



©2014 GRF Davos. All rights reserved.

<http://www.planet-risk.org>

Human and Environmental Wellbeing - Streamlining the Policy Approach¹

RISKU-NORJA, Helmi^a, IRZ, Xavier^a, KURPPA, Sirpa^a, OVASKAINEN, Maria-Leena^b, NUMMELA, Olli^b, RAUHANEN, Timo^c, PINOLEHTO, Marja^a and VORNE, Virpi^a

^a MTT AgriFood Research Jokioinen, Finland, firstname.lastname@mtt.fi

^b National Institute for Health and Welfare, Helsinki, Finland- e-mail: firstname.lastname@thl.fi ^c Government Institute for Economic Research, Helsinki, Finland- E-mail: timo.rauhanen@vatt.fi

Abstract – The present contribution examines the clarity and mutual consistency of the Finnish policy goals regarding promotion of human health and sustainable development in the context of food and physical activity. The realization of the policy goals is discussed by reflecting the goals against the state-of-art of the different the socio-economic groups and their possibilities to promote own health and environmental sustainability. The sector-crossing research featured a qualitative content analysis of over 30 relevant national policy documents from the past decennium. The analysed documents deal with food and physical activity, and their focus is either on health promotion or on broader sustainability issues.

The analysis revealed only few direct contradictions. The synergy advantages are, however, poorly exploited, because the documents suffer from narrow perspective. Health promotion is looked either in terms of nutrition and physical activity or of health inequity. The sustainability concept has largely remained abstract, concrete expressions dealing mostly with environmental and economic issues. Social issues are generally not identified as elements of sustainability. Economic growth is presented as the necessary precondition for a democratic welfare society. The role of the public actors as the path breakers in sustainable life styles is acknowledged. However, the citizens' responsibility both for own health and for the environment is emphasized, and much attention is paid to information to support consumers' responsible choices.

Although the physical health of the Finns has improved over the past decades, also the health inequities among the population have increased. Those outside the education system and working life are often beyond the reach of the services provided by the society or the employers. This suggests that in addition to information steering, also other instruments - public services, economic incentives, as well as legislation and regulation - should be effectively used to bring about the change in the *modus operandi*.

Keywords – sustainability, health promotion, food, physical activity, policy

1. Introduction

1.1. Background

The health inequities among the different population groups and the environmental consequences of the consumption have been identified among the major problems of the Finnish society. Promotion of the population health and entrenching the principles of sustainable development are highly prioritized in the political agenda in Finland. The different policy sectors have taken up these

issues, but this has been done from their own point of view and separately from each other.

In the sector policies, health and environmental issues are rarely considered in parallel. The Health in All Policies-principle is gaining momentum in the area of societal development. The principle stems from the fact that health promotion comprises structural and social as well as individual prerequisites to nurture human health (Leppo et al., 2013). In this approach, the state of the environment is considered as one factor contributing to human health. The sustainability issues on the other hand, are complex

¹ This article is based on a presentation given during the 2nd GRF Davos One Health Summit 2013, held 17-20 November 2013 in Davos, Switzerland (<http://onehealth.grforum.org/home/>)

and many-sided, so called wicked problems (Rittel & Weber, 1973; Hulme, 2009) that cannot be addressed by solving single problems, because changes in some area will cause subsequent and often unprecedented changes in other areas. Sector-crossing approach is, therefore, necessary.

In the present study, the topics of health promotion and overall sustainability are brought together. The study examines how and to what extent the sustainability principles have been accounted for in the Finnish policy discourse dealing with food, physical activity and health promotion. The aim of the study was to improve mutual understanding among the policy sectors using the health-in-all-policies and sustainability as the common point of departure.

1.2. Conceptual frame

Sustainability was originally defined as "the development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987). The reformulations of the concept stress human economic and social activity, which need to be accommodated within the ecosystems' carrying capacity. The MEA-documents emphasize the functioning of the ecosystems (MEA, 2005), whereas other documents emphasize the questions of social equity and justice; sustainable development is to be perceived as the common goal for all human activity and it needs to be incorporated in all policies (UN, 2002; 2005). According to Lang and Heasman (Lang & Heasman, 2004) sustainable development deals with the human and environmental well being.

In the weak interpretation of sustainability, economic growth is seen as the prerequisite for the realization social and environmental sustainability and it is, therefore, the primary goal. The strong interpretation of sustainability means integration of the ecological, economic and socio-cultural aspects in the way that the economic growth and social equity should be secured within the carrying capacity of the ecosystems (Ayres et al., 2001).

The common denominator in all definitions is the anthropocentric future-oriented approach: sustainability deals with mutual accommodation of the human activity the ecosystems functioning in order to secure the survival of the future human generations. The future is considered from the short time perspective of the human species, not from that of the evolution of life.

The concepts sustainable development and sustainability are commonly used interchangeably. However, the two are distinct. Sustainability is about adapting the human activity to the border conditions dictated by the nature and, at the same time, nature's adaptation to the human activity. Sustainability is a goal and the aim is to support human and environmental well-being, "flourishing" (Ehrenfeld, 2008). Sustainable development, on the other hand, refers to the strivings towards the goal. It, thus, embraces policy measures and practical efforts. Although sustainability is the goal, it is not a static state, but it is constantly being re-shaped so as to adapt to the chang-

ing circumstances and to new knowledge. This dynamic balance requires flexibility and adaptive capacity from the society (Holling, 2001). This can be nurtured by securing the economic social and educational and civic rights of the citizens stressing thus the importance of the societal issues in sustainability strivings.

1.3. Aim of the research

Sustainability rhetoric often suffers from the overly general and abstract articulations, and the benevolent aims are, therefore, not easily translated into praxis. In order to do that, the sustainability concept needs to be contextualized. This was done in the sector-crossing HYVINVOIPA (WELL-BEING) research project that was carried out in 2011–2013 as a co-operation of three state research institutions: MTT Agrifood Research Finland, THL National Institute for Health and Well-fare and VATT Government Institute for Economic Research. The mutual interface was health promotion in the context of food and physical activity. The issue was approached from different angles using sustainability as the common conceptual frame.

The research tasks were 1) to examine the articulations of sustainability in the context of health promotion, citizens' food choices and physical activity 2) to evaluate the policy aims, their clarity and mutual coherence in these issues and 3) to discuss the realization of the policy goals by reflecting them against the actual situation among the Finns. Attention was especially paid to the lower socio-economic groups and their possibilities to reconcile own behavior with the health promoting and environmental goals. In the concluding section, the hot spots in developing integrated policy approach so as to promote human and environmental wellbeing are discussed.

2. Materials and Methods

The study was carried out using the approach of qualitative content analysis of the policy documents with the ATLAS.ti soft ware as the tool in the analysis. The documents were scrutinized by looking for the quotations dealing with food, health and physical activity, and their linkage to sustainability goals. In addition to the explicitly outspoken expressions on sustainability, the tacit references dealing with some aspect of sustainability, but without identified conscious coupling to it, were looked for. The quotations were identified as dealing with problems, justification, aims, measures and impacts, and coded accordingly. The quotations were further sorted so as to refer to the different actor groups, farmers, SME:s, public sector and citizens. The specific questions that guided the analysis were: in which ways food, physical activity and health promotion are linked to the sustainability strivings, who are the target groups, what are the goals and how are they justified.

