarios which would be likely in Slovenia when integrating the CAP requirements into Slovenian national policy (Kuhar and Erjavec 2002).

The complexities of European agricultural policy and how it will be applied to Slovenia has made conducting a detailed HIA very difficult. Obviously the HIA had to take into account that adoption of the EU CAP will end national agri-food policy and introduce other influences from EU member states. The CAP itself is reforming at the EU level and during the HIA project negotiation outcomes for Slovenia were not yet known. However aspects of all these elements were included into the research work and a counterfactual approach was applied to the most likely scenarios of policy development. As part of the model these were carefully evaluated including details of the country specific social, economic, policy, technological and other potentially important health determinants (Wallace and Martuzzi 2002).

Modelling scenarios were based on the expectations of the possible policy and economic developments as foreseen at the time of scenario creation considering relevant information from the EU negotiation process.

## ***The health impact assessment methods used***

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These were then formulated into the simulation scenario for the economic model. The important benchmark in the evaluation of potential outcomes was the baseline scenario where intended non-CAP guided policy reform was simulated (Kuhar and Erjavec 2002).

It was acknowledged that the project had to prioritise aspects of the CAP it looked at. Three agricultural regimes were analysed in greater detail due to their importance in Slovenian agriculture and their potentially important health impacts.

1. The dairy regime is among the most distorting agricultural policy in the EU, receiving a considerable amount of the total agricultural budget which is not related to market share. It was important to consider the dairy regime because it has wide ranging implications for market developments, consumption patterns and human health impacts. Animal production and particularly dairy farming is also a large part of the agricultural sector in Slovenia.
2. Fruit and vegetable policy in the EU has been reformed but still creates market distortion. There are obvious health benefits that can be gained with promotion of fruit and vegetable production and increased consumption (see section on health effects of food). Slovenian agriculture has comparative advantages in fruit production (especially apples) and there are possibilities to reorient current production into the environmentally friendly and organic sector.
3. The EU wine regime is primarily oriented to maintain income levels of producers. The Slovenian population has excess alcohol intake and high rates of alcohol related liver diseases, especially in rural areas.

It was also felt that the HIA must recognise that there are other drivers of health and policy change in the agricultural sector, and that the wider issues of socio-economic and cultural change must be taken into account as part of the process.

## **Involving stakeholders in the HIA**

The most important part of an HIA is identifying and collecting information for health impacts that a policy might create. It had been decided that the HIA approach taken in Slovenia would involve national and regional stakeholders. The first HIA workshops were held in March 2002 in the north-east region of Pomurje. 66 people participated including representatives of local farmers, food processors, consumer organisations, schools, public health, NGO's, national and regional development agencies, and officials from several government ministries. These included Ministries of Agriculture, Economic Development, Education, Tourism, Health and a representative of the president of Slovenia. Full details are given in the previous published meeting report. The workshop materials had been developed in English and translated into Slovenian, and the group work was conducted and facilitated in Slovenian. The participants were asked to identify potential positive and negative health impacts of the proposed agricultural policies. This was achieved by conducting a series of rapid appraisal workshops which were facilitated by using a semi-structured grid assessment framework. This prompted participants to consider the core policy issues and identify potential health impacts using the main determinants of health. As part of this participants were asked to identify which population groups would be most affected by each policy area. Comprehensive details of the group work and the results is contained in the full report of the meeting (Rakičan, Pomurje region, 2002) .

## **Identification of main health impacts: data collection and analysis**

The qualitative information gained from the workshops allowed a picture of likely positive and negative health impacts to be constructed, including areas of speculation and disagreement. The main issues identified by stakeholders are summarised in Figure 1.

## ***The health impact assessment methods used***

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*Figure 1: Key determinants of health potentially affected by agricultural policy development in Slovenia*

- Changes in income, employment, housing and issues of social capital in rural areas;
- Changes in the rural landscape, and cultural impacts;
- Increased food imports, and effects on exports;
- Nutritional-value and food safety of produce and food products;
- Environmental issues: farm intensification leading to soil and water pollution;
- The potential benefits of organic agriculture and food;
- Barriers to increasing organic production or small-scale on farm industries (including knowledge of farmers and absorption capacity for EU money);
- Occupational health of farm workers and food processors;
- Capacity of local services and institutions including employment, education, health and social services.

*Source: Outcomes of stakeholder HIA workshops, Slovenia March 2002.*

The next step was to combine this information on potential health impacts with evidence from other sources in order to clarify the strength of the evidence to support or refute the 'hypotheses' of health impacts proposed.

To plan the evidence review, an expert meeting was held to assess the strength of the evidence for the links between the policy issues identified in the workshops, and health determinants and health outcomes. Unsurprisingly, for several key areas the evidence was found to be patchy or not available in an up to date, easily synthesisable form. Details of the findings can be found in the full meeting report. In order for the HIA to proceed the next stage had to map out in more detail the evidence-base for how agriculture and food policies affect health. Evidence reviews were planned and commissioned linking relevant agriculturally-related health determinants and health outcomes for several policy topics that had been key issues in the stakeholder workshops. These were environmentally friendly and organic farming methods, mental health and rural communities, socio-economic factors and social capital, occupational exposure and issues of food policy including price, availability, diet and nutrition. Unfortunately resources were not available to complete all of these and they were unable to be included in the project, limiting some of the analysis and the scope of the HIA.

## **Health indicators**

The final aspect of the project collected health and social indicators in Slovenia (see Appendix B). This allowed the interpretation of the literature review evidence for the Slovenian context. The National Institute of Public Health, Ljubljana coordinated the national and regional data collection with the regional institutes of public health. All those who participated in data collection are listed in appendix C.



## The European Union Common Agricultural Policy

This section will briefly outline the general background and organisation of the EU Common Agricultural Policy (CAP). Relevant details of specific regimes will be discussed in the following sections on specific commodities or funding mechanisms. This section is based on the European Commission website and several key reports (Tarditi 2002; Schafer Elinder 2003).

### Background to the CAP

The CAP is one of the most important policy areas in the EU. In 2002 approximately 45.2% of the EU budget was allocated to it. The CAP comprises a set of laws and policy instruments which regulate the production, trade and processing of agricultural products in the EU. This has also recently included an increasing emphasis on rural development. Currently about 90% of the agricultural budget is allocated to farmers subsidies, while 10% is used on rural development issues.

A comprehensive European agricultural policy was a key element from the outset in the formation of a European Community. One of the main policy drivers was the memory of post-war food shortages and the need to improve future food security in Europe.

The treaty of Rome defined the general objectives of the CAP, which remain the same until the present day. The principles of the CAP were set out at the Stresa Conference in July 1958. In 1960, the CAP mechanisms were adopted by the 6 founding member states and these came into force in 1962.

The legal basis of agricultural policy for the European Community is defined in articles 32 to 38 in title II of the EC treaty (EU Commission accessed June 2003).

**The objectives of the CAP** as set out in Article 33 of the EC (Amsterdam) Treaty are:

- To increase agricultural productivity by promoting technical progress and by ensuring the rational development of agricultural production and the optimum utilisation of the factors of production, including labour;
- To ensure a fair standard of living for the agricultural community, by increasing individual earnings of those employed in agriculture;
- To stabilise markets;
- To assure the availability of supplies;
- To ensure that supplies reach consumers at reasonable price.

In order to attain these objectives, Article 34 of the EC treaty provides for the creation of the common organisation of the agricultural markets. These now exist for 22 agricultural products. The establishment and implementation of market organisations is the responsibility of the Council of Ministers and the European Commission.

**Three main principles (defined in 1962) characterise the market organisation of the CAP:**

A unified market: this denotes the free movement of agricultural products within the area of the Member states; for the organisation of the unified market, common means and mechanisms should be used throughout the EU.

Community preference: this means that EU agricultural products are given preference and a price advantage over imported products. This also protects the internal market from products imported from third countries at low prices and from considerable fluctuations in the world market.

Financial solidarity: all expenses and spending which result from the application of the CAP are borne by the Community budget.

## **Financing and Policy instruments of the Common Agricultural Policy**

Historically several policy instruments have been used to achieve the CAP objectives. From 1962 to 1983 price subsidies were used with the aim to increase production (including efficiency), improve income support and stabilise the markets. These price support mechanisms included import tariffs, market interventions and export subsidies and resulted in higher prices in the EU markets. The effects of the policy were both positive and negative. They did achieve production increases, market stabilisation and structural changes in the agricultural sector with the result that The EU became a net food exporter. However, these had to be balanced against the costs to consumers, and the unfair distribution of agricultural support (with 80% going to the 20% of biggest farms). The end result was production surpluses and rapid increase in the size of the CAP budget.

From 1984-1992 policy instruments including quotas, set aside policy and price support mechanisms were introduced to stop the increase in production and control budget expenditure on agriculture. This solved the problem in the milk sector but most of the other surpluses and budgetary problems remained.

Direct payments were introduced in 1993 in order to conclude the GATT/ World Trade Organisation negotiations, and to stabilise budget costs and farm incomes. Price support mechanisms were reduced and other types of payments introduced to guarantee farm incomes including direct payments per ha/head, payments for set aside land and payments for environmental reasons and less favoured area status. This did have the effect of stabilising the CAP budget while also stabilising farmers incomes.

In the future single farm payments (based on historical entitlements) will mean that bigger farms get less of the CAP budget, and that the agricultural markets will become more deregulated.

## **European Agricultural Guidance and Guarantee Fund (EAGGF)**

The EAGGF was set up in 1962 and is the source of finance for the CAP (EU Commission accessed June 2003). It is divided into 2 sections:

**The guarantee section** finances expenditure on the common organisation of the markets (e.g to buy or store surplus foods, subsidies to encourage exports), the rural development measures that accompany market support and rural measures outside objective 1 regions. It also covers some veterinary expenditure and information measures related to the CAP. This is often referred to as the 1<sup>st</sup> pillar of the CAP it is the more important, with the largest part of the budget going to direct payments. It is a compulsory expenditure within the EC budget. In 2003 the planned expenditure on the guarantee section was 43,770 million Euro (Commission of the European Communities 2001).

**The guidance section** is one of the structural funds aimed at promoting restructuring and regional rural development. It finances other rural development expenditure (not financed by the guarantee section) which contributes to structural reforms in agriculture. These are jointly funded through the CAP budget and other structural funds include regional funds.

Expenses currently covered by the Guarantee section of the EAGGF can be classified into 5 types:

- Refunds on exports to third countries (export subsidies);
- Intervention intended to stabilise the agricultural market;
- Rural development measures outside objective 1 programmes (for which funds from the Guidance section are used) except the rural development initiative;
- The community's financial contribution towards specific veterinary measures and plant health;
- Measures intended to provide information on the common agricultural policy and certain evaluative action of measures financed by the Guarantee section of the fund.

## **Common Market Organisations**

Market organisations are the names for the legal texts that regulate the markets. They regulate production and trade of agricultural products in all member states to achieve the objectives of the CAP, for example



## **The European Union Common Agricultural Policy**

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market stabilisation, fair standard of living for farmers. The mechanisms vary for different products in terms of measures and effects.

They are set up by the Council of Agricultural ministers, acting on proposals by the Commission. The Commission implements the measures required for operating the common market organisations. A management committee, comprising representatives of member states comments on draft measures and operates the market organisations, including fixing single prices for agricultural products in European markets, granting aid to producers, establishing mechanisms to control production.

### **Setting of prices**

The agricultural council fixes 3 different notional prices for products at the beginning of each marketing year.

- The indicative price (basic price or guide price) is the price at which the community authorities consider that transactions should take place
- The threshold price is the minimum price at which imported products may be sold. It is higher than the intervention price and encourages community economic operators to buy within the Community in line with the principle of Community preference
- The intervention price is the guaranteed price below which an intervention body designated by the Member states buys in and stores the quantities produced. The products may be used for humanitarian purposes or sold. Sales by are by competitive tender and the Commission decides in advance on the destination of the products. If it sells on the internal market there must be a guarantee that markets will not be affected.

### **Controlling production by supply management**

Systems of quotas and national reference quantities regulate agricultural production and the limitation of surplus production. The setting aside of land and the allocation of compensatory payments to base areas also limit overproduction.

- Quotas are the maximum production quantities allocated to farmers
- National reference quantities allocated to member states are maximum production quantities for products. If they are exceeded, producers must pay a levy or there will be reductions in subsequent years.
- Set-aside and diversification into non-food production. This is intended to take agricultural land out of cultivation or to diversify production (e.g. production of raw materials for biomass fuel) in exchange for financial compensation.
- Compensatory payments are allocated on the basis of the area of land cultivated or number of animals, and are meant to top up farmers income.

### **Controlling trade with non-member countries**

Importers have to produce an import licence and pay an import duty. If the community market is affected then the Commission may apply measures to safeguard the EU member states in accordance with agreements made with the World Trade Organisation (WTO). The EU also pays export refunds to member state producers who export to the rest of the world to compensate them for lower world market prices.

### **Producer Organisations**

Producers can organise themselves into voluntary organisations to make best use of allocated resources and to achieve market objectives such as increased productivity, improved marketing. For some production sectors e.g. fruit and vegetables, the Commission has granted the producer organisations authority to manage the market measures.

## The European Union Common Agricultural Policy

Figure 2: Types of market support measures by sector (Schafer Elinder 2003).

Measure	Milk and dairy products	Fruit and vegetables	Wine
Intervention buy in	Yes	Yes, under ceilings	Yes, only wine alcohol
Export subsidies	Yes	Yes	Yes
Import duties	Yes	Yes	Yes
Direct support	Yes from 2005-6	Yes, via operational funds	No
Production quotas/area quotas	Yes	Yes, only bananas	Yes
Production aid	Yes from 2005-6	Yes, only bananas, processed tomatoes and processed citrus	No
Consumption aid	Yes	Yes, only free distribution of withdrawn produce	Yes
Promotion aid	Yes	Yes	Yes
Private storage aid	Yes	No	Yes
Conversion aid	Yes, slaughter aid	Yes, apples, peaches, nectarines	Yes, grubbing up aid

### Producer support estimates

Agricultural support expressed as producer support estimates (PSE) represents the total monetary value of support to farmers by taxpayers or governments (quoted as a percentage of gross farm receipts). PSE constituted 35% of the average income of farmers in the EU in 2001, but PSE values vary between commodities, being higher for beef (91%) compared with wheat (44%). EU agriculture is not the most highly subsidised agricultural system in the world, and is approximately in the middle, above the USA but below the PSE of Switzerland, Norway and Japan (Schafer Elinder 2003).

### Rural Development Policy

The rural development policy is part of the structural policy, and the main payments are made for environmental payments and for less favoured areas (sometimes referred to as pillar 2 mechanisms of the CAP). There are many policy instruments used to finance various agricultural structural reforms and rural development programmes. Many require co-financing.

### The Economic Impact of the CAP on consumers

The total amount of income transfers generated by the CAP from Households (consumers and taxpayers) to the Agricultural Sector (producers and general services to agriculture) in 2000 (€ bn 102) was almost equally shared between consumers (€ bn 46) and taxpayers (€ bn 55) (Tarditi 2002). It is higher than the »Agricultural Value Added« of the European Union, i.e. the net contribution of agriculture to the production of goods and services). In other words, the total amount of transfers to agriculture offsets the value of good and services produced by the sector even if computed at present highly supported domestic prices.

Although in the nineties the cost per EU citizen (€ 270 in 2000) associated with the Common Agricultural Policy and the monetary transfers per ha of Utilised Agricultural Area (€ 779) were slightly diminishing in real terms, total transfers per agricultural annual work unit (€ 16556 in 2000) have been increasing both at current and at constant prices. Notwithstanding the various attempts to reform the CAP, the actual support per farm worker increased.

The CAP farm support is increased by the extra support provided by national and regional policies. Unfortunately, comparable statistical information among Member States is not available to assess the total burden of agricultural policy at Community, national and regional level. On the basis of estimates limited to Italy in 1998, which include tax rebates and social contributions rebates for farmers, the total transfers to the agricultural sector can be estimated in € 403 per EU citizen.

Market price support is equivalent to an inequitable income-regressive tax on households as the burden is proportionally higher for poorer than for richer households. Actually the share of food and beverages on total

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consumer expenditure is much higher in low-income households, as well as in poorer EU Member Countries (23% in Portugal, 16% in Germany).

EU citizens and consumer organisations are not fully aware that such a huge burden is involved. Moreover, policy-making institutions are largely biased in favour of farm representatives, while consumer interests are poorly represented.

### **Common Agricultural Policy Reform**

The CAP was successful at achieving its initial goals of increased production and productivity, stabilising European markets and securing food supplies. However, this led to some negative side effects the main one being over-production which led to huge agricultural surpluses, and a rapid increase in the agricultural spending. The CAP has undergone several reforms since its creation 40 years ago. Some of the main reforms are summarised in figure 3.

*Figure 3: A summary of the reforms of the CAP.*

<b>Year</b>	<b>Reform</b>	<b>Main aims</b>
1968	Mansholt Plan	Reduce number of people in agriculture, promote larger more efficient units of production
1972	Structural measures	Modernising agricultural system in Europe
1983	Green Paper (Perspectives for the CAP)	Supply management to bring supply and demand into balance
1988	Agriculture expenditure guideline	Limited the percentage of CAP expenditure from overall EU budget
1991-2	McSharry reform	Shift from price support mechanisms to production controls with introduction of direct payments to farmers (in the form of area or headage payments) decoupled from production. However, continued overproduction occurred in some sectors regardless of market demand
1997	Agenda 2000 reforms	Make the CAP competitive, sustainable and quality oriented. The milk reform was postponed to 2005-6.
2002	Mid term review of the Agenda 2000 reform proposed	Decoupling of direct aid and introduction of single farm payment for cereals, starch, seeds, potatoes, beef, sheep, rice, durum wheat, dried fodder, wine. This farm payment will be drastically reduced by 80% in a 7 year period starting in 2007.
2003 (June)	Mid term review agreed	Agreed on 26 <sup>th</sup> June by Council of Agricultural Ministers for Europe. Introduction of a single payment scheme for cereals, beef and sheep farmers independent from production, with limited coupled payments where necessary to avoid abandonment of production. The single payment will be linked to environmental, food safety and animal standards (European Commission 2003)

While market prices will be gradually reduced to the international level, the EU budget will grant direct commodity-specific subsidies to farmers in order to compensate them for income losses. Consequently, the overall benefits for producers is maintained, including most of the present distortions in domestic production and the large amount of economic resources allocated to agriculture, relative to its importance as a share of gross domestic product (GDP). Moreover the effects of the CAP already recognised as a problem will soon also be created in the applicant Member Countries, such as Slovenia, implementing the CAP as part of the *acquis communautaire*.

