



WWF

SWE



FIVE CHALLENGES FOR SUSTAINABLE CITIES

WWF Sweden's position on sustainable urban development

CITIES IN FOCUS

Urbanization is a powerful global trend. Today half of humanity already lives in cities, and by 2050 an estimated 70 per cent of humanity will be urban.

To meet human needs, the world's cities need to build basic infrastructure in a sustainable way.

Sustainable infrastructure and consumption patterns

For many of the world's cities, there is an urgent need to bolster their capacity to provide their inhabitants with the right conditions to lead a dignified life. Environmental, economic and social challenges are evident even in high-income nations, such as those of North America and Europe. Here, existing infrastructure and patterns of consumption need to be adapted to become sustainable over the long-term.

Problems and opportunities

Cities are sources of both environmental problems and opportunities. On the one hand, rapid urbanization is increasing the environmental load of cities. Cities account for some 75 per cent of the world's energy use, and over 70 per cent of the world's carbon dioxide emissions. Urban infrastructure is largely built without giving much thought to ecological sustainability. A resource-intensive consumer society drives urban lifestyles, contributing significantly to the pressure on the planet's ecosystems. Humanity's ecological footprint already exceeds the planet's carrying capacity by 50 per cent, while biodiversity is on a gravely negative trend. The ecosystem services we depend on for survival and human welfare are at risk of critical levels of degradation.

At the same time, cities have a huge potential to act as hubs for the development of smart, sustainable solutions that can help meet human needs within minimal footprints while still improving quality of life. In parallel with international processes on climate and sustainability, there is a need for strong, visionary leadership at the urban level. Cities already taking strong actions to meet the sustainability challenge are becoming international stars.

Local and global

WWF Sweden views cities as key to overcoming major sustainability challenges. We believe that their role must be informed by:

- a global perspective, especially in terms of cities' role in tackling global challenges such as climate change and poverty;
- a systems perspective that links urban with rural areas, and local with international systems of production and consumption; and
- balancing and integrating social, cultural, economic and ecological perspectives.

WWF Sweden urges decision-makers at national and international levels to drive the transition to sustainable cities with resolve and speed. This must happen domestically in parallel with a strong international engagement. WWF Sweden believes that ecologically sustainable development, as a precondition for social and economic progress, needs to be promoted by addressing five challenges for sustainable cities.

FIVE CHALLENGES FOR SUSTAINABLE CITIES

1. Ecological Footprint
2. Ecosystem Services and Biodiversity
3. Invest for Sustainability
4. The Good Life
5. Leadership and Cooperation



3 BILLION

HUMANS HAVE BUILT CITIES FOR 3 BILLION PEOPLE OVER THE COURSE OF 3000 YEARS. IN THE COMING 30 YEARS WE WILL BUILD CITIES FOR 3 BILLION MORE PEOPLE.

Lars Reuterswård,
Mistra Urban Futures



Here we use the term city without a connotation of size or other characteristics.

WWF's aim is to show the city's positive opportunities as an arena for change and development – an arena where knowledge, vision and transformational power can be activated for sustainable development.



Photo: Leung Cho Pan

WWF Sweden's position

WWF Sweden's position on sustainable cities has a national focus but is inspired by a global perspective. Cities of all sizes – along with regional, national and international levels of decision-making – need to participate actively in the transition to a sustainable urban future.

We direct our appeal to the following key actors involved in city development: politicians, planners and other public sector officials, business and finance leaders, the media, schools, universities, and civil society groups. We believe that these stakeholders have significant responsibilities, as well as opportunities, to lay the groundwork for the transition to sustainable cities.

Above all, citizens must play an active role in this transition. Broad-based participation and engagement are vital to the inclusive, innovative, positive and profound changes required to fulfill the transition.

SWEDEN

Area: 450,000 km²

Forests: 53%, mountains: 11%, cultivated land: 8%, lakes and rivers: 9%

Population: 9.4 million

Capital: Stockholm

Form of government: parliamentary democracy, constitutional monarchy

Life expectancy: men 79 years, women 83 years

Municipalities: 290

Urban population: 84.5%

Population in urban agglomerations > 1 million: 13.8%



Photo: WWF-Canada

ECOLOGICAL FOOTPRINTS

WWF's global goal is that by the year 2050, humanity's ecological footprint stays within the Earth's carrying capacity. Today, the global footprint exceeds the planet's biocapacity by 50 per cent.

