

### Health impact assessment of agriculture and food policies: lessons learnt from the Republic of Slovenia

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**Abstract** The most important public health priority in agricultural policy-making is currently food safety, despite the relatively higher importance of food security, nutrition, and other agricultural-related health issues in terms of global burden of disease. There is limited experience worldwide of using health impact assessment (HIA) during the development of agriculture and food policies, which perhaps reflects the complex nature of this policy sector.

This paper presents methods of HIA used in the Republic of Slovenia, which is conducting a HIA of proposed agricultural and food policies due to its accession to the European Union. It is the first time that any government has attempted to assess the health effects of agricultural policy at a national level. The HIA 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 agricultural policy; analysis of Slovenian data for key health-related indicators; a report on the findings to a key cross-government group; and evaluation. The experience in Slovenia shows that the HIA process has been a useful mechanism for raising broader public health issues on the agricultural policy agenda, and it has already had positive results for policy formation.

HIA is one useful approach to more integrated policy-making across sectors, but clearly it is not the only mechanism to achieve this. A comparison of the approach used in Slovenia with HIA methods in other countries and policy contexts shows that there are still many limitations with HIA application at a government level. Lessons can be learnt from these case studies for future development and application of HIA that is more relevant to policy-makers, and assists them in making more healthy policy choices.

**Keywords** Health status indicators; Environmental health; Policy making; Agriculture/legislation; Food supply/legislation; Nutrition policy/legislation; Program evaluation; Public policy; Models, Theoretical; Public health; Outcome and process assessment (Health care); Risk assessment; Decision making; Slovenia (*source: MeSH, NLM*).

**Mots clés** Indicateur état sanitaire; Hygiène environnement; Choix d'une politique; Agriculture/législation; Approvisionnement en nourriture/législation; Politique nutritionnelle/législation; Evaluation programme; Politique gouvernementale; Modèle théorique; Santé publique; Evaluation résultats et méthodes (Soins); Evaluation risque; Prise décision; Slovénie (*source: MeSH, INSERM*).

**Palabras clave** Indicadores de salud; Salud ambiental; Formulación de políticas, Agricultura/legislación; Abastecimiento de alimentos/legislación; Política nutriciona/legislación; Evaluación de programas; Política social; Modelos teóricos; Salud pública; Evaluación de procesos y resultados (Atención de salud); Medición de riesgo; Toma de decisiones; Eslovenia (*fuentes: DeCS, BIREME*).

**الكلمات المفتاحية:** مؤشرات الوضع الصحي، الصحة البيئية، وضع السياسات، الزراعة، التشريعات الزراعية، الإمداد بالغذاء، تشريعات الإمداد بالغذاء، السياسات الغذائية، تشريعات السياسة الغذائية، تقييم البرامج، السياسة العامة، نماذج، نماذج نظرية، الصحة العمومية، نتيجة وعملية التقييم، الرعاية الصحية، تقييم الاختطار، صنع القرار، سلوفينيا (المصدر: رؤوس الموضوعات الطبية، المكتب الإقليمي لشرق المتوسط).

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## Introduction

### Public health and agricultural policy

The public health implications of agricultural practice and policy-making have risen in prominence since the discovery in the

United Kingdom of bovine spongiform encephalopathy (BSE) in cattle. A retrospective inquiry recognized that poor agricultural practices and bad policy-making, which did not take public health into account, led to BSE being transmitted to humans as a new fatal disease (new variant Creutzfeldt-Jakob disease) (1).

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Since BSE, policy-makers across Europe and worldwide have overemphasized food safety as the major health issue to be considered in agricultural and food policy, despite the relatively higher importance of food security, nutrition, and other risk factors in terms of global burden of disease (2, 3). The basic aim of many agricultural policies is to provide adequate food for the population. In reality, the situation in each country is a much more complex combination of agriculture, food, trade, and health. Issues of food security and balanced nutrition compete for prominence in policies with environmental and food safety standards, agricultural and biotechnology use, foreign investment, food processing and product branding, land ownership, rural development, and international trade agreements. The broader public health issues that are raised by these aspects of agriculture and food production are rarely considered by policy-makers.

This paper looks at the application of health impact assessment (HIA) to agricultural and food policies and discusses whether HIA is a useful tool for raising broader public health issues on the agricultural policy agenda. It presents the methods of HIA used in the Republic of Slovenia, which is conducting a HIA of new agricultural and food policies due to its accession to the European Union. It compares these with methods used for HIA of national policies in other countries and policy contexts, and proposes lessons that can be learnt for the future application of HIA.

