Living from nature – development and change since the Stockholm Conference in 1972

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Foreword

Our age is characterised by great challenges for the environment, the climate and our health. Action to achieve the 17 global Sustainable Development Goals of the 2030 Agenda is of great importance. To increase the pace of progress towards a more sustainable world, the UN Secretary General Antonio Guterres declared that 2020–2030 is a decade to deliver the Sustainable Development Goals, a ”Decade of Action”. Year 2021 saw the UN Food Systems Summit. The summit was intended to illustrate the central role of food systems in achieving the 2030 Agenda goals and to find solutions to the many challenges that the world has to address regarding issues including hunger, famine, the environment, food production and consumption.

The first UN conference on the environment, the Stockholm conference in 1972, is being commemorated by the UN high-level meeting Stockholm+50 in June 2022, hosted by Sweden and Kenya. The ambition in holding Stockholm+50 is to mark its 50th anniversary, while also contributing to increasing the pace of the transition to sustainable, green societies, more jobs and an environment in balance for all, with no one left behind.

The Swedish FAO Committee's discussion paper starts this time from the period around the Stockholm Conference in 1972, and deals with various perspectives on developments in agriculture, forestry and the sea in the 50 years that have taken place since 1972. The paper[1] begins by looking at the development of agriculture in Sweden in a changing world. This is followed by three surveys of forests, the sea and our food choices. Finally, we can follow a conversation between two farmers – in Sweden and Uganda – and their shared pride and their choices and thoughts about the development of agriculture. The various chapters also look forward to the future.

We have just under 8 years left to achieve the goals of the 2030 Agenda. We need to act now to bring about the necessary change. At the same time, we must draw on the knowledge that has generated positive developments and change up until the present. It is nevertheless the case that sustainable use of agriculture, forestry and the sea is part of the solution to the great challenges of our age. We need to learn from our history in order to deal with the future.
It is my hope that this discussion paper will contribute both to the further discussions and to further work to solve our common challenges and achieve the goals of the 2030 Agenda.

Enjoy your read.

State Secretary Oskar Magnusson, Chair of the Swedish FAO Committee

[1] The entire publication is a product of the Swedish FAO Committee. The authors are responsible for the content of their own chapters, which do not necessarily reflect the views of the Committee as a whole.

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CHAPTER 1

Swedish agriculture in a changing world 1972–2022

Anders Wästfelt, Stockholm University

Introduction

For thousands of years humans have been dependent on permanent agriculture for the development of their societies. In the post-war period the primary drivers of change in the agricultural systems of the western world have been efforts to increase efficiency, often resulting in overproduction, falling prices and changes in consumption patterns. These changes have also contributed to environmental and climate problems. Despite profound change, agriculture remains the most essential part of society, a role often taken for granted in the western world.

In 1968 Staffan Helmfrid published a geographical analysis that shed light on the distance between the geographical centres of food production and of food consumption in Sweden; then these two points were only some tens of kilometres apart.[2] Fifty years later this analysis cannot be done since it would include the whole of the world and far too many complex and unknown connections. How could it be that this complexity has been able to grow so quickly in such a short period of time? Understanding this requires an awareness of the ambition and drivers behind processes of change such as urbanisation, structural change, scale expansion and growing international trade – processes that have had a radical impact on Swedish agriculture. This also includes changes in attitudes to the development and change of the landscape as a space for living and a resource for food production.

Along with global market integration, the industrial food production systems of the western world and their efforts to continually increase food production have had a far-reaching effect on the environment and the climate. The copious use of fossil energy for the manufacture of tools, fertilisers and fuels for machinery and transport has led to problems, and it has become more and more difficult to map the connections between the industrial systems of production and their impact on the environment and the climate. These changes have also had an indirect impact on biodiversity and the landscape in relation to the necessary and need for food production plus additional system-generated needs. A large part of the changes described have taken place after 1972, but in recent decades there is a clear shift from the issue initially being food supply to it now being climate and food.

[2] Helmfrid, S. (1968). How is Sweden's agriculture located in relation to its market? Swedish geographical yearbook *[Svensk geografisk årsbok]*, year 44, 1968. Published by the South Swedish Geographical Society.

Photo: Anders Wästfelt

Overproduction and deregulation

Historically, agriculture in Sweden has developed in symbiosis between the State, farmers and consumers and their needs and changing preferences. Farmers who were active in and remember the early 1970s sometimes say that this was the golden age of Swedish agriculture. Much of the post-war period's rationalisation and farm expansion had been completed, and fixed prices for production contributed to good profitability. Tensions in society concerned rising food prices and the level of farmers' incomes; milk and butter became dearer and dearer, but most farmers could make a living from their farms. There was national governance of food production. At the same time, there was growing realisation that the new industrially run agriculture created environmental problems, especially locally, with an impact on plants and animals, but also internationally through eutrophication and emissions of climate gases. In the 1980s and 1990s some of the eutrophication problems were dealt with at the same time as structural rationalisation continued and meant that ditches and small biotopes disappeared from flatlands. Many of these problems persist today; the awareness of climate problems, in particular, has increased but the impoverishment of biodiversity has continued. But Swedish agriculture maintains a relatively good standard in an international comparison, even though it is not climate-positive or long-term sustainable at present.

In the 1980s the problem that agriculture in Sweden produces too much food was accentuated. Year after year, the State's costs for selling the surplus at low world market prices rose. The was lively public debate about how to solve this. The upshot was a decision by the Riksdag (the Swedish Parliament) in 1990 that led to the disappearance of price support for production.[3] Compensatory measures were brought in to save irreplaceable values in the landscape at the same time as farmers became "price takers" in the world market and had to accept falling income from what they produced. In New Zealand a similar change had been made in the 1980s, and reports from that country scared Swedish farmers since there it had resulted in extensive restructuring and the closure of many small farms.

The winding up of price support was short-lasting and, as soon as 1995, Swedish agriculture received new production support when Sweden became a member of the EU, influencing food prices and consumption. It resulted in agriculture becoming part of the EU Single Market and its Common Agricultural Policy (CAP). From that moment on, Swedish agriculture policy was to shift focus to being more about negotiating with the EU and its Member States on policy design and the incorporation of policy in the European regulatory framework that had been harmonised in the EU. Paradoxically enough, Swedish agriculture now came to experience a process similar to what it had gone through in the 1980s; for ever increasing surpluses were produced in the EU. To solve this, production aid was reformed, starting in the 1990s, so that, instead of production aid, the primary payment to agriculture came to be based on farm area and was now called single farm payments. The purpose of this reform was to reduce overproduction, while opening the EU market to global trade and competition by preparing EU agriculture policy for the ongoing negotiations in the World Trade Organisation (WTO). The single farm payment provided compensation for the production aid lost, but also led to greater incentives to scale up farm size. With a large area, but with no production requirements, it was now possible to get a fixed income from the land of a farm. This accelerated structural change. Since the 1990s the EU has also sought at the same time, through a number of reforms of the CAP, to introduce environmental measures so that the focus now is not solely on production, direct aid, the organisation of the markets, etc., but is also on running farms in an increasingly environment- and climate-friendly way.

Structural change, scale expansion and specialisation are effects of the pressure pushing farmers in Sweden to adapt to global competition so as to achieve greater profitability. In part, urbanisation is an effect of this process, which leads to fewer livelihoods being available in rural areas. Along with more transport, this has led to these mega processes continually increasing the distance between producers and consumers.

[3] Lindberg, H. (2008). Policy change and the importance of ideas in reforming Swedish agriculture policy. History Journal *[Historisk Tidskrift],* 128(1), 2–27.

Global market and place-specific conditions

The processes described above are based on the idea that deregulated global trade benefits the Swedish and European economy and the development of agriculture. This idea has led the agriculture policy reforms that have been in place since 1990. As a result of these reforms, Swedish agriculture now constantly interacts with the global market. This idea is also to be found in the present Swedish food strategy, whose ambition is for Swedish agriculture to be competitive in the world market. At the same time, there has been a long-term trend of falling transport prices, which has further increased global trade, thereby increasing competition, without this taking place either on harmonised conditions or on environmentally and socially just conditions. As a rule, these processes have led to lower prices for what is produced. What this policy does not take into account, either in Sweden or elsewhere, is the place-specific conditions that, in practical agriculture, govern what can be cultivated and what conditions are created there for future agriculture, through agriculture specifically.