TRANSPORT, FOOD AND HOUSING

Key sectors for reducing the ecological footprint include transport, food and housing.



WWF's footprint goal

By 2050, humanity's global footprint stays within the Earth's capacity to sustain life, and the natural resources of our planet are shared equitably.

Ecological footprint

The ecological footprint (EF) measures the biologically productive land and water area required both to produce the resources that are consumed, and to absorb the carbon dioxide that is generated by a population. An EF can be calculated for a nation, a region, a city, an organization, or individuals.

Global hectares

EF is expressed in a unit called the global hectare (gha), where 1 gha represents a biologically productive hectare with world average productivity.

Biocapacity

Biocapacity is the area of land and productive oceans actually available to produce renewable resources and absorb CO₂ emissions. It can be measured for the planet or a certain area, e.g. a country.

From words to actions

In Sweden, the average per capita footprint is 5.7 global hectares (gha), while the globally available area per person is just 1.8 gha. If everyone in the world adopted a Swedish lifestyle, it would require 3 planets to produce all the required resources and absorb the produced carbon dioxide emissions. So Sweden's ecological footprint needs to decrease considerably to reach a sustainable and equitable level. For cities and their diverse actors the great challenge now is to convert words into actions, and to turn the vision of a globally sustainable footprint into reality.

• Recognize cities as key actors

Cities have a key role to play to halve Sweden's ecological footprint by 2020 (from its 2009 level), and thereafter to continue to reduce it. This is an ambitious objective that includes both local and global challenges.

• The challenge concerns all cities

It is not enough for only a handful of major cities to make the transition. All Swedish cities need to work ambitiously with sustainable development in order to reduce Sweden's total ecological footprint.

• Prioritize key sectors

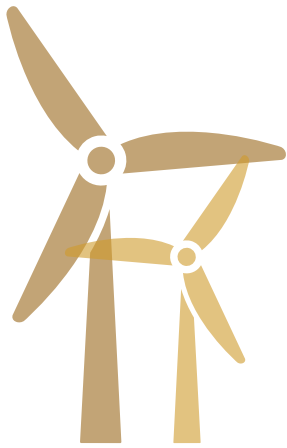
The transition to an economy that is free of fossil fuels is essential to a substantial reduction of cities' ecological footprints. This requires priority actions in four key sectors: energy, transport, food and housing. Cities can develop resource-efficient infrastructure based on renewable energy sources. Further, cities can provide opportunities and incentives for their citizens to make climate-smart and sustainable choices that can improve their quality of life.

• Support from the national level

To support cities and municipalities, the government should develop national goals and strategies to help provide a road map for reducing our ecological footprints to within the Earth's biocapacity.



Photo: Arne Trautmann



Resilience

Resilience is a system's long-term ability to deal with changes and continue to develop. For a society, resilience is the ability to handle, in a long-term sustainable way, such challenges as climate change.

The carbon footprint

The carbon footprint (CF) registers the carbon dioxide emissions caused by a population's total consumption. CF is the sum of all direct emissions, e.g. from heating and transport, plus all indirect emissions along the entire production chain for those goods and services that are consumed. A CF can be calculated for a nation, a region, a city, an organization, or individuals. CF is expressed in units of tons of carbon dioxide. Sometimes additional greenhouse gases are included, and then the unit is expressed as carbon dioxide equivalents (CO₂e).

Read more about WWF's global energy vision

The Energy report – 100% renewable energy by 2050
The report can be downloaded at panda.org

International platforms for climate reporting

- Local Governments for Sustainability (ICLEI) iclei.org
- Carbon Disclosure Project (CDP) cdproject.net



Photo: Kevin Schafer / WWF-Canon

CLIMATE AND ENERGY

Cities as leaders in the transition

Emissions of carbon dioxide and other greenhouse gases must massively decrease in order to avoid catastrophic climate change. About half of the ecological footprint consists of carbon dioxide emissions from the combustion of fossil fuels. Carbon footprint calculations show that an average level of consumption per person per year in Sweden causes more than 10 tons of CO₂ emissions. However, in order to reach a globally sustainable and fair level of carbon emissions that secures the climate, we need to reach below one ton of carbon dioxide equivalents per person per year by 2050. Vital for meeting this goal is the transition to an economy that is based upon 100 per cent renewable and sustainable energy.

Greenhouse gas emissions respect no borders so a national perspective on climate is not enough. On top of national emissions, Sweden's consumption causes huge emissions in other parts of the world through the import of goods and services. A global consumption-based perspective is thus necessary.

