

Agenda 21

Linköping

Plan of action for a sustainable Linköping in the long term

Visions - Goals - Proposed Measures

Adopted by the Municipal Council,
March 1998

Municipality of Linköping

Together we are creating a sustainable Linköping in the long term

You are now reading our first local Agenda 21 for Linköping. The goals and proposed measures that make up the plan have been shaped by a local process involving a large number of residents of the municipality and representatives of local organisations and companies.

Agenda 21 differs from traditional plans and programmes in a number of ways, of which the most important is probably the fact that it concerns everyone. The goals and proposed measures in the plan of action have been divided up among three groups of players, who have been made responsible for their implementation. The municipality has primarily an organising and innovative role and, of course, one of changing its activities. Our everyday behaviour is more important than we think. Only the simple measures included in the campaign to sign up “guardians of the planet” to which several thousand residents of Linköping have responded will together produce significant results!

Another difference is that the time perspective is much larger. The goals in the plan relate to 2005 and 2020 and its visions are aimed quite a long way into the next century.

The plan of action was adopted by the Municipal Council in March 1998. This does not mean that it is set in stone - on behalf of the municipality we shall be monitoring its implementation by means of “green key figures” in the annual environmental report and, as action is taken, updating the list of measures. This will be an ongoing process and it goes without saying that we welcome suggestions for new measures and comments on the goals, together with discussions and ideas concerning possible cooperation. You can contact the Agenda 21 Office by phone (013-20 53 49 or 20 56 79) or via our home page on the Internet (www.linkoping.se/agenda21/).

The creation of development that is sustainable in the long term not only entails the necessity on our part of solving the environmental problems that exist and creating new and more effective ways of exploiting energy and natural resources. It also involves safeguarding what is important for us as people and more clearly taking into account the social dimensions of Agenda 21, namely the quality of life, health and collective influence or, in brief, “the good life”.

The agenda has now been drawn up and we now know in what direction it will take us. Every small measure we adopt in line with its objectives is valuable. We can only achieve a sustainable Linköping if we all - in our various roles - accept our share of the responsibility.

Gösta Gustavsson
Environmental Municipal Commissioner

Agenda 21

Agenda 21 is a programme of action which was adopted by about 200 countries at the large United Nations UNCED Conference for the Environment and Development in Rio de Janeiro in 1992. The reference is to an agenda for the 21st century. The programme, which consists of forty chapters, appeals to all sectors, groups and individuals in society to work on behalf of sustainable development.

The concept of sustainable development was first defined by the Bruntland Commission in 1987 as follows: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

Social, economic and ecological dimensions

Agenda 21 takes up three dimensions of social development which need to work together in order for development to be sustainable: the social dimension, the economic dimension and the ecological dimension. Naturally, these three dimensions are emphasised in varying degrees at different points in time and in different parts of the world. In industrial countries, with their high consumption of resources and major impact on the environment, the focus during the nineties has been on the ecological dimension - something which is also noticeable in the way in which this plan of action for Linköping has been drawn up, with a clear emphasis on ecologically sustainable development in the long term. However, it is very important (and also a substantial challenge) to develop a broader approach. Examples of social factors which contribute to sustainable development are health and quality of life, gender equality, power and influence over one's own situation, and the ability to have a say in the development of society. Sustainable social development is easier to implement among people who are not discontented with their lot.

An important part of the work associated with Agenda 21 concerns a wide involvement and participation in the decision-making process. The tasks handed down by the Rio Conference include the production of local plans of action in collaboration with the local population.

Some important principles have been highlighted in connection with the work on Agenda 21:

- The ecocycle principle - adapting the use of natural resources to natural cycles
- The precautionary principle
- The polluter-pays principle (PPP)
- The substitution principle - whenever a product which is superior from an environmental point of view is available, it should replace an existing product which is inferior
- The principle of subsidiarity - decisions and implementations of measures should take place as close as possible to those concerned

What has happened since Rio?

In June 1997 the UN General Assembly held an extra meeting about Agenda 21 in New York - UNGASS 19. Five years after the Rio Conference the consensus was that the trend in many areas was still pointing in the wrong direction. There has been an overall deterioration in the state of the global environment since the Rio Conference, despite many successes. Particularly serious is the situation regarding emissions of greenhouse gases, toxic substances and acid rain, increasing volumes of waste and a reduction in biodiversity. Less well-off countries are unhappy with the fact that, if anything, aid has decreased since the Rio Conference and the promised transfer of technology has not commenced at the rate promised. Although no dramatic decisions were made at the conference, it could be said that widespread local work has got off the ground worldwide. In more than 1500 towns local plans of action for Agenda 21 have been adopted.

The work on Agenda 21 in Sweden attracted attention in New York. Sweden is distinguished by its widespread activities at local level, with basically all Swedish municipalities having started some form of process for sustainable development. The work has been coordinated centrally by a national committee appointed by the Government, with a small office linked to the Ministry of the Environment. The national committee has recently submitted a report containing, among other things, proposals for action and strategies for future Agenda 21 work in Sweden.

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Description of the process for Agenda 21 Linköping

The Committee for Sustainable Development

Work on Agenda 21 in Linköping started in autumn 1993 under the direction of the Committee for Sustainable Development, which is a policy-management group coming under the Municipal Executive Committee. In 1998 the members of the Committee for Sustainable Development (party affiliation in brackets) are Gösta Gustavsson (c), Chairman, Leif Thuresson (s), Mariann Löfgren (s), Gösta Törnkvist (fp) and Christer Myrgård (m) and their deputies, Ulla Kardell (s), Lotta Bäckman (s), Veine Edman (c), Bertil Franzén (m) and Margitha Magnhagen (m). Note: c = Centre Party, m = Conservative Party, fp = Liberal Party, s = Social Democratic Party.

Organisation of the municipality's Agenda 21

Successful work on Agenda 21 within the municipality presupposes that all municipal profit centres, administrations and companies accept responsibility for environmental issues in their operations. Since 1994 internal activities concerning the environment have been handled by a total of some 210 environmental representatives. The environmental coordinators of the Municipal Executive Office have the overall responsibility for the Agenda 21 work.

Since 1996 there has been a special Agenda 21 information official who, together with a colleague, staffs the municipality's Agenda 21 Office. Ongoing coordination and information within the municipality are handled by an environmental consultation group consisting of representatives of the Municipal Executive Office, the Agenda 21 Office, the Environmental Office, Production for Children and Young People, the Building Committee Office, the Office for Industry and Commerce, the Technical Utilities and the Nature Centre.

Dissemination of information on a broad front

During the initial phase of the local process in 1993 and 1994, a number of meetings were held with representatives of various local sectors, such as trade, housing corporations, agriculture and forestry, and the media, as a basis for collaboration on various activities and projects.

Information has been an important part of the municipal Agenda 21 work. Since 1993 the officials concerned have held a very large number of meetings and information sessions with non-profit-making associations, rural-development groups, companies, housing cooperatives, political parties, study circles and other bodies in order to inform them about issues connected with sustainable development and to discuss local environmental and future issues. A number of events aimed at a wider audience have taken place in the form of trade fairs, exhibitions and public lectures. Since the spring of 1996 Agenda 21 in Linköping has had its own web site.

As part of the dissemination of information about Agenda 21, all the households in the municipality have been contacted by mail on at least two occasions, inviting them to submit their views. In the spring of 1996 proposals were put forward in a brochure for visions for a sustainable Linköping and issues for discussion concerning them. The mailings brought in about 300 completed forms and applications to take part in local activities.