Food production is always tied to a place with specific social, economic, environmental/climate conditions and therefore affects the local landscape, of course. Today the consumption of food is often decoupled from the place where it was produced on account of rapid, long-distance transport. The global market favours competition that benefits from inequalities in place-specific conditions as long as transport costs are low and are getting ever lower.[4] At the same time, trade benefits from differences in production technology and access to cheap fossil energy. The production of food is therefore rarely optimised to local conditions so that production favours and improves the place-specific conditions, reduces climate gas emissions and builds up biological material that provides long-term sustainability. Instead, production is often far too one-sided, leading to biodiversity decreasing and to agriculture becoming more vulnerable, for instance to extreme weather events (e.g. drought, storms, flooding). Food costs have fallen thanks to the development of production and the world market over an extended period of time; but, at the same time, the future costs of agriculture's environmental and climate problems have become less and less clear. The global market has a significant role to play in securing food supply. For optimisation and to make use of place-specific synergies, the market needs to be analysed and developed so that local production and global public goods can develop in parallel. The lack of clarity about connections and drivers must be made visible and dealt with at the international scale. Few today are willing to take the cost of adapting permanent agriculture to the needs of the future; instead, decision-makers today still have faith in never-ending market expansion as the solution to the problems of the future. Solutions being developed today locally to solve contemporary climate problems point in other directions.

[4] Wästfelt, A. Zhang, Q. (2016). Reclaiming localisation in agriculture change: A case study of peri-urban agriculture in Gothenburg, Sweden. Journal of Rural Studies, Volume 47, pages 172-185.

Food and climate

One of the world's greatest dilemmas today is that agriculture and the food system causes around 30% of greenhouse gases in the form of methane, nitrous oxide and carbon dioxide emissions to the atmosphere each year.[5] This applies most of all to industrialised agriculture. In the post-war period, optimisation to ensure greater production has been the main focus in countries around the world; the problem today is that different parts of the world have very different food supply problems. Some overproduce and try to sell surpluses, which often happens to large cities and urban centres in, for example, Africa, at the same time as large parts of rural Africa underproduce and need to focus on ensuring increased production so that everyone has food for the day and that a satisfactory share does not need to be imported.

Photo: Anders Wästfelt

[5] FAO: https://www.fao.org/news/story/en/item/1402118/icode/

The need to halt the growing climate changes is urgent, at the same time as agriculture must be adapted, in practice, to both ongoing and coming changes. Both sustainable consumption patterns and modes of production are being further developed, and new ones must come to light to meet future needs. The change in the needs of food production that follows from estimated population growth accentuates and reinforces the need for change. To be able to implement global changes, adaptation to climate change needs to go hand in hand with place-specific solutions that favour the global reduction of carbon dioxide emissions from agriculture, while making sure that regional supply needs are handled in the light of their place-specific sets of problems. At the same time, the absolute quantity of fossil energy used globally throughout the food system must decrease, but harvests must not fall too much overall.

The climate impact of agriculture can be decreased, but doing so will probably lead to an increase in the relative costs of food production in society. Reducing transport can also result in production at a place that does not necessarily outcompete production at other places with different and poorer local conditions. Taken together, production at two places can give higher total production than if one of them was outcompeted. However, there then has to be steering that makes the less profitable place sufficiently attractive to use or that means that the more profitable place is not allowed to outcompete the other place.

One of the underlying causes of the dilemmas and unclear points presented here is that food is still handled and viewed from an economic point of view – primarily as a commodity and a raw material – and that policy mostly handles it in that way. Even though EU Member States and other countries around the world are careful to ensure food security etc., trade agreements concerning food have been expanded significantly since 1972, and this is part of the causes of the set of problems described.

The right to food is included in the United Nations Universal Declaration of Human Rights (Article 25). The production and distribution of food is not handled in such a way that this goal can be achieved. Individual countries reach their objectives, but the problems at global level remain unsolved. The operation and organisation of agriculture, as such, is not seen as a global public good today. Instead, developments in recent years point to renewed growth of polarisation in the world and to an increase in the number of people in the world who do not have food for the day. At the same time, large parts of the world are better-off than ever before. Many societies in the western world display increasing polarisation with both deficient nutrition and galloping overweight.

Future welfare

From a welfare perspective, food supply differs from education, for example, which is now, in most countries, a cost-free investment for the individual in a common future (United Nations Universal Declaration of Human Rights, Article 26). Similarly, health care is treated, in Europe and a number of other countries, as a collective concern and a human right.

The production and consumption of food needs to be discussed and treated both as a human right and as part of the welfare systems of the future. The global climate perspective and a specific place perspective, in which production is optimised so as to limit the burden on the climate while delivering sufficient nutritious food to consumers, need to be considered in greater depth. At the same time, a localised climate and welfare perspective should be taken more seriously in the international agreements made in the future.

People living of agriculture, both in countries that need to develop and increase their production and also those living of agriculture where a rapid transition is required, need to be integrated in the dialogue about our common global future.

If we look back 50 years, the speed of the transition that took place after 1972 shows that rapid changes are possible when the will is there. The difference today is that ever more global synchronisation is required to have any decisive effect on both the global climate challenges and the place-specific inequalities displayed by food production around the world today. At the same time as the world market for food needs to be developed, agriculture is a potential carbon sink, i.e., at the same time as producing food it also has the capacity to bind more carbon from the atmosphere than is released from production and distribution. Place-bound permanent agriculture can, once again, be given a key role in the development of society, but it will never be possible to release it from the place where production takes place. A development that takes the place for production seriously.

An enhanced global agenda for implementing the UN Covenant on Economic, Social and Cultural Rights[6], which includes the right to food and where it is the State that is responsible for respecting and realising these rights, can hasten the necessary adaptation to agriculture that is optimised for place-specific food production and consumption and that contributes to the development of climate-positive agriculture, thereby extracting carbon from the atmosphere. A future agriculture in the service of all of humanity and society.

[6] The economic, social and cultural rights are to be found for the first time in the United Nations' Universal Declaration of Human Rights from 1948 and were the elaborated in the UN's International Covenant on Economic, Social and Cultural Rights from 1996 and elsewhere.

CHAPTER 2

Forestry policy after the Stockholm conference in 1972 – from Friends of the Earth to climate agreements and trade policy

Anders Malmer, Swedish Forest Agency, and Matthew Fielding, SIANI

Introduction

The early 1970s was a period of growing activism and growing organisation for environmental issues in civil society. Environmental issues were not new, but the period was one of increasing engagement for international issues and growing coverage in the media of international issues. In 1968, for example, the first images of the Earth from space gave a new perspective on the vulnerability of the biosphere, and 1971 saw the formation of the worldwide organisation "Friends of the Earth International". However, the question of deforestation was not yet a central issue at the UN environment conference in Stockholm in 1972. But a growing environmental movement was beginning to draw attention to shrinking rain forests. This early forestry opinion argued using simple messages based both on their own limited knowledge and a weak base of refuted evidence. The myth that forests are the lungs of the earth and that deforestation leads to planetary oxygen deficiency arose in this epoch.[7]

In the past 70 years forest cover and the distribution between different land uses have been relatively stable in the Global North, unlike the Global South (figure 1). In international policy development rain forests therefore remained in focus, as they did at the UN's environment conference in Rio in 1992. There attempts were made to arrive at a binding convention on rain forests. This generated conflict between driving forces in the Global North and the forest nations in the Global South, with the latter opposing the fact that it would not apply to all forest and threats to forests in the north. The conference did not reach agreement on a convention, and solely adopted some general and non-binding principles. Since then, this discourse has continued for decades in the United Nations Forum on Forests (UNFF) without reaching further significant objectives. Consequently, the change in forest cover and the degradation of forests in the Global South have continued to dominate international engagement ever since the 1970s.

[7] The oxygen concentration of the atmosphere is high (>20%) and stable. The production and consumption of oxygen are many times smaller and in broad equilibrium in every forest. Nevertheless, this myth lives on in 2021 in teaching materials, on the internet, among the public and among powerful political leaders.

In the countries in the Global North with extensive forest cover there have also continued to be issues (outside the dominant international discourse) concerning forms for industrial forestry and forms and the scope for exempting forests so as to preserve ecological and social values. Regionally, between countries, the question of air pollution resulting in acid rain, eutrophication and local forest death has also been on the agenda, culminating in the 1980s.