### **Slovenia, accession to the EU and the Common Agricultural Policy**

In Slovenia, agriculture contributes about 3-4% of the GDP. This is much higher than the EU average (see table 4 for agricultural statistics), and one of the highest compared to the EU 15, with only Greece, Ireland and Portugal having larger proportions of the economy dependent on agriculture.

## ***The European Union Common Agricultural Policy***

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Slovenian agriculture is characterised by very small family farms (average 5.6 ha). These traditionally are not specialised or intensive with low productivity and a low degree of professionalism (many are run as part-time with farmers having other jobs).

Slovenia is a net importer of food being approximately 70% self sufficient. Of the wide range of agricultural sectors the country is only self-sufficient in milk, poultry and sheep and beef meat production. The milk and poultry sectors actually produce between 10-20% overproduction. Wheat, maize, fruit and vegetable sectors are only producing amounts which gives 50-70% self sufficiency. The current agricultural trade balance with the EU is summarised in table 3.

*Figure 4: Existing bilateral agricultural trade relations between the EU and Slovenia EU agricultural trade with Slovenia (in Million EURO)*

	1998	1999	2000	Average 1998-2000
<b>EU imports</b>	90	90	93	91
<b>EU exports</b>	419	419	437	425
<b>Trade balance</b>	328	329	343	334

## **Accession negotiations**

The process of accession requires each candidate country to harmonise their legal system with EU law and adjust national policies and institutions. For the accession negotiations, the body of EU law (the *acquis communautaire*) is divided into 31 chapters. Accession negotiations were formally opened with Slovenia in March 1998. Negotiations on the agricultural chapter were formally opened in June 2000. There were 3 parts of the accession process for candidate countries:

- Implementing the *acquis* into national law.
- Requests for derogations from the *acquis*.
- Agreeing the financial framework.

The Government of Slovenia set out several objectives for the CAP negotiations. These included:

- Adoption of the CAP with all rights and responsibilities
- No worsening of the economic position of farmers
- Support for development of agriculture

The negotiations have taken 5 years involving meetings at various levels including political, diplomatic, technical (analysis on quotas, additional payments etc) and administrative (legal base). The final financial package for adoption of the CAP (including levels of direct payments, quotas and rural development funds) was agreed in late 2002. How some aspects of these funds will be used is part of on-going discussions in Slovenia, for example the measures in the Rural Development Policy 2004–2006.

Figure 5 and Figure 6: Key agricultural statistics comparing Slovenia and the EU and CEEC average (2000).

Employment in the agricultural, forestry, hunting and fishing sector							
	Utilised agricultural area (1000 ha)	Number of agricultural holdings (1000 holdings)	UAA per holding (ha)	Number (1000 persons)	Share in agriculture compared with civilian working population (%)	Output in agricultural activities sector (Mio EUR)	Share of agriculture in the GDP %
EU 15 Member states	130 443	6998	18.1	6770	4.3	274 768	1.7
Central and Eastern European Countries	58 662			9 196	21.5		
Slovenia	491 (24% of total area)	695		85	9.6		4.3

Source: European Commission (Eurostat and Directorate General for Agriculture) (European Commission accessed June 2003), FAO and UNSO

EU trade in food and agricultural products					
	Share of imports of food and agricultural products in imports of all products (%)	Share of exports of food and agricultural products in exports of all products (%)	External trade balance in food and agricultural products (Mio EUR)	Trends in food prices from previous year (%)	Share of household consumption expenditure devoted to food, beverages and tobacco as proportion of total consumer expenditure of household (%) - 1999
EU 15 Member states	5.7	6.2	-122	2.1	17
Central and Eastern European Countries	5.6	5.5	-2313		
Slovenia	6.7	4.2	-345	9.8	21.2

Source: European Commission (Eurostat and Directorate General for Agriculture) (European Commission accessed June 2003), FAO and UNSO.

## **Legal and institutional adjustment**

In July 1997 The European Commission concluded that Slovenia still had work to do on its farming legislation to align with the EU (Commission opinion COM (97) 2010 final). The opinion stated that particular effort was required in the following areas:

- Improving structural and rural development policy
- Enforcing veterinary and phytosanitary rules and infrastructure
- Strengthening the administrative framework to guarantee the necessary capacity for implementing and enforcing CAP
- Further restructuring the farming sector to boost competitiveness

To prepare the agricultural sector for accession an eco-social concept of agricultural policy was adopted. There were 3 relevant aspects of agricultural policy reform that were adopted:

- National policy reform (to harmonise the policy with the CAP)
- Harmonisation of the legislation with the acquis
- Institution building to support the changes

Slovenia already had a comparable legal system as the Agricultural act had enabled introduction of comparable market organisations, increasing importance of rural development policies and stricter food safety laws. National changes due to agricultural policy reform have already introduced increased budgetary funds for agriculture, common market organisations, direct payments, rural development and 'pillar 2' type initiatives, and pre-accession aid to farmers via Sapard (see below).

**Implementing the EAGGF.** The agency for Agricultural Markets and Rural Development (AAMRD) has been created as the EAGGF paying agency, while implementing the Sapard programme in the interim.

**Common Market Organisations.** Significant progress has been made in aligning Slovenia's legislation with that of the EU CAP in the various product sectors. The legal basis for producer organisations has also been adopted.

**Rural development.** A series of major decrees on rural development were adopted in 2001, covering areas such as the agri-environmental programme, the introduction of direct aid and compensatory payments for disadvantaged regions.

**Veterinary, phytosanitary issues and food safety.** Progress has been made in setting up competent authorities for veterinary control, control of animal diseases, public health measures, animal waste rendering and animal nutrition. The food safety strategy has been prepared to align Slovenian policy with EU legislation and practice.

## **Derogations**

There are few derogations allowed to the CAP. Transitional periods have been negotiated for farms introducing standards for battery cages for egg-laying hens, marketing of planting materials, with a gradual harmonisation over 5 years of the plant species list and derogations for milk, suckling cows and sheep.

**Preferential trade agreement for alcohol.** An agreement on wines and spirits signed between Slovenia and the EU in April 2001 has established a preferential trade regime. A permanent derogation has been agreed for Cvček wine PTP (i.e. local mixing of red and white grapes). There is also a special issue of wine zoning (i.e. 2 zones with special treatments have been created in one border region).

## **Special Accession Programme for Agriculture and Rural Development (SAPARD)**

The Sapard programme provides financial assistance to support the efforts made by candidate countries as they prepare to participate in the single market and the CAP. For Slovenia the annual Sapard allocation was EUR 6.447 million at 2000 prices. In 2001 the Commission conferred management of Sapard funds to Slovenia. The Slovenian Sapard programme has 2 priorities

## The European Union Common Agricultural Policy

- improvement of production and marketing structures in agriculture and food processing industries,
- economic diversification and improvement of rural infrastructure.

### Agreement reached on EU enlargement and the CAP

At the Copenhagen summit (December 2002) EU leaders reached agreement with ministers from the 10 candidate countries for the terms of their EU entry on May 1<sup>st</sup> 2004. Under the agreement, funding available for all candidate countries is fixed at 5.1 billion Euros for 2004-2006. EU direct aid will be phased in over 10 years. Farmers in the new member states could in theory receive 55% of the support levels of the current EU15 in year 1, rising to 100% incrementally by 2010. This requires each country to top up the payments made by the EU. Farmers from new member states will have full and immediate access to CAP market measures, such as export refunds and intervention measures.

The total financial inflow into Slovenia for agriculture is 80 Euro per citizen. This is the maximum relative allocation for all the candidate countries but is well below the agricultural funding in current EU member states (e.g. Ireland Euro 450, Denmark Euro 250 and France Euro 150).

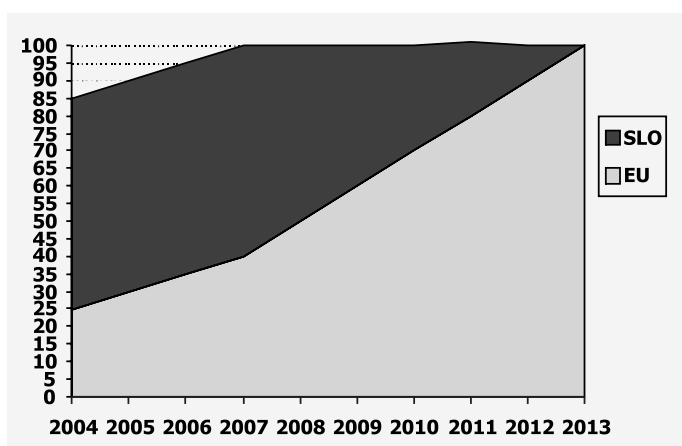
The 3 main areas of contention in the negotiations for the agricultural chapter were direct payment levels, production quotas and rural development.

### Direct payments

Overall the initial EU position was the progressive introduction of EU-funded direct payments. The proposal was that these were to be phased in, with the new member states to be paid at 25% of EU15 levels in 2004, rising to 35% in 2006 and to 100% in 2013. However, the new member states will also be able to top-up these payments nationally so that aid levels could be 55% of full EU direct payment in 2004 rising to 65% in 2006. Until 2006 these top-ups can be co-financed from the countries rural development funds (although this cannot exceed 20%). From 2007 these must be entirely from national funds. For Slovenia where support levels are already high, countries are able to provide up to 110% of current CAP-like support provided nationally in 2003, provided it does not exceed 100% of EU direct payments .

The final negotiation agreement for Slovenia reached with the EU in 2002 was that direct payments would reach 85% of the level of the EU 15 in 2004, rising to 100% in 2007 (see figure 7) (Erjavec, 2003). Slovenia is the only accession country with 100% of direct payments in 2007.

Figure 7: Expected level of direct payment and sources in Slovenia after accession.



(Source: *The Treaty of Accession 2003 of the Czech Republic, Estonia, Cyprus, Latvia, Lithuania, Hungary, Malta, Poland, Slovenia and Slovakia to the European Union*. April, 2003).

Figure 8: Expected EU payments for Slovenian Agriculture (Millions Euro) (Erjavec, 2003).

	2001	2004		2005		2006	
	Slovenia	Slovenian Total	EU	Slovenian Total	EU	Slovenian Total	EU
Direct payments	37	75	0	84	26	90	32
Market measures	37	15	15	38	38	39	39
Rural development	24	62	29	92	59	120	87
TOTAL	98	151	43	215	124	248	157

## Production Quotas

The final agreement included only minor changes to the reference quantities agreed at the Brussels summit (October 2002). The exact amount of the dairy reserve is to be determined in 2006. Farmers from the new member states will have full and immediate access to CAP market measures such as export refunds and cereal intervention.

For Slovenia the initial EU negotiating position was unfavourable, with quotas below current production levels. The final agreement increased production quotas but this was still below domestic interest group requirements.

## Regional development and structural funds for rural development

A range of rural development measures will be eligible in new member states from the day of accession. These will mirror the programmes currently available to the EU15 under council regulation (EC) 1257/1999. They will be co-financed at a maximum rate of 80% by the EU. The Commission will hold ongoing bilateral discussions during 2003 to help accession countries formulate the rural development programmes to be applied.

The initial EU position with Slovenia proposed only 2.1% of available resources for measures of EAGGF Guarantee section (approximately 100 million Euro for 3 years). Slovenia obtained 150 million Euro. The rural development program is 249 million Euro for 2004-2006 plus a compulsory domestic contribution of 330 million Euro. There are various other structural funds that have been allocated that can also be used in the agricultural sector. Current funding includes Euro 236 from structural funds and Euro 168 from Cohesion funds.



## Overview of Public Health issues relevant to Food and Agriculture Policy

### Population health in Slovenia

Slovenia has relatively better population health than many of the other candidate countries. It has mirrored the EU's steady progress in reducing mortality, although overall life expectancy is still over 2 years lower than the European Union average of 78.3 years (Albrecht, Cesen et al. 2002) . Latest figures show that life expectancy at birth in Slovenia was estimated to be 72.3 years for males and 80.5 years for females (figure 9).

*Figure 9: Life expectancy at birth – comparison of Slovenia with EU and CEEC countries.*

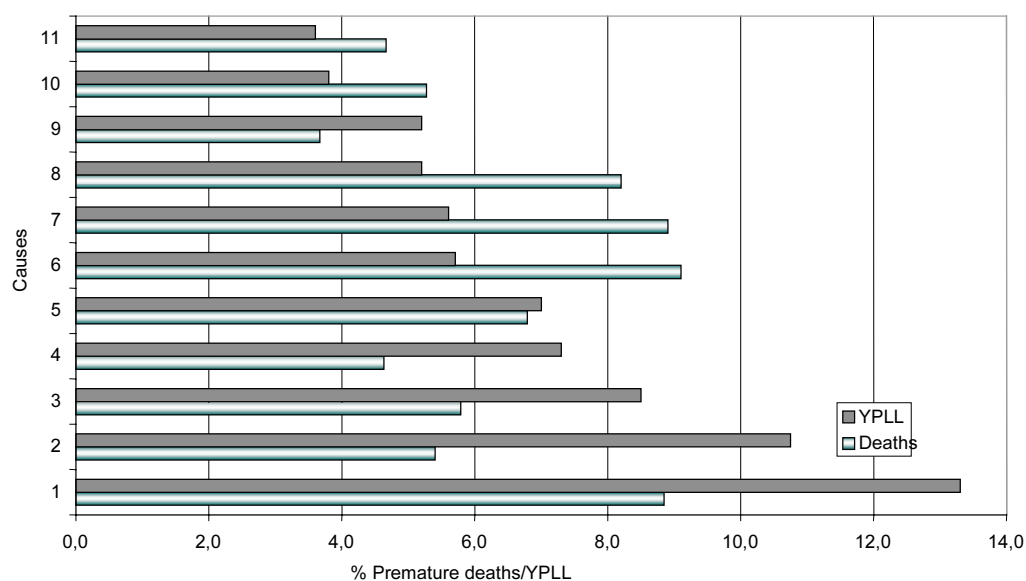
Country	Life expectancy at birth, total	Life expectancy at birth, males	Life expectancy at birth, females
Italy (1999)	79,1	76,3	82,6
France (1999)	78,8	75,2	82,8
Austria (2001)	78,6	76,1	81,9
Germany (1999)	78,1	74,9	81,0
Finland (2001)	77,6	74,7	81,8
Denmark (1999)	76,7	74,1	78,9
Ireland (2000)	76,2	74,0	79,3
<b>EU average (1999)</b>	<b>78,3</b>	<b>75,2</b>	<b>81,4</b>
<b>Slovenia (2001)</b>	<b>75,9</b>	<b>72,3</b>	<b>80,5</b>
Czech Republic (2001)	75,2	72,2	78,7
Poland (2000)	73,9	69,8	78,1
Slovakia (2000)	73,4	69,3	77,6
Croatia (2001)	73,0	71,0	78,2
Hungary (2001)	71,5	68,3	76,7

*(Source T. Albrecht, NIPH, 2003; <http://www.who.dk>, WHO/Europe, HFA Database, January 2003).*

However, focusing on life expectancy does not reveal what are the important public health problems in Slovenia today. The morbidity and mortality data show that Slovenia experiences the same profile of population morbidity and mortality as other countries in Central and Western Europe. Diseases of the cardiovascular system are the most common cause of death in Slovenia, causing almost half of all deaths. Other leading causes of death are cancer, injuries, poisoning, respiratory deaths. The major causes of premature mortality are compared in figure 10. The particular national health concerns that need to be tackled are the high mortality rates for stroke, malignant cancers, suicide, injury and poisoning and liver cirrhosis which are all much higher than in the EU, and rates of heart disease are as high as in the EU (Selb and Kravanja 2000). The differences are summarised in figure 11. More data on health status in Slovenia is given in the appendices.

## Overview of Public Health issues relevant to Food and Agriculture Policy

Figure 10: The main causes of adult premature mortality in Slovenia, 1997-2001 (source T. Albrecht, NIPH, 2003).



### Key to graph

- |                               |                                |
|-------------------------------|--------------------------------|
| 1 Suicide                     | 7 Ishaemic heart disease (IHD) |
| 2 Transport Accidents         | 8 Lung cancer                  |
| 3 non-defined external causes | 9 Undiagnosed cases            |
| 4 Head injuries               | 10 brain vessels diseases      |
| 5 Liver diseases              | 11 other heart diseases        |
| 6 Gastrointestinal Cancers    |                                |

Figure 11: Comparison of death rates for selected causes between Slovenia and the EU average (1999).

	Standardised death rate per 100,000	
	Slovenia (NIPH database)	EU average (WHO HFA)
Cerebrovascular diseases (stroke)	79,79	
Cardio-vascular disease (heart disease)	298,42	
Malignant cancers	89,94	
Suicide	23,35	10
Injury and poisoning	70,80	31.8
Liver cirrhosis	34,08	13.6

Source: WHO Health for all database 2002, and the National Institute of Public Health database 2001.

The most frequent cause of ill-health are diseases of the respiratory system, followed by mental disorders, musculoskeletal and digestive system disorders. In men, the most common type of cancer is lung cancer, followed by cancer of the colon and rectum, skin cancer and cancer of the larynx, pharynx and mouth. In women, breast cancer is most common. An important point to note for this project is that communicable diseases including food poisoning are not a major cause of morbidity in Slovenia.

The suicide rate in Slovenia has been among the highest in the world for over 20 years. National data have shown that suicide is most common in the marginalised parts of society, particularly those living in social poverty including workers with only primary education, semi-skilled workers, unemployed and alcoholics (Marusic 2001). External causes of injuries and poisonings are also a major public health problem in Slove-

## Overview of Public Health issues relevant to Food and Agriculture Policy

nia. Injury and poisoning are the leading cause of death after the age of one and represent the main cause of death until about 45 years of age. Even though the number of deaths caused by injury and poisoning has decreased slightly from 1986-1999, Slovenia still has one of the highest mortality rates in Europe, exceeding the EU average by 100%. The other major health problem is the death rate from chronic liver disease and cirrhosis among men and women. There are more than 30 deaths per 100,000 population per year from liver diseases. Alcohol is most likely to be the single biggest contributing cause, and alcohol consumption in Slovenia is among the highest in Europe (10.38 litres per person per year in 1998).

### Regional variation in health status

There are regional differences in life expectancy, morbidity and mortality in Slovenia that correspond to indices of relative poverty (Albrecht, Cesen et al. 2002). The difference in life expectancy between the least developed regions and central Slovenia is 3 years. The correlation coefficient between income and life expectancy across Slovenian municipalities is 0.7, indicating a strong correlation. The correlation between life expectancy and education is slightly lower but still statistically significant (Hanzek M 1999).