### Models of HIA of national policy

HIA is a developing approach that can be used to consider the potential, or actual, health impacts of a proposed project or policy. It is usually conducted as a multidisciplinary process within which a range of evidence about the health effects of a proposal are considered in a structured framework. HIA takes into account the opinions and expectations of those who may be affected by a proposal. Potential health impacts of a proposal are analysed and used to create evidence-based recommendations that inform the decision-making process (4).

Although there are no fixed, agreed methods of carrying out HIA, there is a developing consensus on the main stages in the process, and these are discussed in detail elsewhere (5, 6). There are now many examples of projects and programmes worldwide that have been subjected to a HIA which has distinct screening, scoping, and appraisal steps. By contrast, there has been much less experience of the application of HIA to national policy. In those countries that have used HIA at policy level the methods are more varied, and the stages are often less distinct.

The Netherlands is one of the few countries to have an ongoing programme of HIA of national government policy proposals. The main responsibility of the Department of Intersectoral Policy (a branch of the Ministry of Health based at the Netherlands School of Public Health) is to screen policies of other ministries for potential impacts on health. They then commission desk-based in-depth HIA analyses for those policies that are expected to have health impacts and if the Ministry of Health wants this examined further (7). Since 1996 they have conducted in-depth HIA analyses on a wide variety of policy areas, from energy tax regulation and the national budget, to housing and employment policies (8, 9).

HIA has not yet been applied to national policies in the United Kingdom, but there is considerable experience at the regional policy level in Wales (10) and London (11). In the

London Regional Government, all of the mayoral strategies are subjected to a HIA during their development. So far, completed HIAs include the strategic plan for future London development, transport, economic development, and waste disposal policy (12). The methods employed in London are very different to the approach taken in the Netherlands. They do not screen large volumes of policies or documents to select those that will require more in-depth work. Instead, there is a clear commitment by the administration to conduct HIA only on mayoral strategies. The London approach also emphasizes the importance of stakeholder involvement in the HIA process, rather than merely being an expert-determined process, in contrast to the Netherlands.

These two examples illustrate that models of HIA have been institutionalized differently by different governments. We were able to learn lessons from these and other national experiences when developing the HIA approach used in Slovenia.

### HIA of agriculture policy or projects

Agriculture and food programmes and policies worldwide are often subjected to environmental impact assessments (13), but to date there have been very few published studies of HIA applied to agriculture, particularly at the national policy level. The models of HIA that have been used for these agricultural projects and policies have been very varied.

The Canadian Government has published two HIAs of agricultural systems in Quebec, as part of an integrated approach to HIA, looking at ways of incorporating health within the framework of environmental assessments (14). The approach is presented in a three-volume manual, which includes discussion of the use of social impact assessment, epidemiology, health evaluation, economics, risk assessment, and the role of health professionals. Rather than looking at agricultural policies, the two published examples of agricultural HIA, hog farming, and pesticide use in apple growing, have been conducted on discrete issues in single agricultural systems in response to public concern. Despite the theoretical integrated methods they present in the manual, the actual examples take a very quantitative approach, drawing on risk assessment methods and data on known health risks, mainly focusing on the issue of environmental pollution.

There has been greater experience of using traditional health risk assessment methods in agriculture. This approach is particularly useful when there is a single specific and well-defined health risk, and it has been applied extensively in the issues of food safety — for example, by the United States Department of Agriculture (15). The UK Department of Health conducted an assessment of risks to public health from the national disposal policy for animals destroyed during the foot and mouth disease outbreak in 2001 (16). Although this government study was presented as an expert environment and health risk assessment it took a broader approach by considering psycho-social health impacts of the policy, similar to the approach taken in a HIA. The health assessment proved to be an important tool to get other ministries to take account of wider public health issues that had previously not been considered. It influenced changes to be made to the animal disposal policy, and to the long-term environmental and health monitoring required by other government departments.

At a trans-national level, the European Union (EU) Common Agricultural Policy (CAP) is a key agricultural policy

internationally. The CAP provides various agricultural subsidies, the results of which have impacts not just in Europe but worldwide due to the distortion of world food prices, and hence trade. This has potentially adverse impacts on less developed nations in particular (17). The Swedish Institute of Public Health conducted a review of the potential health impacts of the CAP in 1996 (18). Although this was entitled a HIA it did not take a recognizable HIA approach and is actually a useful descriptive review of the potential health effects of four CAP regimes: dairy products, fruit and vegetables, tobacco, and alcohol. The report has had very little impact in the European Commission (EC) and on CAP reform. Since it was published, CAP negotiations have continued to marginalize the public health dimension. Clearly, if this had been an applied HIA it would have not been considered a success in effecting change. The Swedish Institute of Public Health has recently produced an updated analysis of the public health implications of the CAP. This is a much more detailed and critical analysis, presenting stronger evidence for health considerations in CAP reform (19). This report was prepared by the Institute of Public Health, but since publication it has stimulated the start of a collaboration on the health effects of the CAP between the health sector and Ministry of Agriculture in Sweden. Both of these reports on the health aspects of the CAP should be considered as important evidence for use by policy-makers in Europe, but are not HIAs in their formally defined sense.