Example from Costa Rica. Demand for land for small-scale subsistence cultivation and pasture is a driver of deforestation. Photo: Anders Malmer

Drought and famine in the Sahel in the 1970s also contributed to growing knowledge about how a shortage of trees can cause erosion and soil degradation. Recurring famine, especially in Ethiopia in 1984–1985, with the pop idol action called ”Band Aid”, made the public even more aware of problems concerning deforestation and over-exploitation of land. While much of the support for degraded dry areas in Africa was about hunger and food aid, other media paid extensive attention to rain forests specifically. The deforestation threat to rain forests was often expressed in terms of area, such as “football pitches per second”, and was given a central role in how environmental problems in the Global South were viewed. In 1987 a new approach to the provision of protection by civil society was started through “Children's rainforest”. School classes collected money to buy rain forest so as to protect it. This activity has spread to 43 countries and is still under way.

Increasing knowledge about complex problems and increasing exploitation side by side

In the 1980s knowledge grew through increasing research. There was most focus on technical questions concerning erosion, water issues and fertility effects of forestry and the transfer of forest to other land uses. During the same period knowledge also increased about the relationship of forests to the development of poverty, agricultural production and the development of society outside forests. This combination of knowledge and opinion gradually led to political processes. In 1985 the Tropical Forestry Action Plan (TAFP) started; it was an international plan containing a number of proposals concerning forestry improvements and priorities, supported by the World Bank, UNDP, the FAO and others. Later analyses of that initiative have concluded that, despite growing knowledge, the choice made to concentrate solely on forestry and not also on agriculture was probably the reason why this process actually had hardly any impact on an accelerating deforestation.

During the same period, from the late 1970s into the 1980s, the world economy grew and was "globalised" strongly in an era of neoliberal economic policy, market control and free trade. At the same time as unsustainable forestry and rapid deforestation for agriculture were increasingly seen as problems, extractive forestry increased in the tropics (felling of commercial timber without any regeneration measures). Paradoxically enough, increasing exploitation was often driven by economic interests from the countries in the Global North where the opposition to forest destruction was greatest. Decolonised new states in the tropics had weak legislation and even weaker possibilities of checking compliance with laws and countering corruption so as to conduct a more sustainable forestry policy. Slightly provocatively, it can perhaps be said that previous colonial powers could now introduce tougher forestry legislation in their own (long since deforested) countries without endangering continued exploitation of natural resources in the Global South. This is naturally an analysis that cannot be made ex post, but that, in retrospect, is not far-fetched for a period that can seem to be very ambivalent.

Exploitation for agriculture and for forestry have often been two sides of the same coin

Expanding agriculture has been a predominant cause of deforestation in the past 50 years. Driven in many cases by a need for livelihoods for a poor and growing rural population – dominated in Asia by burn-beating with ever shorter fallow periods and in Sub-Saharan Africa by the direct transfer of forest to permanent small-scale cultivation and livestock farming. In Latin America large-scale, industrial agriculture and plantation cultivation have been predominant in terms of area. In Brazil and Indonesia there have also been more or less organised relocations of poor farmers to open up forested areas for new colonialisation, example being Rondonia, Sumatra and Kalimantan (the Indonesian portion of the island of Borneo).

In the 1970s and succeeding decades large-scale forestry has seldom had a direct effect on deforestation, but it has definitely had a role 1) by often primarily opening up new areas of forest for colonisation and other industrial activities and 2) by contributing strongly, through neglected action for regeneration, to land degradation in terms of both diversity and fertility.

Selectively felled forests have been more sensitive to fire spread from burn-beating and plantation establishment. From this perspective the forestry industry globally has generally acquired a bad reputation. One often repeated thesis in recent decades is that sustainable forestry in rain forests is not possible against the background of high biodiversity and poor tropical soils. Methods for more considerate forestry were developed in "an orderly manner" in Australia, but it was already banned there in natural forests in the 1990s. Subsequently systems for rain forest restoration and value-creating forest regeneration have been developed in Indonesia and elsewhere. There selective felling with sustainable replanting has been shown to be economically profitable despite investments in regeneration. This results in production forestry with 10–30 predominant tree species. Forest of this kind is, of course, not as rich in species as a virgin rain forest, but is a considerable improvement compared with degrading forest shifting to grassland or transfers to plantations. Yet another problem in the past 20 years is that investments in fully felled areas is now more likely to take place in the much more lucrative plantation sector, previously with rubber trees and recently with oil palm trees.

One interesting linguistic aspect in Sweden, in recent decades, of how international forestry is viewed is that, since the 1990s, the Swedish word skövling (synonymous with destruction, devastation and reckless exploitation, etc.) has been used for all felling of rain forest. With the passage of time, the term is now used indiscriminately both for clear-felling in other countries and for clear-felling in Sweden, both in public debate and in public service media, irrespective of whether it involves forestry or deforestation for a change of land use.

Development aid, boycott or certified trade

There was extensive technical development cooperation for forestry and artificial regeneration in the 1970s continuing into the 1980s. As more was understood about how rural development and land-based industries are dependent on economic and social realities, the forestry sector and forests as a resource were marginalised in development cooperation. Technical development cooperation for forestry was of little effect when the need for land for food supply increased so as to avoid famine in the rural areas dominated by subsistence agriculture in poor countries. Nor did this technical cooperation remedy weak governance of interests in favour of extractive felling. After being at a low level, support to forest sectors for carbon binding and then for the restoration of forest and eroded land has subsequently returned to the aid agenda after 2000 and is now increasing exponentially. The background to the later increase consists both of action to mitigate and adapt to climate change and greater demand for biobased raw materials from forests and of greater realisation of the danger of the globally accelerating loss of biodiversity.

At an early stage of the attention given to the loss of tropical forests, demands were often voiced for a boycott of tropical timber. This has, however, not happened on a large, organised scale.

But the public debate on tropical forests has probably led to many consumers, for example, avoiding outdoor furniture and other products of tropical timber and choosing other materials such as plastic, steel and glass.

Since the 1980s the gradual development of remote sensing has contributed to better regional statistics and control of felling and deforestation. A further technical development to trace the origin of timber is the use of DNA markers specific to regions and species. The view taken of the legality of forest products has developed since the 1990s in line with the greater possibilities for transparency and in line with weak compliance with national forestry legislation. Forest Law Enforcement, Governance and Trade (FLEGT) is a process that operates through restrictions on trade in forest products such as timber. One example is the EU Timber Regulation that puts a control mechanism in place so that illegally harvested timber may not be sold in the EU (illegal under the laws and regulations applicable in the country of origin). In 2021 a proposal was presented to replace the EU Timber Regulation with a law prohibiting import from production originating from deforestation so as to reduce the climate pressure from imported goods. Estimates show that the EU imports of goods account for 16% of global deforestation.

Certification systems are another way of controlling and ensuring consumers' valuation of sustainable production that has been developed in the last 50 years. As regards forest products, today there are developed systems for most types of forest, but the degree of application varies. Other products can also be certified. One interesting example is the product palm oil, in which there is extensive global trade. Most of these plantations have been laid out in the past three to four decades on previous rain forest land. The goal of certification is to distinguish established production with sustainable social and ecological characteristics from still ongoing opportunistic projects for production expanding into remaining rain forests (often personified by the precarious situation of the orangutans) and on peatlands sensitive to carbon dioxide emissions when drained. This certification has, however, great difficulties in developing and being applied in consumer countries since the bad examples mentioned are given great media coverage. This creates uncertainty among wholesalers and consumers that is more likely to lead to attempts to completely avoid products containing palm oil.

Role of forests in the challenge of human-caused climate change

The emerging knowledge about climate change affected by human beings is probably what has had most impact on the attitude taken to forests and their role globally in the past 50 years. Various early programmes for climate compensation by binding carbon dioxide and planting forests were already started in the 1990s. This is an activity that has increased steadily and is now used systematically to compensate for activities with large fossil-generated emissions such as air travel. However, the persistence of these measures varies greatly, and they are controversial since they indirectly encourage continued consumption of fossil fuels and materials.

Deforestation makes an extensive contribution to greenhouse gas emissions. With refined global circulation models and a slower pace of deforestation, the estimate of its contribution has moved from around 20% down to around 10%. The first major global climate agreement, the Kyoto Protocol in 1997, contained national commitments to reduce carbon dioxide emissions, as well as the possibility of trading in emission rights and the "Clean Development Mechanism" (CDM). The latter process enabled countries in the Global North to reduce emissions through CDM projects in low-income countries instead of in their own country. Some CDM projects contained afforestation to bind carbon dioxide, but control mechanisms to avoid leakage and ordinary reforestation meant that few projects were realised.