Figure 12: Mortality rates in selected regions of Slovenia.

	Standardised death rate per 100,000		
	Pomurje	Gorenjska	Primorska
<b>Cerebrovascular disease (stroke)</b>	122.78	72.63	74.69
<b>Suicide</b>	34.01	28.56	15.89
<b>Injury and poisoning</b>	41.48	39.36	59.32
<b>Liver cirrhosis</b>	135.48	24.79	17.92

Source: Office for macroeconomic analyses and development, Slovenia 1999.

The health differences for many causes of morbidity and mortality, including cerebrovascular disease, suicide, liver cirrhosis, are most marked between the regions in the East and West of Slovenia. The north-east region, Pomurje, which has the highest all-cause mortality, is also the region with the largest agricultural sector in the country. Total mortality and mortality from cardiovascular disease, poisoning and accidents and suicide are all higher in the east (see figure 12). The east has statistically higher rural and agricultural communities.

The reasons for the differences are not entirely clear, but these regional differences in health are also mirrored by regional differences in socio-economic factors, including socio-economic status and educational level some of which are presented above. These socio-economic factors are also well-established determinants of health. The health impact assessment set out to attempt to explain some of these regional differences but it proved very difficult. In the 3 regions we considered for our case study unemployment is higher in Prekmurje, life expectancy is lower and people have a lower level of educational attainment.

Figure 13: Some socio-economic determinants of health.

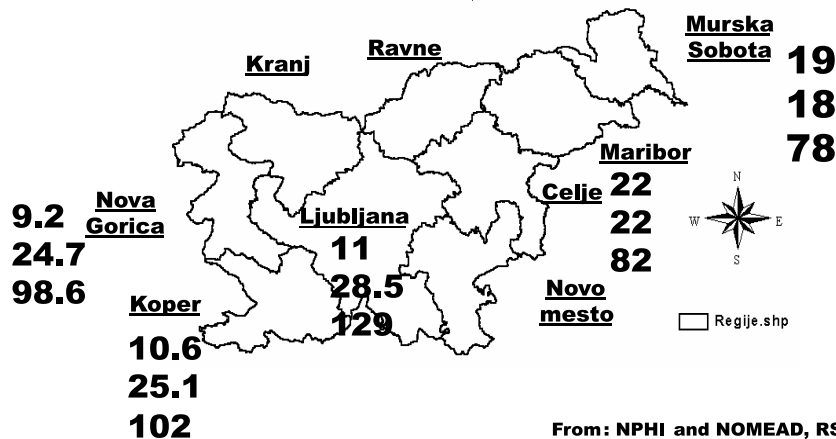
Some socio – economic determinants of health	South Primorska	Gorenjska	Prekmurje
	Total	Total	Total
GDP (SIT), 1996	1 311 000	1 185 000	998 000
Unemployment (%)	10,6	12,6	18,7
Life expectancy at birth (years)	75,5	73,9	72,1
Years of schooling	9,3	9,2	8,7

Source: Office for macroeconomic analyses and development, Slovenia 1999.

Figure 14: Regional variation in health outcomes and socio-economic determinants of health status.

### INEQUALITIES IN SOCIOECONOMIC DETERMINANTS OF HEALTH

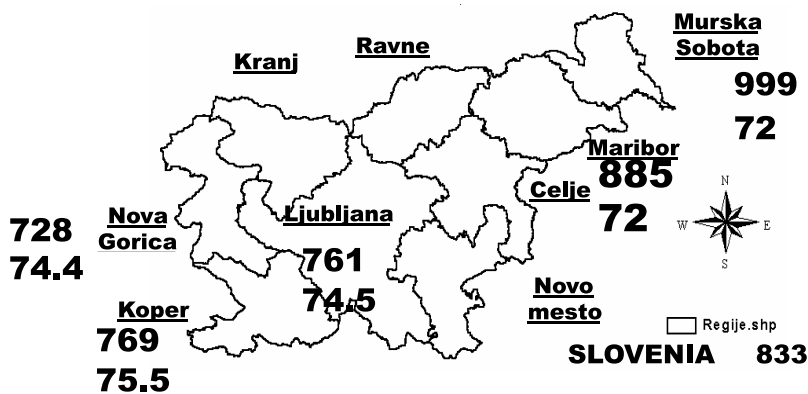
- Level of unemployment (% , 1998)
- Number of students per 1000 inhabitants
- Gross domestic product (GDP - % of average)



From: NPHI and NOMEAD, RS, 1999

### INEQUALITIES IN HEALTH INDICATORS

- Age standardized mortality rate (per 100 000 inhabitants) in different regions of Slovenia (1999)
- Life expectancy (years)



From: PHI and NOMEAD, RS, 1999

### Dietary intake in Slovenia

#### Obesity

Over 50% of the adult Slovenian population are overweight or obese (figures 15-17). Levels of obesity are higher for men than women. However this is also a growing problem in children as 15% of 6-7 year olds and 11 % of 7-15 year olds are also overweight. Rates of obesity are highest in Prekmurje. The cause of this worrying trend in increasing obesity is partly seen by looking at the diet of Slovenian adults. The most recent CINDI survey data (CINDI HM 2001) showed that the worst dietary patterns and habits are in men, lower socio-economic groups, the unemployed, those with low educational status, 25-35 year olds and farmers.

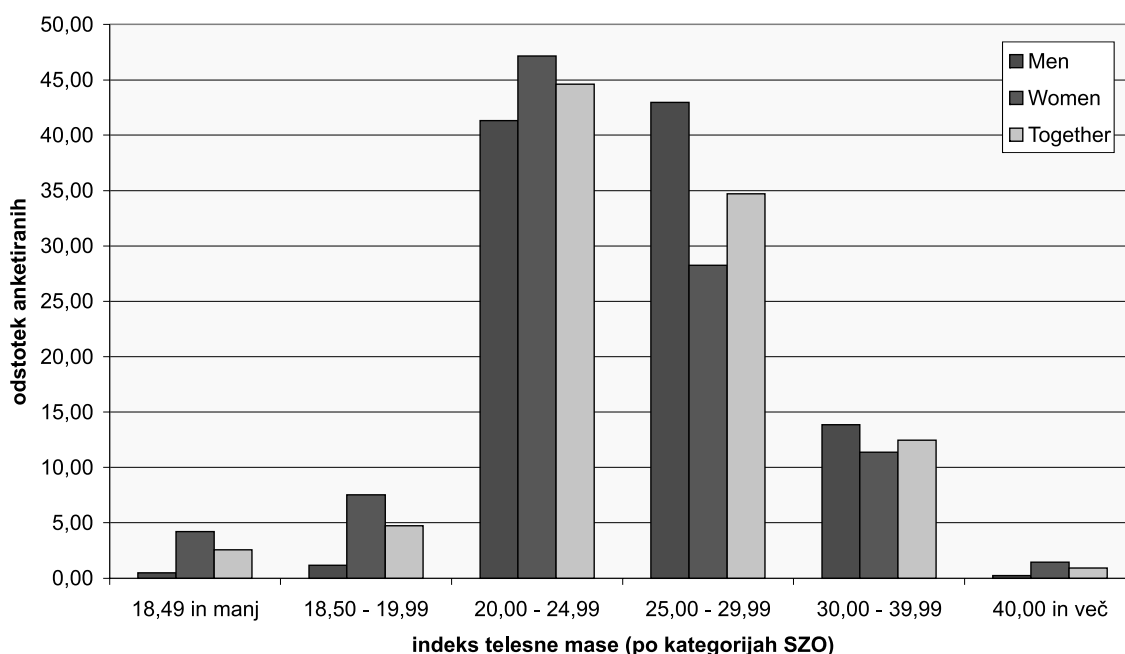
## Overview of Public Health issues relevant to Food and Agriculture Policy

Figure 15: Nutrition status of different population groups in Slovenia, low body weight and overweight with obesity, both sexes.

Age Of the population group	Number of examined persons	Persons (%) with low body weight BMI < 18,5	Persons (%) With overweight or obesity BMI > 25 or	Author and year of research
6 – 7	1685	–	15,2*	Bigec, Primary health Centre Maribor, 1998
7 – 15	3068	6,4	11,4	Radisavljević et all, 1992
18 – 19	296	9,8	12,4	Gabrijelcic, IVZ 2001
15 – 20	1330	9,2	12,6	Valic S. et all, ZZV N. Gorica, 2000
25 – 64	1692	1,4	63,4	CINDI Ljubljana 1990/91
25 – 64	1342	1,3	62,2	CINDI Ljubljana 1996/97
25 – 64	9034	1,3	54,6	CINDI Health Monitor 2001
18 – 65	2183	7,3 ( BMI < 20)	45,25	Koch, 1997
Over 18	1007	4,4	48,1	IVZ – SJM, 1999
60 – 101	1614	0,9	62,9	Pokorn, 1991

Sources: various studies, listed in the last column of the table

Figure 16: Body mass index in the adult Slovene population, by sex.



Source: Institute of Public Health of the Republic of Slovenia, Public Health Opinion Survey 1999/2.

## Overview of Public Health issues relevant to Food and Agriculture Policy

Figure 17: Body mass index of the adult population in Slovenia (25 – 65 years old) and three specific regions with three different kinds of diets.

	Body mass index	Slovenia			South Primorska	Gorenjska	Prekmurje
		male	female	total	total	Total	total
1.	18,49 and lower	0,3	2,1	1,3	2,3	1,4	1,2
2.	18,50 – 24,99	33,2	53,3	44,1	46,1	45,2	39,9
3.	25,00 – 29,99	50,0	30,9	39,6	37,2	40,7	40,2
4.	30,00 and more	16,5	13,8	15,0	14,5	12,7	18,8

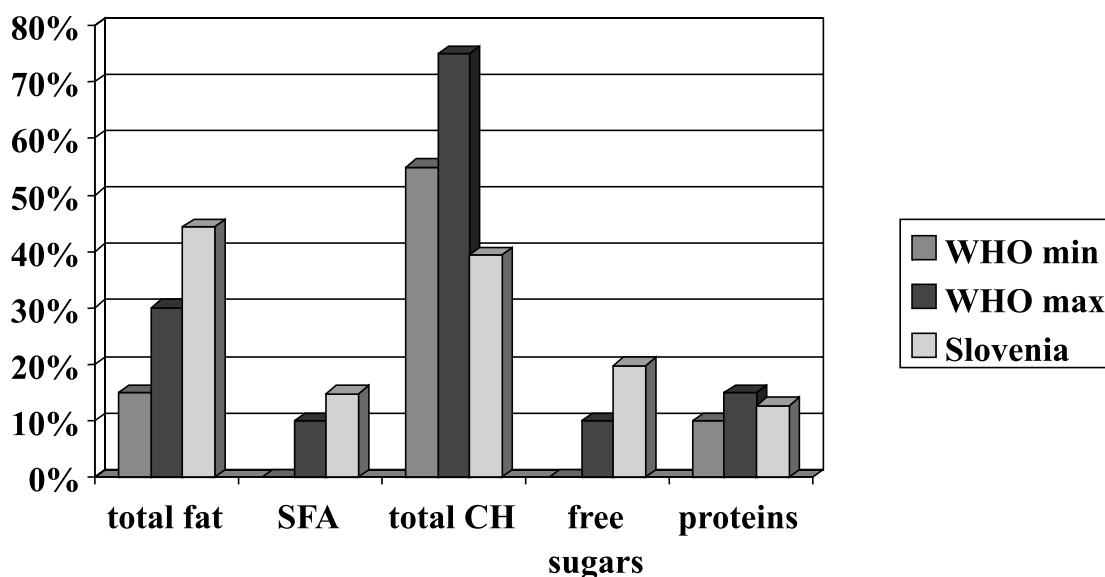
(Gorenjska – mid European diet, comparable with Austria, north Italy, south Germany), Prekmurje (Panonian flat diet, comparable with Hungary), South Primorska (Mediterranean diet, comparable with Dalmacia Croatia, Greece, south Italy),

Source: CINDI HM data 2001.

## Overall Dietary intake

Overall energy intake is too high in Slovenia (compared with WHO recommendations). The main cause of this is the very high intake of total fats, saturated fats and sugars. Average daily energy intake is 11422 kJ (2727 kcal)/day. Too much of the daily energy intake of adults comes in the form of fats compared with the majority which should be carbohydrates. It is assumed that lowering energy intake by lowering fat intake would normalise average daily energy intake in the population and assure recommended shares of daily energy intakes of main macronutrients.

Figure 18: Macro nutrient intake as % of total energy in Slovene adult population (18 – 65 years) in comparison with WHO recommendations.



Source: Koch, V. Nutritional habits of Slovenian adults in health protection aspect, University of Ljubljana, 1997.

## Overview of Public Health issues relevant to Food and Agriculture Policy

Figure 19: Adult dietary intake in Slovenia in 3 regions (Koch 1997).

	Slovenia			South Primorska	Gorenjska	Prekmurje
	male	female	total	total	total	total
<b>Daily energy intake (kJ)</b>	12114	10731	11422	9997	12091	11464
<b>Selected nutrients, daily intake in grams and % of daily energy intake</b>						
1. <b>Proteins (g)</b>	92,7	81,8	87,3	81	87,9	82,2
2. <i>Proteins (%)</i>	12,8	12,7	12,8	13,6	12,2	12
3. <b>Total carbohydrates (g)</b>	296,7	273,4	285,1	261,1	288,3	318,2
4. <i>Total carbohydrates (%)</i>	38,5	40	39,3	41,1	37,4	43,7
5. <b>Sugars (g)</b>	148,3	139,1	143,7	133,2	145,1	162,8
6. <i>Sugars (%)</i>	19,2	20,4	19,8	21	18,8	22,3
7. <b>Dietary fibres (g)</b>	20,3	19,9	20,1	20	18,8	25
8. <b>Total fats (g)</b>	140,6	127,9	134,3	110,1	152,4	123,9
9. <i>Total fats (%)</i>	43,7	44,9	44,3	41,6	47,5	40,8
10. <b>Saturated fatty acids (g)</b>	47	42,7	44,9	36,1	50,7	41,4
11. <i>Saturated fatty acids (%)</i>	14,6	15	14,8	13,7	15,8	13,6
12. <b>Mono unsaturated fatty acids (g)</b>	41,8	37	39,4	32,5	44,9	35,8
13. <i>Mono unsaturated fatty acids (%)</i>	12,9	13	13	12,3	14	11,7
14. <b>Poly unsaturated fatty acids (g)</b>	12,5	10,9	11,7	9	13,1	12,5
15. <i>Poli unsaturated fatty acids (%)</i>	3,9	3,8	3,85	3,4	4,1	4,1
16. <b>Cholesterol (g)</b>	292,8	264,2	278,5	224,6	313	253

Intake of energy and selected nutrients of the adult population in Slovenia (18 – 65 years old) and three specific regions with three different kinds of diets: (Gorenjska – mid European diet, comparable with Austria, north Italy, south Germany), Prekmurje (Panonian flat diet, comparable with Hungary), South Primorska (Mediterranean diet, comparable with Dalmacia Croatia, Greece, south Italy),

Source: Koch V. Nutritional habits of Slovenian adults in health protection aspect, Dissertation thesis, Ljubljana, 1997.

### Intake of selected foods

One of the reasons for this high population fat intake is that most of the population consumes 3,2 % or 2,5 % fat milk. In Gorenjska and Prekmurje region where a cattle breeding is a very important agricultural activity more people consume home produced full fat milk. In Slovenia only 4% of the population drink the lowest fat milk, compared with over 20% of the population which drink full fat milk. This is against the European trend. However, there are other dietary issues including a high intake of red meat and all dairy products regularly. Plant oils are the most popular product for cooking, although over 12% of the population still use animal lard. In Primorska region more olive oil as in other regions. In Prekmurje region one third of the population uses mostly lard in cooking.

This compares with a low dietary intake of fruit and vegetables in the population. Less than half of the inhabitants consume fruits on daily basis, males consume less than females. Only slightly better is the situation in vegetables consumption, little more than half of the population consume vegetables, raw or cooked on a daily basis.

The findings of the Koch dietary study (1997), show that approximately 25% of inhabitants in Slovenia add salt to their meals without prior testing the taste of meal. It is estimation that intake of salt in Slovenia is around 10 – 12 g per day per person, which is on the high end of the normal recommended range. The CINDI Health Monitor survey 2001 shows that people are not salting foods by default in Slovenia, suggesting that recent trends show a reduction in the use of salt in foods/meals. However, in Prekmurje region more people are salting foods /meals after tasting them and in this region is lower share of population, answering to never add salt to foods/meals as in the other parts of Slovenia.

## Overview of Public Health issues relevant to Food and Agriculture Policy

The main regional differences in diet are that in Pomurje region, comparable to Slovenia, people consume more red meat, more eggs as main food in the meal, they eat more often fried foods and less often fruits and beside that they drink more soft drinks.

Figure 20: Intake of selected foods in the Slovenian adult population (25 – 65 years old) in three regions with three different kinds of diets.

Selected food groups, intake	% of adults in each category of consumption						
	Slovenia			South Primorska	Gorenjska	Prekmurje	
	male	female	total	total	total	total	
<b>Fruits and vegetables, intake more than once a day</b>							
1. Fruits (fresh and cooked)	20,5	38,1	30,1	36,4	31,9	27,7	
2. Vegetables (fresh/cooked)	18,2	25,1	21,9	26,5	17,6	28,5	
<b>Selected food groups, intake once a day and more</b>							
3. Fruits (fresh and cooked)	44,8	67,1	57,0	62,5	59,6	54,3	
4. Vegetables (fresh/cooked)	63,0	73,0	68,4	71,8	67,1	70,4	
5. Milk and dairy products	52,5	64,5	59,0	71,2	60,7	52,7	
<b>Selected food groups, intake more than four times/week</b>							
6. Red meat	22,2	11,6	16,5	18,2	11,9	23,3	
7. Poultry	11,8	11,3	11,4	10,0	9,7	17,0	
<b>Selected food groups, intake once/week and more</b>							
8. Fish, fish products, sea fruits	29,8	29,2	29,4	43,8	27,3	33,3	
9. Egg as main food in the meal	40,2	32,9	36,2	34,0	34,3	43,3	
<b>Selected processed foods,</b>							
10. Fried foods, 4x/week and more	5,8	2,9	4,2	5,2	2,1	11,0	
11. Fried foods, 1x/week and more	49,9	36,4	42,5	44,9	34,3	63,0	
12. Soft drinks, intake on daily basis	34,7	26,8	30,4	29,6	26,8	42,9	

(Gorenjska – mid European diet, comparable with Austria, north Italy, south Germany), Prekmurje (Panonian flat diet, comparable with Hungary), South Primorska (Mediterranean diet, comparable with Dalmacia Croatia, Greece, south Italy),

Source: CINDI HM data 2001.

