

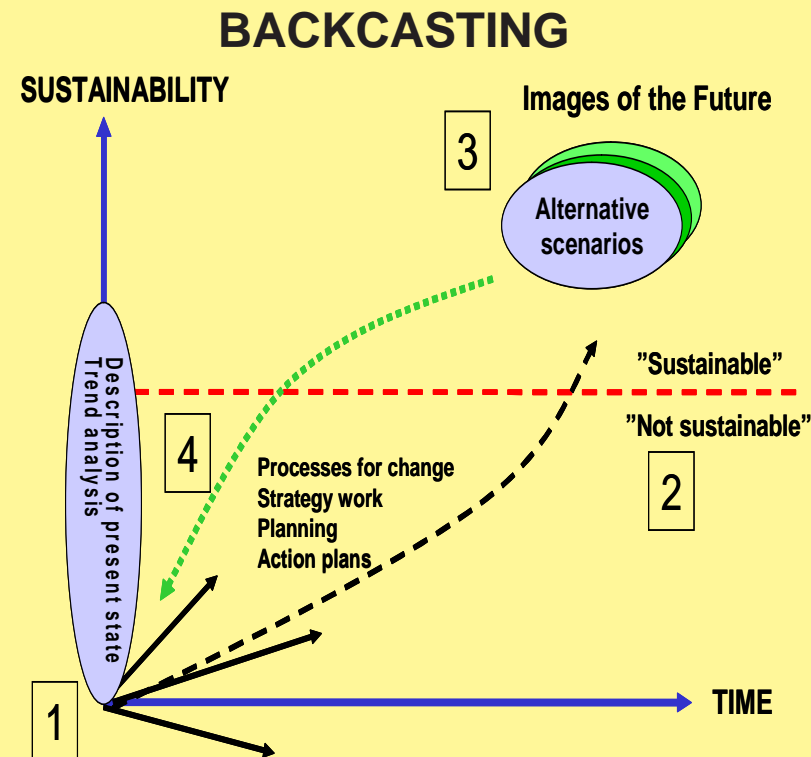
Eco-cycling Göteborg 2050

Kretslopp Göteborg 2050

Using visions and images of the future for strategic planning for sustainable water and waste management

The use of visions and images of the future can be an important tool for developing a long-term sustainable city. In the project Göteborg 2050 we apply this tool to Göteborg and the surrounding regions. The work with sustainable water and waste management in the project has been carried out in cooperation with the City of Göteborg, Sustainable Water and Waste Management.

The Eco-Cycling Göteborg 2050 vision has been developed in the spirit of a methodology called backcasting. In the first step of this method an analysis is made of the present state and trends in the society. Secondly, criteria for a sustainable city in a sustainable society are developed. The third step involves the developing and visualizing of images of the future, using workshops and other input. The visions are finally compared to the present state and trends and are used for strategic planning, as input to strategic and action plans and to speed up processes of change.



City of Göteborg, Sustainable Water and Waste Management

The office of the City of Göteborg, Sustainable Water and Waste Management, is responsible for the oversight of water supply and waste management in the city. The office has the responsibility for long-term eco-cycle planning and a new plan for the period 2003-2008 has recently been produced. In the plan the outlook is generational, i.e. looking 20-30 years into the future.

The project Göteborg 2050

The visionary project Göteborg 2050, aiming to speed up the development towards sustainability, was carried out in cooperation between the Chalmers University of Technology and Göteborg University, Göteborg Energi AB, and The City of Göteborg. Additional support was received from The Swedish National Energy Administration (STEM) and The Swedish Research Council for Environment, Agricultural Science and Spatial Planning (Formas), the Region of Västra Götaland and Renova. The project was concluded in 2004, but the work towards sustainability will continue in Göteborg and the surrounding regions. For further information about the project contact:

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Visions and Scenarios for a Sustainable Water and Waste Management in the Göteborg Region



A sustainable eco-cycling system with:

- Greatly decreased amounts of waste
- Long-lasting products adapted to the ecosystem
- Re-use of products and material recycling
- A clean and visible water environment
- Few but safe final repositories



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Greatly decreased amounts of waste is the first step in the “waste ladder” where the goal is to be on as low a step as possible. The second to fourth steps are re-use of products, material recycling and energy recycling. The last, highest, and least desirable, step is deposition in a final repository. If climbing the ladder is to be avoided demands are placed on both producers and consumers. Industry is responsible for minimizing the amount of waste produced throughout the life cycle of the products they make. Consumers are responsible for their consumption patterns and for the care and maintenance of the products they buy. A sustainable society is dematerialized compared to today.