The use of forest preservation and the planting of trees and forests to bind carbon dioxide was developed at the climate negotiations in Bali in 2007 when REDD (Reducing Emissions from Deforestation and Forest Degradation) was launched. Later REDD+ was developed at the climate conference in Cancún in 2010; it also includes sustainable forestry and increasing carbon stores in existing forests. Low-income countries that can demonstrate greater carbon storage through REDD+ measures can receive internationally funded financing. There are still many question marks concerning deficiencies and risks of adaptation to the market, protection for virgin forests, biodiversity and indigenous peoples as well as continued dependence on grants and projects in the Global South. In particular, this development has not succeeded in linking this process to the agriculture that is being conducted in the same landscape and is part of deforestation.

Attention to forests has accelerated even more in the past decade with a global movement for possibilities of and commitments for Forest and Landscape Restoration (FLR). This is based on the assumption that globally there are around two billion hectares in need of restoration – that can provide both possibilities to bind carbon and a better economy and environment in the countries affected, as well as better living conditions there. In 2011 the Bonn Challenge was founded as an international initiative working for regional and national FLR commitments. Up until the end of 2020 commitments for 210 million hectares had been registered. Another noted initiative was the New York Declaration on Forests, which is a non-binding declaration from the UN climate summit in 2014. Many low-income countries have extensive commitments in the hope of international support (REDD+), but the results on the ground in recipient countries after a decade are still meagre.

Deforestation has decreased considerably in recent decades (figures 1 and 2) but the pace of deforestation, and not least degradation of remaining forest, is still high. The causes of forest expansion are mostly to be found in countries other than those with continued deforestation, and the causes of more forest are often to be found in overgrowth of previous agricultural land or active reforestation. Despite the FLR initiatives described above the area of expanding forest is decreasing.

Figure 1. Estimated deforestation in tropical and temperate forests over time, millions of hectares (revised from FAO, Forest Resource Assessment 2012)

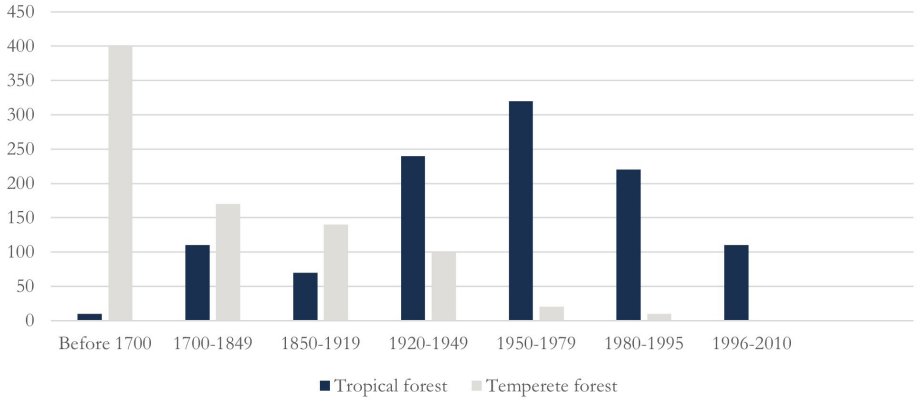
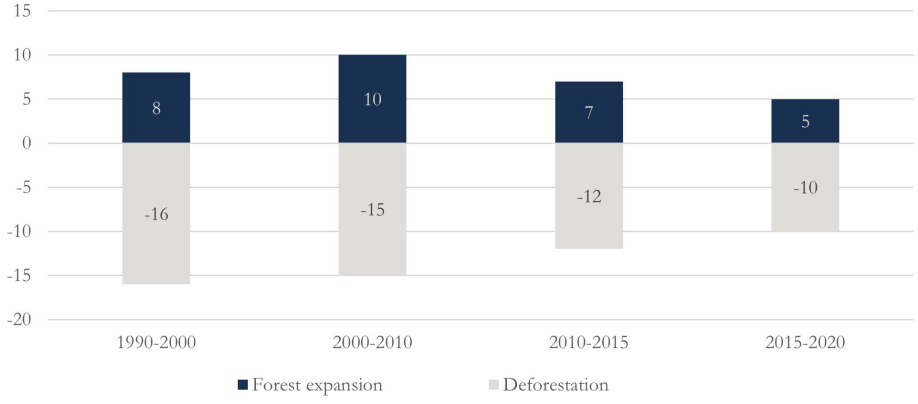


Figure 2. Annual change in forest expansion and deforestation, millions of hectares per year. (revised from FAO, Forest Resource Assessment 2020)



Analyses of continued difficulties in preventing deforestation through REDD+ and development cooperation in the forestry sector are very much about the difficulty of involving those who live of the landscapes concerned. Time-limited projects that start from primary objectives other than local objectives and that have limited possibilities among people affected on the land, still have great difficulties in initiating scalable social and economic development over and above the project.

Future prospects

Like the Kyoto Protocol, the Paris Climate Agreement from 2015 contains national commitments. These are now more far-reaching and apply both to emission reductions and to actions for adaptation to climate change. In the Global South, in particular, they often contain major FLR commitments for forest preservation and development and for agroforestry. As described above, however, these commitments are often dependent in the poorest and least developed countries on development aid funding and global climate funding. They still have difficulties linking to desired sustainable and scalable development. So far, the assessment of these commitments is in the eye of the beholder: here there is a positive awareness and a national upward assessment of the importance of forest resources for development – or are the countries concerned just looking for international climate financing?

Young people both in the Global South and in the Global North have low interest in a career and future in the production of food and natural raw materials. They do not see a future in rural areas which are still depicted as having poor social and economic life opportunities. Today many low-income countries, including in Sub-Saharan Africa, have growing economies undergoing economic development, which often leads to lower pressure on extensive land use for subsistence agriculture. Can biobased economic development be a framework for a development for FLR and social, economic and ecological environment in rural areas?

Alternatively, will international approaches continue to dominate attempts to bring about change? One new phenomenon of international interest is giving nature (landscapes, forests, lakes) legal rights. Can this be a viable path, or yet another method that will be more difficult for the weakest states and the weakest stakeholders? At times, views have been expressed to the effect that international responsibility, for example for the Amazon, should be able to take precedence to national interests, a bit like agreements about Antarctica. After more than ten years of falling deforestation in Brazil, a national policy change for increased deforestation has driven up the discussion about the Amazon again in recent years. The question is whether international initiatives of this kind bring us back to a situation, like in Rio in 1992 for example, where countries in the north and south faced each other from locked positions.

Resources are available internationally, as well as through higher ambitions nationally and locally and through human power and entrepreneurship for a better life. How are these stakeholders to be able to meet and operate in the same landscape? Can global forestry ambitions to bind carbon, save natural forests and increase biodiversity meet local wishes and drivers to improve local livelihoods, create economic values and increase adaptation to climate change.

At the climate conference in Glasgow in November 2021 leaders from 137 countries (including the most forest-rich states) agreed to stop deforestation and increase forest cover by 2030 and to thereby contribute to sustainable development and support inclusive social change in rural areas. It has not been possible in the past, but perhaps a time mature for change will come?

CHAPTER 3

The sea, fish and the people of the future

Linus Hammar, Ingela Isaksson, Rebecca Timms Eliasson, Maria Göthberg and Catarina Hedar, Swedish Agency for Marine and Water Management, and Johan Penner and Andreas Davelid, Swedish Board of Agriculture

Introduction

Imagine that it is 2072, you have just been on a boat trip in a flourishing archipelago, and when you go ashore you order Baltic Sea cod with Swedish-grown pilgrim scallops at the local lunch restaurant. You sit down at a table, look out over the water and philosophise about whether people in the past used to enjoy the sea like you are doing now.

We cannot know what our marine and water environment will be like in 50 years, but we do know that decisions we take today will have a great impact on the future, both in the long and the short term. By learning from the past, we can get better at working to achieve sustainable marine and water environments, both to our benefit and to the benefit of future generations.

