

The Swedish Society for Nature Conservation | Policy

Policy for Sustainable Agriculture

Adopted by the Board 1999



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POLICY FOR SUSTAINABLE AGRICULTURE

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1. Introduction

Agriculture is essential to human survival. Its main purpose is to produce food. Other important products are biofuels, raw materials for industrial use, and natural and cultural qualities. Agriculture has been, is, and will always be a cornerstone of our livelihood and of economic development in virtually all parts of the world.

Agriculture is different from other economic activities. First, because food is essential to life; secondly, because agriculture is the basis of eco-systems and rural landscapes. Thus, what happens in agriculture is not only an economic issue, it also has important biological, cultural and ethical aspects.

Unless agriculture is practised in a sustainable fashion, vital natural and cultural resources and qualities will be lost. It is more than a matter of landscapes becoming overgrown and monotonous to the eye.¹ Many species are totally dependent on uses of the land that combine cultivation and grazing. In that sense, farming may be considered an ecological service that farmers perform to the benefit of society as a whole. Landscape planning should be a consideration when formulating agricultural policy.

To ensure that farming practices do not damage the environment, both the precautionary principle and the substitution rule must be followed.

Since agriculture is of such fundamental importance to the function of both society and Nature, farmers should be ensured such conditions, economic and otherwise, as allow them to plan efficiently and for the long term. Nature is fickle; farmers can never be sure what the season may bring. Therefore, the political and economic rules that apply to farming should be of a long-term nature.

The policy of the Swedish Society for Nature Conservation, SNF, for sustainable agriculture is applicable to commercial agriculture and horticulture and to household gardening. Leisure gardening is a very specialized activity which, like agriculture, is dependent on external inputs. It is not environmentally sustainable and must be reformed so that it takes its starting point in local conditions.

¹ Much of Swedish farmland is cleared forest. When agricultural use of the land ceases, saplings and bushes once again colonize hard-won fields and meadows.

2. The errors of agriculture as practised today

Hundreds of years of continuous farming have produced traditions, cultural heritages and landscapes that sustain a considerable diversity of plants and animals. In Sweden, 70 per cent of the threatened species are to be found in cultivated environments. Of the total number of plants and animals in Sweden, half are dependent on the practice of farming. Among birds the share is one-fifth. Care must be taken to protect all these species.

In most countries the introduction of modern agricultural practices has occurred at the expense of the agricultural landscape as a biotope. In Sweden, roughly one-fourth of formerly cultivated land has been abandoned within the last fifty years. Meadows have degenerated and the forest has crept closer to farmers' fields. Biodiversity is being impoverished. Not only are endangered species disappearing, but even common species of birds are declining. These species are often reliable indicators of the environmental quality of agricultural land. Over the past decade, skylarks (*Alauda arvensis*), wagtails (*Motacilla alba*), lapwings (*Vanellus vanellus*) and starlings (*Sturnus vulgaris*) have declined markedly. Cornflowers (*Centaurea cyanus*) and bellflowers (*Campanula patula*) are but memories, arnica (*A. montana*) is increasingly rare. These negative trends must be broken. A diversity of species is a vital key to the sustainability of ecological systems. It is also valuable per se.

In recent decades agriculture worldwide has come to use increasing amounts of chemical pesticides, herbicides and synthetic fertilizers. The range of species cultivated has shrunk, as has the variety of domestic animals bred. Farms are larger and have become more specialized. The global market has in many cases replaced local ones. Control of food production rests in ever fewer hands, locally as well as globally.

Agriculture has a profound impact on both the environment and people. In addition to reduced biodiversity, well-known negative impacts of agriculture worldwide include eutrofication of surface and groundwater, erosion and soil depletion, pollution of the natural surroundings and contaminating residues in foods, salinization, etc. Agriculture accounts for nearly half of the nitrogen increment to the Baltic Sea. Some groundwater reserves in Denmark, The Netherlands and parts of southernmost Sweden (Skåne) have nitrate levels that render them unfit for human consumption. Chemical pesticides endanger agricultural workers' health. In the South and in eastern countries the hazards are particular acute inasmuch as the compounds applied are more toxic, and protective clothing and equipment are often lacking.