Long-lasting products adapted to the ecosystem are essential in a sustainable eco-cycling system. Before the products become waste they are optimized for a long life that allows re-use and facilitates upgrading and reparations. Long-lived products can be resold and used by many persons before becoming waste. Products adapted to the ecosystems are primarily produced with renewable resources. It is easy to be an environmentally friendly consumer when environmentally harmful products are not to be found in the shops.

Re-use of products and material recycling are a natural part of the eco-cycle society. In a sustainable society there is more time for repairs and restoration. There is a less wide choice of materials available for production. This makes it easier to make simple systems for source separation of waste. Waste separation in the home is easy. All products and packaging are labeled with source separation information. The producers of goods in a sustainable society have total responsibility for the material flows in the whole life cycle of the products and packaging they produce. The minimal waste still remaining after source separation can be burned in gasification combined cycle incinerators that produce electricity and heat and where the ashes is clean enough to be used as a fertilizer in agriculture and foresting. Biological waste is digested to produce biogas and then composted to produce soil.

A clean and visible water environment in the Göteborg region is a sign of sustainability. The water supply and the input into the sewage system are kept as clean as possible from environmentally harmful substances. Pure water supplies demand that the surrounding environment also is kept clean from undesired substances. This requires cooperation on regional level. As a complement to the use of water from the Göta Älv River, water is also taken from natural gravel stratifications. Parallel to the existing regional sewage treatment plant, small-scale solutions have become more important.

Few but safe final repositories. Today’s surface waste disposal sites are part of a linear waste management system that is not compatible with a sustainable eco-cycle society. An eco-cycle waste management system has no conventional disposal sites, only safe final repositories, for example underground in the bedrock. Only a very small part of the waste needs to be put in repositories.



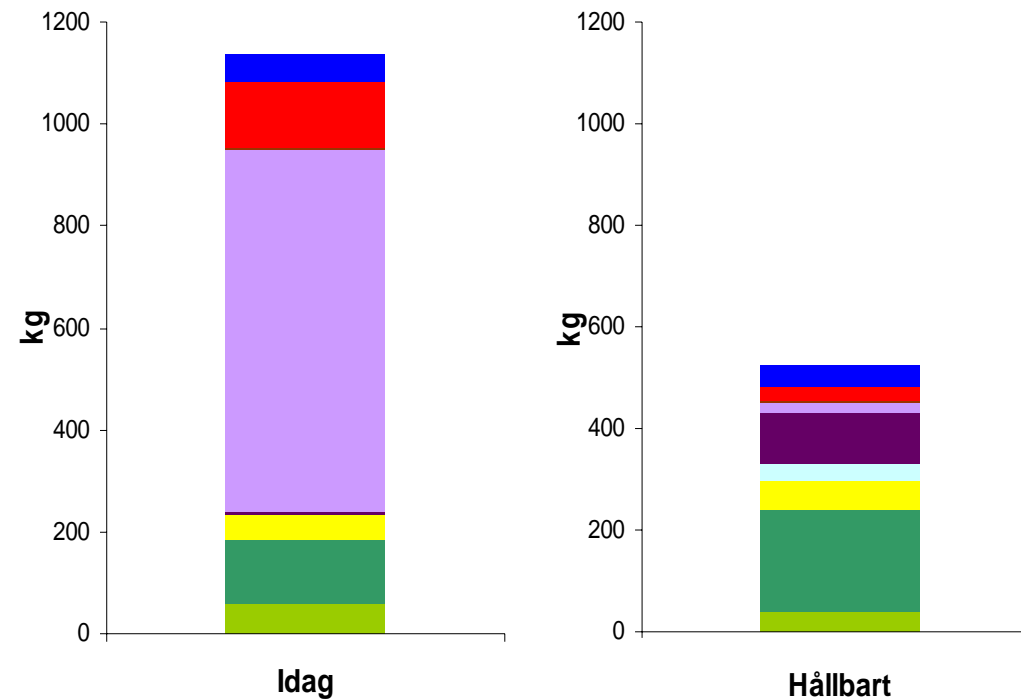
Local compost at an apartment block in Göteborg today.