Figure 21: % of adults adding salt to foods in Slovenia (25 – 65 years old) in three specific regions.

Adding salt to foods	Slovenia			South Primorska	Gorenjska	Prekmurje
	male	female	total	total	total	total
1. Never	34,2	48,9	42,2	51,6	42,3	36,1
2. After tasting the food/meal	62,0	50,3	55,6	46,3	56,0	60,6
3. Always	3,8	0,7	2,2	2,1	1,7	3,3

(Gorenjska – mid European diet, comparable with Austria, north Italy, south Germany), Prekmurje (Panonian flat diet, comparable with Hungary), South Primorska (Mediterranean diet, comparable with Dalmacia Croatia, Greece, south Italy),

Source: CINDI HM data 2001



## Overview of Public Health issues relevant to Food and Agriculture Policy

Figure 22: % of adults using different types of fats/oils in cooking, adult population in Slovenia (25 – 65 years old) and three specific regions.

	Type of fats/oils used in cooking	Slovenia			South Primorska	Gorenjska	Prekmurje
		male	female	total	total	total	total
1.	Olive oil	20,1	21,4	20,8	47,8	20,5	7,3
2.	Other plant oils	63,4	65,7	64,7	44,2	70,0	59,8
3.	Butter, margarine	2,6	2,1	2,4	1,6	3,9	2,6
4.	Lard	13,8	10,8	12,2	6,4	5,6	30,4

Source: CINDI HM data 2001.

Figure 23: % of adults consuming different types of milk in Slovenia (25 – 65 years old) and three specific regions.

	Type of milk consumed in the population	Slovenia			South Primorska	Gorenjska	Prekmurje
		male	female	total	total	total	total
1.	Full fat milk	21,5	18,7	19,9	7,9	25,1	22,3
2.	3,2 % fat milk	41,7	37,7	39,4	49,7	37,5	39,3
3.	Low fat milk (1,5 % fat)	32,6	38,2	35,8	38,9	33,5	32,3
4.	Low fat milk (0,5 % fat)	4,2	5,4	4,9	3,4	3,8	6,0

Source: CINDI HM data 2001.

## Home production of some types of foods

Many households in Slovenia grow food for home consumption. It is interesting to know what are the quantities of those at home produced foods, and whether the diets of 'family farmers' is different from those who do not grow their own food. The research questions were orientated to vegetables from kitchen gardens, cereals, milk, meat and eggs (Koch 1997).

Figure 24: Which types of foods are Slovenians producing at home?

	Complete home production	Partly home produced	Buying on the market	Others
Vegetables from kitchen gardens	39 %	34 %	24 %	2 %
Cereals	7 %	5 %	80 %	8 %
Milk	6 %	3 %	81 %	7 %
Meat	9 %	12 %	73 %	4 %
Eggs	21 %	6 %	64 %	8 %

Vegetables from kitchen gardens are produced by 39,1 % of people questioned, more frequently in the age group 46 – 65, with primary and vocational education, in the rural areas, among people who estimated themselves to the lower social class, who has BMI higher than 27. Rates were higher in the regions of Novo mesto, Murska Sobota and Postojna.

Only small number of questioned persons are growing cereals at home, but 80,1 % are buying cereals and products. A higher proportion of questioned persons are growing cereals at home in rural areas (18, 4 %), and in the following regions: Murska Sobota (37,5 %), Krško (31,6 %), Novo mesto (2,5 %).

## ***Overview of Public Health issues relevant to Food and Agriculture Policy***

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Milk is bought by 80,4 % of questioned persons, only 9,8 % have milk from home production. The highest proportion in milk home production is in the following groups: rural areas (24,9 %), elementary and vocational education (33,9 %), BMI over 27 (11,8 %), regions: Murska Sobota (26,3 %), Krško (29,1 %), Postojna (20,0 %), Novo mesto (15,8 %).

Meat is produced at home only by 9 % of inhabitants of Slovenia, mostly in the age group 26 – 45, with elementary and vocational education (20,3 %), in rural areas (22,2 %), with BMI over 27, in the following regions: Murska Sobota (30,0 %), Krško (29,1 %), Postojna (21,3 %) and Novo mesto (17,5 %).

Eggs: 64,5 % of questioned persons are buying eggs, 21,1 % get them from home production – mostly in the following groups: age group 46 – 65, with elementary and vocational education (61,8 %), in rural areas (44,2 %), lower social class (22,3 %), BMI over 27 (23,7 %), in the following regions: Krško (48,1 %), Murska Sobota (43,8 %).

Although home production is a significant aspect of nutrition in Slovenia, there is no clear data about whether those that produce their own food have more balanced diets than the Slovenian adult average.

## **Other public health concerns related to Agriculture**

### **Drinking water pollution in rural areas**

The main problem of drinking water pollution in Slovenia is pollution with nitrates and atrazine. Pollution is related to areas where groundwater is the main source of drinking water. These are only areas with intensive agriculture.

The most affected area is Prekmurje. EU levels of nitrates are permanently exceeded at waterworks in an area that supplies around 3000 inhabitants. The levels of pesticide atrazine and its metabolic product are permanently or occasionally slightly exceeded (between 0.11 ug/l – 0.3 ug/l) at waterworks that supply roughly 50,000 inhabitants, the area is the most agricultural area with intensive agriculture and extensive use of pesticides.

There are two more areas also affected Ptujsko field and Dravsko field, both areas bordering Prekmurje. The problem and origin of the problem is similar. The water supply with water exceeding nitrate and pesticide standards is quite small, supplying a limited population. The most contaminated wells are out of use and some other technical measures have been implemented. So far around 60,000 inhabitants are supplied with water which slightly exceeds EU levels of atrazine (0,12 ug/l).

The last area where levels of pesticides are exceeded is the Ljubljana area. The capital is surrounded by fields and extensive use of pesticides in suburban agricultural areas was a common practice in previous decades. The result is high levels of pesticide atrazine (up to 0.2 ug/l) at a few water wells and supply of water of similar content of atrazine to roughly 60000 inhabitants.

There is clearly an agricultural basis for the water pollution problems. To correct the situation some technical measures have been implemented (and new wells put in use). These areas have now introduced a ban on use of certain pesticides in designated areas. Although no specific health problems have been noted, pesticides and nitrates in water could be a potential source of ill-health although the risk is now small and geographically isolated.

### **Occupational health of agricultural workers**

Slovenia has very high adult mortality from accidents and poisonings. The regional data show that rates of poisoning and accidents are higher in Pomurje region than in Gorenjska region, which have rates higher than in the rest of Slovenia. Although the data does not clearly define agricultural causes (the main cause of accidents are falls representing 40 percent of all accidents and poisonings), the agricultural sector has historically high rates of accidents worldwide. It is hypothesised that many of these deaths are amongst farmers, partly because we have more farmers in Pomurje region than in other Slovenian regions.

Selected occupational health problems of farmers include:

- High rates of Musculo-skeletal disorders (80% of agricultural workers in some studies)
- Pesticide poisoning (acute and chronic)
- Higher rates of respiratory problems compared to the general population
- Noise induced hearing loss
- High rates of suicide among farmers
- Zoonoses

Some studies from Europe have shown that farmers have high rates of stress (46% in a study of Welsh farmers). In the UK farmers have higher rates of smoking, obesity and alcohol abuse compared to the average male population (in a survey 20% admitted binge drinking). Farmers are twice more likely to commit suicide than the average member of the public and suicide is the second most common cause of death in farmers under 45 years after accidents. Although farmers have among the highest rates of accidents they are less likely to go to hospital or report them, and are less likely than the average population to have contact with local health services (Health and Safety Commission 2001).



## The health effects of food

There is now increasing evidence that inappropriate diet is one of the major sources of ill health in Europe. Scientific evidence clearly shows that a diet high in fruit and vegetables, low in fat (especially saturated fat) and low in salt and sugar is most beneficial to prevent obesity, cardiovascular disease and cancers, the major causes of disease and death.

The Global Burden of Disease (GBD) project, conducted by the World Health Organization (WHO), is the first study to quantify systematically the worldwide burden of death and disability and the contribution to it of different risk factors. In the updated analysis published in the World Health Report 2002 specific dietary risk factors of disease have been included for the first time (WHO 2002). This showed that agricultural products affect the 6 leading risk factors for disease in the European Region.

*Figure 25: Leading risk factors for disease in the European Region.*

Risk factor in GBD study	Diseases affected	% of disease burden attributable to each risk factor	
		Men	Women
<b>Tobacco</b>	Lung cancer, coronary heart disease	17.1	6.2
<b>Blood pressure (systolic &gt;115 mm/Hg)</b>	Stroke, coronary heart disease	11.2	10.6
<b>Alcohol</b>	Coronary heart disease, mental health, liver disease	14.0	3.3
<b>Serum cholesterol (&gt;3.8 mmol/l)</b>	Coronary heart disease, stroke	8.0	7.0
<b>Overweight (Body Mass Index &gt;21 kg/m<sup>2</sup>)</b>	Heart disease, diabetes, cancers	6.9	8.1
<b>Low intake of fruit and vegetables (&lt;600g/day)</b>	Heart disease, stroke, Lung cancer, gastrointestinal cancers	4.3	3.4
Physical inactivity (<30 mins/day)	Heart disease, stroke, diabetes, cancers	3.3	3.2
Illicit drug use	HIV, Mental health	2.3	1.2

*NB: all those risk factors highlighted in bold are influenced by EU agricultural policy.*

*Source: World Health Report 2002.*

In Western Europe, these diet-related risk factors contribute to a considerable burden of ill health. Serum cholesterol accounts for 7.6% of the total DALY (Disability Adjusted Life Years Lost), alcohol for 9.2%, overweight for 7.4% and low fruit and vegetable intake for 3.9% (this compares with 12% for tobacco).

Fruit and vegetable intake varies considerably among countries, reflecting cultural, economic and agricultural differences. The current low intake of fruit and vegetables in the EU region accounts for approximately 4.3% of the total disease burden for men and 3.4% for women. Low fruit and vegetable consumption is recognised as an increasingly important risk factor for non-communicable diseases such as heart disease, stroke and some cancers. It has been estimated that increasing individual fruit and vegetable consumption to the levels similar to those consumed in Southern European countries such as Greece could reduce the burden of disease for ischaemic heart disease and stroke by 31% and 19% respectively. For stomach,

## ***The health effects of food***

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oesophageal and lung cancers the potential reduction in disease attributable to an increase in fruit and vegetable intake was 19%, 20% and 12% respectively. A growing number of national and international bodies are advocating an increase in fruit and vegetable intake to at least 400 grams a day (excluding potatoes). The results of the World Health Report suggest that this should be the minimum policy goal. However this will ultimately require wide-ranging changes in many policy sectors as current preventive and health promotion programmes have had limited success in increasing fruit and vegetable intake in the face of competing pressures, such as intensive marketing of fast food. In northern and central EU countries the population intake should rise by 2-4 times (Riboli and Norat 2001). The intake of fruit and vegetables is lower in low-income, low education groups and lower for men than women.

High blood pressure is a health problem in Slovenia, being a major risk factor for cardiovascular disease. Salt is a major dietary factor influencing increased blood pressure, and it is important that salt composition of foods is taken account of to tackle the full health impacts of diet.

Milk fat and dairy products are a significant source of energy and saturated fat in the diet of populations across Europe, including Slovenia. Fat intake increases blood lipids, such as total and low density lipoprotein cholesterol which are key contributors to the development of ischaemic heart disease, stroke and vascular disease. The World Health Report estimates that in Europe high serum cholesterol accounts for 63% of the disease burden due to ischaemic heart disease and 40% for ischaemic stroke (WHO 2002). More detail on the health effects of food is beyond the scope of this report but can be found in the references and an upcoming book by WHO entitled *Food and health in Europe: a new basis for action* (2003).

## **Results of the Health Impact Assessment**

### **Fruit and Vegetable Regime**

#### **Background to the Common Market Organisation for Fruit and Vegetables**

##### **The fruit and vegetable market in the EU**

The European Union produces about 10% of the world's total production of fruit and vegetables, accounting for 16% of the total value of agricultural production in the EU (Schafer Elinder 2003). The relative importance of the fruit and vegetable sector varies from country to country. The total production of vegetables in the EU has been stable for several years at about 55 million tonnes and the total production of fruit approximately 30 million tonnes. European demand has also remained stable with about 41 million tonnes of vegetables (approximately 133 kg/ per person/ year) and 29 million tonnes of fruit (approximately 92 kg/ per person/ per year). There is a trend of increasing consumption of fruit juices.

The area devoted to growing fresh greenhouse produce has increased but is still only 5% of the total area of vegetable production in the EU. There is a trend towards the intensification of farms, resulting in fewer and larger production units. The fruit and vegetable sector is labour intensive, with the net value per hectare being much higher than the net value per hectare for agriculture as a whole. The income per specialised vegetable holdings are often substantially higher than for specialised fruit holdings (Commission of the European Communities 2001).

The EU is the world's largest importer of fruit and vegetables, and the second largest exporter. The fruit and vegetable sector uses about 4% of the EAGGF budget, and accounts for about 16% of the total value of agricultural products in the EU in 2000.

##### **Reform of the common market organisation for fruit and vegetables**

The first reform in 1996 aimed to give more responsibility to producers to tackle the continued overproduction and withdrawal of produce from the market. There are 3 council regulations in the sector: No 2200/96 concerning fresh fruit and vegetables, No 2201/ 96 concerning processed fruit and vegetables, and no 2202/ 96 concerning special support for citrus fruits. A further amendment was adopted in 2000 (EC No 2699/ 2000) to deal with overrunning thresholds for citrus, tomatoes, peaches and pears.

##### **Marketing standards**

Marketing standards are applied to 36 different fruits and vegetables, in order to assign a market value to a product without requiring inspection. These include minimum requirements and different quality standards. Conformity with marketing standards is not required if products are sold at the farm or to a local market.

##### **Producer Organisations**

Approximately 1400 producer organisations are responsible for about 40% of all fruit and vegetables produced in the EU (Schafer Elinder 2003). These are voluntary organisations of fruit and vegetable producers which have the aim to:

- Ensure that production is planned and adjusted to demand, particularly in terms of quality and quantity
- To promote concentration of supply and to place the produce from its members on the market
- To reduce production costs and stabilise producer prices
- To promote the use of cultivation practices, production techniques and environmentally sound waste-management practices to protect water, soil quality etc

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Although EU support is given to the producer organisations, it is up to individual member states to officially recognise them if they meet the requirements. They must give technical support to their members to improve product quality, promote sales, and decrease withdrawals.

Money received from the Community is paid into an operational fund which can fund various programmes including withdrawal compensation top-up. Measures in the operational programmes may overlap with measures financed within policies for structural changes and rural development.

### **Interbranch organisations**

Their aim is to increase the knowledge and sales of the products they represent, to conduct market research, to guarantee quality of products. They also have the right to lay down stricter rules than the EU or nationally for production and marketing standards. They are currently not widespread in the EU for fruit and vegetables.

### **Intervention arrangements and withdrawals**

For fruit and vegetables intervention storage is not possible, which as they have to be processed immediately. Under the 1996 regulation the producer organisations have the possibility to make withdrawals of any of the products they wish, financed directly from the EU or via their own funds. For 16 products (lemons, satsumas, clementines, mandarins, oranges, watermelons, melons, aubergines, pears, peaches, apricots, grapes, apples, tomatoes, cauliflower) organised members benefit from withdrawal compensation up to withdrawal ceilings (as percent of total production). No intervention buying will take place above the withdrawal ceilings. In addition producer organisations may top up, to a certain value decided by individual member states. Other products can be withdrawn and compensated by producer organisations.

The 1996 reforms introduced 2 ways to reduce withdrawals

1. Reduction in quantities that receive withdrawal compensation
2. A successive decrease in the withdrawal in the withdrawal compensation paid

Another method was grubbing up aid for orchards (removing trees mainly for apples, peaches, nectarines). Across the EU, the amount of fruit and vegetables withdrawn from the market with EU financial support has been reducing. From 1993- 1996 the withdrawal quantity halved, but it has been stable since then (Schafer Elinder 2003). In 2001, 1.1 million tonnes (approx 1.4%) of total production, was withdrawn at a cost of 117 million Euro.

Withdrawn produce can only be used for certain purposes and must not affect the market. Products can be used for human consumption through free distribution via charities, or become processed, disposed of as animal feed, distilled for alcohol. The regulation states that destruction must be avoided wherever possible but as a last choice be composted. However, it is up to producer organisations to decide what should be done with withdrawn produce. Currently in the EU up to 80% of this withdrawn produce was destroyed. A recent report on Public Health (Schafer Elinder 2003) has called for withdrawals to be suspended and all produce be marketed at a lower price. It is hypothesised that lower prices would stimulate purchase and consumption of fresh produce by low-income households, who generally have the lowest intake of fruit and vegetables.

### **Intervention thresholds**

These are used if the market is suffering from structural imbalances giving rise to withdrawals above the ceilings. Intervention thresholds mark the highest quality of product receiving full withdrawal benefits. Intervention thresholds have been in place for 9 out of the 16 products since 1989, indicating that the market is constantly out of balance for these products.



## **Trade**

All the products included in the common market organisation for fruit and vegetables are subjected to import duty in order to prevent import at lower prices than in the EU. The entry price is set for each product reflecting the price level on the EU market and considering price variations by season. Export subsidies can also be applied for.

## **Fruit and Vegetable production in Slovenia**

In Slovenia, fruit and vegetables accounts for about 5% of the value of the agricultural market.

In 2000 SORS conducted a horticultural census in Slovenia, in cooperation with the Agricultural Advisory Service of the Republic of Slovenia (Statistical Office of the Republic of Slovenia 2001).

All market producers were covered, irrespective of the volume of production. Hence data on areas with vegetables in past years are not compatible with this census due to differences in methodology.

In summary there are 2109 producers cultivating 2,258 hectares of vegetables, mushrooms, strawberries and herbs (with less than 7% of horticultural production indoors). Vegetables (excluding potatoes) were produced on 2114 Ha, the main crops being white cabbage (22%), early potatoes (13%), lettuce (9%), sweet peppers (7%), onion (6%), chicory (5%), endive, beetroot, cauliflower and tomatoes (all 3%). On average each market producer has 0.8 Ha. 53% of farms have 1 ha or less, and only 57 (less than 2.5%) have more than 5 Ha of land. Up to 40% of vegetables produced in Slovenia is local production for home consumption which is not directly affected by agricultural policy (although may be influenced by information and education).