We do not have time to wait. While international climate negotiations continue to falter, local actors must take responsibility. Already now, cities can act powerfully to switch to a climate-smart economy based on renewable energy. Cities must also prepare for and adapt to current climate variability and future, unavoidable climate change. In this respect, building cities' resilience to climate change will be essential.

• Convert the energy system now

Cities must proactively contribute to the conversion of the energy system in Sweden so that by 2030 it comprises 80 per cent renewable energy, at the same time that total energy use is reduced. This involves a double challenge: high energy efficiency and a conversion to renewable energy sources. Furthermore, renewable energy must be produced without serious impact on ecosystem functions or biodiversity.

• Meet tough emissions reduction goals

Via a rapid and effective transition to sustainable energy systems, cities can actively contribute to reducing domestic emissions of carbon dioxide in Sweden by a minimum of 40 per cent by 2020 (from a 1990 baseline).

• Halve the carbon footprint

Cities are vital for halving by 2020 the carbon footprint per person from transport, food, housing and other consumption. Decision-makers must create good conditions – for example by promoting stricter building standards, upgrades of existing buildings, mass transport systems free of fossil fuels, consumer education, as well as campaigns and support for more vegetable-based, locally produced, and seasonal food.

• Have an international impact

Swedish cities should be active in the international arena and contribute to advancing a strong, global climate agenda. Important steps include publishing city emissions of greenhouse gases, reporting on actions to reduce climate impacts, and actively implementing tougher emissions reduction goals.

ECOSYSTEM SERVICES AND BIODIVERSITY

The planet's biodiversity and ecosystem services are basic conditions for our survival. Cities directly impact biodiversity through their physical structure and urbanization's effects on landscapes. Indirectly, cities' consumption of materials and energy has even larger impacts, with their ecological footprints contributing to environmental degradation all over the globe.



PROCESSES



PRODUCTS



SERVICES



CULTURAL VALUES

Core values for the sustainable city

For sustainable cities, ecosystem services in and outside the city are key assets that provide a wide range of values: environmental, economic, social, and cultural. High quality urban greenery and urban water bodies produce multiple benefits in biodiversity, climate regulation, improved public health, and quality of life – thereby raising both the attractiveness and sustainability of the city.

In many growing cities there is a continuous conflict between conservation and development. So decision-makers must act effectively to preserve, restore and even create urban greenery and urban water bodies. This requires them to implement tough, innovative and proactive planning, with a holistic perspective and cooperation across sectors.

- **Invest in ecosystem services**

A city must make an assessment of its ecosystem services, to make well balanced planning and investment decisions on the use of land, air, sea and freshwater. Cities should invest in ecosystem services and in the landscape's ecological infrastructure: for example in relation to air quality, aquatic ecosystems (e.g. seas, lakes, watercourses), farming and forestry, pollination, green corridors and migration routes, microhabitats such as edge zones and wetlands, and protection of highly vulnerable species.

- **Cities as actors in conservation**

Cities can assume ambitious roles in conservation by protecting animal and plant life in and around cities. They can also work actively in national and international arenas to strengthen the protection of species and for sustainable stewardship of the planet's biodiversity.

- **Support and incentives from the national level**

National governments should provide a strong framework for local nature conservation by, for example, increasing funding for nature conservation, introducing planning norms for minimum distances between housing and green space, and facilitating the creation of more urban national parks and other types of protected areas. They should also provide incentives to protect and develop urban green-structure and near-urban nature. The value of urban greenery as a tool for climate adaptation and increased public health should especially be highlighted.

ECOSYSTEM SERVICES

Ecosystem services stands for all the products, processes, services and values that are provided by nature.

- Products such as food, medicines, timber, biofuel
- Processes such as photosynthesis, soil formation, water purification and pollination
- Emotional values such as recreation, beauty, and spiritual experiences



WWF's MISSION

IS TO STOP THE DEGRADATION OF THE PLANET'S NATURAL ENVIRONMENT AND TO BUILD A FUTURE IN WHICH HUMANS LIVE IN HARMONY WITH NATURE.

