SymbioCity
PROCESS GUIDE

In search of synergies for sustainable cities

SymbioCity
Approach

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The Swedish International Development Cooperation Agency (Sida) has commissioned the Swedish Association of Local Authorities and Regions (SKL) to develop the *SymbioCity* Approach as part of a comprehensive programme by the Swedish Government to promote the development of sustainable cities and towns. This includes training programmes, publications and training material and, most importantly, practical cooperation between Swedish municipalities and cities in developing countries.

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INTRODUCTION

THE PURPOSE OF THIS GUIDE

This guide focuses on the process of using the *SymbioCity* Approach, which is outlined in The *SymbioCity* Approach publication. It offers detailed guidelines, practical advice, and methods and tools for conducting urban sustainability reviews and developing proposals for improvements to urban areas.

The *SymbioCity* Approach is flexible, and offers a way of thinking and working rather than a fixed procedure. No two interventions are identical, so the process needs to be adapted to work best in your local situation. Features of the *SymbioCity* process are that it

- is **flexible**, and can be adapted for different purposes, and local situations
- earlier steps are revisited and strengthened in later ones, i.e. it is **iterative** or **cyclical**
- engages all stakeholders, especially **marginalised** groups
- promotes **holistic** thinking before considering specific solutions and interventions
- emphasises the importance of searching for **synergies**
- **integrates** spatial, environmental, socio-cultural, economic, urban systems and institutional dimensions of urban sustainability.

When embarking on a *SymbioCity* process, it is best to begin with a broad vision and assessment before going into detail. It is important to understand the assets, opportunities, problems and challenges in a situation in relation to each other, in order to identify potential synergies, before analysing causes and developing solutions.

OVERVIEW OF THE *SymbioCity* APPROACH

The *SymbioCity* Approach is an integrated and holistic approach to sustainable urban development, based on extensive experience in Sweden and developing countries.
As cities are complex and dynamic systems, sustainable urban reviews and planning require an integrated multi-dimensional, multi-functional and multi-stakeholder approach. The *SymbioCity* Approach integrates spatial, environmental, socio-cultural, economic, urban systems and institutional dimensions in ways that are mutually supportive or synergistic.

It considers different functions and systems in relation to one another, and involves all relevant stakeholders, in order to achieve synergies. Symbiosis means synergy, i.e. mutually beneficial interaction. A principle of systems thinking is to consider all dimensions and functions when considering each dimension or function.

Objectives of the *SymbioCity* Approach

The aims of the *SymbioCity* Approach are to improve urban integration, sustainability and resilience, and the quality of life for all present and future citizens. Its objectives are to

- develop multi-sector and multi-disciplinary cooperation among stakeholders
- develop capacity by sharing knowledge and experience among stakeholders
- facilitate cooperation between local, regional and national stakeholders
- guide sustainability review and planning processes on different levels of scale
- contribute to strategies for short, medium, and long-term improvement of urban areas and different dimensions of sustainability
- help cities and towns identify practical and integrated systems solutions and synergies that promote sustainable urban development
- improve existing urban development policies, plans, processes and practices.

The core of the *SymbioCity* Approach is a conceptual model of urban sustainability. This model puts health, comfort, safety and life quality at the core of people-centred urban development. This is based on environmental, socio-cultural and economic sustainability ,supported by urban systems, institutional factors and spatial dimensions.

The *SymbioCity* Approach is described in detail in »The *SymbioCity* Approach: A Conceptual Framework for Sustainable Urban Development« (see www.sklinternational.se/publications).