As far as we were aware, no country had prospectively conducted an assessment of the specific health effects of incorporating the CAP into their national agricultural policy. Although there were many reasons why a HIA of agricultural and food policy was believed to be important for Slovenia, the most significant reason was Slovenia's application to join the EU. In December 2002, the EU invited eight countries from Central and Eastern Europe (Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, and Slovenia), plus Cyprus and Malta, to join the organization in 2004. Negotiations about enlargement of the EU had commenced in 1998 (20). Since then there has been a period of rapid transition in Slovenia and across Europe. This HIA was proposed towards the end of a complex and bureaucratic screening and negotiation process with the EC and member states during which candidate countries have been adopting thousands of pages of the EC legal framework, known as the *acquis communautaire* (21). Each candidate country has to sign up to the *acquis* in its entirety and to accept that European law takes precedence over national law. This includes the influence of the CAP on national agricultural and food systems. All candidate countries, including Slovenia, had been experiencing problems in the negotiations for the national terms for adopting agriculture policies. Agriculture was one of the last chapters of the *acquis* that were still being negotiated when the HIA work was started in Slovenia.

## The Slovenian experience of HIA of agriculture, food, and nutrition policy

### Country background

In December 2001 the Slovenian Ministry of Health and the WHO European region proposed to undertake a HIA of agriculture, food, and nutrition policies. The HIA project in Slovenia was conducted as a pilot project to develop both the

methods of HIA and the evidence base, with the aim that the outputs and lessons learnt could be used by other countries.

The Republic of Slovenia is a small country of approximately two million inhabitants, and is bordered by Austria, Croatia, Hungary and Italy. Formerly a constituent part of Yugoslavia, Slovenia declared its independence in 1991. The country is divided into 9 health and 12 statistical administrative regions. Although agriculture contributes only 3.2% of gross domestic product (GDP), main industries include food and beverage manufacture. The agricultural sector is dominated by dairy farming, animal stock, with the main crops being corn, barley, and wheat. Slovenia has better population health than most of the other candidate countries. It has mirrored the EU's steady progress in reducing mortality, although overall life expectancy is still at least two years lower than the European Union average of 78.2 years (22).

Clearly the most important stimulus for the HIA was Slovenia's application to join the EU, and the influence adoption of the CAP legislation would have on national agricultural policy. However, there were also national Slovenian concerns and priorities that supported development of the HIA work. The Ministry of Health was in the process of developing a national food and nutrition action plan in line with an agreed European strategy (23). This included agricultural sector involvement and was due for completion in May 2003. More generally, the State Secretary for Health had been concerned that there were marked differences in standardized mortality rates between the regions in the east and west of Slovenia (24). The reasons for the differences had not been explained, but the north-east region, *Promurje*, which has the highest all-cause mortality, is also the region with the largest agricultural sector in the country. In *Promurje*, 20% of the population are employed in farming or related industries, which are most likely to be affected by the CAP after accession.

HIA was proposed as an appropriate approach that could be used to investigate the health concerns in the evolving multi-sectoral development of agriculture, food, and nutrition policy in Slovenia. This was particularly important in the agricultural sector, where public health was not on the agenda because it is not a directly negotiated factor within the EU CAP. As we were unable to find any appropriate models of HIA of national agricultural policy that we could apply, we looked at HIA methods used by governments for different policy contexts (as discussed earlier) and adapted the various approaches to the situation in Slovenia.

### HIA methods

The HIA 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; a report on the findings to a cross-government group; and evaluation.

A project working-group was formed that included partners from WHO, international academics, and representatives of the Slovenian Institute of Public Health and the Ministry of Health. 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.