Thinking 50 years back in time

It is fifty years to 2072, and if we play our cards right, we will hopefully have a flourishing sea and a prospering sea food industry by then. If we look backwards instead to 1972 – when the Stockholm conference, the first UN conference on the environment, was held – what we see is a sea that actually gave plentiful fish. At that time Sweden and Denmark landed around 17 000 tonnes of Kattegat cod per year.[8] Forty years later, in the 2010s, only 1% of that quantity was caught. The cod stock in the Baltic Sea has also fallen dramatically.[9]

So, 50 years ago there was cod; there was also plenty of other large fish in the sea; meadows of eelgrass, the "sea's nursery", were also spreading. Now you have to look high and low for fish with a double-figure weight in kilos, and the eelgrass meadows of Bohuslän, on the west coast of Sweden, have shrunk to less than half of what they once were.[10] But there is still hope. Whales are one example of how it is possible to turn round negative trends in our marine environment. After a hundred years of intensive hunting, whales were in a very bad way in the 1970s; in some cases, such as blue whales and right whales, only a few individuals were left.

[8] ICES WGBFAS (2019). Report 20:1.
[9] Swedish Agency for Marine and Water Management (2021) Resource Overview *[Resursöversikt]*. Report 2021:6.
[10] Moksnes et al. (2016) Handbook for restoring eelgrass in Sweden *[Handbok för restaurering av ålgräs i Sverige]*. Swedish Agency for Marine and Water Management Report 2016:9.

The Stockholm conference in 1972 was the trigger for an international decision to stop whaling that began to apply in 1986, and we now see that several species of whale have begun to recover.[11]

Thinking even further back

Life in the sea is extremely old; that is why it is exciting to know the state of the sea not only 50 years ago, but also 500 years ago, and what it was like 5 000 years ago. That we do not know all that much about, but historical documents and archaeological data can offer some insights.

In the Middle Ages you could pay your taxes in salted fish, and fishing was already important in the Viking Age. Sealskin was an important commodity, and the sea was also clearly influenced by us human beings. Our inland waters had already been polluted many hundred years ago, and coastal fishing had become more difficult.[12] Sea birds nesting on islands and cliffs were easy prey for humans, and that left its mark early in history. By the way, did you know that there were large, penguin-like birds in Sweden thar were 85 cm in height and that were not able to fly? The bird was the great auk, see the illustration on next page.

The great auk was largely exterminated in the Middle Ages – even though there were still a few individuals as late as in the 19th century. But the sea is large, and in the past both knights and Vikings had plenty of sea food. In the past, the sea was thought to be so big that humans would never be able to have an impact on it. A spring that never runs dry or an ever-rinsing sink.

If we look ever further back, to 5,000 years ago? Then a few species were in trouble, like the Greenland (or harp) seal, which had been exterminated in the Baltic Sea, but, as a whole, the sea had not been affected that much by humans. There were large amounts of fish, shellfish, birds and mammals that Stone Age people used in every possible way. Nordic sealskin was exchanged for southern metal, and their diet consisted mainly of seafood. Archaeological remains show that early Scandinavian cultures were fishers and gatherers rather than hunters and gatherers.

In a 10,000-year perspective, the climate changes of the past play an important role, especially for us Scandinavians. Here the ice ages have completely changed our seas on every glaciation. When the ice lay heavy, we did not even have any sea, or land for that part. But ten and fifteen thousand years ago, our present species and marine environments were in place, and the ecosystems functioned well.

[11] WWF (2020) https://www.wwf.se/djur/valar/#hot

[12] RISE (2021). On potential use of historical perspectives in Swedish marine management. Report 2021:10.

An illustration of the more original sea on the west coast of Sweden, around five to ten thousand years ago. A lot has happened since then, and we would not recognise our whereabouts. But even if the great auk, our biggest penguin-like auk, is gone forever, there are other things that we can use sustainably in the future. Illustration: Maria Eggertsen. Copyright: Swedish Agency for Marine and Water Management.

What does it matter what the sea once looked like? Well, we can learn what has gone wrong and why, so that we are able to build up more stable use moving forward. This can help open our eyes us to new ways of using the resources of the sea, such as aquaculture (for example cultivation of seafood) or widening fishery to new species to reduce the pressure on the species we fish at present. It can also teach us about the role of predators in the interaction between the sea and humans – are there too many seals today?

Drawing on marine natural history to support the future management of the sea, based on the needs of its ecosystems, is a way of thinking that is fairly new, both in Sweden and in other countries. Luckily enough, there are many researchers who are engaged in various parts of this retrospective mapping work.[13]

[13] RISE (2021). On potential use of historical perspectives in Swedish marine management. Rapport 2021:10.

Learning from bones and books

When researchers try to understand what the interaction between humans and nature was like long ago, there are several sources to examine. The texts of land registers show book-keeping of taxable fish catches in lakes, rivers and coastal waters. Artefacts, such as articles for everyday use and huts, demonstrate the enormous importance of sealing. Ecofacts, such as fish bones and otoliths, show which species were common and how big the fish were that were grilled over a fire and that then ended up in the village's compost. They can be used to set baselines, i.e., a way of comparing the present marine environment with that of the past. We need more of this natural history research, and we need to understand how it can be used for our management and that of the future.

Who should we fish and why?

It is said that the Kattegat cod got on well with several large fish of prey in the past. And that the world's largest meadow of eelgrass was here, just around 150 years ago. Today we base fish quotas and goals on data that does not even reach 50 years into the past. Perhaps there are other species that would actually give more of a return, species that used to be more common. Perhaps productivity and returns can be increased if we manage different species and habitats jointly since they are so closely bound up in nature. We can learn more.

The fisheries of the future, innovation and sustainable planning of the sea

Services for blue sustainable growth

Ecosystem services are nature's functions that contribute to us as human beings. We can get food from the sea. Coastal vegetation counters erosion and protects our homes from falling into the sea when storms bite. Mussels and other filtering animals counter eutrophication. Research indicates that sea bottoms bind enormous quantities of carbon as long as they are not trawled.[14] This is beneficial in terms of the climate. Modern medicine and food production may have a goldmine in marine genes, and we are constantly seeing new seafood products. Modern aquaculture that does not cause eutrophication is under way. Even allotments at sea are coming![15] Using ecosystem services without wear – that is a blue sustainable economy.

Caging the future

Fishing can be conducted in many different ways. In our part of the world, the use of bottom trawling began several hundred years ago, initially using small trawls drawn after sailing ships. There was already a debate at that time in, for instance, the English fisheries administration, and the Government appointed inquiries.

[14] De Borger m.fl. (2021) Impact of bottom trawling on sediment biogeochemistry: a modelling approach. Biogeosciences 18: 2539–2557.
[15] Göteborgs Universitet. Se https://www.gu.se/nyheter/har-byggs-sveriges-forsta-marina-kolonilott

After decades the conclusion drawn was that while the trawls destroyed the bottom and the nursery grounds of fish, the sea was so great that this could hardly make any difference.[16] Today, after bottom trawls have been pulled behind, first, steamboats and then modern fishing fleets, we know that this method of fishing destroys reefs and reduces the variety of species and also that recovering takes a long time.

Illustration of a sea bottom trawled (left) and not trawled (right). Some areas in the North Sea are drawn over by bottom trawls several times a year. Reefs and slow-growing species disappear, but there are many ways of getting food out of the sea, and the development of fishing gear is advancing. Illustration: Maria Eggertsen. Copyright: Swedish Agency for Marine and Water Management.

Perhaps the shellfish buffets of the future will instead come from sustainable aquaculture, or the use of more sustainable fishing practices. A great deal of work is being done on developing selective and sustainable gear. For example, cage fishing does not damage the bottom and does not take in by-catches in the same way as bottom trawl fishing does. It is not as efficient as trawling, but the people of the future may be prepared to pay a higher price.

Blue agriculture

Aquaculture is a collective name for the production of aquatic animals and plants, including fish, mussels, crustaceans and algae. Swedish aquaculture consists mainly of the breeding of salmon in open systems, which involves emissions and environmental impacts. But new cultivation techniques and species are being used on account of increased demand, knowledge and technical development.[17] The newer aquaculture methods include, for example, cultivation of fish on land in systems where nutrients can circulate more and it is possible to integrate cultivation of algae or crops in the same system by reusing the nutrients in the system.

[16] Roberts (2009) The Unnatural History of the Sea. Island Press.
[17] Swedish Agency for Marine and Water Management and the Swedish Board of Agriculture (2020). Strategy for Swedish fisheries and aquaculture *[Strategi för svenskt fiske och vattenbruk]* 2021-2026.

Species that take up nutrients from the sea are also cultivated in what is called extractive cultivation. Examples are mussels, oysters and sea squirts. With the correct location of these facilities, they can have a positive impact on the environment or contribute to decreasing the negative impact of feed-demanding cultivation. Aquaculture is an industry with great potential to produce sustainable food, provided that it is managed well.