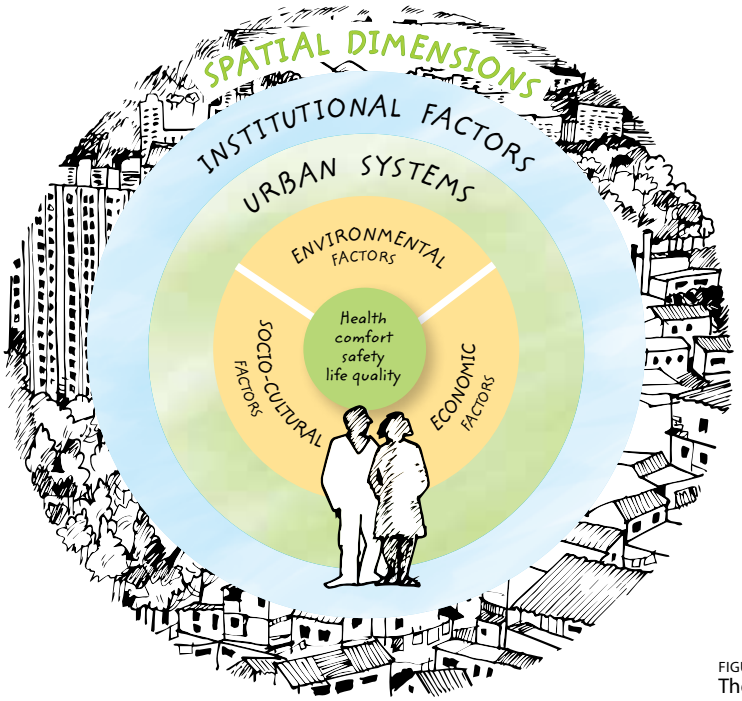


FIGURE 1
The *SymbioCity* Conceptual Model

An integrated systems approach

The sustainability of an integrated system depends on the synergies between its sub-systems, e.g. a healthy environment improves economic and social sustainability. The environmental dimension is often the entry point for the *SymbioCity* Approach, but is always linked to other dimensions, as outlined below.

Environmental sustainability requires protection of ecological systems and resources, so that human activities do not overburden the carrying capacity of the environment. Promoting ecological resilience requires economic resources, but also generates economic activity, and creates jobs that support social sustainability.

Social sustainability requires meeting human needs via basic services, adequate employment opportunities and social inclusion. Citizens have the right to participate in civic and urban development processes that affect them, and special efforts are needed to include disadvantaged and marginalised groups.

Social sustainability is also informed by education and culture, as the sources of ideas, ideals, values, attitudes and social awareness. Leaders thus need to facilitate the development of an aware and caring social consciousness, and a democratic, participatory civic culture.

Economic sustainability requires development that is in balance with available resources, and that does not damage the environment. Developing the built environment promotes economic growth, employment and social well-being, and a diverse, mixed urban environment promotes creativity, social interaction and economic activity.

The key is that all three dimensions should be included in any urban development process, as combining these perspectives increases the potential for value-adding synergies.

Stakeholder participation – a key aspect

Sustainable urban development needs the involvement of local communities and different sectors, so it is important to engage their representatives and leaders. This also develops social synergies and partnerships between different stakeholders.

Facilitating participation in sustainable urban development is an essential social process. Urban planning cannot remain the exclusive domain of urban planners, as sustainable development requires the cooperation of all stakeholders and citizens, including the poor. If they do not see the purpose or buy into the process, it will not happen.

Stakeholder ownership starts with participative visioning and assessment processes that really engage people, and motivate ongoing cooperation between municipal and other stakeholders.

Inspiring and capable leaders are needed, who believe in and communicate the vision, and facilitate the understanding, enthusiasm and participation of others. Good process facilitation is also essential, to manage and coordinate review and planning processes.

Assess assets and opportunities

Urban problems often seem overwhelming, and only focusing on problems can be demotivating, so start with a positive vision of the future, and then make a balanced assessment that identifies assets and opportunities, as well as problems.

It is also helpful to frame problems in terms of human needs, rather than in an abstract and technical way. In every urban context there are positive potentials, resources and opportunities to engage in development as an exciting social learning and development process.

We hope that this *SymbioCity* Process Guide will contribute to your efforts to create a more integrated and sustainable city or town, and a better quality of life for all citizens. Remember, nobody can do everything, but everybody can do something! So let's get started, and work together to make it happen.

Integrating gender equality

Women and men often experience cities in different ways., so urban planning and development needs to be gender-sensitive. But as traditional urban development has been preoccupied with the built environment, the planning profession tends to be 'gender blind'.

Gender matters in urban development planning, as it is relevant to a wide spectrum concerns including employment, housing, open space, transport and environment to name just a few. For example, urban areas provide women with better employment opportunities than rural areas. However, urban labour markets often remain segmented along gender lines, and many poor women can only find jobs as housemaids, cleaners or vendors. Can they get housing, or access public transport to reach these jobs? If health and sanitation services and infrastructure in slums are upgraded, women are likely to be prime beneficiaries, as they fetch water and spend most time in the slum.

These are just some examples of how gender and urban development planning come together. Appendices I and J provide two gender equality assessment tools, which can be adapted and used in different steps of the *SymbioCity* process.