### Defining the policy to be assessed

The major difficulty in the initial stages of the HIA was clarifying the policy options to be assessed. Although there were national proposals for new agricultural policy and a food and nutrition action plan, these were still at the stage of development rather than being firm government proposals. To complicate matters the HIA had to take into account the effect of adopting the CAP into Slovenian law. 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 that Slovenia would be allocated on accession, and the date of accession had still not been confirmed. These issues were not resolved until December 2002, when the CAP subsidies were finally agreed between the EC and the Slovenian government. The complexities of European agricultural policy and how it will be applied in Slovenia has made conducting a detailed HIA very difficult. The EU CAP is an enormous and relatively inflexible body of legislation. The HIA project involved agricultural economists at the University of Ljubljana who were important in modelling and interpreting potential policy scenarios that would be likely to occur in Slovenia when integrating the CAP requirements into Slovenian national policy (25). Obviously, the adoption of the EU CAP will have a large influence on national policy, and it was decided that the main focus of the HIA should be on the broad effects of the CAP adoption. We also looked specifically at the effects of some of the regimes for specific commodities including the fruit and vegetable, wine, and dairy sectors, and the policy instruments for rural development. Our policy analysis had to be balanced against the national proposals, which particularly promoted the rural development measures such as diversification and environmentally friendly policies (issues covered under “Pillar 2” of the CAP — see Box 1 for an explanation). Although these national proposals were based on the CAP, it was widely believed that the EU negotiations would prevent these being adopted in full. It was also felt that the HIA must recognize that there are other drivers of policy change in this sector, and that the wider issues of socioeconomic and cultural change must be taken into account as part of the process.

### Involving stakeholders in the HIA

The most important part of a 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 *Promurje*. A total of 66 people participated, including representatives of local farmers, food processors, consumer organizations, schools, public health, nongovernmental organizations, national and regional development agencies, and officials from several government ministries. These officials included Ministries of Agriculture, Economic Development, Education, Tourism, and Health, and a representative of the president of Slovenia (26). 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

#### Box 1. Explanation of Pillar 1 and Pillar 2 policies of the European Union Common Agricultural Policy

##### Pillar 1

This is a set of policy instruments that directly affects the income situation of farmers in the short term. It includes direct payments (for area of land under cultivation or number of animals) and price supplements.

##### Pillar 2

These policy measures affect rural development and environmental support. The types of policy instruments include conditional area or headage payments in less-favoured areas, agri-environmental payments, mountain pasture, and natural disasters compensation. A very important part of the Pillar 2 policy measures is investment supports for farming activities. These include income diversification investments (agro-tourism, on-farm food processing) and general rural development measures to support the rural infrastructure.

The amount of subsidies and quotas agreed for Pillar 1 and Pillar 2 policies is negotiated with the European Union by each country.

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.

### Identification of main health impacts

The qualitative information gained from the workshops enabled a picture of probable positive and negative health impacts to be constructed, including areas of speculation and disagreement. The main issues identified by stakeholders are summarized in Box 2.

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. For example, one theme from the workshops was the hypothesis that adoption of the CAP would create larger farm sizes and intensified production methods, leading to loss of small family farms, increased rural unemployment, and a consequent increase in ill-health, including depression. This was in regions that already had high rates of alcohol-related deaths and suicide. The next stage set out to clarify whether evidence supported the links between adopting the CAP and loss of small family farms, links between farm intensification and increased rural unemployment, and evidence that either of these is linked to increased rates of ill-health. In this example, recommendations aimed to identify policy instruments in the CAP that could be applied in these areas to maintain small farms — for example, conversion from grain to horticulture production — which are cost-effective on smallholdings.

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 synthesizable form. 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 commissioned that linked

**Box 2. Key determinants of health potentially affected by agricultural policy development in Slovenia**

Source: stakeholder HIA workshops, Slovenia, March 2001.

- 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
- 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 European Union money)
- Occupational health of farm workers and food processors
- Capacity of local services and institutions, including employment, education, health, and social services.

**Box 3. Categories of indicators collected in Slovenia at the national and regional level**

- Levels of food production
- Methods of food production, including extent of agrochemical use, organic food or 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
- Socioeconomic 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.

relevant agriculturally-related health determinants and health outcomes for six policy topics that had been key issues in the stakeholder workshops. These policy topics were environmentally friendly and organic farming methods, mental health and rural communities, socioeconomic factors and social capital, food safety, occupational exposure, and issues of food policy, including price, availability, diet, and nutrition.

The final aspect of the project collected health and social indicators in Slovenia (Box 3). These indicators are determinants of health and were used in the HIA as measures of intermediate health outcomes. This allowed the interpretation of the literature review evidence for the Slovenian context. The Institute of Public Health, Ljubljana, coordinated the national and regional data collection. As with many HIAs, the uncertainty of the extent of policy change after accession meant that for many indicators we were unable to quantify the health outcomes precisely and could only predict the direction of the effect.