There is already wide consensus regarding the criteria of sustainable food. The criteria are based on the overall sustainability definitions (MEA, 2005; UN, 2002; UN, 2005; WCED, 1987) and on the food system research ap-

proach (Lang & Heasman, 2004; Gliessman 2007). The criteria are: (1) food security and sovereignty: availability of basic food items is secured nationally and globally, and the decisions regarding food are made by local actors; (2) food safety and healthiness: food has to meet the requirements of both nutrition and hygienic quality; (3) economic feasibility: the producers receive fair compensation and basic food is available for everyone at reasonable price; (4) cultural distinctiveness and food literacy: the ability to understand the origin of food, its cultural and geographic linkages and the practical food skills; (5) ethical justice: food production fulfils the ethical norms regarding the welfare of the production animals, workers and the environment; (6) environmental sustainability: the natural resource basis of production is secured and environmental impacts are minimized; (7) sensory quality: food is tasty, the meals are composed by paying attention to the visual and aromatic harmony and they are served without haste in pleasant surroundings (FAO, 2010; HM Government, 2010; Risku-Norja & Mikkola, 2010; SusFoodEra 2012). These criteria were used as the interpretative frame for the policy goals regarding food.

The sustainability concept has not been operationalized in the context of health promotion or physical activity, and corresponding criteria are not available. The interpretation of the policy goals dealing with these topics was, therefore, based on the general sustainability concept (Lang & Heasman 2004; UN, 2002; 2005; WCED, 1987).

The research material comprised 31 relevant national policy documents from the past decennium; these deal either specifically with physical activity, nutrition, food and sustainable development or they are more comprehensive and address several of the topics. The focus of the documents is, thus, either on health promotion or on sustainability. The material represents different types of policy documents ranging from comprehensive programs to nutritional recommendations².

3. Results

3.1. Overall policy approach to sustainability

In the analysed policy documents, the concept of sustainable development appears repeatedly, but it has often remained abstract and generic, e.g.: as aim to “improve the compatibility and balancing of economic, social and ecological points of view within the decision-making of public administration” (VN, 2007b). The sustainability concept comprising social, ecological and economic aspects is sometimes paralleled with its contents by articulating the social issues as if they were not part of sustainability (e.g. NCCB, 2004; OKM, 2008; VN, 2007a). When sustainabil-

ity goals are expressed in concrete terms, it is done from the environmental and economic point of view. Among the major issues taken up are decoupling the economic growth and environmental impacts, biodiversity, energy (efficiency), chemicalisation of the environment, eutrophication of the water sheds and climate change (SITRA, 2010; TEM, 2010; VN, 2006a; 2006b; 2007b; 2011). Sometimes the sustainability concept is consciously restricted to the environmental issues (Ministry of the Environment, 2009; VN, 2006b; 2011).

Regarding the social aspect of sustainability, the strivings are seldom explicitly outspoken, the notable exceptions being the strategies of sustainable development and of sustainable consumption and production (Ministry of the Environment, 2012) and the societal commitment to sustainable development (Ministry of the Environment, 2013). Sustainability is often not even mentioned in the documents focusing on health promotion. In the context of physical activity, sustainability is referred to only in very generic terms (OKM, 2008; VN, 2008). Questions dealing with social sustainability are, however, latently present in all analyzed documents. Such tacit references are abundant, and they deal with the citizens’ equity and their economic, social and cultural rights, the securing of which is understood as one of the core issues of the democratic well-fare state.

It is stated that the major part of environmentally sustainable food choices also promote human health and well-being (VN, 2006a; 2006b; VRN, 2014), and that the choices supporting healthy and sustainable life-style should be attractive, accessible and affordable to all (VN, 2006a; 2006b). The role of the public actors as the path breakers in sustainable consumption is recognized (Ministry of the Environment, 2009; VN, 2006a; 2006b; 2013b). On the other hand, the documents also stress the significance of the citizens’ – “consumers” – personal choices regarding both own health and the environment (Ministry of the Environment, 2008; 2012; TEM, 2008). The consumers’ influence is not only through consumption choices, but their potential role also as co-producers in developing new action models and services for the markets is acknowledged (VN, 2013b).

In the documents with the focus on health promotion, the two key health-related problems are overweight and obesity with the associated health consequences, and the increasing health inequity among the population (STM, 2008; VN, 2007c). The main target groups for the policy measures are children, youth and families. Working people, lower socio-economic groups and the aged are also mentioned. Immigrants, long-term unemployed, physically disabled people and those under mental rehabilitation are notified as “special groups” (VN, 2007b; 2007c;

² Government programs: VN, 2007a; VN, 2011

Topical policy programs: VN, 2007b; VN, 2007c; OKM, 2008; TEM, 2008

Government decisions-in principle: STM, 2008; VN, 2006a; VN, 2008; VN, 2009; VN, 2013

Government reports to parliament: TEM, 2010; VN, 2010; VN, 2013c

National strategies: MMM 2002; Organic Strategy Work Group, 2006, VN, 2006b; Food Strategy, 2010; Kottila, 2011; SITRA, 2010

Promotion programs: Ministry of the Environment, 2008; Ministry of the Environment, 2009; Ministry of the Environment, 2012; MMM, 2013; SRE, 2008; VN, 2013a; VN 2013c

Disquisitions: Kurmääki et al., 2012; MMM, 2009; SETU, 2010

School curriculum: NCCB, 2004;

2008).

Socio-economic differences among the population are identified. However, attention is not paid to the differences within the lower socio-economic groups nor among the aged. Although there is wide variation in the socio-economic status in both groups, they are treated as single monolithic entities. The need to support health promoting choices especially among the vulnerable groups is emphasized, but co-operation between the social and health care sectors appears weak. People are presented as targets to various measures, rather than as active persons with knowledge and opinions regarding own needs (STM, 2008; VN, 2007b; 2007c).

Strong interpretation of sustainability is present only in one document, in which the need to accommodate the societal development within the carrying capacity of the environment is explicitly stated (Ministry of the Environment, 2013). All other analysed documents base on the weak interpretation and emphasize economy as the border condition for sustainability. Sustainability deficiency in terms of insufficient economic resources is presented as the fundamental problem. It is the consequence of the unfavourable age structure of the population with the share of old people continuously increasing. Economic growth, based on employment and competitiveness, is seen as the prerequisite for the existence of the well-fare state (TEM, 2010; VN 2007a, 2011, 2013c).

3.2. Food policy and sustainability

The overall frame for food policy is expressed in the government documents (VN, 2007a; 2010; 2011). Food is specifically addressed in the national food strategy (Food Strategy, 2010), in the promotion programs for food culture (SRE, 2008), local food and organic food (MMM, 2013; VN, 2013a) as well as in the dietary recommendations outlined for different target groups (Kela & VRN, 2011; STM, 2010; VRN, 2008; 2010; 2014) and in the documents on organic production (Organic Strategy Work Group, 2006; Kottila, 2011). Furthermore, food is among the topics in the documents dealing with the overall sustainability issues (Ministry of the Environment, 2008; 2009; 2012; MMM, 2002; TEM, 2010; VN, 2006a; 2006b; 2009; 2013b,) as well as in some of the documents with the focus on health promotion (STM, 2008; VN, 2007b; 2007c). Background information on the food policy issues is provided in three disquisitions (MMM, 2009; SETU, 2010; Kurunmäki et al., 2012).