The process steps

This guide is based on the six-step process in »The *SymbioCity* Approach« publication, Chapter 6, and on SKL International's practical experience in facilitating sustainable urban development processes globally.

The process is intended to be flexible, and you can shape as it unfolds, as it is often only when you 'get there' that it becomes clear what needs to be done next. An action learning approach regularly reviews and replans the process, and enables flexibility.

THE STEPS IN THE *SymbioCity* PROCESS ARE

1. Organising the process
2. Diagnosing the current situation
3. Identifying key issues and setting objectives
4. Developing proposals
5. Assessing the impacts of proposals
6. Developing an implementation strategy

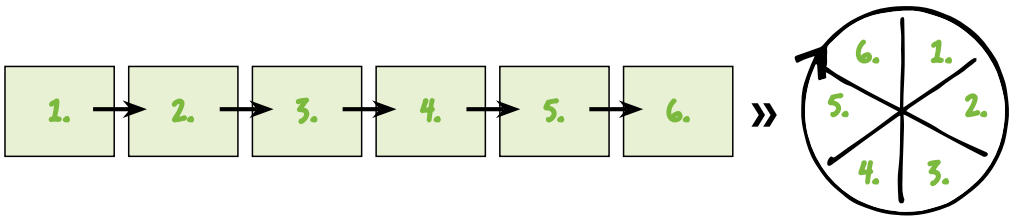


FIGURE 2
The six *SymbioCity* process steps can also be seen as a cycle, which can be worked through in a series of iterative loops – see figure 3.

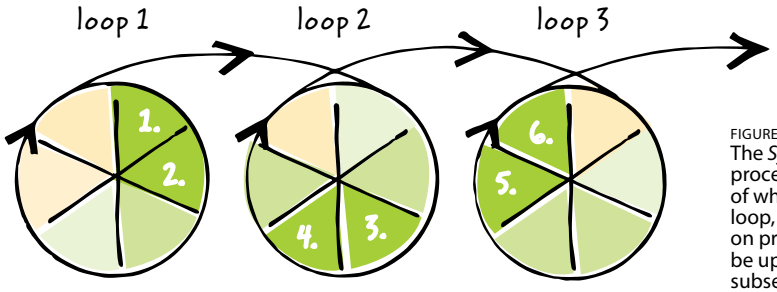


FIGURE 3
The *SymbioCity* cyclical working procedure involves three loops, each of which focuses on two steps. In each loop, it is a good idea to keep an eye on previous steps, which can often be updated and improved during subsequent steps.

A key feature of the *SymbioCity* process is iteration, i.e. cyclical revisiting and improving previous steps. While the process steps are sequential, you can also 'loop back' and develop earlier steps further during later steps, e.g.

- process planning (Step 1) may reoccur later, if the process needs to be adjusted
- the diagnosis (Step 2) can be deepened during later steps
- identifying key issues and setting objectives (Step 3) can be revised and improved after Steps 4 and 5, depending on their outcomes.

STARTING POINTS

The *SymbioCity* Approach can be used

- for undertaking sustainability reviews and assessments of the situation in existing areas
- for preparing policies, plans and projects for development or redevelopment of urban areas or systems
- at different scales, from a city or town to a suburb, neighbourhood, or single project
- with a sectoral or multi-sectoral entry-point
- by different stakeholders, e.g. municipalities, private sector developers, or citizens and community organisations.

The starting point for using the *SymbioCity* Approach will depend on your purpose. When conducting a review, the starting point will be the situation you need to assess. When undertaking a planning process or developing a project, the starting point is often an overall vision, or an idea for solving an existing problem. Any such process may be on various scales, from citywide to a single development project.

The *SymbioCity* Approach can help you to apply an integrated systems approach to urban development processes, which ensures that important perspectives and potential synergies are not overlooked. Though this guide provides fairly detailed guidelines, advice and tools, every situation is unique, and you need to decide what is relevant in your specific case.

BEFORE STARTING, ASK YOURSELF

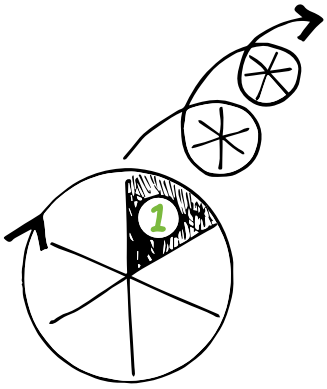
➔ What do you want to achieve by using the *SymbioCity* Approach? Are you clear about the purpose, scope, focus and outcomes of your process?