Participation through a network and round-table groups

In 1996 a network for Agenda 21 Linköping was formed. Besides the municipal environmental representatives, the network consists of about 600 interested residents, associations and companies. Regular information is provided in newsletters and network meetings are arranged two or three times a year.

In 1996 nine "round-table" groups were formed from the network, covering the sectors in the local action plan. These groups have striven to attain a broad composition of interested parties affected by each area involved. Their main task has been to draw up proposals for goals and measures for the local action plan.

Action plan for Agenda 21 circulated for comments

In January 1997 the Municipal Council decided to approve the overall Agenda 21 visions that are to apply to each sector area. In the plan the visions come before the goals drawn up for each sector.

The proposals of the round-table groups were submitted in writing and presented in March 1997 at a network meeting, at which other members of the network were able to discuss and comment on the various proposals.

The proposals were processed and compiled to form a proposal for a plan of action. This proposal was circulated in early summer to about 250 local bodies, inviting them to submit their views. The public were invited to take part in the consultation process through advertisements in the local press. Two thousand copies of the proposal were circulated in Linköping.

By October 67 replies had been received in writing. The consultation bodies are without exception extremely positive towards the proposal and have also contributed a large number of constructive comments and proposals for amendments and additions designed to improve the plan. A summary and analysis of views and proposals have been produced by the Municipal Executive Office, from which all the replies resulting from the consultation process can be obtained.

Following the process of consultation, this revised plan of action has been prepared for adoption by the Council.

How to read this document

Each sector area in the action plan starts off with a general description of what form a sustainable society can take in the sector in question. This is followed by a description of the situation and the problems facing the sector in general and the situation in Linköping today.

The actual plan of action consists of a vision for each sector of a sustainable Linköping, together with targets for the years 2005 and 2020. In addition, there is a list of measures for each sector which can be adopted today, but which should be regarded merely as an example of what can be done by different local players.

Following each goal and proposed measure, suggestions regarding the bodies with which responsibility lies have been noted in brackets. If mention is made of more than one body, the first one in the list should be regarded as having the main responsibility. Responsibility has been divided between:

M = The municipality of Linköping. This includes other official bodies.

B = Businesses in the municipality of Linköping

P = The public in the municipality of Linköping. Included here are associations and non-profit-making organisations.

Cooperation and local democracy

In a sustainable society we will have learnt the value of democracy, participation and the commitment of the individual. We will be aware of the ways in which we have an impact on the environment and of how we can contribute to achieving shared objectives in our roles as citizens of the world, residents of the municipality, people at work, parents, members of associations and private individuals.

Agenda 21 describes how we can achieve long-term, sustainable development on earth, in which people will live in harmony with nature and according to its laws. This means that we need to re-adapt our way of life to the cycle which has continued to function through billions of years.

Agenda 21 is also about the development of a global society built on democracy and solidarity between nations and peoples. For those of us who live in the rich part of the world this, by and large, means learning to do without, for the benefit of others.

At national, regional and local levels, too, Agenda 21 must give rise to new democratic processes, in which all members of society can have a voice. Here, the results of several years of Agenda 21 work already form a valuable corpus of knowledge and experience on which to draw.

In Linköping our work based on Agenda 21 must extend far beyond the normal operations of the municipality. Important players include the local business community, the churches, farmers, the university, the county council, government agencies, the county administrative board, trade unions, societies and other non-profit-making organisations, educational associations, rural organisations and the media. It goes without saying that all citizens should be able to participate in the work of creating a sustainable society, and it is important that this process should include groups such as the elderly and the disabled. The development of rural areas has a major role in the Agenda 21 adopted in Rio de Janeiro in 1992. In Linköping, too, the countryside has a key role in the development of a sustainable society. In 1997 a rural development programme was adopted for Linköping which is closely linked to the local plan of action for Agenda 21.

Vision

The residents of the municipality will participate actively in work towards long-term, sustainable development.

Targets for the year 2005

- All local players in society will participate actively in work towards sustainable development in Linköping by accepting their responsibility and adapting their activities in the interests of the environment.
- All residents will have been invited and given the opportunity to take part in environmental studies in the form of an adult education course suitable for their occupation or social group. (P, M, B)
- Local forums will be in place and functioning, for ongoing dialogue between citizens and decision-makers on environmental and development matters. (M, P)
- An environment management system will have been introduced in the municipality of Linköping. (M)
- A comprehensive environmental plan, subject to continual re-evaluation and updating, will be in place for every unit operating in the municipality of Linköping. (M)

Suggestions for action now

- Compile and present annual environmental reports containing hard statistics relating to Linköping's progress towards becoming a sustainable society. (M)
- Establish collaboration with one or more municipalities to the east or south of Linköping so we can help one another realise the ambitions expressed in Agenda 21. Collaboration already in place can be developed further, e.g. that with Kaunas in Lithuania. (M, B)
- Develop international collaboration and an exchange of experience on environmental and development matters, e.g. within the ICLEI (the International Council for Local Environmental Initiatives). (M)
- Publicise good examples of environmental projects in Linköping, e.g. via the media. (B, M)
- Keep elementary school and upper secondary school pupils constantly well informed so that they can participate in local Agenda 21 work. (M)
- Translate environmental information into the major languages used by immigrants here and make the material available, e.g. in libraries and via the Internet. (M)
- Create a strong basis for a lively debate in the municipality on issues relating to the environment, the future, lifestyle and development. (M)

Transport and traffic

In a sustainable society we will have achieved a reduction in traffic as a result of a larger proportion of people using public transport, more efficient goods deliveries and increased use of information technology. We will walk and cycle to a greater extent over short distances instead of going by car. The environmental impact of traffic will have fallen substantially following a move from petrol and diesel to biofuels and electric vehicles.

In the space of a century our travelling patterns have changed radically. The distance we travel each day has increased a hundred-fold, although we take more or less the same time. The car has given us considerable freedom and independence, although it is only in recent years that we have paid attention to the environmental consequences.

The increasing transportation of both people and goods requires more and more energy. At present, use is made mainly of fossil fuels, which contribute to the greenhouse effect, acid rain, excess fertilisation and local environmental disruption. The roads also take up a lot of space and contribute, for example, to the fragmentation of the countryside.

As many as 80% of car journeys involve distances of less than ten kilometres. Short journeys are often made with cold engines and poorly functioning exhausts, resulting in the emission of correspondingly large amounts of pollutants. Even with perfect combustion of fuel and cleaning by catalytic converters, the greenhouse gas carbon dioxide is produced.

In Linköping about 25% of journeys locally are by bicycle, 15% by bus and 60% by car. For distances up to three kilometres, the bicycle is the most common means of transport. The city has developed enormously in the last few decades and the distances from the outer suburbs to the centre are now large.

By investing in biogas-fuelled buses in the centre, Linköping now has a much improved local environment and the highest proportion of public transport in Sweden using renewable fuels. The investment in regional commuter trains is a good illustration of how more people are being given an opportunity to travel in an environmentally sound way.

Vision

The overall need for transport will fall. We will reduce the number of cars on the roads and provide better facilities for pedestrians, cyclists and public transport. All transportation of persons and goods will be effected with the use of renewable fuels.