## **Vegetable production**

With something over 3000 hectares devoted to vegetables, Slovenia and its agricultural holdings rank among the smallest vegetable producers in Europe. The largest European vegetable producers are the Mediterranean countries (Italy, Spain and France), and the Netherlands, while Poland and Hungary are important vegetable producers among the EU candidate countries. Both the EU members and the candidate countries have a vegetable supply surplus.

Due to unreliable data on Slovene vegetable production in the past, only the production volume in 2000 and 2001 is available for analysis. In general, the heterogeneous climatic conditions in Slovenia make it possible to produce a variety of vegetable cultivars. Nevertheless, one quarter of the vegetable growing area is used for cabbage. The production of lettuce, onion, French beans, pepper, tomato and cucumber is also significant. Taken together, these cultivars cover three quarters of the entire vegetable growing area. In comparison with 2000, the growing area for all broadly produced vegetables, except for cabbage and cauliflower, expanded in 2001.

Slovenia produces some 70,000 tonnes of vegetables per year. Weather conditions have a considerable influence on the yield, which is why, from 2000 to 2001, the yield fell by one quarter, despite the larger vegetable growing area.

Vegetable production is a labour-intensive industry, in which a lot of work has to be invested. At the same time, it brings a relatively high income per area unit. Vegetable production on small Slovene farms can make good use of these two important characteristic features and work towards profitable operation as well as the preservation of the rural population.

An important share of the vegetables produced is intended for the self-supply of rural holdings. The share of crops intended for sale varies significantly for individual vegetable cultivars.

In Slovenia, vegetable production is much more dispersed than in the EU. There are two reasons for this. First, in the EU, vegetables are cultivated on approximately 10% of all comparable rural holdings; compared to almost 80% in Slovenia. This means that the average area intended for vegetables on Slovene farms, even those of market growers, is smaller almost by half than on comparable rural holdings producing vegetables in the EU. The share of farms focusing primarily on vegetable production is also five times smaller in

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Slovenia than in the EU. Second, farmers that primarily cultivate vegetables grow several different sorts and are not specialised in one, so they are unable to offer an adequate amount of vegetables at a time.

Figure 26: Vegetable production, Slovenia, 2000 – 2001.

	Arable land (ha)		Crops (t)	
	2000	2001	2000	2001
<i>Vegetables total</i>	3.242	3.531	78.809	61.168
<i>Cabbage</i>	748	736	26.993	17.152
<i>Lettuce</i>	318	357	6.894	5.268
<i>Onion</i>	259	291	6.260	5.430
<i>Beans</i>	224	315	2.103	3.076
<i>Paprika</i>	204	212	5.824	4.617
<i>Tomato</i>	162	190	3.421	3.144
<i>Cucumber</i>	152	195	3.002	3.170
<i>Chicory</i>	149	172	2.386	2.247
<i>Red beet</i>	123	137	3.141	2.493
<i>Coulliflower and brocoli</i>	85	81	1.474	1.549
<i>Others</i>	818	845	17.311	13.022

Source: Statistical office of the Republic of Slovenia.

## Fruit and vegetable consumption

The World Health Organization and other international organisations recommend a dietary intake of 400g/day of fresh fruit and vegetables (excluding potatoes). In Slovenia, a recent dietary survey estimated that fruit and vegetable consumption averages only 304g per person per day (Koch 1997). This is approximately 100g (or over 1 standard serving) per day lower than the minimum intake recommended. Increasing consumption up to a population average of 400g/day could potentially reduce the risk of heart disease by 10%, stroke by 6% and various cancers by up to 6% in Slovenia.

What types of products are people consuming? We do not have trends of fruit and vegetable consumption in Slovenia, although we can look at trends of production, import and export and make hypotheses about population intake. There is an increase of imports of bananas, kiwi and oranges. Apple consumption is decreasing despite this being a major product in Slovenia.

## Potential change in Slovenian market post accession

After accession all trade barriers (ad valorem tariffs and special custom duties) currently still protecting domestic producers from external competitive pressure will be removed. However, existing preferential trade agreements (no or limited trade barriers) with former Yugoslav republics will also be replaced with the less favourable regime in force for trade with EU countries. After accession it is expected, that the EU price levels will be established, not only at the producer markets for the most administered products, but effects will extend also to the level of consumer prices. Currently some fruit and vegetables produced in the Slovenia are cheaper than the EU average, after accession the likely result is an increase in the cost to Slovenian consumers of some fruits and vegetables. This is expected to be most evident at the Slovenian apple markets, where currently consumer prices are on average slightly below the EU level. After the accession producer will probably try to increase their prices up to the EU level, what might lead to slight decrease of consumption and/or substitution with other fruit types.

On other hand, prices for several fruit groups, especially citrus fruits produced in EU member states, prices may decrease due to trade regime abolishment, removal of tariffs and lowering of the transaction costs. Currently Slovenia imports a wide range of fruits including oranges. That somehow might have also some less desirable collateral effects on local production and supply of fruit – and further stimulate clearly evident trend of substitution from locally produced fruit (apples) to »exotic« fruit (oranges, bananas). This will also benefit exports to the EU. Currently Slovenia overproduces apples by 20% which are mainly exported to Austria. As EU import tariffs will no longer apply exports should be maintained or may increase.

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There may be some changes to existing market channels after accession. It is unlikely that the Slovenian internal market will change much after accession. However, trade patterns with other countries in Europe may alter, particularly reorientation of imports from former Yugoslavia to EU member states.

For example, Slovenia currently has free-trade agreements with Macedonia and Bosnia particularly in industrial fruits for juice production, melons, salad, tomatoes and some vegetables. After accession there will be increased barriers to this trade and cost of imports will increase unless Stability Pact countries become integrated into the EU mechanisms or negotiate favourable trade regimes.

It is likely that in the short term there may be switches in the market channels used for such imports e.g. from Macedonia to Greece due to lower tariffs and monitored food safety levels which meet EU standards.

## **Withdrawal Mechanisms**

These are designed to maintain prices for producers, and are widely used in the EU CAP (see earlier). Currently there is no withdrawal policy in Slovenia, and it is not something that is being considered as relevant for Slovenia. Domestically produced fruit is of high quality and currently Slovenia actually imports »industrial« apples and other fruit of lower quality for processing that is usually channelled for withdrawal. If withdrawal mechanisms do come into effect they will further effect the price of fruit and vegetables for consumers.

## **Recommendations for fruit and vegetable policy**

### **Increasing availability**

The aim of the Ministry of Health is to increase consumption of fresh and frozen fruits and vegetables, as well as maintaining the socio-economic status of all communities. Each person should consume a minimum of 400g/ per person/ per day of fruits and vegetables according to international research and guidelines. This is currently not being met for all sections of society in Slovenia. Although high quality intake data on fruit and vegetables is not available it is clear that national consumption of fruit and vegetables should be increased. The population should aim to increase fruit and vegetable intake by up to 25% (100g/ per person per day). This also will create a potential for increased market demand which would provide an opportunity to increase horticulture production and supply in Slovenia. There are some potential opportunities:

- Aim to increase Slovenian production of fresh and frozen fruit and vegetables to meet this increased market demand. This will have to involve determining what fruits and vegetables will be most suited to both the agricultural system and the market demand.
- Evaluate the possibility to restructure current production from products like grain, to labour intensive but high value added products such as fruit and vegetables. One approach may be to encourage smaller farms to convert to horticulture production with support from rural development instruments (e.g. in Pomurje) to help maintain rural livelihoods.
- The Government could assist in stimulating demand by creation of local procurement policies to supply hospitals, schools and other public funded institutions which provide meals to be supplied by Slovenian produce.

### **Multi-sectoral working to strengthen the fruit and vegetable sector**

Current national intake data is not able to give us an accurate picture of the average daily intake of fruit and vegetables by age and sex of the population. Nor are databases in place to monitor consumption trends over time and in different regions. Setting up inter-sectoral collaboration on comparable databases on fruit and vegetable production, local sale, consumption, processing etc would improve targeting of marketing campaigns to increase consumption. A first step could be better statistical databases jointly shared between the agricultural, economic, statistical and health sectors looking at food production.

These databases could be the basis of well-planned joint policies to improve consumer education, have better market research to improve producer marketing with the aim of increasing Slovenian consumption of fruit and vegetables.

## **Improving quality**

Across Europe there is increasing concern for food safety including pesticide levels in foods. This is particularly true in the fruit and vegetable sector which includes a rising demand for organic produce. Support through various 'pillar 2' instruments could potentially be used to help Slovenian farmers take advantage of producing highest quality and organic fruit and vegetables.

## **Withdrawal mechanisms**

If EU withdrawal compensation mechanisms are introduced after accession then this should only be at times of extreme local, seasonal overproduction. It is also recommended that any withdrawal produce should be used for human consumption (according to EU regulation although this is not common practice in current member states). The Ministry of Health could work with the Ministry of Agriculture to devise disposal schemes to enable low-income families or school children access to the withdrawn produce.

## Wine Regime

### The Burden of disease

The World Health Organization World Health Report 2002 estimated that the burden of disease related to alcohol consumption was 14% in men and 3.3% in women (WHO 2002).

Statistics for Slovenia show that average yearly alcohol consumption fluctuates. In 1997 the average consumption was higher than the EU average, 11.8 litres per person per year in Slovenia compared with the EU average of 9.5 L. In 1999 the difference had become less.

The health effects of excess consumption of alcohol are well known and wide ranging. Chronic conditions related to alcohol abuse include liver cirrhosis. Slovenia has one of the highest rates of alcohol-related liver cirrhosis in Europe. The death rate from cirrhosis in Slovenia is over double that in the EU (30 per 100,000 compared with 13.6 in the EU in 1999). Other conditions related to alcohol mis-use include mental health problems including depression and suicide, and rates of accidental injury. Death rates from both suicide and external causes on injury are approximately double that in the EU (see earlier). Although alcohol will not be the cause in all the cases it is likely to be implicated in the higher rates found in Slovenia.

Figure 27: Deaths directly attributable to alcohol, by region.

Year	Age standardised mortality rates, per 100.000 inhabitants and (%)									
	Slovenija	Celje	Nova Gorica	Koper*	Kranj**	Ljubljana	Maribor	Murska Sobota**	Novo mesto	Ravne
1997	28,79 (3,2)	24,65 (2,5)	36,24 (3,8)	6,36 (0,8)	29,25 (3,6)	34,10 (4,1)	24,77 (3,2)	34,23 (3,2)	34,14 (3,9)	34,50 (3,9)
1998	25,67 (2,9)	22,86 (2,3)	37,00 (3,5)	8,04 (0,9)	22,09 (2,7)	23,00 (2,8)	23,91 (2,7)	35,76 (3,3)	52,24 (5,4)	27,61 (3,3)
1999	22,17 (2,5)	23,75 (2,5)	20,02 (2,3)	12,63 (1,5)	20,64 (2,3)	20,53 (2,5)	24,08 (2,7)	28,46 (2,6)	18,56 (1,2)	41,11 (5,0)
2000	22,52 (2,6)	24,19 (2,7)	18,86 (2,0)	16,75 (2,0)	14,55 (1,8)	21,55 (2,6)	23,36 (2,6)	23,82 (2,4)	30,74 (3,4)	39,49 (4,5)

Source: NIPH Slovenia, 2002.

\* Koper = south Primorska

\*\* Kranj = Gorenjska

\*\*\* Murska Sobota = Prekmurje

There is regional variation in rates of cirrhosis, being higher in some rural areas than others (figure 27 and 29). Alcohol-related deaths are higher in some wine growing areas, but this is not consistent in all of them. In Primorje region, which is also a wine growing region, rates for cirrhosis are lower. It is clear that illnesses related to alcohol abuse are not simply related to wine growing areas, who are producing alcohol for home consumption. In addition in eastern parts of Slovenia wine is not the only problem, quite an important share of the problem is attributed to alcoholic spirits, combined with wine (people are distilling spirit at home from plums and apples – which is not happening in Primorska).

Figure 28: Deaths connected with alcohol abuse in Slovenia, international causes of death classification.

Year	Age standardised death rate (per 100,000 population)										
	To alcohol directly attributable causes	Liver cirrhosis (K70.3, K74.3-K74.6)	Transport accidents (V01-V99)	External causes of death (V01-Y91.9)	Murders (X85-Y09)	Selected cancers. (C00-C14, C15, C32)	Alcohol psychoses (F10.5-F10.9)	Alcohol dependence syndrome (F10.2)	Alcohol abstinence syndrome (F10.3-F10.4)	Acute alcohol poisoning (F10.0)	Pancreatitis (K85, K86.0-K86.1)
1997	28,79	28,22	17,30	81,21	2,66	14,81	0,35	6,27	0,23	1,22	2,65
1998	25,67	27,79	16,38	77,25	0,09	14,35	0,43	5,67	0,23	1,18	2,74
1999	22,17	29,59	16,69	77,06	1,42	14,00	0,20	4,53	0,21	1,25	2,51
2000	29,52	30,96	13,28	63,98	0,99	14,16	0,25	5,48	0,05	1,07	2,60
2001	25,42	32,38	14,88	70,79	0,74	6,45	0,39	6,61	0,04	0,88	2,47

Source: NIPH, 2002 .

Figure 29: Deaths connected with alcohol abuse in Slovenia, international causes of death classification.

	Alcohol liver disease	All liver diseases	Alcohol cirrhosis	All cirrhoses
Celje	15,07	63,62	13,06	36,50
Gorica	3,96	53,45	3,96	25,73
Koper	5,19	42,97	4,45	19,26
Kranj	17,91	51,19	15,87	23,03
Ljubljana	13,74	51,24	12,05	22,06
Maribor	17,97	88,01	16,42	54,23
Murska Sobota	27,59	93,79	26,01	63,84
Novo mesto	29,02	83,33	28,27	57,29
Ravne	31,13	83,92	31,13	46,02
SLO	16,54	64,79	15,07	35,55

Source: NIPH, 2002.

## **The CAP wine regime**

Across the EU wine consumption is declining, while production has not decreased to the same extent. There is 20% surplus production each year. 70% of the EU wine budget (1.2 Billion Euro) is used for managing surplus wine, while 30% is utilised for conversion of vineyards for other purposes (8).

Wine consumption is currently promoted within the CAP. One of the campaigns, aimed at 20-40 year olds promotes moderate drinking as healthy (8). There is no evidence from the scientific literature to support this in this age group; the moderate protective effect on cardio-vascular disease is only seen over 55 years of age.

The most extreme effect of the CAP on wine consumption has been seen in Sweden. Since joining the EU in 1995 wine consumption has increased by approximately 50%, due to the CAP forcing a weakening of the Swedish alcohol policy (Schafer Elinder 2003). The European Commission has made repeated attempts to harmonise excise duty on alcohol. National governments are no longer able to utilise price instruments as a public health control measure, due to harmonisation requirements. Clearly free trade is one of the key foundations of the European Union, so that there are no barriers to trade on the internal European market. However, sometimes it should be recognised that such harmonisation may not be positive for public health.

## **Wine production in Slovenia**

Wine growing in Slovenia is traditionally very dispersed, meaning that most of the farms produce wine for their own use. Currently, only 1/3 of the wine produced is marketed, and many farmers produce wine for home consumption. Slovenia also produces high quality wines that are also exported. Table wine is imported mainly from the former Yugoslav Republics.

In Slovenia the level of support for market production is currently rather high (this includes tariffs, export subsidies) and the large vineyards and companies (former state companies) are the main beneficiaries of that support. After the accession the regime will change and the support will not be so easily accessible. The competitive pressures from the EU markets is expected at the segment of the market that is covered by this larger type of producers (middle to low quality, mass production wines) therefore it is expected that commercial wine production after accession will decrease.

Clearly any decrease in commercial production may affect the amount available for local consumption which should be monitored as alcohol-related disease is already a major health problem and cause of premature mortality in Slovenia.

## **Wine regime recommendations**

1. The new alcohol policy from the Ministry of Health should ensure that health promotion is evidence based (and specifically refutes the EU funded promotion of wine drinking to 20-40 year olds).
2. Ministry of agriculture, forestry and food should aim to reduce surplus wine production by converting vineyards to other production. There should be encouragement for farmers to convert vineyards to other produce. The Ministry of Health and Ministry of Agriculture should collaborate to discourage the use of EU funds for distillation support for surplus wine production, but to increase use of EU wine budget in Slovenia for conversion aid.
3. A register of vineyards should be created in Slovenia to monitor wine production, and use of surplus wine production





## Dairy Sector

### The Milk sector

The dairy sector is one of the most subsidised and regulated within the CAP. There are a wide range of measures whose aim is to maintain the EU price for milk above the world market price. These include export subsidies, import duties, intervention buying, quotas and different means of increasing consumption. These measures create economic conditions which support a production surplus of about 20%. Currently milk quotas are due to be maintained until 2015 (Schafer Elinder 2003). The EU milk budget is used for disposing of surplus milk in the form of butter and skimmed milk powder, to maintain milk prices. Butter is sold at a 30% reduced price to the food industry. This cheap supply of saturated fat creates unfavourable conditions for replacement with other healthier fats (such as vegetable fats), and could be a source of hidden fats in the diet.

The dairy sector is one of the largest parts of the agricultural sector in Slovenia. In Slovenia milk is over-produced by 20%. During the period of last five years national agricultural policy and investment in the national infrastructure has been clearly oriented to increase dairy production mainly through price support mechanisms. The milk quota allocated to Slovenia is at the current production level, therefore the current national oversupply is not expected to be decreased. However, it is not a threat to EU markets or budget, however public health issues have not been considered. The EU CAP will do little to alter the current situation as there is unlikely to be a reform in the EU dairy regime for another 10 years. This will continue to maintain high rates of production and will also artificially increase prices. It should also be recognised that in Slovenia the dairy sector is a good source of regular income for many farmers, including small farms, and any recommendations will have to take this into account.

### Purchasing price for milk

Determination of the purchasing price for milk is complex. The state defines various prices:

- target price for milk – (This is meant for recommendation purposes only for dairies and producer negotiations and for valuation of other policy instruments...)
- minimum price for milk (Which is set very low and has no real impact)
- intervention price for butter and milk powder. This is triggered when the market prices for butter and milk powder are lower than the EU defined intervention price, available to prevent market instabilities.