The agricultural production methods that dominate today are not sustainable. They have several fundamental system errors: Synthetic fertilizers and cheap energy make it possible to raise crops without keeping animals. The result is unbalanced crop rotation without periods given over to seeded grassland.^{2*} When grains dominate crop rotation, more chemical pesticides are required. Residues of these substances pollute crops and the environment. Repeated use of land for the same crop and the growing number of farms having no animals in the interval since the 1950s have impaired soil structures and reduced the amount of humus in some soils. Use of synthetic fertilizers can also impact on micro-organisms in soil, which in turn impairs plants' ability to absorb nutrients. The concentration of raising grains to certain regions has resulted in cheap feed which is transported long distances. Animal breeding has been concentrated in other geographical regions, where great numbers of animals occupy limited space. Vast quantities of manure and urine exceed the capacity of the land to assimilate them, with leakage of nutrients to local and coastal waters as a result.

Farming in Sweden leaves ecological footprints far outside the country's borders. Animal breeders are dependent on cereal feeds from other parts of Sweden, but also protein-rich imports

² Long-term grassland, sown with clover and mixed grasses and turned over at 3 to 4-year intervals.

like soybean meal from other continents. Specialization means long supply-lines. Trends in agriculture worldwide lead in the same direction: toward monocultures, specialization and increasing dependence on inputs of distant origin.

The structural changes outlined above have also meant radical changes in rural landscapes. Fields have been combined and drainage captured in pipes. Small biotopes and aquatic environments have disappeared. As a consequence, biodiversity has suffered.

Industrial agriculture is based on extensive use of cheap, non-renewable resources like fossil fuels and mineral deposits. Use of these inputs produces high yields in relation to the land and the manual labour required. Yet efficiency is low if measured in terms of the nutritional value of the harvest relative to the total amount of inputs (mainly synthetic fertilizers and purchased feeds).

Food production consumes considerable amounts of fossil fuels. The energy balance of open-air crops is positive, whereas the production of meat and dairy products is not energy-efficient. This is inevitable; keeping animals will always demand more energy. Most meat and dairy products offer a higher order of nutrition, however. One should also bear in mind that animals can eat plant foods that are of no direct benefit to us human beings. A major share of the energy used in food production goes to processing, distribution and, not least, consumers' purchasing behaviour. In fact, these factors may in themselves tip the overall energy balance in a negative direction.

Agriculture is subject to political steering as well as to more general socio-economic trends. These have dictated comprehensive rationalization and the adoption of labour-saving equipment and systems. Tax structures and energy costs have made it relatively cheap to consume natural resources and industrial inputs, but costly to employ human labour.

3. Steps toward sustainability

Sustainable agriculture takes its starting point in the productive capacity of the soil. Soil is a living resource. Its nutrients, organisms and water, combined with solar radiation/energy and seeds, plants and animals, set the framework for long-term productivity. SNF is of the opinion that agriculture, as currently practised, needs to be reformed. Farming of the future needs to achieve a balance between plant and animal production so as to allow the recycling of nutrients. Agriculture needs to rely on local resources instead of feeds and fertilizers from distant sources. To compensate for the removal of nutrients that sale of harvests represents, compostable refuse, urine and feces must be returned to the soil. This must be achieved, however, without increasing levels of pollutants, such as heavy metals, in the soil.

We should not allow ourselves to produce and consume our food at the expense of people and ecosystems in other parts of the world. Farming the world over is interlinked via trade of both inputs and outputs. If we consumers purchase environmentally damaging products, we are contributing to environmental pollution and depletion, albeit it may occur in other parts of the world.

In some parts of the world farming has created landscapes and patterns of land use that are highly prized. Traditional, extensive systems of production often are valued for their environmental and cultural qualities. In Sweden, traditional farming practices, with relatively small fields and pastures, foster a rich diversity of plants and animals. In areas of farming on a larger scale, diversity is confined to isolated features of the landscape and other more or less confined biotopes. Much arable land is given over to monocultures. To maintain or restore diversity in agricultural landscapes, all forms of farming in all parts of the country must be allowed to survive. Without viable farms and farmers who cultivate the land, thereby maintaining the cultural heritage and other cultural assets associated with it, biodiversity will decline.

Sustainable agricultural practices are not destructive of natural or cultural qualities. Special attention to delicate biotopes that are not economically viable under modern conditions (e.g., meadows and pastures) is necessary. The measures required range from the preservation of knowledge of traditional techniques to economic compensation.

”Sustainability” has ecological, economic and social aspects. As producer of renewable resources, farming is a key to achieving sustainability in society as a whole. These products are food, of course, but also biofuels and other industrial inputs. Developments in agriculture must be coordinated with the reform of society in other respects.