Targets for the year 2020

- At least 50% of the volume of goods transported to and from Linköping will go by rail. (B)
- A demand-driven and rapid system of public transport will have been developed, linking main centres of population as well as major workplaces and the majority of less populated areas in the region. (M)
- The consumption of fossil motor fuels will have fallen by 50% compared with 1995. (P, B, M)
- With regard to purchases by the municipality of vehicles and transport services, only vehicles which run on renewable fuels will be procured. (M)

Targets for the year 2005

- The entire municipally owned fleet of private cars will be able to run on renewable fuels. (M)
- A comprehensive and continuous network of cycle lanes, which are also safe to use, will have been developed in the city. Linköping will be one of the best cities for cycling in Europe. (M)
- All major built-up areas close to the city tram routes and the Stångådal line within the municipality of Linköping will be part of the commuter train system. (M)
- Fares on public transport will be designed to compete with travel by car. (M)
- The use of fossil fuels will have fallen by 20% compared with 1995. (P, B, M)
- The use of information technology (IT) will have reduced actual transport requirements in the municipality. (B, M, P)

Suggestions for action now

- Require vehicles to run on renewable fuels and insist on low fuel consumption in connection with municipal procurement of services. (M)
- Use renewable fuels for the buses in the central area. (M)
- Provide filling stations with facilities for biogas, rapeseed methyl ester (RME), ethanol and electricity for the public and companies. (B, M)
- Petrol stations should be allowed to sell petrol containing up to 10% ethanol. (B)
- Experiment with car pools as a cooperative project between major companies and residential areas. (P, B)
- Start a competition for Linköping's biggest employers, who will undertake to acquire a certain number of vehicles which run on renewable fuels within a certain period. (B, M)
- Set up a cycle pool in the centre, where cycles can be borrowed on the same principle as that which applies to shopping trolleys. (M)
- Have public transport communicators provide information at workplaces and in residential areas. (M)
- Start a cooperative project with the primary aim of minimising the number of deliveries by lorry in the municipality (e.g. by reloading at one terminal) and developing more environmentally sound local handling of goods. (B)
- Make business trips primarily by train, tram, bus or cycle. (M, B)
- Introduce company cycles and county cards for public transport for business travel at public workplaces and major companies. (B, M)
- Install engine preheaters at parking places belonging to major landlords and at workplaces. (B)
- Experiment with distance working at a number of major workplaces. (B, M)
- Have an emergency service to which to report, for example, broken glass, holes, inadequate snow-clearing or cycle paths in need of maintenance. (M)
- Increase car sharing for those travelling to competitions, training sessions and other events at associations and other organisations. (P)
- Introduce a car-free day once a year in the centre - e.g. in connection with the summer festival. (M)
- Build new parking areas in strategic positions in the countryside to promote the use of public transport and car sharing. (M)

Energy

In a sustainable society our energy needs will not exceed what can by and large be covered by renewable sources of energy - water, the sun, the wind, biofuels etc. The extraction of biofuels from our forests must not be allowed to diminish biodiversity.

The oil crisis of the 1970s opened the eyes of many people to the fact that the supply of energy was not something to be taken for granted. We learned how to be economical with energy, although we have not, in fact, reduced our energy consumption to any appreciable extent. However, as a result of new energy-efficient technology and increased awareness, less and less energy is needed, for example, for heating, lighting, office equipment and industry. We must, nevertheless, modify our behaviour and make use of the new technical solutions available.

The relative proportions of the various forms of energy we consume have changed since the seventies, primarily as a result of the replacement of oil for heating by electricity and the fact that biofuels have started to be used to a greater extent in district-heating systems. Sweden has the highest per capita consumption of electricity in the world. As a result of the deregulation of the electricity market in recent years, companies, landlords and private customers have been able to buy their electricity from the energy provider of their choice. At the same time there has emerged a market for electricity which carries the "Bra Miljöval" (Good Environmental Choice) label (including solar energy, wind power, biofuels and hydroelectric power developed prior to 1995).

In Linköping just under half of the electricity supplied by the Technical Utilities is currently produced from renewable energy sources. Municipal electricity generation takes place by means of combined heat and power (CHP), which involves the effective utilisation of fuel. For example, in 1997 (which is considered to be a typical year) approximately 25% of the electricity and heat was generated from wood fuel (demolition timber, energy forests and waste after cutting), 40% from household and industrial waste from twenty Swedish municipalities and a small amount of waste from abroad, 5% from waste rubber, 20% from oil and 10% from coal. The district-heating network is well established in the central area, supplying 90% of properties. Since almost all the district heating is also generated in CHP plants, which also produce electricity, the Linköping district-heating system helps to reduced the use of fossil fuels in, for example, condensate power plants elsewhere. Even better utilisation of district heating in Linköping is therefore important.

Vision

Overall energy consumption will fall. Electricity and heating will be generated from renewable sources of energy.

Target for the year 2020

- At least 95% of the electricity and heating in Linköping will be generated from renewable sources of energy. (M)

Targets for the year 2005

- At least 75% of the electricity and heating in Linköping will be generated from renewable sources of energy. (M)
- The per capita consumption of electricity will have fallen by 15% compared with 1996. (P, B, M)
- The use of energy in municipally owned properties will have fallen by 20% compared with consumption in 1996. (M)
- A start will have been made on the development of environmentally sound district-heating or group-heating systems in major localities such as Linghem, Vikingstad and Sturefors. The district-heating network in the city and its outer areas will have been completed. (M)
- Another ten wind-power stations will have been erected in the municipality of Linköping. (P, B, M)
- The number of houses with only direct electric heating systems will have fallen by half since 1996. (P)
- No municipally owned properties will be heated with electric radiators. (M)
- Oil-fired heating will have ceased in municipally owned properties outside the district-heating area. (M)
- Existing wood-boiler installations that have not been environmentally approved in built-up areas and clusters of dwellings will have been fitted with an accumulator tank and, if possible, a ceramic liner. (P, M)

Suggestions for action now

- Resume municipal advice about energy to households, businesses and the public sector in order to promote more efficient use of energy and the saving of energy, together with a move to renewable sources of energy. (M)
- Draw up an inventory of the municipality's energy-saving potential and what renewable forms of energy are realistic for achieving the target of 75% renewable energy by 2005. (M)
- Buy "environmentally labelled" energy for the bulk of municipal operations and inform the public and companies about this alternative. (M)
- Accept individual responsibility for trying in all circumstances to reduce energy consumption. (P)
- Gradually replace oil-fired heating with renewable heating in municipally owned properties outside the district-heating area. (M)
- Use only an environmentally approved boiler with an accumulator tank or new techniques such as pelleted fuel in connection with the installation or change of a wood-fired boiler. (P)
- Gradually replace bulbs in traffic lights with energy-efficient light diodes. (M)
- A development programme for district cooling based on the district-heating system. (M)
- Automatic switching on and off of lights in public premises, staircases, industrial premises etc. (M, B)
- Investigate the energy potential and technical possibilities of the small-scale production of biogas, e.g. from slurry and crop residues. (B, M)

Waste

In a sustainable society the products we use will be of higher quality and last longer, which means that we will have less rubbish to dispose of. Both consumers and purchasers will examine these products critically and make demands in relation to purchases and procurement.

By avoiding products which produce hazardous waste, we will reduce the impact on the environment.

In many municipalities the separation or "sorting at source" of waste has made considerable inroads and in several places the amount of unsorted waste has fallen to less than half what it was. Paper and packaging materials of board, metal, glass and plastic can be recovered and the organic waste from households can be composted. At the same time the waste must be managed by means of an overall approach so that there is no adverse impact on the environment as a result of more deliveries or inappropriate methods of recycling. In the longer term we can reduce the amount of waste through the resource-efficient production of durable products.

