



Sustainable food 2020

More resource efficient, fairer, more independent, healthier, more animal-friendly

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In recent decades, we as society have become accustomed to eating habits that promote global warming, aggravate world hunger and water shortages, fail to ensure food security, are unhealthy, and violate the constitutional principle of animal dignity. The ethical-political problem lies mainly in the high consumption of animal-derived foods ^[1]. Therefore, a rational solution substantially consists of the promotion of a plant-based diet ^[2].

By 2020, we can achieve a turnaround by significantly increasing our individual consumption of plant-based foods and substantially reducing the consumption of animal-derived foods.

Sections 1 to 5 of this paper provide arguments why this turnaround is necessary. Section 6 proposes specific measures. We hope that politics, society and industry will discuss, adapt and implement these suggestions. Whether municipal, cantonal, national or even international, we are looking to initiate a turnaround at all levels.

1. Resource efficiency and climate change

Livestock farming leads to many environmental problems. In Switzerland, food production makes up 30% of all negative environmental impacts, which makes it the single highest contributing factor ^[3]. Livestock farming is a particularly significant cause of climate change. The UN Environment Programme UNEP maintains that a reduction of greenhouse gas emissions of at least 50% by 2050 is necessary in order to avoid the worst impacts of climate change ^[4]. To achieve this goal, we as society should increasingly eat a plant-based diet, not least because of the otherwise impending economic costs ^[5].

Greenhouse gas (GHG) emissions: The main causes of climate change are usually attributed to transportation and housing. This is irrational: according to the UN Food and Agriculture Organization FAO, animal farming is responsible for 14.5% of GHG emissions ^[6]. It is therefore equally harmful to the environment as transportation at 15% ^[7]. Fruit and vegetables, however, account for only 1.9% of GHG emissions and grain products for even less with only 1.4% ^[3]. The Swiss Federal Institute of Technology Zurich (ETH) came to the conclusion that agricultural GHG emissions in Switzerland can be primarily reduced through the reduction of animal stocks ^[8, 9]. Furthermore, climate change aggravates the problem of food insecurity for the poorest people ^[10].

Resource inefficiency: A plant-based diet needs 5 times less agricultural land than necessary for the current average diet ^[11]. Livestock farming takes up 70% of arable land around the globe and 30% of the earth's surface ^[12]. 70% of deforested areas in the Amazon rainforest are used as pastures and a large part of the remaining 30% is used to raise animal feed crops (ibid.). Switzerland imports the vast majority of its soy demand from Brazil and therefore contributes directly to this deforestation ^[13]. Also for organically kept livestock more than 80% of the concentrated feed is imported from abroad ^[14].

Water pollution: Animal feces (ammonia), antibiotics, hormones and fertilizers, as well as pesticides for fodder crops make livestock farming one of the biggest sources of water pollution ^[15].

Costs: The British government estimates that if nothing is done about these environmental problems, the consequences of climate change will result in economic losses of 5-20% of the global gross domestic product (up to € 5,500 billion per year). The costs for avoiding the most severe consequences, however, are estimated to be merely 1% thereof ^[16].

2. Resource inefficiency and world poverty

The animal industry causes many socio-economic problems because of its enormous drain on resources. It therefore undermines our fairness towards people in the poorest countries and aggravates world hunger in particular ^[17]. Due to its efficiency, a plant-based diet provides a

rational solution to the problem and should be encouraged accordingly ^[2]. This is also important in light of the expected global population growth.

Water shortage: In regions where forage crops need to be irrigated the keeping of farm animals aggravates water shortage. Taking into account the water consumption for production, more than 15,000l of water are needed for 1kg of beef ^[18], whereas the same amount of wheat merely requires 1,600l ^[19].

Displacement of local farmers: The livestock industry's massive demand for land often leads to the displacement of indigenous peoples and the peasant population from their ancestral lands ^[20].

Price increase for staple foods: The livestock industry's demand for animal feed contributes to rising world market prices for grain and soy ^[21]. This impacts people in the poorest countries most heavily ^[20].