The final results of the HIA will be presented to the Intergovernmental Committee on Health at the launch of the National Food and Nutrition Action Plan in Slovenia in May 2003. This report will present the results and recommendations for the government of Slovenia on a range of agricultural issues including the fruit and vegetable, grain, and dairy sectors, and rural development funding. A retrospective evaluation of the HIA has been planned.

**Intermediate outcomes and lessons learnt from the HIA process**

As far as we are aware, this was the first time that any project had set out to estimate specific national health impacts of incorporating the CAP, and it was the first HIA attempted of national agricultural and food policy.

Several important learning points have already arisen. This is such a complex policy area that it was essential to have effective cross-governmental working in place at a national and regional level to tackle agricultural policy issues. We were fortunate that relatively good intersectoral relationships existed between the Ministry of Health and other ministries, including agriculture and economic development, before the HIA

commenced. The progress achieved on the HIA would not have been possible without this. The HIA also helped to develop better communication between the ministries on these issues.

In common with many HIAs at project or policy level, this HIA was limited by pressures of time and human resources. Despite a well-trained and highly motivated public health sector in Slovenia, personnel in the national and regional institutes of public health are overstretched with the many demands created by EU accession. This work had opportunity costs, as everyone involved had to work on the HIA in addition to carrying out their existing responsibilities.

At the start of the work most people in Slovenia were unfamiliar with the methods or aims of HIA. We initially failed to recognize the importance of this, and found that some data or evidence from sources was not tailored in a way that was of best use for the HIA. As part of the work, a two-day HIA training course was developed and run jointly between the WHO European region, the London School of Hygiene and Tropical Medicine, and the Slovenian Institute of Public Health. Participants included public health professionals and also national and regional colleagues in other Ministries who had been collaborating on the HIA. This need for HIA capacity building was addressed six months after the work had begun. In hindsight, it would have been preferable to conduct training in advance of the HIA starting.

Even though this was planned as a pilot project feeding into 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 subsidies changed regularly. Consequently, it has proved very difficult to quantify or assess some outcomes with any certainty. However, the process of conducting the HIA has achieved some important intermediate outcomes that were not initially foreseen. The HIA involved experts from the Ministry of Agriculture who were negotiating the Slovenian policy position on subsidies with the EC. This not only put wider health and social issues on the agricultural policy agenda, but resulted in agricultural experts

arguing the case for “healthy” agricultural policy formation in the Slovenian National Media. The end result was that the health and agricultural sectors have begun to support each other in the types of agriculture and food policies that they wanted implemented in Slovenia after accession. The subsidies and quotas that Slovenian agriculture will receive were finally agreed in December 2002. The negotiations have been very successful and Slovenia has been allocated much more in relative terms than other accession countries. This particularly relates to the high support of the EU to Pillar 2 agricultural projects in Slovenia, which will potentially allow much more diversification in the rural economy, support smaller-scale environmentally friendly farming, and maintain local production systems. This was the policy position supported by the Ministry of Health. It is obviously difficult to specify the exact influence of the HIA in this, as the final results were not ready to be fed directly into the negotiation process. However, the Ministry of Agriculture is already involved in discussions with the Ministry of Health about how to take forward some of the HIA work.

### Discussion

The impetus for HIA is growing, but so are the expectations of it. There are many questions about what it can do for policy-making and how it can be utilized by the national and regional governments.

The experience of HIA of agriculture and food policies in Slovenia is similar to that found in other countries and other policy contexts. 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 (10). In terms of achieving more specific outcomes, many problems still exist with the HIA process in complex policy environments. These include the often-discussed issues of the timing of a HIA, the evidence base for HIA, and how to embed HIA in organizational culture.

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 other ministries and sectors in public health issues, which created shared agendas and goals in the future policy negotiations. Further evaluation of the project is required, but the most important aspect of HIA in intersectoral policy-making maybe using this interactive approach to explore complex issues.

It is still not clear when is the best time to conduct a HIA of a policy. In the HIA of agricultural policy in Slovenia, as has been the experience in the Netherlands and Wales, if a HIA is attempted at too early a stage the policies are still too vague or change too frequently to make a strong definitive assessment possible. Conversely, if the HIA feeds into the decision-making too late it will have little or no ability to effect change.