Farming, like other economic activities, must free itself from its dependence on non-renewable energy sources. Biofuels are a renewable alternative which some farmers can produce.

In their strivings to achieve sustainability, organic or ”eco-” farmers and growers have taken important steps by eliminating synthetic pesticides and utilizing locally produced natural fertilizers and other inputs. The reform of all agriculture is a priority, and SNF welcomes the initiatives that have reduced and are reducing the environmental impacts of conventional agriculture, as well.

In our view, sustainable agriculture must:

- preserve and enhance biodiversity and rural landscapes that are rich in natural and cultural qualities,
- produce foods that are pure, i.e., free from contaminants,
- maintain the productive capacity of soils,
- minimize pollution of soil, water and air,
- use and recycle plant nutrients efficiently,
- rely exclusively on renewable energy sources,
- provide ethically acceptable living conditions for people and animals,
- be respectful of the rights and values of peoples in other parts of the world,
- integrate agriculture into society and social processes,
- offer the farmer reasonable economic returns.

4. Natural and cultural qualities

Biodiversity has to be maintained. Cultivated landscapes are vital to the preservation of biodiversity, among both plants and animals. Soil microbes represent a vital, yet underestimated, realm of biodiversity.

Agriculture and grazing are crucial to the maintenance and development of biodiversity and rich and varied landscapes. Many threatened species of plants and animals make their homes in permanent pasturage. They are dependent on the presence of grazing animals. Traditional farming practices are necessary for their survival.

Cultivated fields are also vital elements. Islands of unploughed soil, ditches, stands of trees, heaps of rocks, stone fences, pits of marl, and other features of the cultivated landscape all play important roles for the life of the land as well as its appearance.

The maintenance of living rural landscapes is important not only to farmers, but to society as a whole. It contributes to the common good. Farmers should be compensated for the work they do to preserve and enhance biodiversity and the rich variety of landscapes their use of the land produces and maintains. Cultural and natural qualities like these are agricultural products alongside food, biofuels, and so forth. They are shared utilities having economic (if not necessarily market) value and should therefore be paid for.

Farmland is a venue for recreation and offers attractive places of residence. All the while, the rural landscape is an open history book, a quiet reminder of our cultural heritage.

The biodiversity of cultivated plants and domesticated animals is at risk; it needs protection. Sustainability in agriculture means using species that are well adapted to local conditions. Heirloom plant varieties must continue to be cultivated; traditional breeds of domesticated animals must continue to be bred as vital elements in Swedish agriculture.

5. Biofuels and non-renewable resources

Sustainability in agriculture rules out dependence on finite mineral and petroleum deposits – in view of their depletion, but also the pollution their exploitation entails. It is a matter of the need to economize with non-renewable resources, but also of an awareness of the consequences of their utilization. Today, most farming, agricultural processing and distribution are totally dependent on fossil fuels. Maximizing energy efficiency and savings is a top priority. In the short term, use of biofuels must increase; in the longer term, all dependence on fossil fuels must be eliminated.

As a producer of biofuels agriculture has a vital role to play in sustainable societies of the future. Biofuels must be produced without detriment to the environment, i.e., fuel production must meet the same criteria as are applied to other forms of agricultural production. Increasing the intensity of food production systems in order to free arable land for biofuels is not a viable solution. When judging the optimal use of arable lands in Sweden, the option of opening new land to cultivation should be considered. Consumers' choices between animal and vegetable sources of nutrition should also be included in such assessments of optimal land use.

Farmland, whether in fields under cultivation or meadows, is a vital resource which must not be wasted. No farming or other activity should be allowed to pollute this resource with, for example, heavy metals, organic compounds and toxic chemicals. Fertile land should not be committed to urban development, industrial sites, roads or golf courses. Plantations of trees on meadows, pastures and cultivated fields must cease.

Water is a shared, finite resource which must be protected from pollutants. In a global view, water is the most limiting of finite resources.

6. Agricultural inputs

6.1 Plant nutrients

The current use of synthetic fertilizers is unacceptable to SNF because of its negative environmental impacts and because it upholds non-sustainable production systems. The use of synthetic fertilizers must be assessed on a case-by-case basis, and the assessments need to take account of impacts on crops and other organisms and on water, soil and the atmosphere. Use of synthetic fertilizers upholds and maintains the fundamental errors of agricultural systems today (see p 6). Use of highly soluble mineral fertilizers can hurt beneficial microbes in the soil. Many synthetic fertilizers are petrochemical derivatives; many contain pollutants. All things considered, use of such substances is a far less efficient use of resources than utilizing the natural ability of leguminous plants to fixate nitrogen.