The City Biodiversity Index is an international standard based upon data on biological diversity. The index can be used as a tool to monitor changes in biodiversity over time at the city level. Find out more at cbd.int

The Royal National City Park in Stockholm

Around Stockholm is an interconnected park landscape that in 1995 became the world's first national city park. The park comprises approx. 27 km², of which 19 km² is land, and covers parts of three municipalities in Stockholm. The concept of a national city park entails the protection, conservation and showcasing of unique natural, cultural and outdoor-recreational values that such an area provides. The concept also relates to the listed houses and environments, a rich animal and plant life, and to health and quality of life for the city's residents and visitors. Most significantly, urban green spaces such as a national city park also provide important ecosystem services such as producing oxygen, cleaning the air, dampening noise pollution, and buffering both heavy precipitation and heat waves.

BEYOND THE CITY

Sustainable relations in focus

A city does not end at its boundaries. Its relations to the world around it – local, regional, and global – play a decisive role in sustainable urban development. A city's basis for existence is in many ways dependent on its relations to the world around it. A city thrives on a continuous exchange via the import and export of material and energy in different forms. Today this involves not only urban-rural relations, but an entire global system of production, commerce and consumption.

The local perspective is always important. Each city needs to build sustainable relations locally – focused on the municipality or the larger regional area. At the same time, the impact of a city's consumption on sustainable development requires a global focus, underlining the city's total claim on resources and environmental impact on the entire planet. The challenge for a city is to create sustainable relations with the world around it without shifting its consumption impacts to another place or level in the system.

- **Integrated environmental stewardship**

Planners and decision-makers in cities should make use of an integrated model for environmental management, where all use of land, air and water is planned across sectors, so that growing and sometimes conflicting demands on ecosystems can be managed effectively. Environmental planning should also consider the global impacts of resource consumption, along with the impacts on local land use.

- **See the potential in sustainable relations**

A systems approach to urban-regional-global levels enables more effective sustainability gains. Closing material flows and increasing local supply of materials and energy can bring numerous ecological, economic and social benefits. Today's mainly linear flows of the use of materials and resources, e.g. of phosphorus, need to be replaced with resource-efficient, circular flows. Local resource flows can be encouraged through support for localized urban production and distribution of food, energy and materials. Cities can show leadership for ecosystem-based stewardship by taking responsibility for, and investing in, surrounding ecosystem services, e.g. water systems that supply the city.

- **Long-term land-use planning**

Land is a vital natural resource. How a city plans its land use has long-term consequences. From a global perspective, bio-productive space is already a scarce resource, not least for supplying food and energy. Choosing among different types of land-use is a basic question for every responsible city administration. Powerful political, economic and business interests must be balanced within a framework of long-term environmental and social sustainability. The precautionary principle should provide guidance.



WWF Sweden urges governments to encourage cities to establish diverse types of urban protected areas, such as municipal nature and culture reservations.

Photo: Thomas Atterdal

INVEST FOR SUSTAINABILITY

The transition to sustainable development in the world's cities demands huge investments. In the fast-growing cities of developing economies, it is vital that basic infrastructure is built in a sustainable way. In the industrialized world,

existing infrastructure needs to be updated with climate-smart and resource-efficient systems. To break the heavy dependence on fossil fuels, innovations and new technologies on a broad front are needed.



350 TRILLION DOLLARS

APPROXIMATELY FIVE TIMES THE WORLD'S GDP WILL BE INVESTED IN INFRASTRUCTURE IN CITIES IN THE COMING 30 YEARS. IT IS VITAL THAT THESE INVESTMENTS ARE MADE IN SUSTAINABLE SOLUTIONS.

Reinventing the city – Three prerequisites for greening urban infrastructures

Cities as drivers of a green economy

While Sweden makes this shift at home, Swedish actors should be encouraged to play active roles internationally. Swedish innovators and entrepreneurs, especially those working with energy and climate solutions, need appropriate support to penetrate global markets. Innovation need not only involve technology. Financial, social and institutional innovations are equally important, such as new ways to think, organize and cooperate in order to meet human needs in a smart and resource-efficient way.

- **Invest in sustainable urban development**

Cities must attract large-scale investments in order to help address the climate challenge and develop sustainably. Investing for sustainable development will entail managing significant commitments – but would also generate large profits. Cities need to establish long-term plans and offer tailored financing models. New constellations of cooperation are needed, along with a combination of public and private funds. The lock-in effects of ineffective, fossil fuel dependent infrastructure must be avoided at all costs.