All HIA methods are very similar, using a structured assessment based on broad determinants of health. By using health determinants in this way HIAs will always reveal large

uncertainties in potential health impacts. The causal pathways are very complex, and the current evidence base is patchy and often not relevant for assessing policy options. However, this does not mean that there is no evidence for health impacts of policy. This uncertainty may lead to the policy-makers asking: “Is it possible to describe the health consequences of policy decisions at all?”. Public health specialists will need to explain clearly these uncertainties to policy-makers and manage expectations of the likely output before starting a HIA. The lack of an adequate evidence base is a recurrent problem in HIA at project or policy level (4). There is an ongoing debate about how to assemble relevant evidence for HIA and policy-making (6, 27). In this Slovenia HIA we needed to commission new reviews of research evidence relevant to the agricultural policy interventions we were assessing. In most cases, there is neither the time nor money available to undertake such systematic reviews or synthesize evidence relevant to the specific policy context.

How HIA is applied by governments will affect its ultimate long-term influence on policy (28). Those countries that have an effective HIA programme at policy level have institutionalized HIA in various ways (7, 10, 28). Although the HIA in Slovenia was conducted as a single, large pilot project, it was crucial that it was done as a collaboration with the Slovenian Ministry of Health, with a clear mechanism of feeding into government strategy making (in this case the Food and Nutrition Action Plan). If HIA is not embedded in the future organizational culture in Slovenia, the benefits to intersectoral working that have already been achieved 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 (28).

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. 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 involvement of stakeholders in the process (4). The problem still remains that the public health sector has not yet reached a common understanding of HIA, and how it should be used in policy-making. This is confusing to policy-makers wishing to apply HIA. The experience gained in Slovenia shows that it has potential as a means of contributing to more integrated policies, not only in agriculture but a range of policy areas. Further evaluation of the outcomes of such policy-level HIA should enable us to direct the development of HIA in the most practical way to support governments make healthy policy choices. ■

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## Résumé

### Etude d'impact sur la santé des politiques agricoles et alimentaires : l'expérience de la République de Slovénie

La salubrité des aliments est actuellement la première priorité de santé publique à respecter dans le cadre d'une politique agricole, même si la sécurité alimentaire, la nutrition et d'autres questions sanitaires en rapport avec l'agriculture sont des problèmes relativement plus importants du point de vue de la charge mondiale de morbidité. Peu de pays procèdent à une étude d'impact sur la santé dans le cadre de l'élaboration de leurs politiques agricoles et alimentaires en raison sans doute de la nature complexe du secteur agro-alimentaire.

Le présent article décrit les méthodes utilisées par la République de Slovénie pour étudier l'impact sur la santé des politiques agricoles et alimentaires qu'elle a prévu de mettre en place à la suite de son adhésion à l'Union européenne. C'est la première fois qu'un gouvernement s'efforce d'évaluer les effets possibles sur la santé de sa politique agricole à l'échelle nationale. Cette étude d'impact sur la santé s'est déroulée en six étapes : analyse des politiques ; ateliers d'évaluation rapide avec diverses parties intéressées ; examen des résultats de recherches qui

intéressent la politique agricole ; analyse des données correspondant aux principaux indicateurs de santé en Slovénie ; présentation d'un rapport sur les résultats de ces analyses devant un groupe de hauts fonctionnaires représentant divers secteurs du Gouvernement ; et évaluation. Dans le cas de la Slovénie, l'étude d'impact sur la santé a permis d'inscrire de grands problèmes de santé publique à l'ordre du jour de la politique agricole et a eu une influence bénéfique sur la formulation de la politique.

L'étude d'impact sur la santé est un excellent moyen de favoriser la concertation entre les différents secteurs dans l'élaboration des politiques mais il est évident que ce n'est pas le seul. Si l'on compare l'expérience de la Slovénie avec celle d'autres pays, on constate que l'utilisation des études d'impact sur la santé au niveau de la politique gouvernementale se heurte encore à de nombreux obstacles. Il est possible de s'inspirer de ces études de cas pour concevoir et appliquer des études d'impact sur la santé qui s'avèrent plus utiles aux décideurs et les aident à faire des choix politiques plus favorables à la santé.

## Resumen

### Evaluación del impacto sanitario de las políticas agrícolas y alimentarias: lecciones aprendidas en la República de Eslovenia

La prioridad de salud pública más relevante a la hora de formular políticas agrícolas es actualmente la inocuidad de los alimentos, pese a que, en términos de la carga mundial de morbilidad, la seguridad alimentaria, la nutrición y otros aspectos sanitarios relacionados con la agricultura tienen una importancia relativamente mayor. Existe en todo el mundo una experiencia limitada del uso de evaluaciones del impacto sanitario (EIS) en el desarrollo de las políticas agrícolas y alimentarias, que refleja tal vez la naturaleza compleja de este ámbito de política.