Poor people's fish

The sea is under hard pressure everywhere. Fishing fleets come from many countries, pollution follows population density and the impact of climate changes is global. But it is particularly unfair when local populations in poor countries see their fish stocks being sucked up by foreign fleets or fish-poaching that it is hard to do anything about. Global work on fishing rights and equity in the distribution of catch quotas is crucial for many coastal communities around the world. Other ways of using the sea also need to be distributed equitably, between population groups, in particular, but also between different industries. Sea planning is something new and is becoming more and more important globally. Sea planning means that the State plans the use of the sea for different needs.[18] It corresponds to the planning long done on land, known as physical planning or comprehensive planning. Sea planning can be a key to long-term and sustainable management, with a fair distribution of marine resources. Sweden contributes both nationally and internationally to transparent fisheries policy and ecosystem-based sea planning.

A blue or grey future?

Many countries are pinning their hopes´ on new or new old blue industries. Through the ages we have mainly used the sea for fishing and hunting, aquaculture, shipping and culture. But the future can contain so much more – such as extraction of renewable energy, sustainable tourism, biotechnology. storage and mining, perhaps even settlement.[19] If we stop to think and avoid repeating mistakes from history, the sea has enormous potential. It actually two-thirds of the Earth.

Forward, for the people of the future!

In 1972, 50 years ago, a lot happened for the environment. The underlying reason was a greater realisation of how unsustainably we have treated the environment. That year saw the world's first environmental conference at a high political level, and direct environmental legislation was introduced. That international agreements are the key to sustainable management is particularly clear regarding the sea, where administrative boundaries are erased. Another requirement is to avoid treating land, seas and oceans separately. Management must run from source to sea, through local, regional and global cooperation.

[18] Swedish Agency for Marine and Water Management. Read more at: https://www.havochvatten.se/planering-forvaltning-och-samverkan/havsplanering/om-havsplanering.html
[19] Anthesis (2020) Future Exploitation of Areas Beyond National Jurisdiction. Report 2020:4.

In our own time, international environmental negotiations are under way, as never before, about the seas, our atmosphere, the climate and biodiversity. The UN is soon expected to have completed negotiations on environmental legislation that will apply to international waters (i.e. some 40% of the surface of the Earth). Progress is also made in the area of the climate, even though it is a bit slow. And this specific step will probably be of decisive importance for whether we will even be able to use the sea in 50 years. Not to mention 500 or 5 000 years into the future. Whales, which were in a bad way in the 1970s, but have started to recover since then, are a concrete and positive example showing that we can turn round negative trends in our marine environment.

One thing is clear, we can do even better. For we all love the sea, don't we? We don't want to take that love away from them – the people of the future.

CHAPTER 4

Sustainable food choices – from global dialogue to plates in school dining halls

Anna Richert, WWF, and Hanna Dufva, Swedish Food Agency

Introduction

The high-level meeting Stockholm+50 follows up the UN environment conference in 1972 and marks 50 years of global environment action. In this chapter we are going to take a closer look at how our eating habits have developed during the same period and the link of food to the environment. But the question of food choices was hardly topical during the Stockholm conference in 1972. However, important steps were taken to give the FAO a greater mandate and greater weight regarding food production, but the actual composition of diets and meals was not on the agenda.

Fact box: UN Food Systems Summit

The UN Food Systems Summit (FSS) was held on 23–24 September 2021. It had the purpose of producing new measures and innovative solutions and strategies to transform our food systems and to achieve progress in all 17 global Sustainable Development Goals (SDGs). The FSS was intended to engage more people for sustainable food systems (People's Summit) and to be result-oriented (Solutions Summit). In the five Action Areas of the Summit a number of action-oriented coalitions and initiatives (Multi-Stakeholder Initiatives) were established in areas including food loss and waste, school mealtimes and sustainable and healthy diets.

Read more about the FSS on the UN website:
https://www.un.org/en/food-systems-summit

The question of sustainable food and healthy consumption is highly topical today. The UN Food Systems Summit (FSS) was held in September 2021 as the historic first summit on food systems and their central role in achieving the 2030 Agenda goals. The summit had an explicit focus on participation including youth participation. The expression "Nothing about us, without us" was coined by one of the youth representatives during summit preparations and was also referred to by the UN Special Envoy for the 2021 Food Systems Summit at the summit opening.

The high-level meeting Stockholm+50 also has a special global Youth Task Force. Children and young people are the future, but they are also part of the present transition to sustainable development to achieve the global SDGs. In this chapter we will therefore take a closer look at eating habits and food consumption with a focus on children and young people, and from a Swedish perspective it is particularly interesting to look more deeply at school meals.

Travel in time through Swedish school meals

Sweden is a pioneer through our school meals. Since the 1940s Swedish schoolchildren have been served free meals in school. In the past decade the nutritionally sound food requirement has been supplemented with recommendations concerning environmental sustainability. Several studies show that school meals are complementary, i.e. they contribute to children having more equal living conditions and possibilities of being in good heath. Many children actually get most of their nutrients from school meals. Research from Lund University and Stockholm University shows that free school meals have contributed to children who received free school meals in the 1960s having higher incomes throughout their lives.[20] School meals were also given attention during the FSS, and some 60 countries are interested in developing work on healthy and sustainable school meals in the School Meals Coalition launched at the Summit. The purpose of the Coalition is to support governments in re-establishing school meals programmes in countries hit hard by the corona pandemic, to develop existing school meals programmes and to exchange experience so that every child will be able to get a healthy and nutritious meal at school by 2030.

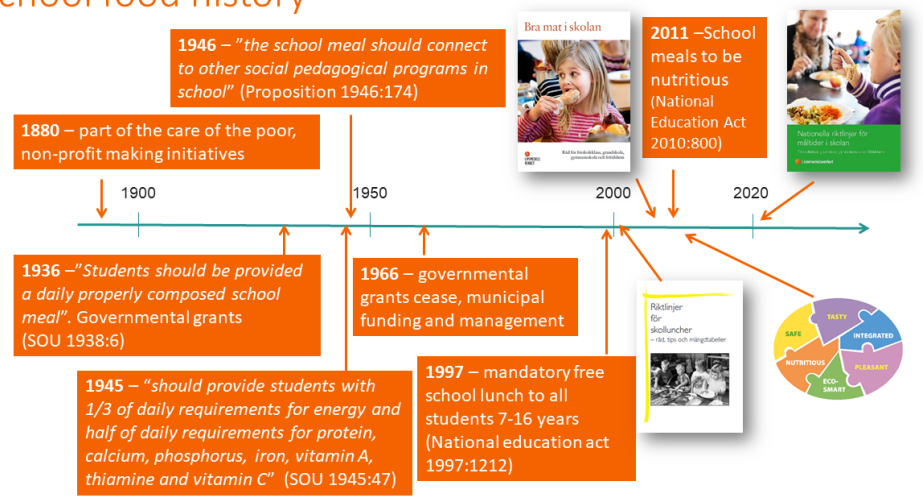
So how have school meals changed over time of Sweden? Svenska Dagbladet, a national daily newspaper, has published several articles on the subject.[21] In the 1970s school menus contained food like lobscouse, chitterlings and mock chili con carne. Soured milk with muesli and raisins was a recurring dish. On some days Mexicana soup was offered, and ice cream was sometimes on the menu as a dessert. The Nutrition Recommendations were revised in 1970 and became a responsibility of the Swedish Food Agency in 1981, when the first Swedish Nutrition Recommendations were developed on the basis of the Nordic Nutrition Recommendations from 1980. In the 1980s efforts were also made to get children to eat more of their school meals, and the National Board of Education and the National Board of Health and Welfare produced study material to teach junior-level pupils correct dietary habits.

In the early 1980s savings were made in Swedish municipalities and they also hit school lunches. One way was to make them more vegetarian and rich in fibre so as to bring costs down. In the 1980s ideas about locally produced food prepared from scratch at schools also began to take shape as a reaction to the move towards larger kitchens for food preparation and rationalisation. Since then this trend has continued in subsequent decades and is still ongoing.

[20] Lundborg et al. 2021, Long-Term Effects of Childhood Nutrition: Evidence from a School Lunch Reform. The Review of Economic Studies rdab028, https://doi.org/10.1093/restud/rdab028
[21] Karin Thurfjell 2018. Svenska Dagbladet 24 August 2018. Wanted to make school meals better – using canned food.