Sustainable meal has been defined as "a product of shortest possible supply chain or an organic product or a product that has been produced traceably in line with the responsibility principles". Based on this, local, organic, seasonal and vegetarian food are presented as sustainable options (Ministry of the Environment, 2008; 2009; 2012). However, the concrete goals set for the public sector are very cautious, mainly confirming the prevailing situation: by the year 2015 15% (one meal a week) of the meals provided by the public catering units should meet the criterium of sustainable meal (Ministry of the Environment, 2009; VN 2009) and thence on the increasing the share of

sustainable meals yearly by one per cent unit (Ministry of the Environment, 2012).

The criteria for sustainable food are fairly new, and they do not appear as such in any of the analysed documents. In the different documents sustainability is approached from different angles, and the emphases, therefore, vary. In the following, the results of the analysis are compiled according to the criteria. Four of the analysed documents have a fairly comprehensive approach to food sustainability and consider food in terms of human and environmental well-being (SETU, 2010; SRE, 2008; VN, 2006a; VRN 2014).

(1) Food security. Food security is defined as sufficiency of and access to affordable food to satisfy the needs of all citizens (Food Strategy, 2010). The food security issue is addressed in several other documents, too, but usually without a conscious linkage to sustainability, the expetions being the two disquisitions and the promotion program for the Finnish food culture (Kurunmäki et al., 2012; SETU, 2010; SRE, 2008). Specifically, local food and regional production models are seen to increase food security and local well-being (MMM, 2013; SITRA, 2010; TEM, 2010; VN, 2013a).

The need to improve self-sufficiency of protein feed and energy is considered as important, and because of the need to adapt to climate change the importance of national research and plant breeding is stressed (Food Strategy, 2010; SETU, 2010; VN 2010). Although the competitive domestic production is considered to be the basis for food security, it is acknowledged that food production is coupled to the international trade through energy, protein feed and machinery. Therefore, product-specific food security in terms of domesticity cannot be specified. In terms of exports, the unavoidable integration to the global markets is also seen as an opportunity for the Finnish food sector (Food Strategy, 2010).

(2) Food safety and healthiness. Access to adequate nutritious food as an essential ingredient in health promotion is specifically pointed out in the dietary guidelines (Kela & VRN, 2011; STM 2010; VRN 2008; 2010; 2014) and also in one of the the policy programs (VN, 2007c). In these documents, the emphasis is on the nutritional aspects, but nutrition and health are not perceived as being elements of sustainability. When sustainability is mentioned, it is done only in general terms as a topic of its own that needs to be accounted for in developing food services. There are, however, hidden sustainability statements, which deal with the axiomatic starting point of promoting health and equity through public food services as well as with the tastiness of food, the pleasantness of the eating occasion and its importance for social cohesion (e.g. STM, 2010). In the new Finnish dietary recommendations, attention is paid also to environmental and cultural aspects of food, and they contain also recommendations for adequate physical activity (VRN, 2014).

(3) Economic feasibility. Economic sustainability is approached from the point of view of the food sector's competitiveness. Because of the threatening sustainability deficiency, solution is sought from economic growth. Growth is sought from all sectors, also from the food sec-

tor, which is to be developed as a field of strong expansion both for domestic demand and for export (Food Strategy, 2010; VN, 2010; 2011). In particular, organic and local food are seen to have great potentials in this respect in providing new business opportunities for the organic farmers and for the SME:s (MMM, 2013; VN, 2013a). Increasing the use of local food is seen to improve the regional economics in form of employment and locally circulating income (Kurunmäki et al., 2012; MMM, 2013).

It is stated that sustainable choices – including food choices – should be accessible to all (VN, 2006a; 2006b; 2010). The profitability and competitiveness of the food sector is, however, based on the consumers' willingness to pay premium for the sustainably produced food (MMM, 2010; VN, 2010). The option for economic steering instruments is noted, but concrete measures are seldom presented (Ministry of the Environment, 2012; TEM, 2010; VN, 2006a; 2011), one possibility is to develop the lunch note system³ so as to promote sustainable and healthy eating habits (VN, 2013b).

(4) Cultural distinctiveness and food literacy. The references to food culture deal with local and seasonal food as means to improve knowledge on the origin of food and on its route to the consumers' plate (NCCB, 2004; SRE, 2008; STM 2008). Local food is also seen as important in view of preserving the diversity of Finnish food culture with its multitude of regional food traditions (Kurunmäki et al., 2012; MMM, 2013). The importance of education and communication in forming values and attitudes and in gearing the choices towards sustainability is recognized (Ministry of the Environment 2008; 2012; SRE, 2008; SETU, 2010; VN, 2006a; 2010; 2011; 2013b). The positive experiences provided by the public catering services are considered as important (Ministry of the Environment 2012; MMM, 2013; NCCB, 2004; SRE, 2008; STM, 2008), and the role of the consistent food literacy in schools and children's day care centres is stressed. This means that food education needs to be accounted for also in teacher education (SRE, 2008; VN, 2010).

(5) Ethical justice. Fairly little attention is paid to the ethical questions, and they are not among the explicitly articulated sustainability issues. Animal welfare is seen as being an essential ingredient of the high quality domestic food and of the responsible, traceable food chain (Food Strategy, 2010; Ministry of the Environment, 2012; MMM, 2002; VN, 2010). Animal welfare is one of the arguments presented especially in support of organic production (Kottila, 2011; VN, 2013a). Other ethical issues deal with the strivings to promote social equity also in terms access to healthy and nutritious food and to increase the appreciation of food and food chain actors (MMM 2013; SRE, 2008).

(6) Environmental sustainability. The concrete measures to promote sustainability within the food sector deal particularly with ecological sustainability. Greenhouse gas emissions and nutrient loading of the watersheds are brought up as the grave environmental impacts of the food

chain. It is stressed that food chain is responsible for one third of the environmental burden of the consumption (e.g. Ministry of the Environment, 2012). The impact of food consumption on climate change is particularly emphasized. There appears to be solid confidence in information steering and in the significance of the consumers' choices in improving the state of the environment. Product information in form of packaging labels and various interactive tools is considered as important steering instruments (Food Strategy, 2010; SRE, 2008; VN, 2010; 2013a; 2013b).

Environmental issues are strongly emphasized from the production point of view in the natural resource strategy (MMM, 2002) and in the documents dealing with national food strategy (Food Strategy, 2010; MMM, 2009; SETU, 2010). On the other hand, climate change is also seen as an opportunity for the Finnish agriculture, which is constrained by the harsh climatic conditions (Food Strategy, 2010; VN 2010). Promotion of local and organic food as sustainable choices (Ministry of the Environment, 2009; MMM, 2013; VN, 2013a) is justified on environmental grounds.

The influential potential of the public sector to promote sustainable food consumption is due to both the large purchasing volumes and to the possibility to provide practical examples of healthy and environmentally friendly eating habits (Ministry of the Environment, 2008; 2009; 2012; VN, 2009; VRN, 2014). Food waste is addressed only in a couple of the most recent documents, and the informative measures to monitor and to reduce food waste are targeted for the professional kitchens and for the households. Attention is not paid to the other parts of the food chain (Ministry of the Environment, 2012; VN, 2010; 2013b).