The actual prices for milk that farmers receive is freely negotiated on the market but are affected by nationally defined non-obligatory elements for price determination. Elements for price determination include:

- basic purchasing price (per litre)
- quality supplements (fat and protein content, micro organisms count, somatic cells count)

The relative financial importance of these quality supplements is now determined entirely on the negotiation basis between farmers and dairies.

It is clear that producers income is generated by a complex formula, but that for public health increased amounts of fat is currently financially beneficial to milk producers.

### Categories of Milk Fat

In Slovenia, the categories of milk (and milk products) on the market are regulated by the Rules on the quality of milk, milk products, rennets and pure vaccines (Official Gazette of the R of Slovenia 21/93), which will be referred to as *Rules on the quality of milk*. In the European Union milk Council Regulation 2597/97/EC supplemented by Council Regulation 1602/1999/EC provide the definitions for milk products that have to be adopted in Slovenia as from 2002 as part of accession requirements (summarised in figure 30). Theoretically categorisation in the Rules on the quality of milk in Slovenia set very broad limits. Despite this loose regulation only milk with fats contents specified in table 23 were placed on the market by domestic producers.

## Dairy sector

However, the fat content of these different categories of whole, semi-skimmed and skimmed is not in line with EU regulation.

Figure 30: A comparison of the current fat content of milk marketed in the EU and Slovenia.

	Fat content of milk (%)	
	EU	Slovenia
<b>Whole milk</b>	>3.5%	3.2%
<b>Semi-skimmed</b>	1.5-1.8	1.4–1.6
<b>Skimmed</b>	<0.5	0.5

In 2000 around 70% of total milk drunk in Slovenia had 3.2% fat content (i.e. whole milk). A study by the University of Ljubljana revealed that consumers in Slovenia are well informed about the milk they purchase, with only 5% not aware of the fat content of milk that they drunk (Pohar et al 2001). However, consumers appear to be unable to relate this to the total fat they consume, and the importance of this in health terms. According to the dairy industry, the adoption of EU regulation on milk fat content will not cause producers major problems in changing the categories of milk and will only mean a negligible costs (e.g. for changing packaging). There is an assumption that consumers will switch demand to the same 'category' of milk i.e. consumers of 3.2% will switch to 3.5% milk. Thus the industry feels that there will be no further surplus of milk fat. (NB This is further complicated because until 31 December 2005, in addition to the EU categories, consumers will still be able to buy 3.2% milk).

A study by the University of Ljubljana on the potential impact of the changing milk regulations on consumers found that more than 60% who today buy 3.2% milk would actually choose to change to 1.8% or less fat content (Pohar et al 2001). This would be in line with trends across Europe where the market demand is increasing for lower fat milk and other dairy products.

This second scenario would be beneficial to the health of the population compared to the industry predictions, as it would significantly reduce the saturated fat consumption in the population. However, the same study simulated that such a change would cause the dairy industry to accumulate a surplus of dairy fat equivalent to 1100 tonnes of butter (minimum 82% fat content). The economic and health problems of butter fat disposal will be considered in the next section.

## Recommendations on milk fat

1. MAFF should investigate more sufficient policies in the dairy sector which aim to preserve the economic viability of the sector while at the same time lowering the milk fat content (in line with market demands for lower fat products). Some specific policies that should be considered include:
  - Technical assistance work with farmers to reduce the fat content of cow's milk produced by supporting different feeding practices. This can be achieved through breeding and feeding practices that could be the subject of technical extension programmes in the rural development funds. It has been estimated that if all farmers produced milk with the same fat content of Italy (3.64% compared with 4.08% EU average) this would reduce the EU yearly fat production by more than the amount of butter currently fed back as surplus into the EU food chain with subsidies .
2. There should be government marketing of the public health benefits of switching to lower fat milk when the new whole milk standard comes into full effect. There should be clear education campaigns about the new milk fat levels so that consumers are clearly informed that the products they are buying have changed.
3. MAFF should proactively work with the dairy industry to lower the amount of surplus milk/ butter fat produced domestically. Currently the national milk processing industry is taking the burden of surplus milk fat production, which will change with financial support after accession (although there are moves to abolish this in the near future and should not be the basis of future policy). The determination of milk prices and supplements for quality are prescribed by MAFF, who could use the opportunity to start

## ***Dairy sector***

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discussion on reform to lower surplus fat production and hence take advantage of the economically undistorted conditions currently in place.

### **Butter fats**

Currently Slovenia produces approximately 3000 tonnes of butter, and 16.500 tones of cream. Both products are overproduced and exported with state support (export subsidies). Currently the trends in the dairy industry is a burden to the agricultural sector. In Slovenia the total production of milk (and hence milk fat) is constantly increasing, whereas the trends of dairy fat consumption are decreasing across Europe. Butter fat is a »side« product and this disposal of excess butter fats is actually an economic cost to the dairy industry.

After accession this surplus butter will become a source of income due to the financial incentives of the EU intervention system. However, it is unlikely that the butter subsidies will be sustained in the EU in the long term. Although reform of this is currently blocked it is likely to have to change in the next decade.

For public health, it would be preferable to decrease production, and hence consumption, of so much saturated fat in the form of high fat milk or butter (which is sold cheaply to the food industry and enters the diet hidden in processed foods). On accession there will be economic incentives to continue producing butter which will negatively affect the rising trends in obesity and cardiovascular disease already seen in Slovenia.

### **Recommendation for butter fat production**

It is recommended that the Ministry of Agriculture works with dairy farmers under the current market conditions to reduce surplus butter production now. This would have potential economic benefits in the future of not having to reform the sector when EU butter subsidies are withdrawn (see recommendation above).

### **School milk schemes**

#### **The Slovenian school milk programme**

In Slovenia education on healthy nutrition and food safety are two important issues included already in the **kindergarten** and **primary school** curricula (formal and hidden) in the form of kindergarten and school subjects and organised meals.

Healthy nutrition and food safety are included in formal curricula from 1st to 9th grade in all subjects where appropriate and with specific requirements to study home economics (including food safety and healthy nutrition) in 5th grade and compulsory study of healthy nutrition in 9th grade.

Every kindergarten provides three to four meals for children daily and most of primary schools provide two to three meals for children daily, by regulation every primary and secondary school has to provide children at least one meal a day. This effectively means that school meals are financially subsidised and about 20 % of children are getting support for their meals.

Norms and standards for organisation of organised kindergarten and school meals were adopted in 1986 and are under review in 2003 and 2004. It is foreseen that modernised norms and standards will be adopted in 2004. The 1986 standard states that every child has to get at least one piece of fruit a day and each day must be offered a combination of meals that has to contain one portion of milk or milk products.

## **Drinking milk recommendations for children in Slovenia**

A consensus was achieved in Slovenia about the recommendations on intake of milk and dairy products in children and youth population. It was agreed that children up to the age of two years may consume normal milk, with the entry to the primary school but at the latest at the beginning of puberty they should switch to low fat milk and dairy products. This is not the case if the child has problems with overweight or obesity. In this case child and his/her parents shall get professional advice on appropriate diet as soon as possible.

## **EU school milk schemes**

The EU school milk measure appears to be an inviting option for national governments who would receive money to provide school age children with milk. However, it should be remembered that it is intended as mechanism to dispose of surplus milk, not to improve diets of children. The scheme stimulates milk consumption of mostly whole fat milk by school children because the subsidy given to whole milk is 74% higher than that given to skimmed milk. The school milk measure will add to the rising problem of childhood obesity in Slovenia, by promoting the over consumption of saturated fat if whole milk is introduced.

Currently the diets of school children in Slovenia are very good. It is possible to negotiate low fat milk in EU funded school milks schemes, and if it were possible to 'fine-tune' the policy instrument to support only low-fat milk products in line with national dietary guidelines these could be introduced in Slovenia. This should be investigated with the Ministry of Agriculture.

## **Recommendations for school milk schemes**

1. The national drinking milk guidelines for school children should be supported. This may not be best served by considering any EU funded school milk schemes which promote full fat milk in schools.
2. Work with the options in the acquis to 'fine-tune' the policy instrument to support only low-fat milk products in line with national dietary guidelines

## **Rural Development Policy**

The effects of the CAP on rural development were seen as important by a wide range of people in the stakeholder workshops. Unfortunately due to time and resource constraints Rural Development Policy was not included as one of the specific policies that the HIA prioritised to be assessed. However, the following section is included to discuss the background and potential health issues that may be important. It is clear that the public health effects in the rural areas will be the most significant after the CAP is adopted after accession. This HIA recommends that a separate project looks at the effect of the EU rural development measures on public health in Slovenia to complement important work that has already started in this area, for example the Mura project in Pomurje region.

### **Rural development measures in the CAP**

A range of rural development measures will be eligible in new member states from the day of accession. These will mirror the programmes currently available to the EU15 under council regulation (EC) 1257/1999. They will be co-financed at a maximum rate of 80% by the EU. The Commission will hold ongoing bilateral discussions during 2003 to help accession countries formulate the rural development programmes to be applied.

The initial EU position with Slovenia proposed only 2.1% of available resources for measures of EAGGF Guarantee section (approximately 100 million Euro for 3 years). Slovenia obtained 150 million Euro. The rural development program is 249 million Euro for 2004-2006 plus a compulsory domestic contribution of 330 million Euro. There are various other structural funds that have been allocated that can also be used in the agricultural sector. Current funding includes Euro 236 from structural funds and Euro 168 from Cohesion funds.

Rural development funds are allocated from an overall regional development budget. In Slovenia, the Ministry of Regional Development is coordinating the other government ministries allocation and spending of the EU Regional Development Budget funds. Once rural funds are allocated, how this will be spent is decided by the Ministry of Agriculture. The rural development policies are very relevant for the agricultural sector. They include rural development measures that support the CAP financed from the EAGGF finance section. The most important of these are the ecological payments and payments for less favoured areas (LFA). The second types of measures are structural funds and rural development policies financed from the EAGGF guidance section.

There are over 20 rural development instruments by which these funds can be distributed. These cover a considerable range of policy instruments including investment support for agricultural holdings, special assistance for young farmers, funds for income diversification, marketing assistance.

In Slovenia there is overall macroeconomic stability in the economy (with a yearly growth rate of about 3% of GDP in 2001), but there are substantial differences in the level of development between the regions which will have to be taken into account. National unemployment is relatively low at 6.4% but this varies considerably between regions, and is highest in the regions with largest agricultural sectors.

### **State Aid Budget**

The State Aid Budget is used for policies that are not in the CAP, although the budget is controlled by the European Commission. These cover instruments that are focused in rural areas and are financed from regional funds. These instruments are unlikely to be financed for the agriculture sector from EU funds, although the Ministry of Agriculture may request funds not controlled by the EU. These may be used to support the food industry.

## **Absorption Capacity**

The use of the rural development funds is in large part determined by the application for and uptake of the various measures by producers and processors. It is questionable if Slovene farmers are able to apply for and use these. This absorption capacity can be promoted by specific agricultural extension workers assisting farmers not only in applying for funds, but to suggest ways in which they could adapt or change their production through the use of new types of funding. Within this there is an opportunity to promote practices that are not only of economic benefit to farmers but also will have broader benefits to public health. For example SAPARD funds can be used for investment in processing of milk, meat and fish.

## **Realistic expectations of the rural development measures for health**

Slovenia will join EU CAP in 2004 and is obliged to sign up to and respect the acquis. The CAP regulations are very prescriptive and much of it leaves little room for changes. This will mean that Slovenia will be an actor in the European market and agriculture will work in a competitive market economy. CAP creates distortions to the market, and limits what national governments can do. However, the CAP must also be seen as creating opportunities.

The Slovene agricultural strategy from 1993 established open market economic mechanisms in agricultural production and food processing. Goals were not measuring amount of production, but are more »content« oriented (e.g. use of land, competitiveness, and environmental friendly programmes). It is important that on joining the EU Slovenia does not lose elements from the 1993 strategy through adoption of the CAP.

Clearly in the common market each farmer has the same possibilities to adapt production in the way they want (and to earn the maximum amount of money they can). They all have the same chances for applying for funds in different programs and to get EU subsidies according the same rules. Although the Ministry of Agriculture is unable to force producers to grow specific crops, for example fruits and vegetables, there are possibilities to support certain policy instruments especially through the rural development budget that could encourage or give incentives for more ecological or health promoting produce. This can have benefits across sectors, for example, maintaining income and employment in rural areas where unemployment is currently much higher. Reducing unemployment has clearly been shown to have population health benefits. Encouragement of producing crops and animal products that are also the basis of a balanced diet for reducing obesity and disease will have both health and economic benefits as consumers are increasingly demanding 'healthier foods' across Slovenia.

The main mechanisms through which this can be achieved are environmental programs, which are increasingly oriented in this direction in EU and in Slovenia. Through the use of »agricultural advisory services« Slovenia can influence the use of the financial sources available in agriculture.

## **Diversification of production**

The rural development measures could be used to stimulate diversification of production methods to include more high quality, higher value crops. This includes the increased use of ecological and integrated production methods (including organic) and establishment of efficient markets and distribution chains to support them. Due to the extensive production methods and varied natural geography in Slovenia some regions have greater opportunities to reorientate their production in this way. Diversification can be encouraged by educating and facilitating access of farmers to sources of expertise, funding and technical solutions. MAFF should initially support regional investigation of where such possibilities exist for 'redirection' of farm production to these high quality ecological production methods, including alternative crops.

## **Organising producers**

Optimisation of the economic possibilities of new products and methods requires ensuring that the market chain is in place and well organised. MAFF should work both regionally and nationally to ensure vertical co-ordination of production, processing, retail (both by stimulating local and national markets) and export.

## **Recommendations for Future Work**

### **Health Council**

The Health Care and Health Insurance Act (Official Gazette of the Republic of Slovenia 9/92) provides the basis for all activities in the area of health protection and promotion as well as determines the area of activity of national and regional health care institutions. This modern law promotes objectives of the »health for everyone« declaration.

In its Article 3 the Act stipulates that by means of measures of economic, environmental and social policies the Republic of Slovenia shall create conditions for the implementation of health care as well as activities to promote, preserve and restore health and shall also coordinate the functioning and development of all areas with the health care objectives, thus constituting a commitment, comparable with Article 152 of the Amsterdam Treaty.

Article 5 of the Act provides the basis for the establishment of the Health Council, whose duty shall be to monitor the impact the environment and life habits might have on the health of the population or social groups as well as to propose the institution of relevant measures; to assess development plans and draft laws of all activity areas in terms of their impact on human lives; to propose measures which would promote the production and consumption of healthy food as well as the introduction of technological processes and products that are less harmful to health, and other initiatives.

A special action group should be set up within the Health Council, which would monitor the area of food and diet.





## **Using health impact assessment in Slovenia: assessing lessons learnt**

This was the first health impact assessment project to attempt to estimate national health effects of incorporating the CAP, and the first prospective HIA undertaken of national agricultural and food policy. Although a formal evaluation has not yet been undertaken, several important learning points have already arisen from assessing the HIA process.

### **Limitations to the HIA process**

The 2 biggest problems encountered during the HIA were the complexity of the agricultural policies being assessed and the lack of robust, available evidence of the links between policy themes and specific health impacts.

### **Prioritising policies for the HIA**

The complexities of European agricultural policy and the ongoing uncertainty of how it will be applied in Slovenia on accession in 2004 has made conducting a detailed HIA very difficult. The EU CAP is an enormous and relatively inflexible body of legislation which has different effects in each EU member state. The project involved agricultural economists at the University of Ljubljana who were important in modelling and interpreting potential policy scenarios which would be likely in Slovenia when integrating the CAP requirements into Slovenian national policy. A HIA requires identification of answerable questions. The complexity of the food and agricultural sector and the CAP in particular often made the clarification of the questions for the HIA difficult and time consuming. Due to limited time and resources a pragmatic consensus of the HIA project group was adopted to select policies to be assessed in the HIA. These were considered to be priorities for public health due to the agricultural context in Slovenia. It cannot be considered a comprehensive analysis of all the health impacts of the CAP in Slovenia but a first attempt to assess potential health effects of some key aspects of agricultural policy. One important aspect that had to be left out due to time pressure was rural development policy, something that was felt by the working group should be followed up in a specific project specifically focusing on this complex policy area.

### **Lack of available evidence for health effects of agricultural policy**

All the approaches used in health impact assessments worldwide are broadly similar, using assessment based on a framework of broad determinants of health. By using health determinants in this way HIA's will always reveal large uncertainties in potential health impacts. In food and agriculture, the causal pathways are very complex, and the current evidence base for health effects as found to be patchy and often not relevant for assessing specific policy options in the Slovenian context. However, this should not be taken by decision-makers to mean that there is no evidence for health impacts of agricultural policy. The lack of an adequate evidence base found in this HIA is a recurrent problem in many HIAs at project or policy level. There is an ongoing debate about how to assemble relevant evidence for HIA and policy-making. In the Slovenian HIA, evidence on agriculture and health linkages is limited and it was felt new reviews of research evidence were required relevant to the agricultural policy interventions being assessed. Unfortunately these were not completed as foreseen due to financial and time pressures. This is typical of most HIA's, where there is neither the time nor money available to undertake comprehensive evidence reviews or synthesize evidence relevant to the specific policy context. However, in future health impact assessment decision-makers need to understand that this lack of evidence may be the rate-limiting step to completing a detailed analysis for an HIA.

### **Resource limitations**

In common with many HIA's at project or policy level, this HIA was limited by pressures of time, human and financial resources. All the staff involved in planning and managing the project, collecting and analysing data

had to conduct the work on the HIA in addition to carrying out their existing responsibilities. No staff were specifically funded to work full-time on this in Slovenia. The HIA as originally planned was an enormous piece of work which needed to be completed in a relatively short period (March 2002- May 2003). The original plans for the project had to be scaled back when the limitations of the available resources became apparent. To produce a detailed analysis initially envisaged by the Ministry of Health including market economic analyses, the new literature reviews required, and looking at the health issues of broader rural development policy issues would have required several full-time staff working over a minimum of 2–3 years.

Some financial resources were made available to the project from both WHO Europe (managed by WHO) and the Ministry of Health. As this was a pilot project managed between WHO and the Ministry of Health in Slovenia, money was spent at the beginning of the work on organising meetings to inform the appropriate development of the HIA methods and process to be used. This involved using the budget to fund travel, meeting and technical costs of many international experts to attend workshops in Slovenia. Unfortunately towards the end of the project this meant that there was no contingency funds available, and resulted in insufficient funds to complete the literature reviews which were needed, the requirements for which had emerged during the project. In a future project of this type it may be better to balance the financial requirements of meetings to design methods and to involve stakeholders at the start of a process, with money budgeted to collect the information required to complete the project plan, including employing designated staff specifically to facilitate data collection, and to complete literature reviews and other information gathering some of which may not originally have been predicted.