En este artículo se presentan métodos de EIS usados en la República de Eslovenia, donde se está llevando a cabo una EIS de las políticas agrícolas y alimentarias propuestas con motivo del acceso a la Unión Europea. Es la primera vez que un gobierno intenta evaluar los efectos sanitarios de la política agrícola a nivel nacional. La EIS ha seguido básicamente un proceso en seis etapas: análisis de políticas; talleres de evaluación rápida con interesados directos de diversa procedencia; examen de los datos de investigación pertinentes para

las políticas agrícolas; análisis de los datos de Eslovenia para establecer indicadores clave relacionados con la salud; preparación de un informe sobre los resultados para un grupo intergubernamental clave; y evaluación. La experiencia adquirida en el país muestra que el proceso de EIS ha sido de gran utilidad para plantear cuestiones de salud pública más generales en la agenda de la política agrícola, y ha redundado ya en beneficio de la formulación de políticas.

La EIS es una estrategia valiosa para formular políticas más integradas a nivel intersectorial, pero sin duda no es el único mecanismo para lograr tal cosa. La comparación del enfoque empleado en Eslovenia y los métodos de EIS usados en otros países y contextos políticos muestra que la aplicación de la EIS tropieza aún con muchas limitaciones a nivel gubernamental. Se pueden extraer enseñanzas de estos estudios de casos con miras al futuro desarrollo y aplicación de EIS que sean más pertinentes para los formuladores de políticas y que les ayuden a tomar decisiones políticas más saludables.

## تقييم التأثير الصحي للسياسات الزراعية والغذائية: الدروس المستفادة من إعداد تقييم التأثير الصحي في جمهورية سلوفينيا

الرئيسية المرتبطة بالصحة، الإبلاغ عن الموجودات إلى مجموعة حكومية تتألف من مختلف القطاعات الهامة وأخيراً التقييم. لقد أظهرت الخبرة المكتسبة في سلوفينيا أن عملية تقييم التأثير الصحي كانت من الآليات المفيدة لزيادة الاهتمام بقضايا الصحة العمومية بدرجة أوسع أثناء بحث جدول أعمال السياسات الزراعية، وكان لهذه العملية نتائج إيجابية في صياغة السياسات.

إن تقييم التأثير الصحي من الأساليب المفيدة لوضع السياسات التي تتسم بأنها أكثر تكاملاً وشمولية للقطاعات المختلفة، ولكنها ليست الآلية الوحيدة لتحقيق ذلك. فقد أظهرت المقارنات بين الأسلوب المستخدم في سلوفينيا مع طرق تقييم التأثير الصحي في البلدان الأخرى وفي السياقات السياسية الأخرى أن هناك الكثير من المحددات التي تضيّق من مدى تطبيق تقييم التأثير الصحي على الصعيد الحكومي، ويمكن استفادة الدروس من الحالات المدروسة لصالح التنمية المستقبلية وتطبيق تقييم التأثير الصحي الأكثر ملاءمة لأصحاب القرار السياسي، ولمساعدتهم في اتخاذ المزيد من الخيارات السياسية الصحية.

تعدّ سلامة الغذاء أكثر أولويات الصحة العمومية أهمية عند وضع السياسات الزراعية، رغم الأهمية المرتفعة نسبياً للأمن الغذائي والتغذية وبعض القضايا الأخرى المتعلقة بالزراعة نظراً لما تلقىه من أعباء مرضية على الصعيد العالمي. وهناك خبرة عالمية محدودة حول استخدام تقييم التأثير الصحي في إعداد السياسات الزراعية والغذائية، ولعل ذلك ما يعكس الطبيعة المعقدة في هذه القطاعات السياسية.

وتستعرض المقالة الطرق المتبعة في تقييم التأثير الصحي في جمهورية سلوفينيا، حيث تم إجراء تقييم التأثير الصحي للسياسات الزراعية والغذائية المقترحة والتي نجمت عن انضمام جمهورية سلوفينيا إلى الاتحاد الأوروبي. وكانت هذه هي المرة الأولى التي تحاول فيها حكومة ما تقييم التأثير الصحي للسياسات الزراعية على الصعيد الوطني. وقد تم اتباع ست خطوات أساسية في تقييم التأثير الصحي: تحليل السياسات، حلقات عملية للتقييم السريع تعقد مع المؤثرين في اتخاذ القرارات السياسية من مختلف الأصول، استعراض البيانات من البحوث المتعلقة بالسياسات الزراعية، تحليل المعطيات المتوافرة في جمهورية سلوفينيا حول المؤثرات