➔ How do you think the *SymbioCity* Approach can add value to the specific urban development process you are engaging in?

KEY TERMS IN THE INTRODUCTION

sustainability	the capacity to continue without harmful long-term environmental, ecological, social, cultural or economic results
stakeholders	all those who have an interest in, or are affected by a process, and who should therefore be involved in it (usually defined as various groups, and/or according to sectors, e.g. local residents, the business sector, other government agencies, civil society/community organisations)
synergy	mutually enhancing interaction between different activities, processes and stakeholders
iterative	cyclical revisiting and developing a previous activity or stage to improve the result
integrated planning	includes spatial, environmental, socio-cultural, economic, systems and institutional dimensions and stakeholders, and cross-functional, integrated working
ecological resilience	the capacity of a natural system to withstand disruptive impacts
vision	description of a desired future situation

STEP 1
ORGANISING THE PROCESS



WHY THIS STEP?

Good organisation involves clarifying roles and responsibilities, planning, scheduling and managing activities. This saves time and money, fosters transparency and predictability, and enables people to cooperate and achieve their objectives.

Good planning and organisation of a sustainability review or planning process is a key to success. This involves deciding

- the purpose of the process
- its definition and scope
- who should be involved, and how
- when and where different steps will take place
- what resources are needed.

INVOLVING STAKEHOLDERS

The *SymbioCity* Approach involves different stakeholders as decision-makers, partners, participants and contributors. In the municipal context, key internal stakeholders are political representatives, departmental heads, and sometimes union leaders. External stakeholders could include government departments and agencies at various levels, and the business sector, consumers and civil society. Academic experts and consultants are often involved to provide technical expertise and process facilitation.

The *SymbioCity* Approach encourages broadening the view of which stakeholders to involve, and goes beyond a limited sector perspective, e.g. that in a waste management project the most important stakeholder is the municipal waste management department. Important stakeholders are also likely to include other departments – water and sanitation, infrastructure, health, education, etc., households, environmental advocacy groups, green tech businesses, and others that might not come immediately to mind.

Though municipalities usually lead urban development processes, other stakeholders can use the *SymbioCity* process, e.g. urban planning specialists in universities or consultancies, private developers and community organisations. However, as municipalities are usually responsible for leading urban development processes, this will be assumed in this guide.

DEVELOPING THE PROCESS AND STRUCTURES

Complex, participative review and planning processes need a steering group to manage the overall process and coordinate various working groups and stakeholder groups. There may also be overlapping membership of groups, and joint meetings where representatives of different groups work together, e.g. joint working sessions and workshops.

FIGURE 4
Possible organisational structure for sustainable urban development planning. Structures can be adapted in specific situations to enhance real stakeholder participation.

The Steering Committee

A steering committee is responsible for managing the process, and linking it to the senior management team and council, and key external stakeholder representatives. The steering group ideally includes some senior managers and councillors, as leaders with formal power and influence. Representatives of strategically important external stakeholder groups could also be included.

The role of a steering committee includes

- to provide political leadership and ensure formal support for implementation
- to provide strategic management of the process
- to coordinate overall work
- to take important decisions
- public relations and communication.

Working groups

The *SymbioCity* Approach emphasises cross-functional teams and broad involvement of stakeholders as the key means of achieving synergies between different stakeholder groups and functional subsystems.

Working groups should therefore include specialists from different departments alongside representatives from other levels of government, the local community, academia, and the private sector. The composition of a working group, and the profile of each group member, will depend on the focus and purpose of the specific intervention.

Stakeholder groups

Besides being involved in the working group, stakeholders should be engaged throughout the process as a knowledge resource, and to provide inputs and responses to ongoing work.

Stakeholder groups may be sector, function or area based, and a general stakeholder forum can bring together representatives of different stakeholder groups to engage with the overall sustainability vision, and review or planning process.

PROCESS PLANNING

It is now time to plan the review or planning process, including time frames for the different steps, and when the different groups will meet. The steering group needs to develop an overall work plan which should at least include

- Purpose of the process
- Formal organisation
- Sequencing of activities to be carried out, including internal meetings and consultations with stakeholders, and who is responsible
- Time frame of activities, including duration and when in time
- Reporting, including when and who is responsible
- Tangible outputs to be produced.

Any work plan will have to be revisited and revised continuously during the course of work.