Hazardous waste is the type of waste which it is most important to handle correctly. Ideally, we should stop using products that can turn into hazardous waste, and what we nevertheless use must be handed in to an environmental facility.

The bulk of the waste is created in industry and in the course of activities such as demolition or rebuilding. Here, too, the amounts that are disposed of at a landfill site have started to fall in recent years thanks to some degree of separation. Nevertheless, a lot more can be done.

In Linköping the quantity of household waste has fallen, amounting in 1996 to 265 kg per head of population. One of the reasons for this decrease is greater sorting at source, including composting, although the weight-based charge that has gradually been introduced is also of relevance.

Recycling points for newsprint and packaging made of board, glass, metal and hard plastic can be found at just over thirty sites in the municipality, although this represents only one point for every 4700 residents or so. Hazardous waste from households has to be handed in at specially located environmental collection points. Those parts of the municipality outside the major conurbations are served by environmental vehicles which make regular collections. In the case of industries, companies, institutions etc., the handling of waste takes place by special agreement. There is no organised central composting of organic household waste, although in addition to areas with detached and semi-detached houses, a number of housing cooperatives, preschools, schools and also individual restaurants have made a start on local composting.

Household waste, however, makes up only a small proportion of the total amount of waste, accounting for just under one-fifth in 1992. Industrial waste accounted for about one-third and waste from energy recovery accounted for the same amount. Building and demolition waste also normally comprises a significant portion of the total waste, although this depends entirely on trade conditions in this sector.

Vision

The handling of waste will be characterised by re-use and recycling. We will not produce any waste which has to go to a landfill site.

Target for 2020

- The amount of landfill waste in Linköping will have fallen by 80% compared with 1996. (P, B)

Targets for 2005

- The total amount of landfill waste in Linköping will have fallen by at least 15% compared with 1996. (B, P)
- The amount of household waste collected will have fallen by 50% compared with 1996. (P)
- Organic waste will not be disposed of in Linköping after 2005. (M, B, P)
- Local composting will have been developed in most residential areas. The organic waste will be used as a source of nutrients in local cultivation and nearby agriculture. (P, B, M)
- The service provided to households for the reception of hazardous waste will have gradually been improved and the number of environmental collection points will have at least doubled compared with 1997. (M)

Suggestions for action now

- Increase information about the management of hazardous waste. (M)
- Give everyone living in the municipality access to efficient recycling points that are convenient in the context of their normal daily routines. This means a standard of service which provides well-sited recycling points, each catering for up to 1300 residents. (B, M)
- Target the information that is given to residents about sorting at source, composting and recycling. The information should highlight the whole chain, from purchases to recycling, and emphasise individual responsibility. (B, M)
- Carry out a local evaluation of producer responsibility (i.e. for packaging) by interviewing residents about the recycling points. The result should be used as part of the supervision exercised by the municipality and as a basis for discussions with the material-processing companies. (B, M)
- Carry out quality measurements of, among other things, the presence of substances harmful to the environment in the organic waste of caterers in order to improve knowledge of the alternatives local or central composting. (M, B)
- Introduce a weight-based waste charge throughout the municipality. (M)
- Give information, costings and training about composting to residents and companies. (M)
- Change over to cloth nappies at the maternity wards of the University Hospital and offer parents an inexpensive starting pack of cloth nappies and pull-ups. (M)
- Provide an opportunity to subscribe to at least one local newspaper via the Internet in order to reduce paper consumption. (B)
- All municipal units can compost their kitchen and garden waste. (M)
- Launch a campaign for the collection of scrap metal throughout the municipality. (B, M)
- Organise an activity involving the recycling, repair and resale of furniture and other convenience goods - so-called "junk stores". (B, M)
- Set up recycling centres for bulky waste, garden waste, brushwood, packaging, hazardous waste etc., with consideration being given to an acceptable level of service and availability. (M)

Biodiversity

In a sustainable society we will preserve biodiversity, both in built-up areas and in the countryside. We will not allow biotopes to disappear or threatened species of plants or animals to be eradicated from the municipality as a result of human activities.

By biodiversity we mean the variation among living organisms in all environments, whether on land or in the sea, and the interactions and processes in which these organisms take part.

What we usually perceive as undisturbed nature has nearly always been influenced by humans in some way. In the south of Sweden, for example, virtually no forests exist that have not been affected by cutting, charring or other form of human intervention. Some of these actions are so small or took place so long ago that they scarcely have any importance. We then speak of "natural forests", which contain a large number of varieties of lichen, fungi and insects which live on dead or dying trees.

The forestry which has successfully produced timber and paper pulp during this century has also been responsible for the disappearance of many habitats. In recent years a change has taken place, and biodiversity and environmental issues are now valued as highly as the production of timber and raw material for pulp. Forest companies and other landowners are learning more about valuable biotopes and indicator species and are developing forestry plans which take account of the environment. A Swedish standard for the environmental certification of forestry has recently been adopted by the international Forest Stewardship Council (FSC).

The agricultural landscape is also changing. A few decades ago there were plenty of meadows and pastureland, habitat "islands" in cultivated fields, ditches and fences. When the land becomes overgrown, wetlands and small surface waters disappear and large deciduous trees are cut down, the environment for many species also disappears. 70% of all the flowers, for example, which are regarded as threatened in Sweden, are native to the agricultural landscape.

Protecting plants and animals is not just a question of establishing nature reserves. Account must also be taken of biodiversity in all activities which affect the countryside so that we can retain an "everyday" landscape rich with species alongside our protected heritage. Simple management measures or considerations can mean life or death for many species. The size, too, of the protected areas and the links between them are of considerable importance.

In Linköping we have a special responsibility for the oak-populated areas, which are fairly well documented and extend a fair distance from the southern outskirts of the city. This landscape contains a large number of threatened plant and animal species, of which the endangered *Osmoderma eremita* beetle has attracted a particularly large amount of attention. In regard to water-meadows, too, the municipality has a special responsibility, including those by the shore at west Roxen with their wealth of bird life.

The municipality of Linköping contained ten nature reserves and four biotope-protected areas in 1996. The reserves cover 1285 hectares, representing 0.8% of the land and water belonging to the municipality. In Sweden as a whole, the area of land that is protected is 8.2%. In the forestland owned by the municipality there are at present 100 hectares of key biotopes and another 124 hectares of high natural value. Together these areas represent 13% of the forest owned by the municipality.

About 900 of the plant and animal species in Sweden that are under threat are found in Östergötland. Approximately half of them are insects. A large amount of knowledge is still lacking about many groups of plants and animals, and at the present time there is no integrated local knowledge bank for the municipality of Linköping.

Linköping still retains several connected green zones which reach a long way into the city, represented by the zone between Rydsskogen, Vallaskogen, the military exercise range and Vidingsjöterrängen and the zone consisting of the Stångån and Tinnerbäcken watercourses. The areas of greenery in the vicinity of the city not only have a very important social function, but can also be managed in a manner which promotes biodiversity.

Vision

Plant and animal varieties will be preserved in natural habitats. Habitats that have been destroyed will be restored.