In the 1990s the discussion about the cost of school meals, the quality of the food and the food environment continued. Now the actual timing of school meals also began to be viewed as a problem since they were often served too early in relation to the length of the school day.[22] It only became compulsory to provide free school meals for all pupils in 1997. Guidelines for school lunches were developed by Applied Nutrition at Stockholm County Council: in cooperation with the Swedish Food Agency and published in 2001. They were revised to produce the advice on Good food at school published in 2007.[23]

School food history



In the 2000s the Swedish Food Agency produced new dietary advice that recommends five different vegetables every day. In the early 2000s a survey showed that the number of children eating vegetarian food at school had doubled in the space of five years. The finalists in the Cook of the Year competition in 2001 had actually to make a school lunch.

In the 2010s there was a discussion about educational lunches, with teachers taking part in the meal, and, once again, costs were in focus. New legislation came in 2011 laying down that school meals should not just be free for pupils, they should also be nutritionally sound. This trend is accelerating in public mealtimes; more food is being prepared from scratch; and professional cooks are being employed in school kitchens, which are being called restaurants. But the focus on the mealtime environment as such and the view that pupils are guests at a restaurant was established.

[22] Svenska Dagbladet.
[23] Swedish Food Agency, Good food at school *[Bra mat i skolan]*. 2007: Uppsala.

The mealtime environment is important in fostering appetite and eating. When the dining hall smells of new-baked bread, that gives you an appetite.[24] Salad tables are being expanded and more vegetarian food is being offered. As an example, in 2012 school meals in the Municipality of Örebro won the Municipality's internal quality prize because the meals had been prepared from scratch, had a focus on nutritionally sound and environmentally smart food, improved the atmosphere in dining halls and therefore also reduced food waste.

How do Sweden's young people want to change their school meals?

Presentation of dialogue with Sweden's student and youth organizations. The National Food Administration's meal blog - How do Sweden's young people want to change their school meals? Meal blog (maltidsbloggen.se).

Development of eating habits in Sweden

Since the 1970s there have been changes in our eating habits, and the share of our income going to food has gradually decreased. In particular, Sweden was influenced by entering the EU, which gave greater access to imported and cheaper food.

[24] Municipality of Örebro. Quality prize - Municipality of Örebro – in-depth presentation (orebro.se).

The most recent national dietary survey by the National Food Agency (Riksmaten Ungdom) found that young people eat too little fruit and vegetables; they actually need to eat twice as much. The intake of vegetables has increased but not the intake of fruit. Consumption of meat and cured meats is higher than stated in the nutrition recommendations, but lower than in previous surveys. Young people drink less soft drinks and fruit drinks and drink more water. 17% of their calories come from sweets, soft drinks, biscuits and snacks, which is less than in the 2013 survey but is still too high compared with the recommendations. Children of parents with low education eat less fish and vegetables and drink more soft drinks than other young people. To sum up, most young people do nevertheless get enough vitamins and minerals, apart from teenage girls, a third of whom show signs of iron deficiency. Recent trend analyses have highlighted the change in eating habits among young people, more and more of whom eat their meals alone in front of a screen, and the increase in the number of meals outside the home.

Food, environment and health for sustainable consumption

At present we know that the environmental impact of the average Swedish diet exceeds the planetary limits for the food system in a number of areas. More than 15% of Swedes' consumption-based greenhouse gas emissions come from food, and we have a global footprint in several areas where we export environmental impact when we import food.[25] It is, above all, less consumption of animal products that has great potential to reduce climate impacts and global land use, but having cattle graze in rough grazing areas contributes, at the same time, to greater biodiversity in Sweden.

In Sweden we have worked on the link between environment and food for a long time. In 2009 the Swedish Food Agency produced supporting information for environmentally smart food choices in cooperation with the Swedish Environmental Protection Agency. This was developed further so that Sweden became the first country in the world to integrate environmental aspects in national dietary advice, when the present dietary advice was adopted in 2015.[26] Health and environment often go hand in hand; what is good for health is generally also good for the environment. Around 40% of Swedes are assessed as having unhealthy eating habits, which means that lifestyle-related diseases risk continuing to rise in the next few decades.

There are great differences between different groups in the population, and research shows that socioeconomically vulnerable groups have a poorer diet and are hit more by cardiovascular diseases, type 2 diabetes, cancer and obesity.

[25] Steinbach et al, 2018. Environmental impact of Swedish consumption – new monitoring indicators *[Miljöpåverkan från svensk konsumtion – nya indikatorer för uppföljning].* Final report of the PRINCE research project.
[26] Swedish Food Agency, 2015. Advice about good eating habits – risk and benefit management report *[Råd om bra matvanor – risk och nyttohanteringsrapport].* Swedish Food Agency's report series, no 5/2015.

There are also differences between women and men and boys and girls. 17% of girls and boys have overweight. 5% of boys and 4% of girls have obesity. Overweight and obesity are more common among children of parents with shorter education.

In 2017 the Swedish Food Agency and the Public Health Agency of Sweden published a report that sets out the scientific basis for promoting healthy eating habits. The report shows that it is possible to influence eating habits among the population.[27] However, the action needs to be long-term and to include several different components that affect both individuals and their social and physical environment. This applies, for example, to greater access to healthy food, restricted marketing of unhealthy food, smaller portion sizes, economic incentives for a healthy lifestyle, and information and education. The action should cover several different areas, and important social structures are schools and preschools, workplaces, health care, local areas, community associations, the food chain and social care.

What will we eat in the future?

What will school meals look like in 50 years? To understand more about what our food system will be like in the future, we must understand more about the drivers that shape it. One great uncertainty we see now is climate change. We know very little about how cultivation systems in Sweden and globally will be affected in the long term by climate change and by changes and losses of biodiversity. The complex system that is food production can be changed by factors such as shifts in growing seasons, other animal pests and changes in access to water, and this will affect agriculture both in Sweden and globally. Other strong factors for change are market forces, where the combination of price pressure in public meals and at retail level, followed by consumers' hunt for cheaper food, contributes to food that is cheap at the expense of the environment and of people. There is a counterweight in political goals such as the 2030 Agenda that helps us to set objectives for greater sustainability in the food system. Knowledge, values and attitudes affect behaviour and therefore what we consume.[28] Trends also drive changes in consumption when we choose food for everyday life and special occasions, where influencers and opinion shapers make an impression.

Ahead of the high-level meeting Stockholm +50, sustainable food choices is actually an issue on the global agenda to an extent that we did not see in 1972, when the main focus was on production issues. Sustainable and healthy food choices are a central issue if we are to be able to reach the SDGs and stay within the limits set by the planet, as clearly demonstrated by the UN Food Systems Summit.

[27] Public Health Agency of Sweden and Swedish Food Agency 2017. Proposals for measures for stronger, long-term work to promote health related to eating habits and physical activity, https://www.livsmedelsverket.se/globalassets/publikationsdatabas/rapporter/2017/forslag-till-atgarder-matvanor-fysiskaktivitet_2017.pdf

[28] Swedish Consumer Agency, 2020 Methods for changing dietary habits – Focusing on action to reduce consumption of animal products *[Metoder för att ändra kostvanor – Fokus på insatser för att minska konsumtionen av animalier].* Input report 2020:4.

And it is perhaps significant that Sweden, as a country, is a member of three of the many coalitions established in conjunction with the UN Summit, those on school meals, food loss and waste, and healthy and sustainable eating habits.

So what do we think about school meals in the future? Trends shift, as is reflected in school meals over time, but the fundamental human needs are the same: good food that is filling and sitting around a dining table and eating together, having discussions and feeling a sense of togetherness. We are likely to see new dishes through the great openness we have to outside cultures, influences and trends, but with more use of sustainably produced raw materials. We may also see a development of more locally produced raw materials for public meals with high sustainability criteria in procurements, and perhaps cooperation between schools and local farmers with pupils also being involved in the process behind school meals.

The risks constituted by climate change and loss of biodiversity may perhaps be addressed with a food system that is not dependent on a few crops but that builds on local resources and variation and diversity, both in fields and on tables. Much remains to be done for a more sustainable food system. We need to be more careful in choosing raw materials so as to contribute to biodiversity and work for better use of pesticides, animal welfare and water use. We need to eat a smaller quantity of meat that is more sustainably produced, that is of higher quality and that has environmental benefits. We also need to take more wholemeal and eat more vegetables and reduce overconsumption of food, both from a health perspective and also to reduce food waste and loss.