(7) Sensory quality of food and the eating environment. In the documents focusing on the mass catering services, in addition to the nutritional aspects, some attention is paid also to the tastiness of food and to the physical surroundings and timing of the lunch break (Kela & VRN, 2011; STM, 2008; 2010; VN 2007c; VRN, 2008; 2010; 2014). The solutions are to be sought at local level accounting for the prevailing circumstances and enabling the various parties' participation in planning the practicalities (Ministry of the Environment, 2009). The significance of eating together from the communal cohesion point of view is identified: the meals provided by the catering services in day care centres, schools, working places and for the aged is seen to promote social and psychic wellbeing (Kela & VRN, 2011; SRE, 2008; STM, 2010; VN, 2010; 2013a; VRN, 2008; 2010; 2014).

In the analysed documents, there appears to be only few direct contradictions. There is, however, a multitude of strategies and programs which focus on some specific perspective. The synergy advantages are therefore poorly exploited. The few contradicting statements can be identified between economic and environmental goals: developing the food supply in accordance with the demand

³ Lunch note has been introduced to support the employees' well-being and working performance. It is economically supported in the income taxation, but there are no nutritional requirements nor restrictions regarding its use outside the working hours. In similar veins, the employers often provide their employees the possibility to "motion note", which encourages to leisure-time physical activity.

consolidates the dominance of the present main stream products. Social responsibility of the enterprises requires pro-activity; therefore the markets cannot function at the same time so as to please the majority of the consumers, and as the pioneers in social responsibility. It is also inconsistent to strive towards easy, affordable and accessible sustainable choices for all, and on the other hand, to expect that the consumers are ready to pay extra for them.

4. Discussion

4.1. Summary of the Results and the State-of-Art

The strategies and programs suffer from narrow perspective and from overly general expressions. Health promotion is looked either in terms of nutrition and physical activity or of health inequities. The sustainability concept has often remained abstract. The concrete expressions deal with environmental impacts and with the economic aspects focusing on the sustainability deficiency. With one exception (Ministry of the Environment, 2013), there is no support for the strong interpretation of sustainability. By emphasizing the role of the economy as the prerequisite for sustainable development, the policy discourse takes the stand of weak interpretation of sustainability (Ayres, 2001). The more comprehensive view on human and environmental well-being is largely missing. Although direct contradictions are rare, the different goals and measures do not support each other. Therefore, the synergy advantages are poorly exploited and the message remains fragmentary.

Social issues deal with equity among the citizens and their economic, social and cultural rights. These issues are present in some form in all analysed documents, but in most of them, they are not perceived as being part of sustainability strivings. The references to sustainability are tacit. Other hidden sustainability statements can be identified in connection with the questions dealing with food security, food culture and food literacy.

Measured by many indicators the physical health and functioning ability of the Finns has improved over the past decades. However, at the same time the health inequities among the Finnish population have increased (THL, 2012).

The development in leisure time physical activity has been by and large positive. It is more common among the well-educated population than among the other groups. This difference can be identified also among the young; the gymnasias students are physically more active than the students in the vocational schools. In general, compared to other groups, the children of the well-off families are physically more active (THL, 2012). Understandably, every day walking or biking to work is more common among the clerical professionals than among those in physically demanding occupational duties. The major problem is the everyday physical inactivity and sedentary life style, which have increased in all population groups, including the children and the young (THL, 2012).

Like differences in leisure time physical activity, also the differences in food consumption appear to be related to the socio-economic status. They are evident, par

excellence, in use of vegetables and fruit, the use of which is much more common among the well-educated, high income people than among the lower socio-economic groups (Paturi et al., 2008). Although unhealthy eating habits are more common among the citizens in the lower socio-economic groups (judged by the level of income and education), the environmental impacts of their food consumption are, in average, lower compared to food consumption of the better-off citizens. This was evident, when the household food consumption and the associated environmental impacts in terms of two indicators, carbon dioxide equivalents and phosphate equivalents indicative of climate change and eutrophication, respectively were considered in parallel in different socio-economic groups (Irz & Kurppa, 2013).

The health differences become evident already in the young during the secondary education, and they are fairly established by the time of the conscript service (Helakorpi et al., 2003). Health inequities are to some extent balanced by the public services provided by the society. The beneficiaries of these services are the day care and school children, the students and the working people. The services provided by the employers, occupational health, motion and lunch notes, are targeted to those within the working life, and they are mostly used by the well educated clerical workers. Motion and food services are, thus, often beyond the reach of those outside the education system or work life - unemployed, retired, many immigrants and marginalized citizens, although the vulnerable groups are those who mostly would benefit from them.

4.2. The Steering Instruments and their Impact

The instruments aimed at guiding the citizens' behaviour towards healthy and environmentally friendly lifestyles comprise norms and regulations, interventions, promotion programs, economic incentives and various informative measures including formal education.

Normative steering is based on the laws and on binding regulations such as legislation dealing with health care, physical activity, environmental issues and education. The positive impact of the normative steering becomes evident with a time lag. However, because the norms are fairly stable and they cannot be easily changed, the impact is also long lasting. Normative steering is fairly general and it leaves room for interpretations. The desired goals are further promoted through programs and interventions, by using various kinds of economic and informative approaches.

Interventions are measures that are carefully designed for specific target groups in order to develop together with them new approaches to support normative steering. In Finland, interventions have been mainly used in health promoting efforts. The experiences have been positive showing that life style changes are possible also in the lower socio-economic groups; the greatest benefits appear to be obtained from the interventions targeted specifically to them (Lindström et al., 2006; Rautio et al., 2012). Interventions are often used as an initial step before launching more extensive national programs for all (e.g. KKI, 2014)

or for specific for specific target groups e.g. for the school-aged (LIKES & Ministry of Education 2014), the aged (The Age Institute, 2014) and for prevention of diabetes among the risk groups (Lindström et al., 2006; Rautio et al., 2012).

There is interest in Europe to develop the public procurement strategies so as to promote sustainable food consumption. Being voluntary, these instruments have so far not been widely applied, and their effectiveness remains to be seen (Mont & Plepys, 2009). In Finland, programs to promote sustainable food consumption have been targeted specifically for the actors of the municipal catering sector. Major concerns have been in improving the personnel's overall awareness on the sustainability issues and in increasing the use of local and organic food. This is done by focusing on the purchasing knowhow so as to include environmental, social and quality criteria in the tender calls (EkoCentria, 2012). The food culture program aimed at improving food literacy among various target groups and, tangentially it also addressed health and environmental issues (SRE, 2008). Progress is taking place slowly but steadily (EkoCentria, 2012).

In Finland, the statutory public catering sector provides over half of all meals eaten outside homes, and the great majority, 83%, is at the response of the municipalities and the state; the rest being staff canteens in charge of the private entrepreneurs (A.C. Nielsen, 2008). The municipal catering services are firmly based on the nutritional recommendations, and they have contributed to the gradual adoption of healthier eating habits among the population (Helakorpi et al., 2003). A free warm meal is served free regardless of the parents' economic status for all children in municipal day care and for all students in primary, secondary general and vocational schools. It is a means to promote children's and young peoples' well-being. Also in Europe, initiatives have been taken to regulate the quality of school food (Traill et al., 2012).