### **Involving stakeholders in project planning**

A clear managerial lead supported by a steering or working group is an essential part of any successful project and it is clear that this should be the mechanism by which HIA projects are planned and run. A project working group was formed at the start of this project which included partners from WHO, international academics, and representatives of the Slovenian Institute of Public Health and the Ministry of Health. Its terms of reference were clearly defined; to determine the project scope and to ensure the progress of the various stages of the HIA. The lack of other sector representatives on this group, particularly from the Ministry of Agriculture, became a limitation to deciding on policies and gaining involvement of stakeholders at some points. Changes led to the involvement of agricultural economists to assist the group. This would have functioned better if we had involved other Ministry representatives from the initial planning stages.

### **Lack of in-country experience with methods**

At the start of the work most people in Slovenia were unfamiliar with the methods or aims of HIA. The project initially failed to recognise the importance of this, and found that some data or evidence received from sources was not tailored in a way that was of best use for the HIA. As part of the work a 2-day HIA training course was developed and run jointly between the WHO, London School of Hygiene and Tropical Medicine and the Slovenian Institute of Public Health. This need for HIA capacity building was addressed 6 months into the commencement of the work. It would have been preferable to conduct training in advance of the HIA starting.

### **Appropriate timing of the HIA**

Even though this was planned as a pilot project feeding into future national policy development, the political time frames created pressure to provide support for the Slovenian Government position during the EU negotiations on the CAP subsidies. Providing such support was often not possible. In 2002 the goal of accession had been a moveable target, and the proposed nature of EU agricultural subsidies changed regularly. Consequently, it proved very difficult to quantify or assess some outcomes with any certainty in the short political timescales necessary.

It is still not clear when is the best time to conduct an HIA of any policy. In the HIA in Slovenia, as has been the experience of national HIA in the Netherlands and Wales, (Council for Public Health and Health Care 2000), if an HIA is attempted at too early a stage the policies may be still too vague or change too frequently

to make a strong definitive assessment possible. Conversely, a HIA that feeds into the decision-making too late will also have little or no ability to effect change. This was important with the health assessment of the foot and mouth disease disposal policy conducted by the English Department of Health . The rapid, early health assessment was crucial in influencing policy change and improving public health consideration and monitoring during the foot and mouth disease outbreak (Department of Health 2001) .

## **Potential benefits of the HIA process**

### **HIA as a tool to aid inter-sectoral public health action**

As the CAP is such a huge and politically difficult policy area it was essential to have effective cross-governmental working in place at a national and regional level to address the relevant policy issues. Some inter-sectoral working already existed between the Ministry of Health and other ministries, including agriculture and economic development before the HIA commenced. The HIA helped to develop new communication between the Ministries on food and nutrition issues. Since discussing the HIA work, the health and agricultural sectors have begun to agree on some common policy areas that they both support and would want implemented in Slovenia after accession, for example future interest in rural development policy. However, it is difficult to evaluate the specific benefits of the HIA to inter-sectoral working on agriculture, food and nutrition in Slovenia because there were many political processes occurring concurrently including development of the National Food and Nutrition Action Plan (which involves agricultural systems).

### **Co-operation of the Ministries of Health and Agriculture**

As a part of the HIA FAN project meetings between MoH and MAFF were organised. Very important »side effect« of those meetings is better understanding of positions/arguments of both sides and identification of common interests. Identification of common interests was crucial for successful creation of common programs and activities. It enables a creation of win-win positions where possible.

For example, food and nutrition strategy and Food and nutrition action plan 2003 – 2008 are under preparation in Slovenia in 2003. Here is the comparison of the priorities of the Food and nutrition strategy as they were set in the beginning of the process and after the improvement of dialogue.

Priorities of the Food and nutrition action plan in the beginning of the process:

1. Inter-sectoral co-ordination of activities in the area of nutritional policy.
2. Education and awareness raising on the principles of safe, protective and balanced nutrition and the establishment of healthy eating habits and eating patterns based on choosing the right foods with the right biological composition; education and training of experts (food chain, education, health, media).
3. Drawing up new nutritional guidelines and adapting food production and processing to these new guidelines.

Priorities of the Food and nutrition action plan at the end of the process:

1. Education and awareness raising on the principles of safe, protective and balanced nutrition and the establishment of healthy eating habits and eating patterns for all population groups, education and training of experts.
2. Establishing conditions for healthy nutrition and physical activity (ie. food supply, accessibility ...).
3. Inter-sectoral co-ordination of activities.
4. Political support through consensus and/or legislation
5. Harmonisation with physical activity strategy

For all three pillars (food security, food safety and nutrition) education and awareness raising were identified as the highest priority in Food and nutrition strategy for Slovenia. In Food and nutrition action plan 2003 – 2008 common education and awareness raising planes are prepared and they include other sectors as education policy, too. Common implementation activities are supposed to be prepared in near future.

## **Involving stakeholders nationally and regionally in the policy process**

Stakeholder workshops were held which had involvement of 66 participants from a wide range of backgrounds. These workshops were considered an important mechanism to involve consumers, farmers, and other ministries and agencies in the decision-making process which they had not previously been engaged with.

## **Discussion and Conclusion**

This work adds an important new piece of work to the growing experience of HIA applied to agriculture and food policies worldwide including Canada, England, Sweden (Lock, Gabrijelcic et al. 2003). Various methods and approaches have been used, all of which aim to assess the impact of an agricultural practice or policy on public health. Despite this, there is still much uncertainty about what HIA can specifically and realistically do for policy-making and how it can be used by national and regional governments.

In many respects the experience of HIA of agriculture and food policies in Slovenia is similar to that found in other policy contexts elsewhere. The major benefits seem to result in strengthening policy-makers' understanding of the interactions between health and other policy areas, and creating new opportunities for improving intersectoral relationships. For example, in Slovenia, the ability of HIA to involve a wide range of stakeholders was considered a very important part of the process. It broadened the issues and enabled them to be considered from different viewpoints. It also engaged regional organisations, other ministries and sectors in public health issues. However, stakeholder involvement may not always be necessary. The Swedish health analysis of the CAP (Schafer Elinder 2003) contributed to the initiation of some collaboration between the health and agricultural sectors but was conducted as a desk-based expert led study.

In terms of achieving more specific outcomes, many problems still exist with the HIA process in such complex policy environments as agriculture. These include the often discussed issues of the timing of an HIA, the evidence-base for HIA, and how to embed HIA in organizational culture. How HIA is applied by governments will affect its ultimate long-term influence on policy (Banken 2001). Those countries that have an effective HIA programme at policy level have institutionalized HIA in various ways (Banken 2001). No country has yet institutionalised HIA of agriculture or food policies. The HIA's of agricultural policy that have been conducted in Slovenia, Sweden and the UK were conducted as single projects. However, in both Slovenia and the UK there was at least a clear mechanism of how the HIA would feed into government. In Slovenia this was the Food and Nutrition Action Plan. If HIA is not embedded in the organizational structure of decision-making bodies, benefits to intersectoral working may be lost. This was the case in British Columbia, Canada, where, owing to political changes, HIA fell off the policy agenda after previously having a central cabinet-level role.

Although this review of the HIA process shows that there are still many limitations with HIA application at an agricultural policy level. In the wider context of policy-making, HIA should be seen as one useful tool that can be used to embed public health across policy sectors including agriculture. It is clearly not the only way to support effective intersectoral working or »healthy« policy development. Its strengths include a structured approach, the flexibility of methods and its potential to involve a wide range of stakeholders in the process (Lock 2000). The experience gained in Slovenia shows that HIA has potential as a means of contributing to more integrated intersectoral policies, not only in agriculture but a range of policy areas. Further evaluation of the outcomes of this policy-level HIA should enable the development of HIA in the most practical way to support the Slovenian government make healthier choices in the agriculture and food policy sector.

# Conclusions

This health impact assessment has looked a wide range of issues relating to the health linkages with specific agricultural policies in Slovenia after accession. It is clear that with appropriate programmes and ongoing inter-sectoral collaboration agricultural policy can be oriented to support improvements in public health without any deviation from the primary goals of the Ministry of Agriculture, Fisheries and Food. By understanding the constraints of the Common Agricultural Policy framework, policy instruments can still be used to significantly contribute to improving the state of both the environment and the health of the population.

Overall, the HIA proposes that the current Agricultural Policy model in Slovenia is likely to be better for the health and socio-economic wellbeing of the population than the situation which is likely to occur after adoption of some policy changes due to the CAP. The HIA suggests that the current model of agriculture should be protected and strengthened to improve the public health of the population where possible.

The specific recommendations of the HIA can be summarised in four main policy areas below; fruit and vegetables, wine, dairy produce and rural development. It is important to mention that these actions are not necessarily actions that can be undertaken solely by the Government of Slovenia, but some will require changes in CAP policy centrally in the EU and could potentially benefit the populations of many countries across Europe.

## Summary of recommendations

### Fruit and vegetables

1. Aim to increase Slovenian production of fresh and frozen fruit and vegetables to meet increased market demand stimulated through healthy eating campaigns. This will have to involve determining what fruits and vegetables will be most suited to both the agricultural system and the market demand.
2. Evaluate the possibility to restructure current production from products like grain, to labour intensive but high value added products such as fruit and vegetables. One approach may be to encourage smaller farms to convert to horticulture production with support from rural development instruments (e.g. in Pomurje) to help maintain rural livelihoods with added health benefits.
3. Improved inter-sectoral collaboration including better statistical databases jointly shared between the agricultural, economic, statistical and health sectors looking at food production. These databases could be the basis of well-planned joint policies to improve consumer education, have better market research to improve producer marketing with the aim of increasing Slovenian consumption of fruit and vegetables.
4. Focus on improving product quality. Across Europe there is increasing concern for food safety including pesticide levels in foods. This is particularly true in the fruit and vegetable sector which includes a rising demand for organic produce. Support through various 'pillar 2' instruments could potentially be used to help Slovenian farmers take advantage of producing highest quality and organic fruit and vegetables.
5. If EU withdrawal compensation mechanisms are introduced after accession then this should only be at times of extreme local, seasonal overproduction. It is also recommended that any withdrawal produce should be used for human consumption (according to EU regulation although this is not common). For example, supplying schools.

### Wine regime

6. The new alcohol policy from the Ministry of Health should ensure that health promotion is evidence based (and specifically refutes the EU funded promotion of wine drinking to 20-40 year olds).
7. Ministry of Agriculture, Forestry and Food should aim to reduce surplus wine production by converting vineyards to other production. There should be encouragement for farmers to convert vineyards to other produce. The Ministry of Health and Ministry of Agriculture, Forestry and Food should collaborate to discourage the use of EU funds for distillation support for surplus wine production, but to increase use of EU wine budget in Slovenia for conversion aid.
8. A register of vineyards should be created in Slovenia to monitor wine production, and use of surplus wine production.

### Milk products

9. MAFF should work with farmers to reduce the fat content of cows milk produced by supporting different feeding practices. This can be achieved through breeding and feeding practices that could be the subject of technical extension programmes in the rural development funds.
10. There should be cross-government marketing of the public health benefits of switching to lower fat milk when the new whole milk standard comes into full effect. There should be clear education campaigns about the new milk fat levels so that consumers are clearly informed that the products they are buying have changed (i.e. from 3.2% to 3.5% fat content).
11. MAFF should proactively work with the dairy industry to lower the amount of surplus milk/ butter fat produced domestically.
12. The national drinking milk guidelines for school children should be supported. This may not be best served by considering any EU funded school milk schemes which promote full fat milk in schools. Only skimmed milk should be considered for any such EU funded scheme.
13. Work with the options in the acquis to 'fine-tune' the policy instrument to support only low-fat milk products in line with national dietary guidelines.

### Rural Development measures

14. It is recommended that a separate health project be conducted that assesses the full health effects of the rural development measures.
15. Where appropriate, rural development measures should encourage investment in crops that form the basis of a healthy balanced diet where it is also economically beneficial to producers e.g. fruit and vegetables in small farms currently producing grain products.
16. Rural development measures should support income diversification and rural livelihoods of small farmers to maintain rural livelihoods and the tackle rural unemployment. This will be important in tackling the high rates of mental illness and suicide in Slovenia as a whole, and in farmers specifically.
17. Where possible rural development measures should aim to create sustainable markets to increase local supply and availability of products which form the basis of a healthy diet, including incentives for creating new markets such as producer co-ops or home delivery box schemes for fruits and vegetables, plus preservation of local food markets such as farmers markets.
18. The absorption rates of different agriculture EC funds in Slovenia should be increased. Due to the current lack of knowledge amongst the rural population the application for available funds is relatively low at present. Evaluation of current agricultural assistance should consider why there are still perceived barriers in the Slovene population.

### General measures

19. A separate working group in the National Council for Health, (responsible for HIA procedures in Slovenia), should be established to conduct specific HIA on agriculture, food and nutrition topics in the future as they arise.
20. The Government of Slovenia should work to develop local procurement schemes for public sector provided meals, for example in schools, hospitals and elderly care homes. This would benefit Slovenian producers, particularly for fresh perishable produce such as fruit and vegetables by creating long term guaranteed markets while also ensuring that public funded meals are healthy.

## Appendices

### Appendix A: Members of the HIA working group

- Jožica Maučec Zakotnik, MD, State Secretary, Ministry of Health, Štefanova 5, SI-1000 Ljubljana. Republic of Slovenia.
- Mojca Gabrijelčič Blenkuš, MD, Public Health Physician. National Institute of Public Health, Trubarjeva 2, SI-1000 Ljubljana, Republic of Slovenia
- Dr Karen Lock, Research Fellow, ECOHOST, London School of Hygiene and Tropical Medicine, Keppel Street, London. WC1E 7HT. UK
- Peter Otoresec, MD, Public Health Physician. National Institute of Public Health, Trubarjeva 2, SI-1000 Ljubljana, Republic of Slovenia
- Dr Aleš Kuhar, Department of Agricultural Economics, Policy and Law, University of Ljubljana, Slovenia.
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- Professor Paul Wallace, Department of Primary Care and Population Sciences, University College and Royal Free Medical School, London. UK
- Dr Aileen Robertson, Regional Adviser for Nutrition, WHO Regional Office for Europe, Copenhagen, Denmark
- Dr Carlos Dora, Health Impact Assessment Programme, WHO, Avenue Appia 20, CH 1211 Geneva 27, Switzerland.

### Appendix B: Categories of indicators collected in Slovenia at National and Regional Level

- Levels of food production
- Methods of food production including extent of agrochemical use, organic food/ environmentally-friendly food production
- Environmental pollution in agricultural areas
- Levels of food imports and exports
- Working conditions and occupational health of those in the food and agricultural industry
- Socio economic factors in rural communities including employment by sectors, unemployment statistics
- Access of consumers to food- food retailing, prices
- Patterns of food consumption
- Food safety statistics
- Food processing, including on-farm processing
- Agro-tourism development

### Appendix C: List of people who contributed to the data collection and analysis

Margareta Atelšek, Ministry of Agriculture, Forestry and Food  
Ivanka Gale, National Institute of Public Health of the R of Slovenia  
Tatjana Kofol Bric, Regional Institute of Public Health Ljubljana  
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Rok Poličnik, Ministry of Health  
Darko Simončič, Ministry of Agriculture, Forestry and Food

Other contributors are acknowledged by name in previous project reports.

## Appendix D: International publications on the HIA project in Slovenia

**Health impact assessment of agriculture and food policies: lessons learnt from HIA development in the Republic of Slovenia.** Karen Lock, Mojca Gabrijelčič-Blenkuš, Marco Martuzzi, Peter Otorepec, Paul Wallace, Carlos Dora, Aileen Robertson & Jožica Maučec Zakotnik. *Bulletin of the World Health Organization* 2003, 81(6); 391-398.

**Conducting a health impact assessment of the effect of accession to the European Union on national agriculture and food policy in Slovenia.** Karen Lock, Mojca Gabrijelčič-Blenkuš, Marco Martuzzi, Peter Otorepec, Aleš Kuhar, Aileen Robertson, Paul Wallace, Carlos Dora, & Jožica Maučec Zakotnik. *Environmental Impact Assessment Review* 2003 (accepted for publication).

## Appendix E: Analysis of the likely health impacts for the HIA FAN based on modelling scenarios

This summary was taken from the discussions and consensus reached in the Rome Meeting, 21-22nd May 2002. This looked at:

- The over arching issues that need to be considered for each health impact
- Time frame of the health impacts
- We need to consider both the immediate impact on joining the EU and the mid to longer term changes.
- Likely direction of change. The HIA also needs to estimate the magnitude of the change and the certainty that this will happen.
- Who is affected, and how: Producer- Processor- Consumer- Vulnerable groups

Summary of the health impacts and data needs

The tables below summarise the initial discussions held in the Rome meeting on the likely health impacts in Slovenia caused by the affect of accession on the agricultural policies. This follows on from the discussions of the agricultural economic model (Kuhar and Erjavec 2002).

### Working and living conditions

	Likely change	Time frame	Evidence source available/ required
Farm income	Decrease in farm income especially for middle and large sized farms (>2 Ha)	mid-long term	Comparative case studies, Model
Number of farms	Decrease number of middle-sized/ small commercial farms	long term	Ministry of agriculture, forestry and food, statistics, comparative case studies
	No likely change to livelihood for subsistence/ small farms (except there may be an increased number of farmers at this level)		Model, comparative data from Italy
Dairy farming	Dairy farmers- rapid decrease in income	immediate- mid	Model, EU negotiation quotas
Age of work force	About 2/3 farmers are elderly		Social security data



## Agri-Tourism

	Likely change	Time frame	Evidence source
Type of agri-tourism	Increased policy barriers to on-farm processing	immediate	
Number of farms/ people involved in agri-tourism	No significant increased demand		Comparative case studies (Poland, Austria)

## Access to Food

	Likely change	Time frame	Evidence source
The balance of super markets versus local shops	Steady state likely to continue, although foreign companies are likely to increase their share of the supermarket sector	immediate	
Consumer price of food	Continued trend of decreasing price	short-mid term	
Food quality	Although food quality is good, if there is any change this should improve	mid	Check comparative studies

## Food processing

	Likely change	Time frame	Evidence source
Food safety	Improvements (although high standard already reached)	short	
Quality of inputs	Quality may decrease due to increased competition	mid	
Processed foods	Increased amounts of processed foods on the market (and potential nutritional effects- high salt, sugar and fat content)	mid-long term	
Domestic production	Decreased domestic market share by approximately 20-30%, with decreased local employment (could be 2 outcomes- local companies could supply multi-nationals or there could be a decrease in processing firms)	mid	
Traditional markets	Loss of some current markets due to an inability to compete e.g Yugoslavia. A pessimistic estimation is a 15% reduction initially	immediate	

## Appendix F: Questions identified for the literature review of the health impacts of agricultural policy

### PROPOSED REVIEW OF EVIDENCE LINKING RELEVANT EXPOSURES AND HEALTH OUTCOMES

Following a series of meetings on Food and agriculture policies in Slovenia, it was proposed to undertake a literature review of the evidence relating relevant exposures /health determinants to health outcomes (WHO 2002).