PARTICIPATION QUESTIONS

- ➔ Which stakeholder groups and organisations need to be involved?
- ➔ Why? What are their interests and possible contributions?
- ➔ Are there conflicting interests, and how will these be addressed?
- ➔ How will the various stakeholders be informed, consulted and involved?
- ➔ How can we involve vulnerable and marginalised groups?

PROCESS PLANNING CHECKLIST

		✔
1.	a clear and shared purpose and objectives	
2.	leaders and stakeholders are involved and support the process	
3.	key internal and external stakeholders and participants are identified	
4.	a steering committee and working groups are established	
5.	an overall work plan is established and shared	
6.	joint forums / working sessions / workshops are planned	
7.	stakeholders communication and participation is planned	
8.	national and regional government agencies are informed and invited to participate	
9.	a documentation management plan is established	

PLANNING STAKEHOLDER PARTICIPATION

It is essential to involve citizens and stakeholders in understanding the need for sustainable urban development, in assessing situations, and in developing and implementing the vision and plans. This will foster ownership, as a key element in sustainability.

Stakeholder groups with limited interests can be engaged on a limited basis. Where stakeholders have conflicting or competing interests, engage them together to develop 'win-win' solutions. The participation process should be flexible, as new groups, representatives and issues may emerge during the process.

Of special importance is the inclusion of women, and to integrate the perspectives of both men and women, as well as the poor, in review or planning processes.

DEVELOPING A COMMUNICATION STRATEGY AND PLAN

Effective communication is essential to the success of sustainable development processes, to inform, involve and motivate all the stakeholders. This includes the development of a communications strategy and plan for internal and external communication, as a key aspect of an overall process plan.

DEVELOPING A COMMUNICATIONS STRATEGY

Various media and forms of communication can be used to reach particular stakeholder groups, or engage them in two-way communication. Consider

- ➔ Whom do we need to communicate with and why?
- ➔ What will be the best means of communicating internally and externally?
- ➔ How can we enable two-way communication?
- ➔ What are the intended outcomes of our communication strategy?
- ➔ Who will be responsible for what?
- ➔ How will we monitor, evaluate and improve communication processes and outcomes?

Open and honest communication

Transparency is a basic principle of democracy, so it is essential to be honest and open, and not provide partial information, or downplay real concerns and difficulties, or raise expectations that cannot be met. Always be open and clear about 'the rules of the game', and what stakeholders can and cannot influence, or you risk alienating them.

DEVELOPING A DOCUMENTATION PLAN AND MANAGEMENT SYSTEM

Review or planning processes can generate a large volume and variety of documentation, which needs to be organised, managed and accessible, including records of meetings and workshops, proposals, plans and reports, presentations, maps, photos, illustrations, videos, reference documents and correspondence.

This material (both digital and hard copy) needs to be organised so it is easy to find, access and distribute. The easiest way to store and share digital data is on a shared drive, intranet, Google Docs or website.

All project documents should be identified by an organisational and project heading/logo, plus title, document type (if not included in the title), date and author. Adopt or develop a system to categorise and manage documentation, or you will soon be in the midst of documentary chaos and confusion.

ADVICE ON ORGANISING THE PROCESS

- > Treat the review or planning process as a formal programme with clearly defined sub-projects.
- > The Mayor and Council, and the City Manager and top team should jointly own the vision and lead the programme.
- > Ensure that stakeholder participation and ownership permeate in all aspects of the process.
- > Use a variety of media including workshops, site visits, exhibitions and posters, press articles, video presentations (e.g. on good practice case studies), and websites.
- > Report regularly to all stakeholders and the public on the progress of the programme and projects.

STAKEHOLDER COMMUNICATION AND PARTICIPATION OPTIONS CHECKLIST

	COMMUNICATION	
1	Press articles and notices	
2	Radio and TV sessions	
3	Municipal website (special section)	
4	Sustainable City website, shared with other stakeholders	
5	Social media	
6	Posters, notices and flyers	
	PARTICIPATION	
1	Effectively engage and invite stakeholder groups to participate	
2	Opportunities to comment on published proposals and plans (including on website/s and social media platforms	
3	Surveys – questionnaires, focus groups, interviews	
4	Community meetings, stakeholder forums, workshops	
5	Consultation and involvement of stakeholder representatives by internal working groups	
6	Competitions, e.g. urban design, project ideas, good citizen-led projects / good practice examples of sustainability, e.g. green schools or businesses	