- **Work with the financial market**

Cities should place demands on the financial market to bring about sustainable change. Today, only 7-10 percent of the world's financial assets are managed with strict sustainability criteria. Such a low figure contributes to long-term lock-in effects within a fossil fuel dependent economy. Cities often act as financial hubs that can provide the appropriate environment for financial actors to contribute to loan guarantees for entrepreneurs, for example, or finance models that market solutions for sustainable urban development.

- **Develop smarter cities**

Cities should set objectives and develop tools for how ICT (Information and Communication Technologies) can be used in urban planning, transport, and energy systems, in order to enable smart and resource-efficient systems.

- **Demand new solutions**

The development of sustainable cities requires not only gradual improvements of existing technologies, but also entirely new ways to think about and organize urban needs, functions and infrastructure. Cities can provide leadership by demanding and implementing transformative innovations – solutions that enable a profound and sustainable transition.

- **Connect solutions with markets**

Many technical innovations with the potential to radically reduce CO₂ emissions are already on the market, but are not applied at the scale necessary to reach climate goals. Swedish cities can contribute to stronger cooperation between environmental and energy technology sectors and the fast-growing markets of, for example, Asia and Africa. Cities can also seek out and invest in climate innovations from developing markets so that these reach mature markets.



Photo: Tovovan

READ MORE ABOUT INNOVATIONS

Enabling the transition – Climate innovation systems for a low-carbon future

The report can be downloaded at panda.org

WWF's site for climate innovations
climatesolver.org

Read more about jobs and sustainable development

Investing for the future:
More jobs out of a greener EU budget

Low carbon jobs for Europe:
Current opportunities and future prospects

The reports can be downloaded at panda.org



Promoting green procurement and jobs

INFLUENCE FINANCIAL FLOWS

There is an enormous need to re-direct global capital flows away from solutions that are based on fossil fuels and toward investments in energy efficiency and renewables.

- More than 280 of the world's largest investors together with the UN Environmental Programme have called for the creation of financial incentives that shift the risk-reward balance in favour of low-carbon assets.

- Present annual levels of financing for sustainable solutions must increase by at least 5 times, and then accelerate to a level perhaps 35 times higher by 2050.

- New platforms and models are needed to widen access to financing for climate- and environmentally-oriented innovations, in partnership with banks, investors, and innovation agencies.

Municipalities are key economic actors. The public sector's share of Sweden's GNP is nearly 20 per cent, of which municipalities account for a significant share. Municipalities are responsible for a range of public services which entail extensive material production through, for example, energy, water, and waste management. The public sector is also an important employer and purchaser.

Swedish municipalities have a relatively large freedom to act independently, both politically and economically. They are entrusted with significant responsibility to follow national and international decisions and guidelines concerning environment and sustainable development. They also have opportunities to drive sustainable development forward independently. For example, cities can influence the market by demanding environmentally friendly goods and services. They can make especially ambitious commitments in water, sewers, energy, recycling, and waste management. Municipalities can also help to develop a green jobs market.

• Green public-sector procurement

Cities should use public-sector procurement as a proactive political tool for purchasing environmentally friendly and climate-smart goods and services, especially in the energy, food, and fibers (e.g. wood, paper, cotton) sectors. Cities should follow internationally accepted criteria and standards for responsible production of goods that can damage important ecosystems, such as wood, paper, cotton, soy, palm oil, meat, milk, fish, and bioenergy. It is essential that public-sector consumption is both environmentally friendly and resource efficient, and that it contributes to the required reduction in society's total use of materials and energy.

• Supporting frameworks and incentives

Without a supporting regulatory framework, it will be difficult for green procurement to make a significant impact. Sweden and the EU must develop procurement rules that enable, and in some cases, force public-sector actors to make environmentally responsible choices in their procurement. At the same time, policy measures need to focus on reducing the demand for environmentally harmful products and services.

• Green jobs

Cities can create more green jobs by stimulating innovative projects for climate solutions, environmental protection and nature conservation. Cities also need to promote synergies between job creation policies and their environmental and sustainability goals.

THE GOOD LIFE

Welfare and lifestyle are key dimensions of sustainable urban development. The social dimension of sustainability – concerning citizens' equitable access to essential goods, services and wellbeing – has been a key policy issue for many of Sweden's larger cities. From a global perspective, the social dimension has even more urgent relevance, for example, in poverty reduction.



City planners should promote preconditions for climate-smart and sustainable lifestyles.