The following framework for this piece of work was proposed:

#### OVERALL CONSIDERATIONS

The WHO group pose a set of questions / writing brief relating to each area to the nominated lead author(s)

**Initial** The lead author(s) should review the suggested brief and make a general response about the scope of the work and his / her ability to undertake the task. The lead author should at the same time return to WHO a list of relevant references of published work and other bibliography. The lead author should identify 5 international experts in the field who could undertake peer review of the draft chapter.

**Main work:** Once agreed, each chapter should be formulated as follows:

**Overall** Synthesis of the available evidence in each chapter

- General (obligatory)
- Specific/detailed (where possible)

The evidence presented should be carefully targeted to specific questions for the chapter

**Format** Each chapter should include

1. General introduction to the topic, describing overall scope and state of evidence
2. Statement of how evidence has been prioritised according to impact
3. Comment for each section/topic on
  - overall potential impact
  - strength of the data
  - strength of the association

**Conclusion** How sensitive are these considerations to possible policy change, and what will be the direction of change?

This section should specifically consider the topic in relation to Health Impact Assessment (HIA). As such it should review the degree to which each of the exposures /health determinants could be expected to respond to possible policy change.

The end point will be the production of a grid summarising the strength of the evidence in each area of interest, together with the likely size of the impact.

**PROPOSED CHAPTERS / MODULES FOR REVIEW**

- 1: »Environmentally friendly« / Organic farming products:
- 2: Diet, nutrition and health:
- 3: Mental health and stress
- 4: Occupational exposure
- 5: Socio-economic / social capital
- 6: Food safety

**1. »ENVIRONMENTALLY FRIENDLY«/ FOOD PRODUCTS ORGANIC FARMING**

*The HIA exercise to date has indicated that changes in FAN may be associated with substantial changes in the use of environmentally friendly (sustainable) food production and organic farming methods.*

*The following questions appeared:*

1. What evidence is there about the effects of these methods of food production in comparison with traditional methods on the following?
    - a. Nutritional content – Water
    - a. Nutritional content – Micro nutrient
    - Macro nutrient
    - Non nutrient } by different food products
  - b. contamination – chemical
  - c. contamination – microbiological (incl. mycotoxins)
2. Is there any evidence that any of the differences in content have any effect on health?
  3. Comment on the likely effect of any different methods of packaging and transport + delay of retail likely to be associated with these kinds of food products.
  4. Is there any evidence for the links between the price sensitivity of consumers to organic crops? In other words, will consumers pay more, and if so is this limited to certain population groups?
  5. Rural livelihoods: what are the likely effects of these farming methods on sustainable employment and population density?
  6. Environmental health: what are the likely effects of these methods of farming on environmental factors such as water pollution (and consumption), and factors likely to mediate climatic change (»greenhouse« gases etc).

**2. NUTRITION AND HEALTH**

***a: The HIA exercise to date has indicated that adoption of policies relating to the CAP will have a major effect on availability and pricing of different foods. What is the available evidence on the likely effect on dietary patterns of the following factors:***

1. Price of food and affordability
2. Access to food markets and shops
3. Types of hops, competition and availability of different food types
4. Labelling of food products
5. Advertising
6. Education and health promotion

***b: The HIA exercise has indicated that changes in FAN may be associated with substantial changes in diet and nutrition patterns.***

An overview of the current state of evidence regarding the relation of dietary intake and health outcomes:

<b>A. CONTENT</b>	<b>B. FOOD TYPES</b>
Fat	Fruit + vegetable
Fibre	Meat
Sugars	Fish
Salts	
Trace elements / micro nutrients	

Where possible, information and evidence on what is know about the influence of the following factors on health is to be provided:

FOOD ADDITIVES
FOOD RESIDUES
FOOD SUBSTITUTES (IN PROCESSED FOOD)

### **3. OUTCOMES OF MENTAL HEALTH AND STRESS**

***The HIA exercise to date has indicated that changes in FAN may be associated with substantial changes in mental health status, probably in relation to stress related to the process of change in general and »anomia« in particular.***

Mental health problems in relation to mentioned factors are the topic of interest:

1. a: Review of taxonomy of mental health problems  
b: Review of methods for screening and population diagnosis
2. What evidence is there about the mental health responses to?
  - a. Stress in general
  - b. »Anomia«
  - c. Change I individual life circumstances, AND change in culkture or society (such as that which may occur after joining the EU and the effects of the CAP)
3. What evidence exists about mental health responses to?
  - a. Socio-economic factors
    - unemployment
    - social isolation
    - poor education
4. What is the relationship between mental health and patterns/levels of alcohol consumption?
5. What is the relationship of suicide to mental health status and alcohol / drugs?
6. What evidence exists about the mental health status of agricultural workers in relation to the rest of the population?

### **4. OCCUPATIONAL EXPOSURE**

***The HIA exercise to date has indicated that changes in FAN may be associated with substantial changes in farming practices, and as a result there are likely to be changes in occupational exposures.***

1. What is the relationship with health outcomes (acute + chronic) for the following exposures?
  - a. Pesticides: by type, application, acute versus chronic intoxication.

Which population groups (eg by social class, education level (especially specific agricultural training), job status eg casual farm workers)

- b. Agricultural / farming equipment: – accidents
  - musculoskeletal injury
  - noise / emissions
- c. Animals + poultry: – zoonoses
  - other
- e: Other exposures.

**5. SOCIO - ECONOMIC FACTORS AND HEALTH OUTCOMES / SOCIAL OUTCOMES**

***The HIA exercise to date has indicated that changes in FAN may be associated with substantial changes in socio-economic status AND in social capital.***

As understand that this is a developing field, therefore would be of interest find information relating to the following issues:

1. What are the potential relevant indicators?
2. How do you define and measure relevant indicators?
  - s/e status
  - social capital
3. What associations have been defined for relevant indicators and health outcomes?
4. What evidence is there that national can affect both social capital and/or socioeconomic status, and if so what evidence relates specifically to food and agriculture policy?
5. What are the areas of uncertainty which would limit their use in HIA?
6. What are the key research questions in this area which need to be answered?

**6. FOOD SAFETY**

***The HIA exercise to date has indicated that changes in FAN may be associated in changes in farming practices and regulations which could affect factors relating to food safety.***

For this reason the information on the evidence on relation of health outcomes would be of interest:

**A. CHEMICAL EXPOSURES:**

- pesticides
- heavy metals
- residues (antibiotics / hormones)
- additives
- contaminants (e.g. dioxins)

**B. MICROBIOLOGICAL:**

- infections
- toxins
- mycotoxins

- { C. PHYSICAL }
- { D. RADIOLOGICAL }

## Appendix G: Detailed Mortality rate analysis in Slovenia in years 1987 to 1996

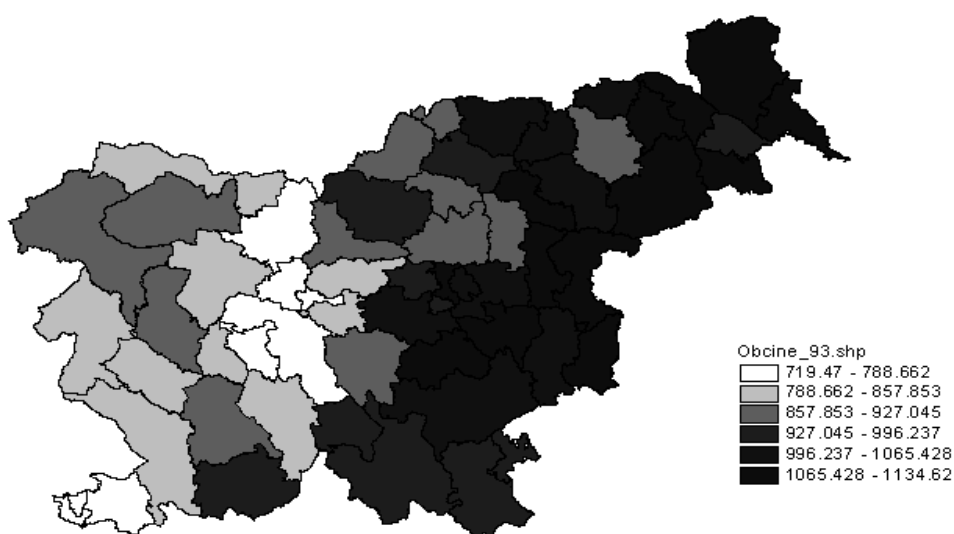
(Šelb J., Kravanja M. *Umrljivost. Zdrav Varst, Supl, 2000; V 39: P 5 – 18*) (Selb and Kravanja 2000)

In Slovenia, the life expectancy at birth increased by 2.76 years in the decade from 1987 to 1996. It was ascertained that the mortality rate of the population in Slovenia decreases, but is still high in comparison to developed countries. Despite the fact that some mortality rates have lowered in the past few years, they are still higher than in certain selected observed countries, owing to malignant neoplasms, injuries and poisonings, respiratory and gastrointestinal diseases.

The age standardised mortality rates from various diseases show marked geographic distribution in Slovenia; particularly noticeable is the difference between the eastern and the western part of the country.

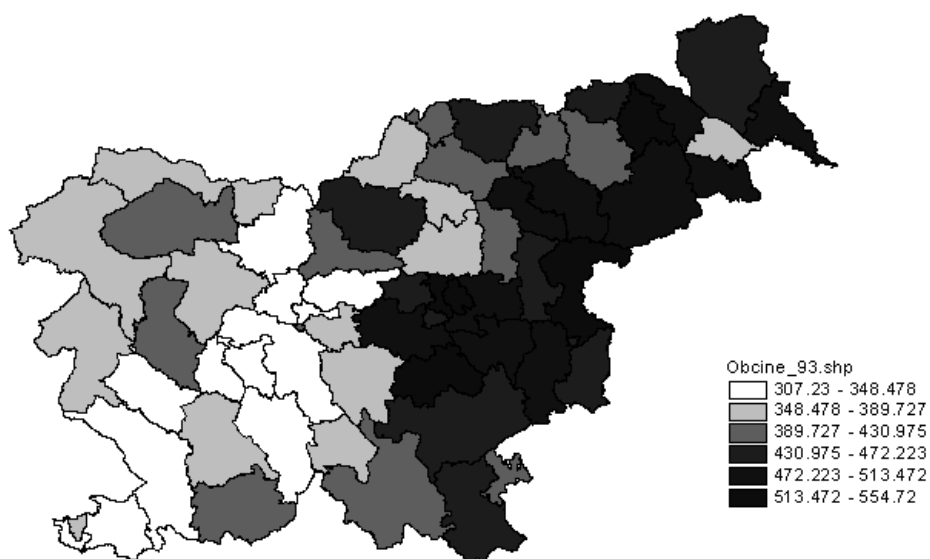
In the eastern part of Slovenia, regional centres have lower premature mortality than the remaining areas. The age standardised mortality rates in Slovenia are lower than in Croatia and in Central and East European countries, yet higher than mean value in the Scandinavian countries and countries of the European Union. In the period 1987-1996, the infant mortality has characteristically and utmost lowered. A significant decrease was also observed in the mortality rates of older adults and elderly.

Figure 1: Age standardised mortality rates of the population in 62 administration units in Slovenia in 1987 –1996.



Age standardised mortality rates in Slovenia vary from 7.2 to 11.3 deaths per 1000 inhabitants.

Figure 2: Age standardised mortality rates in inhabitants under the age of 65 years in 62 administration units in Slovenia in 1987–1996.

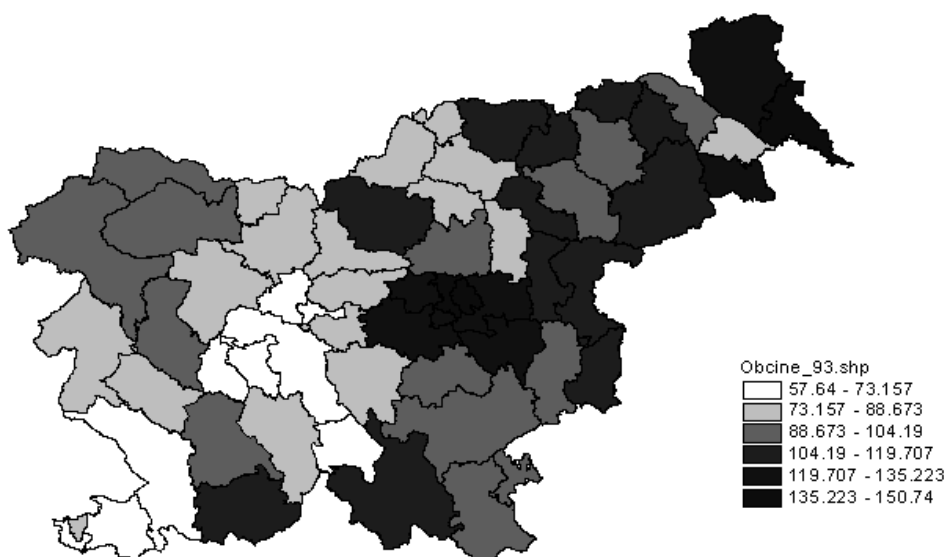


## CAUSES OF DEATH

Among the most frequent causes of death in the ten years' observation period, the greatest fall of mortality rate was observed in cardiovascular diseases. In this time the mortality from neoplasms and respiratory diseases has increased, but their trend is not reliable.

### 1. Cardiovascular diseases

Figure 3: Age standardised mortality rates due to cardiovascular diseases in the population below 65 years in 62 administration units in Slovenia in 1987 – 1996.

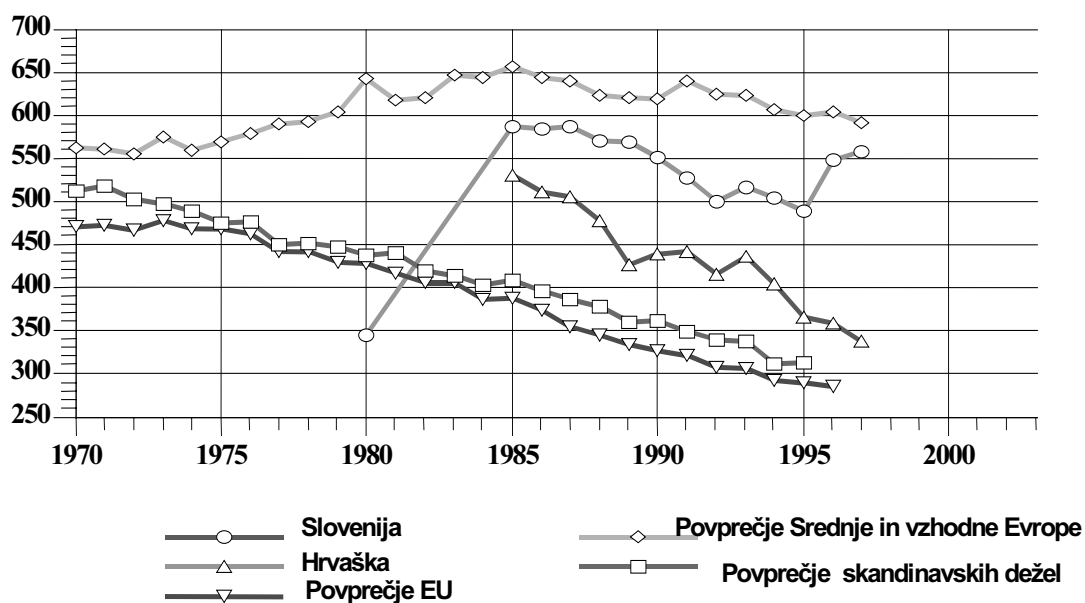


Age standardised mortality rates due to cardiovascular diseases are lower in Slovenia than in Croatia, and also lower than mean value in the Central and East European countries, yet higher than in the European Union and Scandinavian countries.



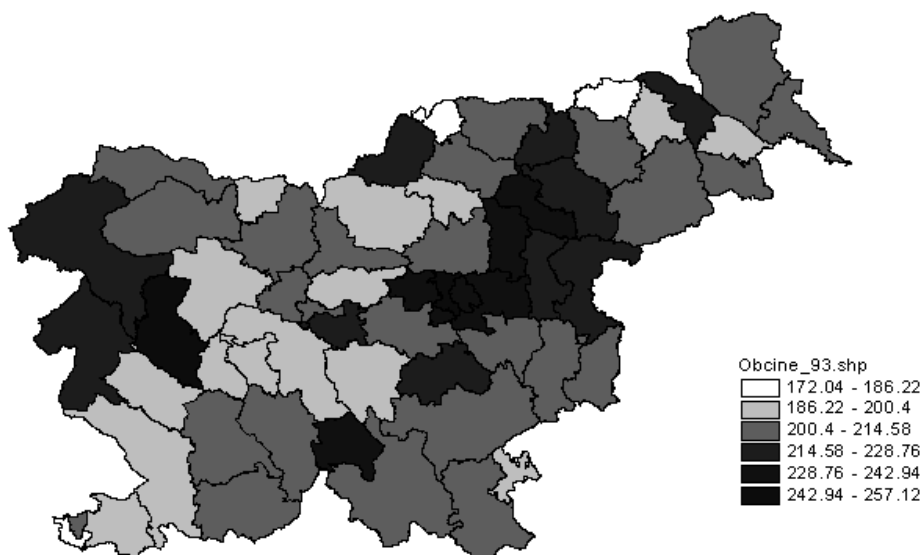
## Appendices

Figure 4: Age standardised mortality rates due to cardiovascular diseases in Slovenia and in certain selected European countries.



## 2. Malignant neoplasms

Figure 5: Age standardised mortality rates due to malignant neoplasms in total population in 62 administration units in Slovenia in 1987 – 1996.



The mortality rate due to malignant neoplasms increases in male and in female population, but these trends are not reliable. The mortality in men under 65 years of age is reliably decreasing.

As concerns the mortality rates induced by malignant neoplasms, Slovenia is not so expressively divided into the eastern and the western part as it is with regard to total mortality and mortality caused by cardiovascular diseases.



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