Target for 2020

- At least 2% of municipal land will have been protected under the Nature Conservation Act, with the aim of benefiting threatened plant and animal species. (M)

Targets for 2005

- At least 1.5% of municipal land will have been protected under the Nature Conservation Act, with the aim of benefiting threatened plant and animal species. (M)
- Forestry in municipally owned forests will be environmentally certified according to Swedish FSC criteria. (M)
- Awareness will be high regarding the location of threatened species in the municipality. Agriculture and forestry will be managed in such a way that the situation for threatened plants and animals in the countryside is improved. (B, M)
- At least forty areas of wetland and small ponds which benefit biodiversity will have been restored or recreated in the municipality. (B, M)
- The biological and cultural-historical values of the oak-populated areas will be secured in the long term. (M)
- The area of well-maintained natural pasture and meadowland will be just as large as it was in 1996. (B, M)

Suggestions for action now

- Protect and develop the natural and cultural values in the existing military exercise area south of Linköping. Invest in information and tourism in this area. (M)
- Schools, preschools and other municipal units, together with associations, companies, the elderly or other groups of residents, can "adopt" an area of countryside in the immediate environment. (M, P, B)
- Make an inventory of areas of countryside of high biodiversity near built-up areas, as a basis for work on the green structure of heavily populated areas in Linköping. (M)
- Build up a local nature database in which knowledge of threatened species in the municipality is kept so that it can be disseminated to landowners. (M)

- Carry out projects which aim to inform about and preserve cultivated plants and rural species of animals of local or regional origin. (M)
- Organise a campaign for haymaking in the valuable grasslands, e.g. through courses. (M, P)
- Publish a book which describes from an educational standpoint the natural landscape and areas of countryside worth visiting in Linköping. (M)
- Recreate parts of Tinnerbäcken's old winding layout and biodiversity. (M)
- Leave uncultivated zones next to watercourses and edge zones of cultivated fields in which no chemicals are used. (N)
- Allow at least 5% of the municipally owned productive forestland in the form of key biotopes and other small biotopes of biological value, which can develop freely. (M)

Food and sources of nutrition

In a sustainable society we will produce our food without long-term damage to the productivity of the soil, to the surrounding ecosystem or to ourselves. We will have a much better energy balance in agriculture than today and enjoy working cooperation between city and countryside, with a larger proportion of regionally grown produce and nutrients in circulation.

A couple of generations ago by and large all those living in Sweden had direct links with agriculture. Today only a small percentage of the population live on the land and many people have no or very little knowledge of how food is produced. Even so, agriculture is a key factor in a sustainable society, not least because the attention of an increasing number of people is being directed at the land-based industries for future fuels for heating, electricity and transportation, alongside food production for a growing population.

Today's production and handling of food are out of balance from an energy perspective. Ten times more energy is used to bring our food to the table than the nutrition we derive from eating it. Of the country's total consumption of energy, about 20% is used for the supply of food. A household of four persons consumes about 40,000 kWh of energy on food each year - energy which is used up in the form of artificial fertiliser, machines in food production and long-distance deliveries of food. This energy cost can be reduced substantially, e.g. by eating food which is produced in an efficient manner locally or in the surrounding region, by seasonal adjustments to menus and, not least, by avoiding making long journeys when we go shopping.

Much more energy is needed to produce animal products such as meat, eggs and dairy produce than vegetables. Where nutrients are concerned, animal products are also less efficient, with only 10-15%, for example, of the nitrogen added during meat production ending up in the meat on our table. In Sweden we eat, on average, 40% more proteins than we need. Those who wish to reduce their intake of proteins can reduce the amount of meat they eat somewhat, to the advantage of foods from the vegetable kingdom. These changes are also important in the long run from the point of view of being able to support a growing population on earth with a limited area of agricultural land.

A lot of the imported produce we consume is produced in such a way that both the environment and health of the food workers are adversely affected. In Sweden we import foodstuffs (including coffee, soya beans, cocoa, rice and bananas) and cotton. The net amount imported, i.e. the difference between what we import and what we export, is equivalent to 420 square metres of cultivable land per person.

We must in the long term have an efficient circulation of nutrients. Phosphorus, which is a vital nutrient, is today used by and large in a linear flow, from phosphate mines via commercial fertiliser to our food and onwards via the sewage system into the watercourses, where it gives rise to eutrophication. At present the phosphorus which ends up in the digested sludge of the sewage treatment plant is mostly sent to landfill. This situation will not be viable for much longer.

In Linköping about 44,000 hectares of agricultural land are distributed among just over 700 farm holdings. As elsewhere in Sweden, agriculture has undergone rationalisation in the last few decades and the number of farms has fallen by about 30% since the beginning of the

seventies. Smallholdings are become increasingly few in number, while units in excess of 100 hectares are increasing. In 1996 1.8% of those living in the municipality worked in agriculture, forestry and fishing. Of agricultural land, 3.7% was farmed organically, with about thirty farms affiliated to the KRAV label for organic produce. During the nineties there has been a noticeable increase in the proportion of organic farming.

The municipality has a well-developed sewage system, the sewage treatment plant at Nyköping cleaning most of the wastewater from the densely populated areas of the municipality and from Borensberg in the municipality of Motala. There are also small treatment plants at Nykil, Ulrika, Västerlösa and Björkeberg. In Gammalkil a trial has started on laying out wetlands for cleaning wastewater. This has also been tried in a pond system for part of the water leaving the Nykvarn plant, with excellent results in regard to nitrogen cleaning. for example. The digested sludge from the treatment plant is not spread at present on any fields used for food production. Most of it goes to landfill, while a small proportion is spread on energy-forest plantations.

A trial of local sludge treatment has started in Hulta under the management of the ecocycle association, and an experiment is also in progress on the separation of urine in the municipality.

Ecologically sustainable food production

Ecologically sustainable food production in the plan of action includes the following conditions taken from the publication *The Vital Industry*, published by the Natural Step Foundation in association with the Federation of Swedish Farmers and the National Association of Alternative Growers.

- The integration of animal husbandry for the best balance at individual agricultural enterprises
- The fixation of nitrogen by means of solar energy
- Better utilisation of plant nutrients in farmyard manure
- A greater amount of evergreen land to counteract the leakage of plant nutrients
- Crop rotations which counteract the multiplication of weeds and harmful plants
- Less use of auxiliary energy and a transition to renewable fuels
- The preservation and recreation of important environments for the flora and fauna of cultivable land
- No accumulation of heavy metals in agricultural soil

Vision

Town and country must be integrated, with improved return of nutrients to the soil, a greater proportion of locally produced food, and sustainable farming. Throughout the municipality the systems for water and sewage will be based on cyclical principles.

Targets for the year 2020

- The entire municipality will have a sewage system based on cyclical principles. One element of this system will be the return of nutrients in urine and faeces to agriculture. (M, B, P)
- All food consumed and produced in the municipality will be produced in an ecologically sustainable manner (see definition in box). The health of those working in the food industry (worldwide) will be taken into consideration. (P, B)

Targets for the year 2005

- 40% of private wastewater treatment plants in the countryside will be based on cyclical principles, to include the ability to return nutrients to agricultural land. (P, B, M)
- Sewage systems based on cyclical principles will be installed in all new dwellings and other buildings. (M, B, P)
- The sewage sludge from the municipal sewage treatment plant will be of such high quality that it is attractive and risk-free for use in the production of food. (M, B, P)
- At least 10% of the agricultural land in the municipality of Linköping will be farmed organically. (B, P)
- Emissions of nitrogen to air and water in the municipality of Linköping will have been reduced by 20% compared with 1994. (B, M, P)
- All households in built-up areas will have the means to grow, for example, a proportion of their own food. (M)
- Only those foods which have been produced in an ecologically sustainable manner (see definition in box) will be used within the municipality's own operations. The health of those working in the food industry (worldwide) will be taken into consideration. (M)
- All land belonging to the municipality and leased for farming will be farmed in an ecologically sustainable manner. (M, B)
- In the municipality's own operations there will be facilities for the long-term storage of fruit and vegetables. (M)
- At least 15% of the food served in schools and day nurseries in Linköping will be produced according to KRAV guidelines (i.e. organically). (M)
- The majority of food producers in the municipality will have earned entitlement to "environmental certificates" and/or will have carried out their own internal "environmental audit". (B)
- In order to improve the purification of wastewater at the Nykvarn treatment plant (in particular, the removal of nitrogen), a wetland of sufficient size will have been established as the final stage of the purification process. Parts of this wetland will also be accessible to the public. (M)