Photo: Hendrik Holler / IBL

Welfare and lifestyle in a new light

Sustainable urban development should take its starting point in promoting citizens' wellbeing. Even if 'the good life' cannot be easily measured or planned, city planners can provide citizens with the preconditions for living well and sustainably. A city can offer a range of lifestyle and livelihood possibilities. This is why many people today choose to live in cities, even after starting families, and view urban living as their long-term lifestyle choice. A sustainable city should therefore provide the preconditions for its citizens to enjoy a climate-smart, resource-efficient and high-quality lifestyle. A truly sustainable city would thus typically involve a dense, integrated and green environment with attractive housing, working and living conditions for all sectors of society. The provision of public spaces and meeting places are immensely important and can help a city provide its inhabitants with a sense of identity and place.

- **Ensure an inclusive transition**

Urban planners should ensure the equitable participation of residents in the processes for retrofitting the built environment and, more relevantly for cities in the Global South, converting informal settlement areas. Participation is an important precondition for a sustainable ecological transition.

- **Provide incentives for sustainable lifestyles**

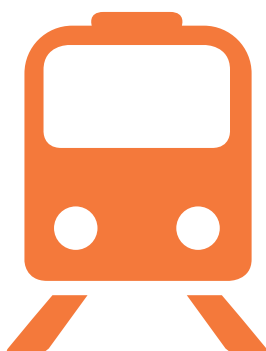
City planners should promote climate-smart and sustainable lifestyles by creating the preconditions and incentives to, for example, use public transport, work flexibly, live energy efficiently, re-use and recycle materials, choose seasonal and locally produced, vegetable-based foods, and reduce food wastes.

- **Engage citizens**

Cities should actively raise awareness among residents of the advantages of making climate-smart and sustainable consumption decisions. Exploring sustainable lifestyles can be an exciting means to engage citizens in city development.

- **Scale up fair trade**

Scaling up fair trade can raise awareness of global social and humanitarian issues. It can thus be used as a catalyst for sustainable urban development. It is important to go beyond advocating fair trade as a niche market and work more broadly to boost fair commerce.



CAPACITY TO ACT FOR SUSTAINABLE DEVELOPMENT

- Knowledge of the problems, but also of opportunities and solutions
- Motivation – will, courage, and inclination to act
- Opportunities – to see alternative paths of action and have the ability to apply them
- Reflected positions – to seek solutions and critically relate to different proposals



Participation is the basis for active citizenship. Citizens, in their various roles, should have opportunities to take responsibility for shaping sustainable development.

LEARNING AND PARTICIPATION

Active citizenship for sustainable urban development

Learning and participation are guiding principles for sustainable urban development. Schools should provide appropriate learning tools to enable young people to relate to the future's challenges. Education should involve strengthening the capacity of children and young people to act. However, learning for sustainable development needs to happen at all ages, and must go beyond the individual to incorporate group and institutional learning. How do change processes happen in cities?

Participation is the basis for active citizenship. Citizens, in their various roles, should have opportunities to take responsibility for shaping sustainable development. Participation and learning are also basic elements of a city's resilience, i.e. the ability to handle changes. There is a strong relationship among human rights, democracy, dialogue and participation. Sustainable urban development cannot be directed only from the "top-down", or completely from "bottom-up". Instead it must combine both. Working with sustainable cities should be viewed as an excellent opportunity for developing the tools of local democracy.

- **Inclusive city planning**

Decision-makers in cities should involve citizens in the city's planning and development processes. Especially important target groups are those who are usually under-represented in planning processes, for example, the urban poor, women, youth, ethnic minority groups, and socially marginalized sectors.

- **Innovative cooperation**

The municipality should encourage cooperation and learning among different sectors and city departments. By engaging the education sector, residents and business, it is possible to strengthen knowledge and participation across several sectors. In this way, entrepreneurial competences can be developed to help tackle obstacles to a sustainable future.

- **Learning for sustainable development**

Teachers, school administrators and governors need to be given sufficient support and resources for learning for sustainable development to have an impact in schools. The vocational qualifications for teachers and school administrators should prepare them for greater cooperation both within schools and between schools and society.

- **Entrepreneurship is key**

Entrepreneurship and learning for sustainable development are cited as all-embracing perspectives in the Higher Education Act in Sweden and official school curricula. Skills development that supports entrepreneurship is one of the EU's stated key competences. When education encourages students to think about issues concerning sustainable urban development, it becomes possible to achieve social and ecological goals in addition to educational goals.