Various kinds of nutritional, ethical and environmental labels have been introduced in view of the different consumer groups. The aim is to promote the consumers' informed choices so as to reconcile own health and taste preferences with the environmental, social and ethic questions of food production. The evidence on the effectiveness of this type of consumer information is limited and the consumers' environmentally friendly attitudes are not necessarily reflected in their actual consumption behaviour (Almaani et al., 2004; Horne, 2009; Grunert, 2011; Csutora, 2012). The consumers tend to make their decisions on the short term hedonistic grounds rather than based on the altruistic societal and environmental arguments, which are more abstract and remote both in time and space (Brown et al., 2009). The results from Finland suggest that information is selectively exploited; the well-off people have adopted health information, whereas environmental information appears not to be prioritized (Irz & Kurppa, 2013).

Economic instruments focus on taxation. In general, in order to change the consumers' behaviour towards healthier choices the impact of the taxes on the product price should be considerable, of the order of 20% (Mytton et al., 2012). The value added tax (VAT) of the com-

modities and services is the major taxation targeted for the households' consumption. It is the same for all and, therefore, relatively more straining for the low-income households. Because of the difficult problems of definition, healthy food items are not prioritized in any of the EU countries by means of VAT taxation.'

The so called Pigou and sin taxes, which aim at internalizing external health and environmental impacts of the products and services, are options to promote environmental goals and healthy life style among the population. The difference between the two is that, while the Pigou tax aims at protecting innocent outsiders from the measures implemented by other parties, the sin tax aims at protecting people from their own unhealthy choices (Mankiw, 2009). Although the sin tax (e.g. fat and sugar taxes), could be used to encourage health promoting consumption, so far it has been mainly applied only for fiscal reasons. These taxes could be used specifically as funding source for other sustainable eating initiatives (Traill et al., 2012).

The green tax -concept has been introduced to promote environmentally favourable consumption but so far, the progress in this area has been slow (Mont & Plepys, 2009). There is, however, research evidence in support of this kind of steering instrument; adjusting the taxing of the food products according to the CO₂ equivalents associated with their production could be effective in gearing the food consumption towards more vegetarian direction with the consequent reduction of the greenhouse gas emissions of the food chain (Wirsenius et al., 2011; Edjabou & Smed, 2013).

Formal education is an important part of information steering. Physical activity, health, nutrition and environmental topics are firmly integrated into the Finnish basic education, partly as specific subjects, but also as cross-curricular topics. Sustainability is the value basis of the Finnish school education, and it is to be accounted for in all teaching and in all every day practicalities of the schools (NCCB, 2004). The implementation of the sustainability approach is, however, on the schools' own initiative, since the instructions are missing. The performance of the Finnish students in the international PISA evaluations of the schools shows that the formal education in Finland is of high quality and it gives the pupils good start for the future. However, adoption of the sustainability issues at cognitive and practical level has not been clarified.

The role of the media should not be belittled. TV, press and internet reach large masses, and the information spreads effectively. The debates both on health and environmental issues are lively particularly in the social media. The influence of social media is evident mainly in the individuals' behaviour, which may change rapidly and to an unexpected direction according to the stop-go trends. For instance, in recent years, the keen interest in low carbohydrate diets managed to break at least temporarily the long positive development in the dietary habits of the Finns (THL, 2012). However, because new trends and topics are continuously taken up in the media, the behavioural changes are not necessarily long lasting.

4.3. Policy Integration

The need for policy integration has been advocated for e.g. by the Health-in-All-Policies approach (Leppo et al., 2013). At present, there is keen interest among the European policymakers and researchers to integrate the health and environmental goals comprehensively into sustainable food policy, and the work has begun (Lang & Barling, 2013). Where initiatives have been taken, the guidance is mainly targeted to the consumers. In general, the governments appear to be unwilling to take clear stand to sustainable food consumption and to use effective instruments to promote it. The responsibility is instead externalised to the consumers, civic organizations, and to the think tanks (Power & Mont, 2012). The sustainability issues have not been very much on the agenda of health promotion and physical motion.

Health and environmental aspects are combined in consumer information e.g. in Sweden (National Food Administration, 2009), in the Netherlands (Health Council of the Netherlands, 2011) and in Germany (German Council for Sustainable Development, 2013). The UK Sustainable Development Commission has compiled priorities for the government to promote sustainable food consumption in the UK (UK Sustainable Development Commission, 2009).

In Finland, the role of the public sector as the path breaker in sustainable consumption is stressed and in addition to the consumers, it is one of the target groups of the information (Ministry of the Environment, 2009; 2012). Along with the recommendations for sufficient physical activity, the issues of environmental sustainability and food culture are also taken up the newly revised dietary recommendations (VRN, 2014). Physical activity is accounted for also in the Nordic dietary recommendations, but ecological sustainability is mentioned in only one sentence: "By also considering factors like food production characteristics, seasonal food supply, and food origin when selecting food items, a diet that supports health can also be sustainable from an environmental and ecological perspective." (NNR, 2013). In most of the EU countries no attention has been paid to expand the scope of the nutritional recommendations towards more comprehensive sustainability approach (Lang & Barling, 2013).

The present Finnish policy discourse emphasizes the role of the economy as the prerequisite for sustainable development. In this view, the good health of the population is also seen as a factor strengthening the economic competitiveness. From the sustainability point of view, social policy based on economic growth is likely to be problematic. Economic growth usually requires increasing the material consumption and production. This is bound to run up against the limits dictated by the environment. Instead, reducing the inequities among the population would improve social sustainability. In this view, the social investments e.g. in form of health promotion, are fundamental questions of social justice.

5. Conclusions

The present inequity among the citizens threatens sustainability from all directions. Changing the situation requires a cultural breakthrough, restructuring of the prevailing values and attitudes and a change in modus operandi (Ehrenfeld, 2008). The cacophony from the various policy fields is confusing when striving towards more sustainable society. It is, therefore, important that the development of the food and health policies head into the same direction and that positive development in one area does not cause problems in other areas. In developing instruments for change, there needs to be consensus regarding the core issues and the guard-rails for the change. Common principles and all parties' commitment is required from the whole policy field.

At the level of the policy strategies and programs, it is essential to integrate the goals dealing with food, health, nutrition, physical activity and environmental issues. The goals of the different policies can be streamlined, if they are formulated in line with the sustainability principles. Promoting sustainability in one area influences also sustainability strivings - to one or the other direction - also in the other areas. The aim is to find a decent solution by reconciling the various approaches, although this solution is not necessarily the best for some specific sector.

Articulating the goals in concrete terms enables to define the indicators to follow-up the realization of the goals. There is already a fair consensus regarding the criteria for sustainable food (e.g. SusFoodEra, 2012). The context-centred approach should be applied to operationalize the sustainability criteria also for physical activity, and for any other area of human life. In principle, the goals of health promotion and sustainable development could be easily combined through food and nutrition: food is nutritionally balanced, tasty, affordable and accessible to all, environment is accounted for by favouring local and seasonal products and regarding food culture, attention is paid to preparation and rhythm of the meals as well as to the eating occasion itself and to its importance for social cohesion. Physical activity and food are intimately linked through health promotion. Sustainability and physical activity can also be linked, and this should be done within the frame of policy for physical activity. Like local and seasonal food, seasonal activity close to own housing and functional activity including the trip to work could be steps towards more sustainable forms of physical activity that are accessible to all regardless of the income level.