For further reading see “Kretslopp Göteborg 2050” (in Swedish), available at www.goteborg2050.nu



Second-hand stores are common in the sustainable eco-cycle society.

Scenarios for a sustainable eco-cycle society



Waste per person in Göteborg

The diagrams show total yearly amount of waste per person in Göteborg today and in a sustainable future. Waste from households, services, industries and the building sector are all included.

In a future sustainable society it would be possible to half the total amount of waste compared with today. The diagrams show separated waste fractions today and in a future sustainable eco-cycle society.

As the total amount of waste decreases in the sustainable society, a greater part is also separated into fractions. Unsorted mixed waste is assumed to decrease from 70% of the total amount of waste today, to as little as 4% in the future. The decrease in total waste amounts is a result of dematerialization, of lifestyle changes, of the use of more durable materials and of an increase in repair and re-use. The decreased amount of mixed waste depends mainly on an increased separation.

Buying products in containers adapted to an eco-cycle society

Valdemar stands at the counter in the cheese and butcher store at the local square of Hjällbo. He discusses with Ostasia which kind of goat cheese would be suitable for spinach lasagna.

He makes a choice between a creamy soft cheese and a well-matured hard cheese. Based on the consistence he would like to choose the soft cheese but he likes the strong taste of the hard one. “I’ll take half a kilo of the hard cheese from Czechia” he says to Ostasia who cuts a broad slice and wraps it in thin cling film. “Can I have a small container with the soft one as well”, Waldemar adds and feel satisfied with not having to choose between the two. The container of soft cheese is made of light rigid plastic and has already been cleaned and re-used hundreds of times.

Before taking off for home by bicycle he stops at the Recycling Center to read the newsletter on the notice board. He catches sight of a notice about a course in mushroom cultivation organized by the Educational Society of Hjällbo. “The few flower plants in my apartment is the closest I have gotten to gardening”, Waldemar thinks and reminds himself that the Hoja plants needs replanting. He decides to buy some composted topsoil at the Recycling Center.

“Why not buying some new pots at the same time” Waldemar asks himself and walks into the well-assorted second-hand store. He immediately takes a liking to some silver-painted clay pots from late 2010s. As he pays for the pots, he asks to get them home-delivered. He whistles as he bikes home. Waldemar looks forward to getting home and to make the lasagna together with his children.

Visions in Words

Swimming in City’s streams and the Göta Älv

I have taken an early after work with my colleagues from the tele-office at the Kvilleorget local square on the Hisingen Island north of the Göta Älv River. The sun is strong this day in July and we sit under a parasol among the black currant bushes in the middle of the square. We pick some berries and drink water directly from the tap that is built into the modern art installation next to us. The art installation also has containers for collection of rain-water that is used for watering the plants in the square.

“We just have to go swimming”, Sini cries out and picks up her bicycle map. Even though we could go to the local river swimming area, I say that I think it would be fun to take a swim at the other side of the river, in the Göteborg City center. The others agree that it would be nice with a bike ride. The large green swimming areas along the Mölndal Creek would be really nice to lie on, but we finally decide to go to the nearest alternative, the Järntorget Square swimming area just across the river. Most of us have our bicycles with us. Those who don’t, borrow City lending bikes. Then off we go towards the pier at Lindholmen and then across the bicycle bridge to the Järntorget Square.