- **Access to nature from an early age**

In Sweden, all schools and pre-schools should promote access to nature for play and learning activities. Provision of outdoor and environmental educational activities needs to be further strengthened. School gardens and urban farms, for example, can contribute to valuable insights for children.

CITIES AND SCHOOLS

Ecological and social values should develop as the city grows. Here the education sector can support processes of participatory, holistic and long-term sustainable development by engaging in outreach and cross-border educational activities. Learning for sustainable development must incorporate entrepreneurship skills so that students are equipped with both knowledge and skills to participate in the city's development.

Teachers, school administrators and governors need to be given sufficient support and resources for learning for sustainable development to have an impact in schools.

Photo: Kerstin Carlsson



LEADERSHIP AND COOPERATION

Shifting to sustainable urban development requires new ways of thinking. It is about going from one-dimensional perspectives – based on sector, competition, or growth – to thinking in terms of holistic, sustainable systems. Not least, it is about discussing the basic issue of what is the ultimate goal of urban development?

FOOTPRINT FAMILY

- Ecological footprint
- Carbon footprint
- Water footprint

Read more in the Living Planet Report 2012.

The report can be downloaded at panda.org

New methods for the sustainable city

A systems perspective lays the groundwork for envisioning the city as connected and integrated with the world around it, including the relationships between city and countryside, city and region, city and the rest of the world. But a change of perspective does not take place overnight. Cities need to actively explore and test methods and indicators that integrate ecological, social and economic aspects of sustainable city development.

Old patterns of planning and management can be broken with the aid of new perspectives. Today, cities are already working with more coordinated and cross-sector methods. This transformation needs to be strengthened. Changing from “drainpipe” to cross-sector approaches is key to the management of sustainable cities.

• Transformational leadership

Sustainable cities require not only gradual improvements of existing technology and infrastructures, but also creative and visionary ideas about the future city. Actors who work with transformational leadership enable a profound and sustainable change process.

• Broader perspectives

Cities should complement a local perspective with a global resource and sustainability perspective in their analysis and reporting. This can be done by using consumption-based indicators, for example, ecological footprint, carbon footprint, and water footprint, together with local indicators for the city’s development.

• Complementary indicators

Cities should provide active leadership in exploring and testing indicators for sustainable city development. The challenge is to put together a balanced set that combines ecological, social, and economic aspects, and that together provides a nuanced picture of the city’s development.

International learning cases

Urban solutions for a living planet – An inventory of 100 learning examples from the entire globe at panda.org/urbansolutions

Find out more about indicators

WWF Sweden has developed an overview of indicators for sustainable urban development with a starting point in WWF’s goals and perspective. To learn more please contact: urban.solutions@wwf.se



Photo: Martin Good



GAPMINDER

**FIGHTING THE MOST
DEVASTATING MYTHS
BY BUILDING A FACTBASED
WORLD VIEW THAT
EVERYONE UNDERSTANDS**

Hans Rosling

At gapminder.org you can view important statistical trends on humanity's development.



Will your city inspire the world?

Earth Hour City Challenge – an international challenge to cities. Find out more at: panda.org/citychallenge

NETWORKING AND COOPERATION

To share and learn globally

Urbanization is taking place at breakneck speed. While cities around the world are facing increasing pressures to develop sustainably, some have already been internationally recognized for taking their own initiative to prioritize climate and environmentally friendly development.

Urban solutions will play a decisive role in securing sustainable development globally in the next decades. By acting through networks and projects for mutual exchange, cities can combine their efforts and thereby more effectively tackle the global sustainability challenge than through their own individual initiatives. Swedish cities have something to teach the world and cities from around the globe have something to teach Swedish cities.

- **Provide supportive urban policies and frameworks**

Sweden should have the goal of being a world leader in urban development characterized by globally sustainable footprints, protected ecosystem services and biodiversity, and high levels of welfare and quality of life. For Sweden's municipalities and regions to be able to realize this, national objectives and financial support are needed, not least if pilot projects are to have long-lasting impacts. National governments need to clarify the responsibilities and opportunities that cities have to advance sustainable development. At the same time, governments need to provide appropriate conditions and supportive structures. Conflicting goals among social, ecological and economic aspects of sustainable development need to be identified and resolved.

- **Encourage innovation**

Innovations and entrepreneurship are vital for the global diffusion of solutions. The government should commit to supporting international cooperation among cities on innovation, above all in energy and climate solutions. This will help cities to achieve local energy and environmental goals. For Sweden to position itself globally, the government should develop an innovation strategy that suggests where in the global value chain for development and production of solutions that Swedish cities can provide the most effective benefits.