Suggestions for action now

- Introduce a labelling system to identify food produced locally or within the region in order to aid consumer choice. (B)
- Provide all households and businesses in the municipality with information on the link between food and the consumption of energy and natural resources. (M)
- Publish information on farm shops, "white" (i.e. environmentally approved) food stores and organic farming, as part of the municipality's environmental information programme. (M)
- Serve vegetarian meals at least one day per week in schools and preschools. (M)
- Use human urine as a fertiliser on one of the golf courses in the municipality. (B)
- Utilise sewage sludge in the cultivation of biomass fuel (i.e. energy forests). (M, B)
- Create a contact network as an interface between producers and consumers in the municipality to promote the production of food locally. (B, P)
- Form customer focus groups linked to local food stores. These focus groups can, for example, influence stores to stock organically and ethically produced food, enter into "contracts" with the store and have a role in informing other customers. (P, B)
- Selected farms within the municipality can organise open days for the public and for school-age and younger children a few times per year, to make consumers more familiar with the way in which foods are produced. (B)
- Provide information on ways in which we as individuals can contribute towards reducing the environmental impact of the municipal wastewater system. (M)
- Offer lunches which are seasonal at Linköping's restaurants and at restaurants and canteens run by or for the municipality. (B, M)

Physical planning and ecological construction

In a sustainable society we will plan, design and build on the basis of a longer perspective. We will use building materials and construction methods which have a minimum impact on the environment, and we will plan from the outset so that recycling will be possible in the future.

In order to improve the quality of life in residential areas, we will provide greater opportunity for individuals to garden (both outdoors and in greenhouses). Environmental considerations are a key factor throughout the process from physical planning to the actual construction work.

The public planning system as a whole is very important to our ability to live and work in a sustainable society. Physical planning within the municipality can, for example, help reduce the need for transport by ensuring better proximity of residential areas and the areas where people work, shop and go for public sector and other services. Proximity to green areas and the countryside for recreation, exercise, sport or simply relaxing and enjoying nature is also important for people living in a society which is sustainable in the long term.

Construction work is a long-term investment and a major one. For construction to be profitable, we must reach sound and far-sighted decisions on environmental matters now.

That which we create in society must be planned, designed and built in such a way as to ensure that its impact on the environment is as small as possible. Most important of all is that buildings should be planned so well that they will last and remain useful for a very long time. Even at the outset, however, allowance must be made so that if they have to be demolished in the future, this can be done in an environmentally sound way, e.g. through the recovery of used materials.

Attention must also be paid to the best interests of the environment in refurbishment and maintenance work. Energy-saving measures, the use of sound materials and the installation of dual wastewater systems all contribute towards making premises more environmentally sound.

Linköping has a population of approximately 133,000 living in approximately 64,000 apartments. 75% of these dwellings are in built-up zones in the municipality, and only 8% are in areas defined as "sparsely populated". Almost 40% of households consist of one person only. The number of new homes built has fallen sharply in recent years. In the "Municipal Housing-Stock Programme" the projection is for between six and eight thousand new apartments to be built by the year 2010. A number of housing estates are due for refurbishment and remodelling over the next decade, and the ambition exists already for this work to be carried out in an environmentally sound manner.

In May 1998 Linköping adopted a Master Plan for the municipality, which contains a statement of intent with regard to land and water use within the municipality.

Policy on environmentally sound construction in the municipality of Linköping

All new building projects are to be carried out according to ecological principles and adapted to suit conditions on site. Projects are to be implemented with regard to energy and water conservation and should, where possible, make use of materials from local sources to reduce transportation input. Heating systems will either use district heating or be based on renewable sources of energy. Rainwater run-off is to be dispersed locally. Nutrients in sewage are to be utilised as agricultural fertiliser if this is technically and economically feasible. Natural materials such as timber, stone and

brick are to be used, as well as materials which are able to be reused or recycled or are biodegradable. All buildings are to be fully damp-proofed and well ventilated. The "precautionary principle" is to be applied for electrical installations. Sufficient space is to be reserved for separating waste and for composting. This policy will also be applied, where appropriate, to the refurbishment or extension of existing buildings.

Vision

Physical planning will be based on an approach which is all-inclusive, long-term and based on sustainability. All projects will culminate in construction work and dwellings which are economical in their use of resources, environmentally sound and sound from a health viewpoint.

Targets for the year 2020

- Linköping will have a living city centre, suburbs and satellite communities structured in a way similar to the old city, which will be coordinated with the surrounding rural areas. (B, M, P)
- Linköping will be a "green" city, with beautiful parks and green areas which harmonise with buildings, squares, streets, roads and watercourses. The existing "green and blue ways" will have been preserved and extended. There will be sheep and other grazing animals on large grassed areas and pastureland close to built-up areas. (M)
- An "environmental declaration" (building material declaration) will have been issued for all housing in the municipality of Linköping, signifying that the building is sound from a health point of view. (B, P)

Targets for the year 2005

- In Linköping there will be at least three apartment buildings (either new or refurbished) which will function according to cyclical (i.e. sustainable) principles.
- Adaptation to cyclical principles will be implemented to the fullest extent that is technically and economically feasible. (B)
- All projects for the construction of new buildings will, as far as possible, follow the "Policy on environmentally sound construction in the municipality of Linköping" (see box above). (B, M, P)
- The areas known as Trädgårdsföreningen, Stångåpromenaden and Tinnerbäcksdalen will be further improved and developed.
- The proportion of trees and parks in the city centre will have increased. (M)
- A city farm or equivalent will have been established at Valla or another suitable area which is easily reached from the city. The farm will have a wide variety of traditional Swedish breeds of farm animal and old varieties of cultivated plant, showing the methods used when communities were largely self-sufficient. (M)
- Recommendations governing noise and air pollution must be met in all existing large housing estates. (B, P)
- The radon survey already started within the municipality will have been completed, and measures will be in place to meet limit values. (M, P)
- In all buildings (newly-built, refurbished and extensions) energy-efficient and environmentally sound appliances and installations will be present as standard equipment, in addition to food cellars or larders, thermostatic mixers and flow-limiting devices on water taps, shower roses and lavatory cisterns. (B, M)

Suggestions for action now

- Choose new construction sites in the city and the service areas in such a way as to ensure efficient service, efficient public transport and efficient district heating. (M, B)
- Take into account the need for railway sidings in the "work areas" (i.e. commercial/industrial areas) of the municipality when drafting a Master Plan. (M)
- Prior to demolition, subject buildings to inspection and demolish according to a demolition plan under which selective demolition is to be applied where possible. (B, M)
- Building companies can supply an environmental declaration for each construction project. (B)
- When granting loans for construction projects, banks and lending institutions can give preferential treatment to projects which are environmentally sound or based on cyclical principles. (B)

Trade and industry

In a sustainable society, trade and industry will have a role to play in ensuring sustainable development. With the right driving forces, companies will remain profitable. Companies will pursue their own environmental programmes in a goal-oriented manner, consuming only one-tenth of the natural resources they are using today.