METHODS AND TOOLS FOR ORGANISING THE PROCESS

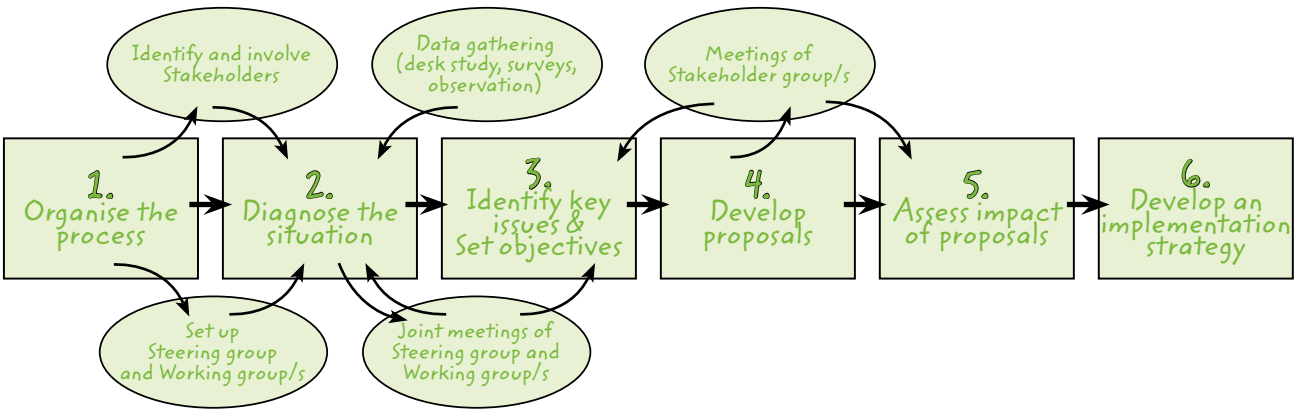
Here are some methods and tools you can use in organising the process. In each chapter, the methods tools are only suggestions, from which you can choose, if you think they will be useful. The only essential method needed in every step is good group discussions in working sessions.

A process map or PERT* chart

A process map or diagram shows a single core process and related sub-processes, e.g. a workflow diagram. It shows how processes are connected, rather than showing them in parallel and in relation to a formal time axis, as in a work plan. A process map can be done first as a sketch, before doing a more structured work plan.

* PERT stands for Programme (or Project) Evaluation and Review Technique

FIGURE 5
Example of an SC planning process



A schedule

A schedule is an essential tool for managing any complex process or project, as it shows when different activities happen in relation to each other, including meetings of the groups involved, and when time and resources need to be allocated. Include stakeholder participation processes and meeting in your work plan, to ensure that this essential aspect is not neglected.

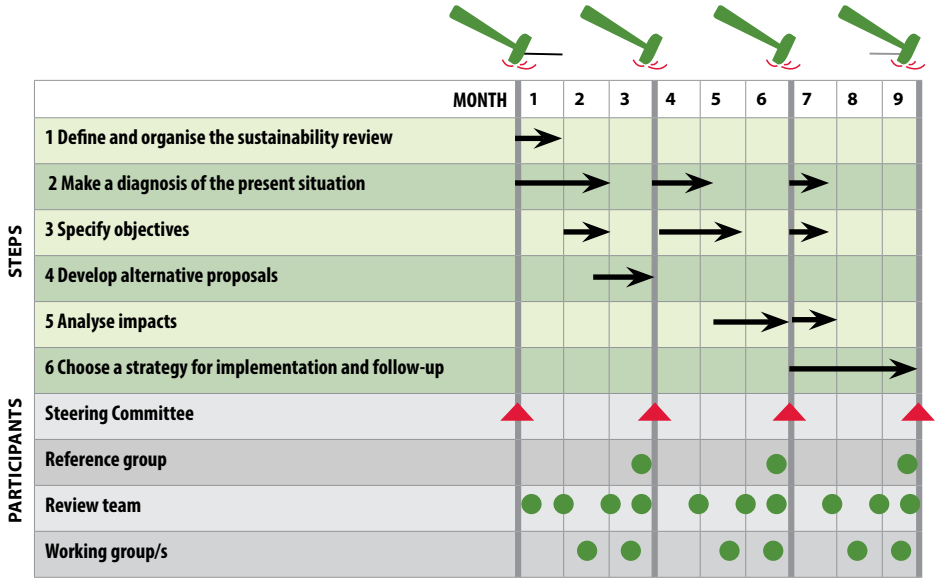


FIGURE 6
Example of a schedule or Gantt Chart

A Work Plan

A work plan gives more detail than a schedule and uses a different format, which specifies activities, who is responsible, deliverables and time frames and/or deadlines for each activity or set of activities. A column for notes or comments is also useful, as in the real example on the next page.