Sustainability even as an achieved goal is not a static state, but it is a dynamic balance that is constantly reshaped so as to adapt to the changing circumstances and to new knowledge (Holling, 2011). When this requirement for constant adaptation is accepted, it is also accepted that it is not possible to reach an unambiguously defined state of sustainability, but sustainability means the society's ability to react to the change. Even though there are gaps in knowledge and no definitive quantitative indicators are available, the policy steering should be based on available research knowledge and on the prudence principle.

A number of issues that emerged in the Finnish cir-

cumstances is listed below:

Effectiveness of the steering instrument. The contents and of target groups of the various steering instruments need to be re-evaluated. It is important to know the mechanisms that induce behavioural change in the various population groups. Instead of clarifying opinions and conceptions, the actual impact of the various instruments on behaviour need to be assessed.

Product information. The product information should be harnessed as means for policy steering to promote responsible product development and marketing so as to make sustainable choices attractive, affordable and accessible to all. Product information for consumers needs to be targeted more specifically in view of the different population groups.

Critical consumption and civic education. Much attention is paid to the consumer information in order to promote responsible choices. Similar to the advertisements this information aims at increase the sales. The consumption itself is not questioned. There is need for civic education which encourages critical consumption and citizen activity.

Economic instruments. Instead of pushing the responsibility onto the consumers, sustainable choices should stand to reason as the easiest, most economic and most attractive option. Price as a steering instrument could be used much more effectively. The key is to find a way to internalise the health and environmental costs into the price of the products and services. In decision-making, the long-term impacts of healthy food and reasonable physical activity on public health and national economy should be accounted for.

School food. Especially in Finland the public catering sector is an important forum for civic food education. The free school lunch provided by the municipalities has a central role in entrenching sustainable eating habits. The children and youth are within reach of this service at least 12 years, often even longer starting from the municipal day care. This opportunity should not be wasted, because many of the lasting eating habits are adopted in early age.

Municipal services and the needs of the vulnerable groups. The municipal food and motion services must be brought also within the reach of those outside the education system and working life. Health promotion policy would benefit from the participatory approach and tight co-operation between social and health sectors and their customers.

Interventions. In addition to the top-down steering, the citizens' own activity should be encouraged by supporting various local-level initiatives. The experiences from the health promoting interventions give an idea about the available measures and their efficiency. Similar participatory actor-oriented approach could be applied to promote also sustainability goals comprehensively.

Changes in the everyday environment. Attention needs to be paid especially to the public space and everyday operational environment. Both promoting and to restrictive measures can be applied to steer and regulate the visibility, supply and advertisements of the products and services so as to support sustainable consumption. Com-

munity planning with focus on light traffic and on local motion possibilities is essential in supporting physical activity. The key question in view of the population health is to break the routines of sedentary life style. It requires a thorough change in the present school and working environments.

References

- A.C. Nielsen (2008). Register on hotels, restaurants and catering services 2008. <http://fi.nielsen.com/news/documents/HORECATIEDOTE.pdf>. (12.8. 2012)
- Almaani, M., Aylwinblanco, P., Barbato, C., Benavides, D., Burman, M., Cacouris, P., Palacios, C., Sorensen, J., Sorgeloose, T., Vanier, C. & Vemali, G. (2004). *Retailers' communication to promote sustainable consumption*. UNEP DTIE & HEC School of Management.
- Ayres, R.U., van den Bergh, J.C.J.M. & Gowdy, J.M. (2001). Strong versus weak sustainability: economics, natural sciences, and "consilience". *Environmental Ethics* 23: 155-168.
- Brown, E., Dury, S. & Holdsworth, M. 2009. Motivations of consumers that use local, organic fruit and vegetable box schemes in Central England and Southern France. *Appetite* 53: 183-187.
- Csutora, M. Journal of Consumer Policy (2012). One More Awareness Gap? The Behaviour-Impact Gap Problem. *Journal of Consumer Policy*, 35: 145-163.
- Edjabou, L.D. & Smed, S. (2013). The effect of using consumption taxes on foods to promote climate friendly diets – The case of Denmark. *Food Policy*, 39: 84-96.
- Ehrenfeld, J. (2008). *Sustainability by Design: A Subversive Strategy for Transforming our Consumer Culture*. New Haven: Yale University Press. EkoCentria (2012). <http://www.portaatluomuun.fi/>. (30.10.2013)
- FAO (2009). The state of food insecurity in the world 2009. Economic crisis: impacts and lessons learned. Rome: Food and Agriculture Organization of the United Nations. Food Strategy (2010). Proposal for national food strategy. http://www.mmm.fi/attachments/mmm/tiedotteet/5qZTC31Sw/Huomisen_ruoka_-_Ehdotus_kansalliseksi_ruokastrategiaksi.pdf. (10.10.2013)
- German Council for Sustainable Development (2013). The sustainable shopping basket. http://www.nachhaltigkeitsrat.de/fileadmin/user_upload/English/pdf/publications/brochures/Brochure_Sustainable_Shopping_Basket.pdf (26.10.2013)
- Gliessman, R.S. (ed.) 2007. *Agroecology: The ecology of sustainable food systems*. Boca Raton, Florida: Lewis Publisher. 392 p.
- Grunert K. (2011). Sustainability in the food sector: A consumer behaviour perspective. *International Journal of Food System Dynamics* 2:207-2018.
- Hankonen, N., Absetz, A., Haukkal, A. & Uutela, A. (2009). Socioeconomic status and psychosocial mechanisms of lifestyle change in a type 2 diabetes prevention trial. *Annales of Be-*