## References

1. The BSE Inquiry. *The BSE inquiry: The Report*. 16 volumes. London: The Stationery Office; 2000.
2. Ezzati M, Lopez A, Rogers A, Van DerHoorn S, Murray C, et al. Selected major risk factors and global and regional burden of disease. *The Lancet* 2002;360:1347.
3. *The World Health Report 2002: reducing risks, promoting healthy life*. Geneva: World Health Organization; 2002.
4. Lock K. Health Impact Assessment. *BMJ* 2000;320:1395-8.
5. Health Development Agency. *Introducing health impact assessment: informing the decision-making process*. London: Health Development Agency; 2002.
6. Parry J, Stevens A. Prospective health impact assessment: pitfalls, problems and possible ways forward. *BMJ* 2001;323:1177-82.
7. Council for Public Health and Health Care. *Healthy without care. Report to the Minister of Health, Welfare and Sport*. Zoetermeer, The Netherlands: Council for Public Health and Health Care; 2000.
8. International Institute for the Urban Environment. *Preliminary study: health impact assessment of housing policies in the Netherlands*. Netherlands: NSPH; 1999 (English translation 2001).
9. Van Putten D. *Employment proposals and health effect screening*. Netherlands: TNO Arbeid (NSPH on behalf of the Intersectoral Policy of the Ministry of Health, Welfare and Sport); 1999.
10. Breeze C, Hall R. *Health Impact Assessment in government policymaking: developments in Wales*. Brussels: WHO Europe, ECHP Policy Learning Curve; 2001.
11. London Health Commission. *Update on key messages from Health Impact Assessments on Mayor of London Draft Strategies*. London: London Health Commission; 2001.
12. Cameron M, Cave B. Health Impact Assessment of the Draft London Plan. London: London Health Commission; 2002.
13. World Bank. Agriculture and rural development. In: *Environmental assessment sourcebook*. Washington DC: World Bank; 1999.
14. Health Canada. *The Canadian Handbook on Health Impact Assessment*. Ottawa: Health Canada; 1999. Available from: URL: <http://www.hc-sc.gc.ca/ehp/ehd/oeha/hial>.
15. United States Department of Agriculture. *The public health impact of E. coli O157 in beef*. Washington DC: US Department of Agriculture, Food Safety and Inspection Service; 2001.
16. Department of Health. *A rapid qualitative assessment of possible risks to Public Health from current foot and mouth disposal options*. London: Department of Health; 2001.
17. ActionAid. *The developmental impact of agricultural subsidies*. London: ActionAid; 2002.
18. Dahlgren G, Nordgren P, Whitehead M. *Health Impact Assessment of the EU Common Agricultural Policy*. Stockholm, Sweden: National Institute of Public Health; 1996.
19. Shafer Elinder L. *Public Health Aspects of the EU Common Agricultural Policy. Developments and recommendations for change in four sectors: fruit and vegetables, dairy, wine and tobacco*. Stockholm, Sweden: National Institute of Public Health; 2003.
20. European Commission. *European Union Enlargement: a historic opportunity*. Brussels: European Commission; 2000.
21. Maclehorse L, Mckee M. Looking forward, looking back. Gateway to the European Union: health and EU enlargement. *Eurohealth* 2002;8:1-3.
22. Albrecht T, Cesen M, Hindle D, Jakubowski E, Kramberger B, Petric V K, et al. *Health Care Systems in Transition*. Slovenia: European Observatory on Health Care Systems; 2002;4.
23. World Health Organization. *The first action plan for food and nutrition policy 2000-2005*. Copenhagen: WHO European Region; 2001.
24. Selb J, Kravanja M. Analiza umrljivosti v Sloveniji vletih 1987 do 1996 [Mortality rate analysis in Slovenia 1987 to 1996]. *Zdrav Varst* 2000;39 Suppl:55-18. In German.
25. Kuhar A, Erjavec E. *Situation in Slovenian agricultural and food sectors and related policies with estimation of the likely future developments*. Ljubljana: University of Ljubljana, Biotechnical faculty; 2002.
26. Wallace P. HIA on Food, Nutrition and Agriculture in Slovenia. Report of the preliminary meeting 27th February to 1st March. Rome: WHO European Centre for Environment and Health; 2002.
27. Mindell J, Hansell A, Morrison D, et al. What do we need for robust quantitative health impact assessment? *Journal of Public Health Medicine* 2001; 23:173-8.
28. Banken R. *Strategies for institutionalising HIA*. Brussels: WHO Europe, ECHP Policy Learning Curve No. 1; 2001.