All companies have an interest in making money and being profitable. Because no one has ever put a price on natural resources, they have become free assets which cost nothing to use. In recent years, however, businesses have become much more interested in the environment. Caring for the environment has become a factor in competing and an important quality issue, enquired about by more and more consumers. The indications are that many of the jobs of the future will be within the "green sector".

More and more companies are forging a distinct environmental profile far in excess of the current statutory requirements. These are motivated by environmentally aware purchasers and consumers who favour companies which have made a definite environmental commitment. Carefully devised economic controls such as levies, deposits and taxes can also provide a disincentive to pollution and thereby help to make trade and industry more environmentally friendly.

Linköping is in an excellent position to meet the challenges of tomorrow's knowledge society, with its university and institute of technology, high-tech businesses, excellent position and communications, natural setting and landscape, and availability of services. All this helps to create opportunities in a climate where trade and industry are becoming more sensitive to the needs of the environment and are moving towards greater energy efficiency and judicious use of resources in production.

The private sector has been very stable and secure in recent decades, with growth in employment even during the 1980s. In the municipality the public sector is unusually large, with 37% of jobs. The proportions of people working in high-skill industries and of those dependent on the armed forces are also higher than the national average. In recent years job security has been eroded, partly on account of the closure of certain garrisons, and, as in the rest of Sweden, the number of unemployed has increased considerably.

Among companies in Linköping there is a great deal of interest in formally systematising and documenting their environmental activities in an environmental management system. The key elements of an environmental management system are increased knowledge, improved procedures and increased responsibility, all of which benefit both the working environment and the environment at large. Several Linköping companies have obtained accreditation to ISO 14001, and some have elected to register under EMAS (the Environmental Management and Auditing Scheme). A joint project involving ALMI, the County Administrative Board and Linköping Institute of Technology has provided valuable support for small and medium-sized enterprises.

Vision

Companies in the municipality will have a distinct environmental profile and will be supported in their environmental activities.

Targets for the year 2020

- Trade and industry in Linköping will not be dependent on fossil fuels for their production. (B)
- Trade and industry in Linköping will use resources - both energy and materials - as efficiently as possible in their production. (B)
- By the year 2020 the workplace will be in or close to the home. (M, B)

Targets for the year 2005

- Linköping will be well known for its active environmental work within the municipality and in industry. (M, B)
- At least 25% of companies in Linköping will belong to an environmental management system, in accordance with ISO 14000 or EMAS. (B)
- All companies in Linköping will be well acquainted with and will work in accordance with the precautionary principle and the substitution principle. (B)
- Measures to support small-scale processing will have been put in place in order to create a structure which, in the longer term, will prove necessary from an energy and transport viewpoint. (M)

Suggestions for action now

- Support small and medium-sized companies in waste management by offering identification of waste types and suggesting possible options for disposal. (M)
- Organise regular environmental meetings for people in trade and industry. (M)
- Help environmentally sound companies by establishing concrete environmental criteria for the procurement of goods and services by the municipality of Linköping. (M)
- Emphasise environmental matters in the municipality's marketing of Linköping. (M)
- Award environmental certificates sector by sector to draw attention to the companies which are doing well in their environmental improvements. (M)
- Develop a centre for environmentally sound production, e.g. linked to the university. This centre would be able to offer companies help, for example, in implementing environmental management systems, training in preventative environmental protection and product development, plus auditing the environmental impact and possible environmental improvements. (M, B)
- Facilitate the setting-up of companies which will produce services and goods with a high level of sustainability. (M)

Children and young people

In a sustainable society children and young people will participate positively in the environmental work of both the school and the municipality. The environment will be an integral part of the school and preschool curriculum. There will also be lines of communication in place between young people and decision-makers on environmental matters. There will be increased interaction and cooperation between young people in different countries. All schools and preschools will incorporate nature more clearly into their curricula. Outdoor lessons will form a natural part of the school day, and young people will influence decision-making in both school and municipality.

Children and young people were identified at the Rio Conference as one of the most important groups to involve in Agenda 21 work. Several surveys have shown that young people see environmental issues as among the most important issues in society.

In 1997 the National Agency for Education carried out an assessment of progress made to date in Sweden in terms of sustainability measures and teaching about the environment. The results show that much remains to be done, particularly in terms of pupil participation in decision-making and the involvement of pupils in the Agenda 21 process. Agenda 21 issues are not important in schools and child care alone. One neglected area is that of leisure, where clubs, societies and sporting activities are very significant. Here much remains to be done.

In Linköping in the last few years several good examples have emerged in the school and childcare areas. These examples show the way ahead for sustainability measures within teaching and elsewhere. Many of the schools and preschools have already established environmental goals in their curricula, while in other places there is a special environmental plan which is reviewed annually. Some examples of the environmental work already in progress are an increased proportion of outdoor lessons, school gardens, composting, recycling, environmentally sound purchasing and reduced energy consumption. Cooperation between various schools in the municipality and with schools abroad has already started.

Vision

Ecocycle issues will form an important part of all aspects of activities at preschool and school levels.

Targets for the year 2020

- Young people in Linköping will be given real opportunities to influence decision-making by the municipality which involves the environment and issues relating to the future. (M)
- The majority of school pupils will have established contact with young people in other countries for discussions on the environment and issues relating to the future, often via the Internet. (M)

Targets for the year 2005

- Pupils will have a high degree of participation in and real influence on decisions relating to sustainability measures in schools in the municipality. (M)
- A suitable means will have been developed or a forum created as a contact link between young people and decision-makers, primarily for environmental matters and issues relating to the future. (M)
- Every school and preschool will have "its own" nature area within walking distance. (M)

- Youth clubs in the municipality will have examined their activities from an environmental point of view and drawn up their own environmental plans (P, M)
- All children completing their compulsory schooling will have a basic knowledge of the conditions needed for a sustainable society. (M)
- All children at elementary school in Linköping will have learnt about how food is produced, processed and cooked. (M, B)
- Schools and preschools in the municipality will have reduced their consumption of energy and water by at least 5% per year over a five-year period. (M)

Suggestions for action now

- Introduce annual environmental certificates, to be awarded to schools and preschools. (M)
- Create school gardens at all elementary schools in the municipality. (M)
- Stop using environmentally hazardous chemicals (as defined in the "NB List" of the National Chemicals Inspectorate) in lessons and make laboratory experiments and similar work environmentally sound. (M)
- Plant fruit trees and bushes that produce berries, which can then be "adopted" by preschool groups and school classes. (M)
- Make school meals (in preschools and schools) a part of lessons on the environment and health. Provide information on factors such as environmental impact in farming, transportation and animal husbandry. Also teach children about nutrition and other health matters. (M)
- Where practicable, have at least one outdoor lesson per week in elementary schools. (M)
- Make lifestyle issues and global justice a part of the school curriculum. (M)
- Promote cooperation between schools, the childcare system and the university on the matter of outdoor education. (M)
- Hold meetings two or three times a term for teachers currently teaching about environmental issues, for discussion and to share ideas about teaching, new literature or other educational materials. (M)
- Implement further education in environmental studies for all upper secondary and elementary school teachers. (M)

Patterns of consumption and lifestyle

In a sustainable society we will have learnt to do without things which we do not need to buy and we will consciously select products which are kind to the environment. In the long term we will replace a lot of material consumption with human communication. We will value more highly meeting friends and cultivating our interests.