- havioural Medicine* 38: 160-165.
- Health Council of the Netherlands (2011). Guidelines for a healthy diet: the ecological perspective. The Hague: Health Council of the Netherlands,
- Helakorpi, S., Patja, K., Prättälä, R., Aro, A. & Uutela, A. (2003). Health behaviour and health among Finnish adult population, spring 2003. B 17/2003. Helsinki: National Public Health Institute.
- HM Government (2010). Food 2030. Department for Environment, Food and Rural Affairs. <http://archive.defra.gov.uk/foodfarm/food/pdf/food2030strategy.pdf> (15.10.2013)
- Holling, C.S. (2001). Understanding the Complexity of Economic, Ecological, and Social Systems. *Ecosystems*, 4: 390-405.
- Horne, R.E. (2009). Limits to labels: The role of eco-labels in the assessment of product sustainability and routes to sustainable consumption. *International Journal of Consumer Studies* 33: 175-182.
- Hulme, M. (2009). Why we disagree about climate change: Understanding controversy, inaction and opportunity. Cambridge University Press. Irz X. & Kurppa S. (2013). Inter-household variations in environmental impact of food consumption in Finland. *MTT Discussion Papers* 1/2013.
- Jokiainen: MTT https://portal.mtt.fi/portal/page/portal/mtt_en/mtt/publications/mttdiscussionpapers/2013 (20.12.2013) Kela & VRN (2011). Recommendation for principles in meals for the students in higher education, [in Finnish]. The Social Insurance Institution of Finland & National Nutrition Council. <http://www.ravitsemusneuvottelukunta.fi/files/attachments/fi/vrn/korkeakouluruokasuositus.pdf> (15.1.2014)
- KKI (2014). Fit for Life Program. <http://www.kki.likes.fi/pages/content/Show.aspx?id=31> (1.2.2014)
- Kottila, M. (2011). Revised strategy for organic sector 2011-2015, [in Finnish]. Pro Luomu. <http://www.luomu.fi/wp-content/uploads/2011/08/Luomualan-kasvu-ja-kehitysohjelman.pdf>: (10.12.2013)
- Kurunmäki, S., Ikäheimo, I., Syväniemi, A. & Rönni, P. (2012). Disquisition on local food [in Finnish]. Ministry of Agriculture and Forestry. http://www.mmm.fi/attachments/mmm/julkaisut/maatjulkaisut/65w1I3c5F/Lahiruokaselvitys_valmis.pdf (10.1.2014)
- Lang, T. & Barling, D. (2013). Nutrition and sustainability: an emerging food policy discourse. *Proceedings of the Nutrition Society* 72: 1-12.
- Lang, T. & Heasman, M. (2004). Food Wars - The Global Battle for Mouths, Minds and Markets. London: Earthscan. 365 p.
- Leppo, K., Ollila, E., Peñna, S., Wismar, M. & Cook, S (2013). Health in All Policies. Seizing opportunities, implementing policies. Helsinki, Finland: Ministry of Social Affairs and Health.
- LIKES & Ministry of Education (2014). Finnish Schools on the Move - a more active and enjoyable schoolday enjoyable schoolday <http://www.liikkuvakoulu.fi/in-english.2.2.1014> 2014)
- Lindström, J., Ilanne-Parikka, P. & Peltonen, M. (2006). Sustained reduction in the incidence of type 2 diabetes by lifestyle intervention: follow-up of the Finnish Diabetes Prevention Study. *Lancet* 368: 1673-1679.
- Mankiw, G., N. (2009). Smart Taxes: An Open Invitation to Join the Pigou Club. *Eastern Economic Journal* 36: 14-23.
- MEA (2005). Millennium Ecosystem Assessment, Ecosystems and Human Well-being, Synthesis. <http://www.millenniumassessment.org/documents/document.356.aspx.pdf>. (15.10.2013)
- Ministry of the Environment (2008). Getting more from less. Proposals for Finland's national program to promote sustainable consumption and production. <http://www.ymparisto.fi/default.asp?contentid=62075&lan=en>. (15.10.2013)
- Ministry of the Environment (2009). Sustainable public procurement. Public sector becomes a pioneer in sustainable public procurement. <http://www.ymparisto.fi/download.asp?contentid=103507&lan=fi>. (15.10.2013)
- Ministry of the Environment (2012). From less more wisely. Revised program for sustainable consumption and production 2012. [in Finnish]. Helsinki: Ministry of the Environment. www.ymparisto.fi/julkaisut. (15.10.2013)
- Ministry of the Environment (2013). Finland we want 2050. The society commitment for sustainable development. [in Finnish] http://www.ymparisto.fi/fi-FI/Ymparisto/Kestava_kehitys/Kestavan_kehityksen_yhteiskuntasitomus/Kestavan_kehityksen_yhteiskuntasitomus_2810597%29 (10.1.2014)
- MMM (2002). Strategy for sustainable use of renewable natural resources in Finland. Publications 8b. Ministry of Agriculture and Forestry. Helsinki, Finland: 1-94 p.
- MMM (2009). Background report for national food strategy [in Finnish]. Ministry of Agriculture and Forestry. http://www.mmm.fi/attachments/elintarvikkeet/5HKe7TYp2/Ruokastrategia_tauaselvitys_UUSI.pdf. (20.10.2013).
- MMM (2013). Local food - naturally! The program of the Finnish government for local food and the goals for developing the local food sector to 2020. [in Finnish]. Ministry of Agriculture and Forestry. <http://www.mmm.fi/attachments/lahiruoka/6GeZ7N4oG/LahiruokaohjelmaFI.pdf> (15.1.2014)
- Mont, O. & Plepys, A. (2009). Sustainable consumption progress: should we be proud or alarmed? *Journal of Cleaner Production* 16: 531-537.
- Mytton, O., T., Clarke, D. & Rayner, M. (2012). Taxing unhealthy food and drinks to improve health. *British Medical Journal* May 22.
- National Food Administration (2009). The National Food Admin-

- istration's environmentally effective food choices, proposal notified to the EU 15.05.09. http://www.slv.se/upload/dokument/miljo/environmentally_effective_food_choices_proposal_eu_2009.pdf (10.1.2014) NCCB (2004). National core curriculum for basic education [in Finnish]. Vammala: Opetushallitus. http://www02.oph.fi/ops/perusopetus/pops_web.pdf (15.10.2013).
- NNR (2013). Nordic Nutrition Recommendations (2012). Part 1. Summary, principles and use. Nordic Council of Ministers. Nord 2013:009.
- OKM (2008.) Active and healthy Finland in 2008. Proposal for national program for physical motion from the public steering point of view [in Finnish]. Ministry of education, Department of Culture, Physical Motion and Youth. Work Group Memoranda and Reports 2008:14. <http://www.minedu.fi/export/sites/default/OPM/Julkaisut/2008/liitteet/tr14.pdf?lang=fi:1>(15.12.2013)
- Organic Strategy Work Group (2006). The strategic goals 2007-2015 in developing the Finnish organic markets. [in Finnish]. Organic Strategy Work Group, Helsinki
- Paturi, M., Tapanainen, H., Reinivuo, H. & Pietinen, P. (2008). The national Findiet 2007 survey. B 23/2008. National Public Health Institute. Helsinki, Finland
- Power, K. & Mont, O. (2012). Analysis of latest outcomes of academic work on sustainable consumption 2010-2012. *ETC/SCP Working Paper 3/2013*. European Topic Centre on Sustainable Consumption and Production. Copenhagen, Denmark.
- Rautio, N., Jokelainen, J., Oksa, H., Saaristo, T., Peltonen, M., Niskanen, L., Puolijoki, H., Vanhala, M., Uusitupa, M., & Keinänen-Kiukaanniemi, S. (2012). FIN-D2D Study Group. Socioeconomic position and effectiveness of lifestyle intervention in prevention of type 2 diabetes: one-year follow-up of the FIN-D2D project. *Scandinavian Journal of Public Health* 39: 561-570.
- Risku-Norja, H. & Mikkola, M. (2010). Towards sustainable food systems through innovative networks in public catering. 9th European IFSA conference "Building sustainable rural futures: The added value of systems approaches in times of change and uncertainty." International Association of Farming Systems, 4-7 July, 2010, Vienna, Austria
- Rittel, H.W.J. & Webber, M. (1973). Dilemmas in a general theory planning. *Policy Sciences* 4: 155-169.
- SETU (2010). The challenges of food choices and steering instruments in global operational environment [in Finnish]. Helsinki: Advisory Board of
- Sector Research. Know-how, work and well-being 1/2010 http://www.minedu.fi/export/sites/default/OPM/Tiede/setu/liitteet/Setu_1-2010.pdf (10.1.2014)
- SITRA 2010. National strategy for natural resource use, [in Finnish]. SITRA - The Finnish Innovation Fund SITRA <http://www.sitra.fi/julkaisut/muut/Kansallinen%20luonnonvarastrategia.pdf> (20.10.2013).
- SRE (2008). Promotion program for Finnish food culture, [in Finnish] Helsinki: Ministry of Agriculture and Forestry., http://www.sre.fi/ruoka.fi/www/fi/liitetiedostot/Microsoft_Word_-_ruokakulttuuriohjelma_paeiv.pdf (10.12.2003)
- STM (2008). Government decision-in principle on guidelines for health promoting physical motion and nutrition [in Finnish] Helsinki: Ministry of Health and Social Affairs. http://www.stm.fi/c/document_library/get_file?folderId=28707&name=DLFE-3875.pdf&title=Valtioneuvoston_periaatepaatos_terveytta_edistavan_liikunnan_ja_ravinnon_kehittamislinjoista_fi.pdf (20.10.2013)
- STM (2010). Proposal for measures to develop mass catering services in Finland [in Finnish with English abstract]. Ministry of Social Affairs and Health. STM Reports 2010,11: 1-82.
- SusFood (2012). Sustainable food production and consumption. EU 7th framework program. <http://www.susfood-era.eu/index.php?index=30>. (1.9. 2012).
- TEM (2008). Consumer policy program for 2008-2011 [in Finnish]. Ministry of Employment and the Economy. http://www.tem.fi/files/20019/TEMjul_23_2008_konserni.pdf: (10.1.2014)
- TEM (2010). Intelligent and responsible natural resource economy. Government report to parliament [in Finnish]. Ministry of Employment and the Economy. http://www.tem.fi/files/28516/TEM_69_2010_nettti.pdf: (20.10.2013)
- The Age Institute (2014). <http://www.voimaavanhuuteen.fi/en/frontpage> (1.2.2014).
- THL (2012). The results of the school health survey [in Finnish] http://www.thl.fi/fi_FI/web/fi/tilastot/vaestotutkimukset/kouluterveyskysely (22.10.2013).
- Trail, W.B., Shankar, B., Verbeke, W., Hoefkens, C., Mazzocchi, M., Capacci, S., Ramach, T., Saba, A., Gennaro, L., Niedzwiedzka, B., Bech-
- Larsen, T., Aschemann-Witzel, J., Wills, J., Kuhn, S. & Sadler, C. (2012). Effectiveness of policy interventions to promote healthy eating and recommendations for future action: Evidence from the EatWell Project. Deliverable 5.1
- UK Sustainable Development Commission (2009). Setting the table - Advice to government on priority elements of sustainable diets. <http://www.sd-commission.org.uk/publications.php?id=1033> (26.10.2013).
- UN (2002). Report of the World Summit on Sustainable Development (Corrigendum) Johannesburg, South Africa, 26 August - 4 September. A/CONF.199/20* ed. United Nations, New York. <http://daccess-dds-ny.un.org/doc/UNDOC/GEN/N02/636/93/PDF/N0263693.pdf?> (30.10.2013)
- UN (2005). Johannesburg Plan of Implementation. http://www.un.org/esa/sustdev/documents/WSSD_POI_PD/English/POIToc.htm. (30.10.2013)
- VN (2006a). Government decision-in principle on sustainable development strategy [in Finnish]. Prime Minister's office. <http://www.ymparisto.fi/download.asp?contentid=60377> (22.10.2013)