Food waste and world hunger: The production of 1kg of beef requires up to 13kg of grain and for 1kg of pork it is up to 6kg ^[22]. Globally, 85% of the soy crop ^[23] and 35% of grain production are fed to livestock ^[24]. In Switzerland the latter is even 80% ^[25]. At the same time 842 million people are permanently malnourished ^[26] and 20,000 die from the effects every day ^[27]. If these crops were reallocated for human consumption, an additional 4 billion people could be fed already today ^[28] – more than the expected global increase in population of 2.4 billion ^[29].

3. Food imports and food security

Also with regard to food security, too many animal-based foods are currently consumed in Switzerland. The Swiss livestock industry is heavily dependent on imports of concentrated feed, which so far has been omitted in previous calculations of levels of “self-sufficiency”. Because of its resource efficiency, a predominantly plant-based diet increases food sovereignty.

Level of self-sufficiency: Switzerland's level of self-sufficiency is reported to be at 60% ^[30]. If fodder imports are considered – as they correctly should be – the level drops to 50%. This means that we obtain 50% of our food from abroad ^[31]. Switzerland imports 430,000t of protein feed per year, with soy imports having increased tenfold over the last 20 years ^[32]. For the production of these food imports approximately 250,000ha of acreage is required abroad ^[33]. The arable land in Switzerland amounts to 270,000ha ^[34]. Accordingly, in order to maintain the current level of animal-derived food consumption in Switzerland, we use up equally as much arable land abroad as we have available in our entire country.

Irrational approaches to the problem: The Swiss People's Party and the Swiss Farmers' Union (SFU) want to raise the level of self-sufficiency through popular initiatives ^[35]. The SFU looks to

increase the domestic cultivated area for fodder to 40,000ha. This could indeed increase the level of self-sufficiency by 15%, although no further than that. The SFU writes:

Given the many factors to be considered (...) an extensive expansion of areas for concentrated feed production is hardly realistic. A complete production of concentrated feed using domestic components is absolutely unrealistic. ^[36]

Also the currently discussed reauthorization of feeding meat and bone meal could reduce soy imports by no more than 10% ^[37]. Therefore, it is obvious that only the promotion of a plant-based diet could massively increase Switzerland's level of self-sufficiency.

4. Plant-based diets and health

From a medical perspective, too many animal-derived foods are currently consumed in Switzerland, which leads to various health issues and high costs. A mainly plant-based diet is healthy and lowers the risk of numerous diseases ^[38]. Therefore, it should be promoted as a cheap method of disease prevention.

Use of antibiotics and pandemic risks: Alone in the Swiss livestock industry 66,000kg of antibiotics are used every year to prevent animals from getting sick ^[39]. Multiresistant germs are accordingly widespread amongst livestock ^[40] – as well as on free range (organic) farms and in 36% of bodies of water ^[41, 42]. Treatment methods are severely limited once these bacteria are transmitted to humans via the consumption of animal products. Currently available antibiotics could become ineffective in 10-15 years ^[43] unless there is a change in practice. Already today 80 people die every year from such bacteria ^[44]. The concentration of germs in the livestock industry also facilitates the development of pandemics such as bird flu ^[45].

Vegetarian diets: The Federate Commission for Nutrition's expert report assesses a predominantly plant-based diet as positive:

Independently of vegetarianism, it has been scientifically recognized in the past 20 years that a diet consisting of a high intake of fruit/vegetables, nuts or wholemeal products contributes considerably to the preservation and improvement of health. ^[46]

Cardiovascular disease: A proportional increase in the consumption of plant-based foods reduces the risk of developing cardiovascular disease significantly (ibid.). Plant-based foods contain less saturated fatty acids and no cholesterol.

Diabetes mellitus: A reduction in the consumption of animal-derived products lowers the risk of developing diabetes mellitus. The risk is almost 50% lower with a completely meat-free diet ^[47].