A sound balance between animal and vegetable production would make it possible to eliminate synthetic fertilizers. In certain localities where natural plant nutrients are lacking in the soil, supplementary fertilizers may be required.

Environmentally motivated taxes on the use of nitrogen and phosphorus spur measures to develop more resource-efficient methods. Accruing revenues may be used to support research,

education and counseling regarding measures to make farming operations environment-friendly, or they may be returned to the industry to help finance reform measures.

Even use of natural fertilizers must be guided by qualitative and resource-efficiency norms. Manure must be stored and applied so as to minimize the leakage of nutrients to water and the atmosphere. Where animals are fed antibiotics and growth hormones, residues in the manure may harm microbes and other organisms in the soil. Similar problems may occur when human urine and feces or other organic material which can contain pharmaceutical residues is applied.

The recycling of nutrients in refuse from food industries, in human urine and feces for reuse in agriculture is desirable, but such recycling must not imply the accumulation of heavy metals, organic compounds or other pollutants in the soil. Achievement of this goal requires the development and implementation of effective and environmentally sound systems of recovery and distribution.

6.2 Chemicals

Pollution and the presence of toxic residues in products, soils, water and the atmosphere are problems of global scope today. The impacts of toxins on ecosystems and human health range from acute poisoning to more subtle, as yet poorly understood effects. Pollutants have increased in number and intensity as agriculture around the world has become increasingly dependent on synthetic chemical inputs.

SNF maintains that the use of synthetic pesticides must cease. Our views regarding these compounds are analogous to our position regarding the use of antibiotics in animal husbandry: if at all, such chemicals must be applied in response to need, i.e., as a specific corrective, not on a general or routine basis. Systems of production that are dependent on routine use of these chemicals are not viable and must be reformed.

Today, traces of toxic compounds are present in our food and in the soil, water and atmosphere. As our methods of analysis are refined, we are finding ever more residues. This speaks for following the precautionary principle in our choice of methods to control weeds and pests. This applies equally to biological control methods.

Weeds and pests are all part of the same ecosystem as the crops we cultivate. It is a question of finding a salutary balance between the organisms we desire and those we do not. The balance should be attained via effective crop rotations and choices of suitable varieties, coupled with mechanical rather than chemical control measures.

To reduce the environmental impact of farming practices, reductions in the use of synthetic pesticides must be real. That is to say, untreated areas must increase, and doses in treated areas decrease. Merely reducing the levels of active substance by converting to low-dose compounds is not enough. When chemicals are called for, the least toxic alternative should be chosen.

7. Animal husbandry

Domesticated animals shall be kept and bred with sustainability in mind and under ethically acceptable conditions which take account of the animals' needs and natural behaviour. Animals must have adequate space to graze, root, sandbathe and so forth. Animals should be able to find a private nook in which to give birth.

Feed should be appropriate to the animals' natural digestion; the diets of cattle, for example, should consist mainly of coarse fodder, i.e. hay and ensilage. Feeding plans should be adapted to animals' assimilation of protein so as to reduce the nitrogen content of manure.

Feed should have full nutritive value and be free from both additives such as growth-promoting hormones and antibiotics, and contaminants such as heavy metals. Medicines shall only be

administered therapeutically, to cure illness, as prescribed by veterinaries; they should not be administered as general preventatives or growth-promoters. Use of medicines to permit conditions of production that impinge on animals' health and welfare is unethical. General, preventive use of antibiotics has also been shown to pose hazards to human health.

Animals must be kept and slaughtered under conditions that respect the integrity of the individual animal. The methods of slaughter must ensure immediate death, without stress. Live animals should not be subjected to long-distance transports.

Breeding should observe high ethical standards. Its aims should be healthy animals which remain functional and productive throughout their natural life-spans. The development of biologically unviable breeds like the Belgian Blue or use of methods such as cloning are not ethically acceptable.

8. The players

8.1 Politics and public policy

Swedish agricultural policy in the post-war period has had other lodestars than sustainability; it has sought to secure food at low cost, to attain national self-sufficiency, and to stimulate rationalization, higher yields and profitability. Similar goals have steered the Common Agricultural Policy, CAP, of the European Union. Sweden has been a member of the Union since 1995. These policies have resulted in systems of production that have serious environmental impacts and which regularly produce large surpluses. Much of the surplus production is exported. Producers receive generous export subsidies, with the result that European exports press world market prices. Consequently, farmers in the South are not competing on equal terms, which makes it harder for them to ensure food security in their own countries.