- **Participate in global networks and initiatives**

Cities can participate in international networks and initiatives for sharing knowledge and experiences of sustainable urban development. The aim is for all Swedish cities to be engaged internationally on the basis of their own contexts and what they have to offer.

- **Mutual benefit and learning**

Cities' international engagement, with twin-towns partnerships for example, should have an active learning and sustainability perspective. In the Global South, these efforts should focus on a sustainable use of ecosystems and biodiversity, as well as strengthening local management and sustainable urban development.

- **Shaping opinion**

Via international networks and procurement alliances, cities can shape opinion in support of, for example, stronger EU trade rules for natural resources, such as sustainability standards on biomass, stronger regulations concerning the trade in illegally cut timber, and fisheries agreements with third party countries.

INTERNATIONAL NETWORKS AND INITIATIVES

- The European Covenant of Mayors: eumayors.eu
- The Global Cities Covenant on Climate: wmsc2010.org/the-mexico-city-pact
- Local Governments for Sustainability (ICLEI): iclei.org
- Carbon Disclosure Project (CDP): cdproject.net

FIND OUT MORE!



WWF's emerging work with cities is aimed at pushing and supporting this transition. Our vision is cities where people can live fulfilling and sustainable lives within the limits of one planet.

WWF and sustainable cities

WWF is one of the world's leading environmental and nature conservation organizations. WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature by:

- conserving the world's biological diversity,
- ensuring that the use of renewable natural resources is sustainable,
- promoting the reduction of pollution and wasteful consumption.

Cities play a decisive role in view of their fast-growing shares of the global population, resource use, and environmental load. WWF urges stakeholders in cities to work effectively and rapidly to reduce cities' ecological footprints and to manage ecosystem services and biodiversity in a sustainable manner.

The good news is that despite huge problems there are many solutions for attractive lifestyles within the limits of the planet's biological capacity. But there is a need both for political leadership and engagement by businesses, financial organizations, entrepreneurs, and citizens, for these solutions to be able to become realities and contribute to a fast and positive transformation. WWF's emerging work with cities is aimed at pushing and supporting this transition. Our vision is cities where people can live fulfilling and sustainable lives within the limits of one planet – a *One Planet Future*.

WWF Sweden's position is directed firstly to decision-makers with key roles in city development. But each citizen's participation is essential, in a basic way, for creating real and enduring change. It is time for all of us to ask questions and seek answers about how we can live well and sustainably on one planet.



More reading

Download and read more on sustainable cities and global sustainable development.

- Living planet report 2012 – Biodiversity, biocapacity and better choices
- Reinventing the city – Three prerequisites for greening urban infrastructures
- Enabling the transition – Climate innovation systems for a low-carbon future
- Financial Vehicles – Driving Private Investments in Climate Innovations
- Urban solutions for a living planet – Learning cases



- The Energy report – 100% renewable energy by 2050
- Sharing the effort under a global carbon budget
- Investing for the future – More jobs out of a greener EU budget
- Low carbon jobs for Europe – Current opportunities and future prospects
- Big cities, big water, big challenges – Water in an urbanizing world
- Mega-stress for mega-cities – A climate vulnerability ranking of major coastal cities in Asia

More information

Read more at panda.org/sustainablecities

Visit Urban Solutions for a Living Planet at panda.org/urbansolutions

Learn more about the Earth Hour City Challenge at panda.org/citychallenge

Please contact us at
urban.solutions@wwf.se

Five Challenges for Sustainable Cities

WWF Sweden's position on sustainable urban development

CITIES

Already half of the world's population today lives in cities and by 2050 an estimated 70% of humanity will be urban.

ECOSYSTEM SERVICES

In the sustainable city, ecosystem services – both in the city and in relation to the world around it – stand for a wide range of benefits.

ECOLOGICAL FOOTPRINTS

Cities have a key role in making the vision of globally sustainable footprints into reality.

LEADERSHIP

A strong focus on urban solutions is needed in order to secure a globally sustainable development in the coming decades.

INVESTMENTS AND INNOVATIONS

Sustainable cities require new ways of thinking about and organizing the city's needs, functions and infrastructure.

WELFARE

Cities can provide opportunities for climate-smart and resource-efficient lifestyles with high quality of life.



Why we are here

To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.

www.panda.org