Obesity: In a five-year study, participants who reduced their intake of animal-derived products gained the least weight ^[48]. Many plant-based foods are low calorie while being highly nutritious and rich in fiber.

Health and cow's milk: Advertising promotes the belief that the consumption of cow's milk is a necessity for healthy bones. However, according to scientific data there is no correlation between consumption of cow's milk and bone fracture risk ^[49], including for children and adolescents ^[50].

Expenses: The consequential economic costs related to the overly high consumption of animal foods can be assumed to be huge. In Switzerland the costs of overweight alone amount to CHF 5.8 billion per year ^[51].

5. Animal welfare

Irrespective of organic or conventional standards, the exploitation of livestock affects the legally guaranteed protection of animal dignity ^[52]. It leads to many breeding-related illnesses and, in particular, to much suffering during keeping, transportation and slaughtering. By promoting a plant-based diet, we also consider the interests of the large number of suffering animals. 150,000 animals are killed every day in Switzerland alone ^[53].

Slaughtering conscious animals: The harm the livestock industry brings upon animals is most obvious in the slaughterhouse. 4-9% of cattle have to be stunned with a captive bolt gun more than once, while 0.1-1% of pigs remain unanesthetized after carbon dioxide exposure ^[54, 55]. This means that in Switzerland every year more than 26,000 cattle and calves, as well as over 2,800 pigs are slit open and scalded whilst still conscious ^[56, 57, 58]. This is in crass contradiction to art. 21 of the Animal Welfare Act: "Mammals may only be slaughtered if they are anesthetized before the start of blood extraction." ^[52]

Behavioral disorders and bovine mastitis: The keeping of dairy animals is not as idyllic as made believe by advertising ^[59]. Mother cows are separated from their calves in the first week after birth ^[60] – also in 95% of organic farms ^[61] – despite cows' distinctly close mother-child bond ^[62]. The significantly shortened nursing period leads to behavioral disorders: calves start suckling each other ^[63]. In consequence, they are often kept in single cages and fed with a milk substitute ^[64]. In order for a cow to constantly produce milk it has to give birth regularly (ibid.). Whereas originally a cow produced 8l of milk per day to feed its calf, the current "milk capacity" lies at 25l per day (ibid.). Overbreeding leads to an array of health problems ^[65]. Even every third dairy cow that is kept according to organic standards suffers from bovine mastitis ^[66].

Gassing and cannibalism: Abuses are also numerous in poultry farming ^[67]. When it comes to egg production, all male chicks are gassed or shredded immediately after hatching as they do not lay eggs and do not put on enough meat ^[68]. This affects over 2 million chicks per year in Switzerland alone ^[69]. After laying 300 eggs in one year, laying hens are gassed as well. As with the gassing of chicks, organic does not make a difference here either ^[70, 71]. On average, 20 broiler chickens are kept per square meter. They are killed after reaching a weight of 2kg and "slaughter age" in just 40 days – despite a life expectancy of 20 years. Also here, overbreeding leads to many illnesses ^[72], feather pecking and cannibalism ^[73, 74] – even on organic farms,

even in Switzerland ^[75, 76] – in spite of the *legal* preventive clipping of their vulnerable beaks ^[77, 78].

Castration and heart failure: Animal welfare also suffers in pig husbandry ^[79]. On average, 1-2 piglets per litter are crushed by their mothers ^[80]. They are separated from their mothers after 18 days ^[81]. Their teeth are ground down in order to prevent them from hurting each other ^[78]. Boars are castrated merely because of the way their meat smells – which is legal ^[82, 78]. For fattening, pigs reach a weight of over 100kg in less than 6 months, thereby determining their “slaughter age” ^[83, 84]. Breeding-related conditions such as joint problems and cardiac failure are widespread ^[85, 86].