- VN(2006b). Towards sustainable choices. Nationally and globally sustainable Finland. [in Finnish]. Publications of the Prime Minister's office 5/2006. <http://www.ymparisto.fi/download.asp?contentid=53983&lan=fi>: 20.10.2013)
- VN (2007a). The program of the Prime Minister Matti Vanhanen government 2007.[in Finnish]. Prime Minister's office. <http://www.aka.fi/Tiedostot/Strategiat/hallitusohjelma2007.pdf> (15.12.2013)
- VN (2007b). Policy program for children, youth and families [in Finnish]. Prime Minister's office. http://valtioneuvosto.fi/tietoarkisto/politiikkaohjelmat-2007-2011/lapset/ohjelman-sisaeltoe/HPO_Lapset_HSA2007.pdf. (15.12.2013)
- VN (2007c). Policy program for health promotion [in Finnish]. Prime Minister's office <http://valtioneuvosto.fi/tietoarkisto/politiikkaohjelmat-2007-2011/terveys/fi.jsp>. (15.12.2013)
- VN (2008). Government decision-in principle on guidelines for health promoting physical motion and nutrition [in Finnish] Helsinki: Ministry of Health and Social Affairs http://www.stm.fi/c/document_library/get_file?folderId=28707&name=DLFE-3875.pdf&title=Valtioneuvoston_periaatepaatos_terveytta_edistavan_liikunnan_ja_ravinnon_kehittamislinjoista_fi.pdf(22.10.2013)
- VN 2(009). Government decision-in principle on promoting sustainable choices in public procurements 8.4.2009 [in Finnish]. Prime Minister's office, Helsinki
- VN (2010). Government report to parliament on food policy. [in Finnish]. Prime Minister's office http://www.mmm.fi/attachments/maatalous/maatalouspolitiikka/newfolder_14/5tTDQgjLk/selontekosuomi.pdf: (20.10.2013)
- VN (2011). The program of the Prime Minister Jyrki Katainen government [in Finnish]. Prime Minister's office <http://www.vn.fi/hallitus/hallitusohjelma/pdf332889/fi.pdf> (15.1.2014)
- VN (2013a). More Organic! The promotion program of the Finnish government for the organic sector and the goals for development until 2020. [in Finnish]. Ministry of Agriculture and Forestry
- VN(2013b). From less more wisely. Government decision-in principle on sustainable consumption and production 13.6.2013 [in Finnish]. Prime Minister's Office. [http://valtioneuvosto.fi/toiminta/periaatepaatokset/periaatepaatos/fi.jsp?oid=388570:\(20.10.2013](http://valtioneuvosto.fi/toiminta/periaatepaatokset/periaatepaatos/fi.jsp?oid=388570:(20.10.2013)
- VN (2013c). Government future report: Sustainable growth for well-being [in Finnish]. Publications of the Prime Minister's office 1 /2013 <http://vnk.fi/julkaisukansio/2013/j18-vn-tuse-fi-19-sv-20-en/PDF/fi.pdf>: 10.1.2014)
- VRN (2008). School meal recommendations [In Finnish]. National Nutrition Council. http://www.ravitsemusneuvottelukunta.fi/attachments/vrn/kouluruokailu_2008_kevyt_nettiin.pdf (15.1.2014).
- VRN (2010). Nutritional recommendations for senior citizens [in Finnish]. National Nutrition Council. Helsinki. http://wwwb.mmm.fi/ravitsemusneuvottelukunta/Suositus_ikaantyneet_080909.pdf (!5.1.2014)
- VRN (2014). Health from food. The Finnish dietary recommendations[in Finnish: Terveyttä ruuasta]. Helsinki, National Nutrition Council. http://www.ravitsemusneuvottelukunta.fi/files/images/vrn/2014/ravitsemussuositukset_2014_fi_web.pdf (20.1.2014)
- WCED (1987). Our common future. Oxford: Oxford University Press.
- Wirsenius, S., Hedenus, F. & Mohlin, K. (2011). Greenhouse gas taxes on animal food products: rationale, tax scheme and climate mitigation effects. *Climate Change*, 108: 159-184.

Citation

Risku-Norja, H.; Irz, X.; Kurppa, S.; Ovaskainen, L.; Nummela, O.; Rauhanen, T.; Pinolehto, M.; Vorne, V.(2014): Human and Environmental Wellbeing - Streamlining the Policy Approach. In: Planet@Risk, 2(4), Special Issue on One Health: 254-265, Davos: Global Risk Forum GRF Davos.