CAP is costly. A considerable share of the Union's total budget goes to agriculture. Consumers pay for their food directly in the market and indirectly via their taxes. The lion's share of EU expenditures on agriculture goes to support the production of cereals, oilseeds, and protein crops, and to animal husbandry. Only a small percentage is dedicated to environmental protection.

In SNFs view, instead of subsidies, farmers should be reimbursed for their products: food, biofuels and other inputs, but also the natural and cultural qualities their work provides. The implementation of such a reform presumes, however, that each link in the food production chain assumes responsibility for its environmental impacts and pays the attending costs, i.e., "the polluter pays principle" shall apply. Environmentally motivated steering mechanisms, such as taxes and surcharges, should be more widely used, and requirements to use the "best available technology" (BAT) more widely imposed. Furthermore, the precautionary principle and substitution rule should guide policy-making.

Agriculture cannot attain sustainability unless the rest of society makes progress in the same direction. The two lines of development are interdependent. SNF argues that society at large should offer farmers long-term stability in the terms under which agriculture operates; sudden changes in tax policies, etc., should be avoided. As business enterprises, farms are dependent on local biological conditions. It is generally not possible to choose or quickly change products or systems of production at will. This characteristic inertia makes farming different from most other branches.

Food should be produced close to the consumer. At the same time, Swedish agriculture participates in global food supply systems. It is therefore important to bear in mind the consequences various measures may have for food security and environmental quality far beyond Sweden's borders.

Agriculture needs economic, social and cultural conditions that permit the development of sustainable production systems. One means to encourage the development of sustainable production methods are environmentally motivated premiums on ecologically produced crops, etc. The polluter pays-principle should apply. The same naturally applies to biofuel production, as well. Markets need to be developed and relevant research funded. Tax reforms and various policy measures are needed to remove existing hindrances to sustainable alternatives.

8.2 The individual farmer and the industry

The farmer is the key player with regard to developing sustainable systems; he or she is involved in an important reform effort. The farmer has a duty to produce and to manage the land and animals in ethically acceptable ways.

The farming industry has a duty to work to provide conditions that are conducive to the development of sustainable production systems by, for example, informing farmers of sustainable alternatives and by making research findings available to them. The industry should also cooperate closely with retailers and public purchasing agents to stimulate and broaden interest in the environmental aspects of food production and food. The industry has a duty not only to satisfy existing demand for ecologically produced products, but also to help develop new markets for them.

8.3 Consumers and the food trade

Consumers have a considerable potential to bring about changes in agricultural production through the preferences they express on the market. If they choose products having the least negative environmental impact, production will shift in that direction. For this to happen, consumers must be aware of the impacts in question. This in turn requires that they have access to information about the products on the market, among other things in the form of environmental and quality labelling. All such labelling should be based on independent audits and certification by third parties. Three such labels are on the Swedish market today: Bra Miljöval ("Good Choice for the Environment", awarded by SNF), Svanen ("The Swan", awarded by the Nordic Council of Ministers) and KRAV (a certification body for organic produce which develops standards for organic production, monitors compliance, and promotes the "KRAV" label). Other information that aids consumers in making their choices includes indications of origin and labelling of foods containing or made with genetically modified organisms. Strong consumer organizations are needed to look out for consumers' best interests.

Consumers bear a share of the responsibility for the reform of agriculture to achieve long-term sustainability. Adapting one's purchases to follow local growing seasons is one way consumers can contribute. Consumers cannot continue to increase their consumption of meats if they wish to protect the environment, as meat production is responsible for a good share of nitrate pollution and is not energy-efficient. Thus, meat consumption needs to be reduced overall. Grazing animals are resource-efficient and enhance biodiversity; among meats, lamb and beef are environment-friendly choices.

Retailers should ensure that consumers have the opportunity to choose environmentally beneficial products.

Local food production is beneficial in many respects. It can reduce transports, it provides jobs. Perhaps most important, it gives food an identity. Locally produced food is no longer anonymous; it has an origin and other qualities besides taste, nutrition and price. Our emotional ties to the soil, to "the green, green grass back home", may be manifested through food. The significance of local food production is the sum of these various aspects.

Local government and other public bodies should take advantage of the leeway offered in Swedish legislation pertaining to public purchasing and introduce environmental criteria to guide their choices of food.