Several people ask whether we will need to eat insects, laboratory produced meat or algae in the future. There is a lot we do not know about our coming meals fifty years from now, but for the foreseeable future we will recognise the food we eat. There is also a need for the future to pick up old habits and dishes, for example using the whole of the animal, and making sure that we eat fish from the whole of the food chain such as bream, ide and roach. Simple, good raw materials such as rough vegetables and wholemeal products are what will be needed more of on plates in the future, combined with new knowledge about taste, sensory aspects and quality. In general, there is a great need to involve young people in the food system – from global high-level meetings, conferences and agreements all the way down to plates in school dining hall. Challenges in complex food systems are not solved by simple means. We need to see the whole picture and look both forwards and backwards. Many of the solutions for our future, more sustainable food systems are waiting to be found in the past.

CHAPTER 5

The future is in agriculture, both in Uganda and in Sweden

Kalle Lindberg, We Effect

Kabahanda Bath and Elisabeth Hidén are both 26 years old. They grew up on a farm, trained in agriculture and married – and recently each had a son. Moreover, both of them live in rural areas and work in the agriculture sector. Uganda, where Kabahanda lives, and Sweden, where Elisabeth lives, may differ in terms of both climate and economic prosperity. But when Kabahanda and Elisabeth share their experience of being a young woman in agriculture in a video conference, it quickly becomes clear that the challenges they face are not that different. Kabahanda still lives in Bubukwanga, the village where she grew up. There she is a member of the local cooperative society, Bubukwanga cooperative society. Two years ago she completed her agricultural training, and then she was given a half hectare of land by her father. On it she grows cocoa.

Kabahanda Bath. Photo: Devine Kobusinge

– In my country it is usually boys who are given land, says Kabahanda. Most of the land is owned by men. When my father gave me land, my relatives were critical. They thought that control of the land would go to my husband's family.

Elisabeth lives outside Hjo, on her husband's dairy farm. The agriculture has been leased out, but Elisabeth and her husband manage the forest. Elisabeth is an agronomist and works as a salesperson at Lantmännen, a farmer-owned agriculture cooperative. She is also chair of the youth wing of the Federation of Swedish Farmers.

In Uganda more than 70% of the population have livelihoods in agriculture, while only around 2% of Swedes work in agriculture and forestry. This difference is reflected in consumers' knowledge about how food is produced.

Elisabeth Hidén. Photo: Astrid Hidén

When Kabahanda was in junior high school, agriculture was one of her school subjects. The pupils had to cultivate a piece of land and sell what they harvested. Elisabeth's experience of senior high school is that her classmates did not know that much about what it was like to be a farmer. She views this lack of knowledge as a threat to Sweden's future as an agricultural nation.

– There are a whole lot of reasons why so few people in my generation want to be farmers, says Elisabeth. The land is expensive, the working days are long and earnings are not particularly good. But, in my view, the lack of interest and understanding among consumers and politicians is an important part of the problem.

Elisabeth sees how this lack of understanding for the situation of farmers is reflected in a lack of resolve among decision-makers when farmers need their support. There may be a need for intrusion and threats by animal rights activists, damage caused by climate change such as forest fires or damage caused by a greater game population.

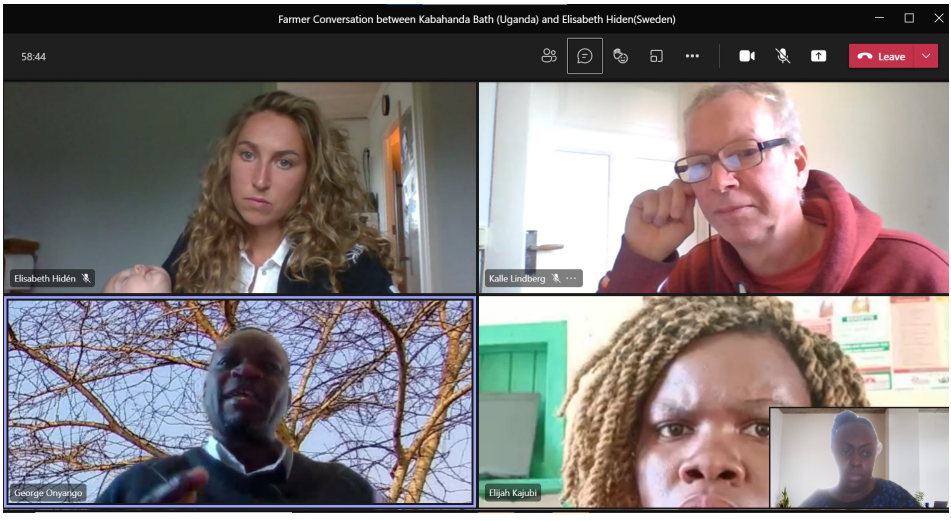
At the same time, Kabahanda feels that in Uganda there is consensus around the important role of agriculture for the country. A consensus that is, in her view, reflected in a preparedness on the part of politicians to assist farmers.

Climate change creates difficulties for farmers everywhere. Sweden and Uganda are no exceptions. In Sweden the summers are getting hotter, which has led to extensive damage by the European spruce bark beetle and forced many farmers to fell forest quickly so as to prevent the spread of pests. Not only does the forest affected have to be felled prematurely, it is also often hard to get well paid for it. In Uganda heavy rains have caused erosion and landslides. This is something that has hit Kabahanda's cocoa-growing. To spread her risks she has decided to diversify.

– I have started breeding chickens to get an extra income, says Kabahanda. Now I am also considering starting to breed pigs and grow mushrooms.

Kabahanda is a member of a cooperative and a small association. This not only enables her to access loans to develop her company and sell her produce. She also gets to experience the pleasure of inspiring other young people to be farmers. For Elisabeth it is rewarding to be able to contribute to improving the situation of young farmers through her involvement in the youth wing of the Federation of Swedish Farmers.

Another similarity between Kabahanda and Elisabeth is the pride they feel about their work. Kabahanda enjoys being able to see her plants grow and her customers appreciate what she produces. Elisabeth likes giving advice to farmers in her role as a salesperson at Lantmännen.



An enthusiastic, virtual conversation between Kabahanda and Elisabeth.

– Out of my 180 customers, only two are women, says Elisabeth. "The average age of our customers is 65 years. Most of them are pleased when I call, and they listen to my advice. In my experience, they judge me on the basis of my knowledge, not my gender."

The future

In 50 years Kabahanda and Elisabeth may have grandchildren who are facing the same question as they are pondering themselves: Does agriculture have a future? They both think that new generations will be faced with challenges similar to those they have experienced themselves, even if some – like changes in weather patterns – will probably cause even greater problems. Agriculture in Uganda is likely to continue to be an industry with tough competition; chickens are likely to continue to be hit by infections that inhibit their growth; and the extensive damage that wild boars cause to Swedish fields is not likely to be viewed as an important issue in the future either by a society lacking in knowledge of agriculture and appreciation of farmers.

Nevertheless they would both like their sons to follow family tradition and be farmers. One fine day their children will need to choose an occupation. Then Kabahanda and Elisabeth intend to try to have the same attitude as their parents had in relation to them. They will endeavour to treat their sons and daughters alike and to support them, but they stress that this is a choice that every young person must make on their own.

– My country is so dependent on agriculture, says Kabahanda. I would love it if my son wanted to take over and develop even more businesses. At the same time, I do not want to prevent him if he wants to do something else.

Fact box: Who works in agriculture around the world

- Globally around 450 million men and women are employed as agricultural workers. Together they account for more than 40% of the total workforce in agriculture.
- In Uganda most farmers do not have formal ownership of their land. They cultivate it under customary law. Many of them also work as agricultural workers.
- 80% of people living in extreme poverty globally live in rural areas and have agriculture as one of their main occupations. This includes both smallholders and agricultural workers.
- Smallholders with less than two hectares of cultivable land area account for about 30% of the Earth's food production.
- Women are over-represented among the poor of the world, while bearing the greatest responsibility in their household for food production. As regards food, women often eat last and least in countries hit by conflict, hunger or widespread famine.

Svenska FAO-kommittén

The Swedish FAO Committee was formed in 1950, the same year that Sweden became a member of FAO. The task of the Committee is to assist the Government in its work for food security for all, while taking account of global development and the preservation of biodiversity in the areas of agriculture, forestry and fisheries. It is also to spread knowledge about and raise interest in the work of FAO in Sweden. The Committee consists of thirteen members and its chair.

Swedish FAO Committee
www.svenskafaokommitten.se