Paucity of information and advertisement: It was revealed in a survey that 88%, and 70% respectively, were unaware of the fact that livestock on animal fattening farms are not guaranteed straw or exercise by the Swiss animal welfare act ^[87]. 64% of respondents did not know that the brands *Suisse Garantie* and *Schweizer Fleisch* do not require free-range facilities, or wrongly assumed the opposite ^[88]. Misleading advertisements with slogans such as “species-appropriate” and “humane” contribute to such misjudgements ^[89]. However, this also suggests that the government neglects its legal obligation to inform regarding animal welfare ^[52].

Mass production and animal welfare: As shown by previous research, animal welfare is systematically disregarded by current livestock keeping practices ^[52]. Why? (1) The keeping of livestock is so inefficient with regard to land and sustenance resources ^[11, 22] that it is not profitable despite subsidies running into the billions ^[90]. Thus, increased efficiency requires improved performance of animals as a “resource” at the expense of their welfare ^[91]. (2) The overly high consumption of animal-derived foods requires an assembly-line livestock industry – in Switzerland alone, over 55 million land animals are killed after a fraction of their life expectancy each year ^[53, 92]. Regardless of conventional or organic standards, such a mass production inevitability results in tremendous suffering of animals ^[93]. By promoting a plant-based diet animal protection is taken seriously.

6. Sustainable food 2020 – measures

The plant-based diet is to be promoted by raising the status of plant-based meals institutionally and in society. This structural approach is liberal and moves society towards the goal of more sustainable nutrition ^[94]: an improvement of the availability of plant-based meals leads to an increase in sustainable nutrition ^[95] without compromising our freedom of choice or limiting our enjoyment and convenience ^[96]. In this sense, we propose the following measures:

Improving plant-based cooking skills

1. Professional training: Currently, almost all meals in the practical exams to qualify as chef require the cooking of meat. From now on, plant-based cooking (vegetarian and vegan) shall be

granted an important place within chefs' vocational training. At least half of the official examination meals shall be meat-free. At least one is completely plant-based (vegan).

2. School education: Currently, plant-based cooking is hardly ever covered in home economic lessons in schools ^[97]. From now on, plant-based cooking (vegetarian and vegan) shall be granted an important place in home economics lessons in schools. At least half of all main dishes which students learn to cook shall now be meat-free. At least one starter, one main dish and one dessert per quarter year is entirely plant-based (vegan).

3. Further education: Companies in the food service industry which allow their chefs to attend further training in plant-based cooking ^[98] as well as chefs attending such training on their own initiative shall be supported financially. Financial support will be higher for companies training apprentices and respective trainers.

Enhancing plant-based product offers

4. Companies in the public sector: Companies in the food service industry which offer meat-based dishes shall also offer high-quality vegetarian and vegan dishes. Food service companies in public establishments (school and university canteens, staff canteens in public administration, prisons, military installations etc.) shall take appropriate measures to promote sales of meat-free and entirely plant-based meals whilst reducing the proportion of animal products (further education, declarations, presentation, price discrimination).

5. Private sector: Companies cultivating plant-based food or producing plant-based products suitable to replace meat-based products shall be promoted through directed public funding (e.g., as it is the case with renewable energies).

Improving the basis of decision-making

6. Recommendations: Municipalities, cantons and the federal government shall recommend a reduction of the consumption of animal products and an increased intake of plant-based meals based on the reasons provided in this paper.

7. Research: The federal government or individual cantons shall quantify the economic costs of an overly high consumption of animal products (health costs, environmental costs, the costs of agricultural dependency on foreign countries, etc.).

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About

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Contact

Address

GBS Switzerland
Efringerstrasse 25
CH-4057 Basel
gbs-schweiz.org
sentience.ch

Co-president GBS Switzerland

Adriano Mannino
+41 78 858 22 70
adriano.mannino@gbs-schweiz.org

Project manager Sentience Politics

Michèle Singer
+41 78 755 59 96
michele.singer@sentience.ch

Coordinator Initiative Bern

Sebastian Leugger
+41 77 434 85 81
sebastian.leugger@sentience.ch

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