Given equitable distribution, the Earth's resources are sufficient for everyone. Today the richest fifth of the Earth's population account for four-fifths of consumption, while the poorest fifth account for one-hundredth. The environmental problems of modern society have been caused by our "wealthy" lifestyle.

With the aid of new technology and production which is economical in its use of resources, we can achieve some progress on the way towards reduced environmental impact, while preserving our standard of living. To achieve change which is sustainable in the long term, however, we need to subject our way of life and our consumption to careful scrutiny.

Because we have become accustomed to "buying happiness", severe problems arise when we do not have enough money or if we become unemployed. Crime and drug abuse are major problems in the welfare society.

Vision

We will create opportunities for people living in the municipality to make sound environmental choices when shopping. The use of harmful chemical products will cease within the municipality.

Target for the year 2020

- Substances which are harmful and not readily biodegradable will not be used in such a way that they are released onto land, into water or the air. (P, B, M)

Targets for the year 2005

- No person resident in the central area of the city or in other large built-up areas in the municipality will be dependent on using a car to obtain either public sector or commercial basic services. (M, B)
- It will be possible for everyone to buy environmentally sound products. Retailers will stock a range which is environmentally labelled, to the extent that such exists, and will provide customers with information on the environmental impact of products. (B)
- The social and community health system will have been developed and will form a natural part of Agenda 21 work. (M, P, B)

Suggestions for action now

- Refrain from purchasing batteries containing cadmium in operations run by the municipality. (M)
- Run a pilot scheme to test the idea of a "recycling room" in an apartment building, where unwanted items could be "swapped" instead of or before being discarded. (B, P)
- Annually award environmental certificates to approved food stores - designated "white shops". (P, M)

- ❑ Provide ongoing, concise and broad-based environmental information to all households in the municipality. (M)
- ❑ Start up suitable eco-teams and environmental groups, e.g. in housing estates, to work together towards increasing knowledge and awareness and changing lifestyles to more environmentally friendly and healthy behaviour. (P)
- ❑ Make improvements in the social and community health system part of the Agenda 21 project. (M, B, P)
- ❑ Develop interaction between different generations, e.g. by using the knowledge and experience of older citizens in schools, childcare, clubs and associations. (M, B, P)

Implementation and follow-up

The plan of action for a sustainable Linköping is adopted by the Council. It is to be implemented within each appropriate operation of the municipality and will thus be something which concerns all residents of the municipality.

The role of the municipality is primarily to be responsible for implementation within its operations and for the follow-up of the work. The goals which concern the operations of the municipality reflect the intentions of the Council and are to serve as material for, among other bodies, the goal committees when drawing up outline and concrete goals and for the purchaser committees in their operational planning. The intentions of the action plan will also affect other municipal plans, documents and decisions.

By municipal activity in the plan is meant an activity which is financed by the municipality and which the municipality itself performs or procures. In the next few years it is planned to organise a municipal environmental management system. The responsibilities of different committees and units will be allocated in a special municipal environmental programme.

Continuous development

It is important to note that the catalogue of measures comprises only recommendations or ideas for concrete steps that can be taken immediately; it is not a complete list of measures for achieving the goals. The proposals come from residents or other players who have participated actively in the local Agenda 21 process. The type of round-table groups that have been responsible for a large part of the goals and measures also have an important role to play in the continued implementation of the action plan.

Annual reporting

As an annual follow-up of the Agenda 21 work in Linköping, it is proposed that at one of its meetings the Council should receive a progress report on the implementation of the action plan. In this connection a revision would also take place of the measures listed in the action plan, resulting in the removal of certain measures that have been taken and the addition of new proposals. The environmental report of the municipality should form part of the follow-up. The report should be expanded with additional key figures and should comprise indicators which measure the progress made towards a sustainable society.

It is proposed that the action plan as a whole be reviewed every four years and that a new action plan be adopted by the Council each time it is elected to office.

Organisation of implementation

The Committee for Sustainable Development is submitting in connection with this plan of action a proposal for organising implementation of the plan. Under the proposal the political control of Agenda 21 work should in future lie with the Municipal Executive Committee and its planning committees. The Committee is also proposing certain basic principles and functions for the organisation of officials which will be needed in the future. One source of support for implementing the action plan as part of municipal operations will be the environmental management system which it is proposed to establish in the municipality of Linköping.

Other local planning publications and sources of local environmental information

(Please note that the titles listed below are translations of Swedish titles. Unless otherwise stated, the documents are available in Swedish only.)

1. Other programmes and plans linked to Agenda 21 which have been adopted by the Municipal Council. Those listed are the latest versions officially adopted, although several of the plans are currently being revised.

Waste Management Plan 1994-1996	KF § 138/1994
Municipal Housing-Stock Programme 1996-1998	KF § 63/1996
Programme Relating to Policy on Drugs and Alcohol	KF § 137/1988
Electrical Environment Policy	KF § 18/1996
Energy Plan	KF § 146/1992 (under revision)
Programme of Action for the Disabled	KF § 150/1997
Programme of Action for Development of the City Centre	KF § 2/1995
Programme of Action for Measures to Prevent Allergies	KF § 178/1995
Programme Relating to Immigrant Policy	KF § 4/1995
IT Vision	KF § 104/1995
Gender Equality Plan	KF § 8/1995
Communications Vision	KF § 218/1994
Rural Development Programme	KF § 131/1997
Environmental Protection Programme 1994	KF § 85/1995
Programme on Trade and Industry and Employment	KF § 61/1994
Cleansing/Refuse Collection Regulations	KF § 163/1997
Schools Plan	KF § 208/1995
Traffic Plan 90	KF § 175/1991
Supply of Goods Plan	KF § 131/1991 (under revision)
Heating Plan	KF § 64/1991
Master Plan	Adopted in May 1998

In addition, in conjunction with the budget each year a number of "outline objectives" and "concrete objectives" are approved by the Municipal Council. Copies of these (in Swedish) may be ordered from the Municipal Executive Office of Linköping.

2. Official guidelines adopted by the Environmental Committee:

The Use of Wood as a Fuel	MN § 142/1996
Inventory and Improvement of Private Wastewater Treatment Plants	MN § 141/1996
Environmental Requirements for Vehicle Washing Equipment	MN § 106/1997

3. Other main sources of local environmental information:

- Environmental Report 1996, published in "The Environment in Linköping" 1/1997
- The Nitrogen Budget for the Municipality of Linköping, published in "The Environment in Linköping" 2/1997
- A Manual for Guardians of the Planet 1997, published by the Agenda 21 Office of the Municipality of Linköping
- "Good Examples of Local Agenda 21 Work in Linköping" is published annually by the Agenda 21 Department
- The Environment in Östergötland - Analysis, Goals, Measures, (STRAM), the County Administrative Board, County of Östergötland 1995
- The Citizen of Östergötland and the Environment, published by the Department for Social and Environmental Medicine, Östergötland County Council, 1996.
- The Use of Ozone-Depleting Substances within the Municipality of Linköping, published by the Environmental Department, Report 1996.
- Social and Community Health Projects, published by the Environmental Department, Report 1996
- Radon Measurements in the Municipality of Linköping, published by the Environmental Department, Report 1996
- The Measurement of Air Quality in Linköping, published by the Environmental Department, Report 1997:3
- Radon in Water in the Municipality of Linköping, Report 1997

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