A work plan can be an elaboration of a schedule, or a schedule can be a more visual summary of a work plan, which can be put up on a wall for regular viewing and discussion by project teams and stakeholders.

WORK PLAN – *SymbioCity* X

First stage (A): 28th January – 8th February 2014.

Ref.	Activity	Responsible	Deliverables	Notes
A1	Working Groups orientation session	Working Group (WG)		
A2	Define and organise the work. Discuss and agree on the Work Plan.	WG		
A3	Joint meeting Steering Committee (SC) and Working Group	SC/WG		Present the Work Plan to the Steering Committee
A4	Fact finding. Collect data and information regarding environmental, social and economic conditions that have an impact on urban sustainability in City X.	WG		
A5	Undertake a SWOT analysis of environmental, social and economic conditions in City X.	WG	SWOT Analysis report	
A6	Analysis. Assess the data and information collected. Discuss the sources and causes of the problems and consequences if the problems are not addressed.	WG		
A7	Create a draft Problem Tree based on the results from the fact finding exercise, the analysis and the SWOT.	WG	Problem Tree report	Edited report ready by Feb 14th
A8	Make preparations for the stakeholder workshop.	WG		

FIGURE 7
Example of the first page of a work plan

A stakeholder map

This is a social or relationship map which shows various stakeholders in relation to each other, e.g. close/distant, important/not important, (size of circles) and links between them. You can use colour coding for different types of stakeholders, e.g. government – blue, community – green and business – red.

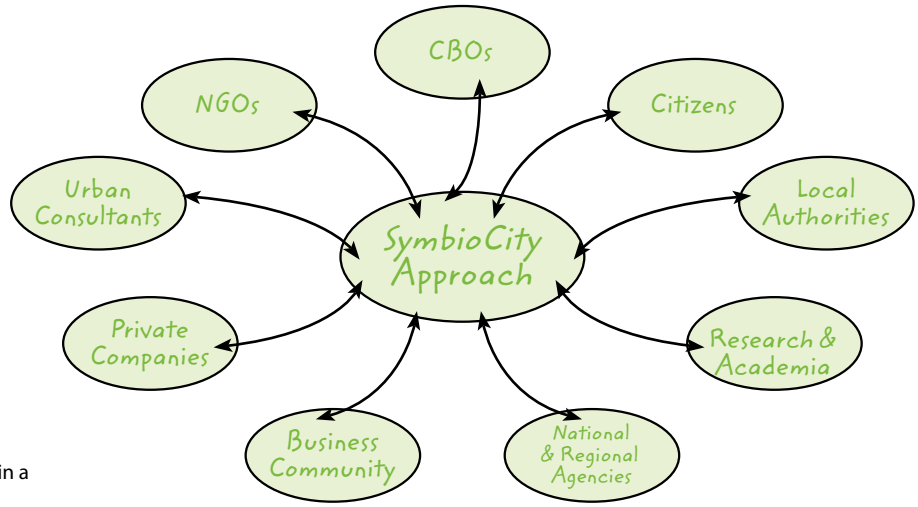


FIGURE 8
Example of stakeholder groups in a *SymbioCity* process

EXAMPLE

ORGANISING A *SymbioCity* PARTNERSHIP

Two cities established a partnership to address urgent urban development challenges, especially in the area of waste and water.

A 14-month project was set up to conduct an urban sustainability review and develop integrated proposals. A Steering Committee was established with representatives from the two cities as well as national level stakeholders. The practical work was assigned to a multi-disciplinary Working Group, and the process was facilitated by an external facilitator.

Political support in both cities was identified as essential, both for the planning process and for implementing projects, and that the institutional framework for cooperation is clear to everyone. Furthermore, the linkages between the partnership process and existing regulatory frameworks and policies were continuously assessed.

The Steering Committee as an oversight body for the partnership ensured links between the different planning levels in both cities, from which the necessary specialists were involved, and there was a common forum and provision for broad stakeholder participation.

two cities

water and waste

urban sustainability review

Steering Committee
Working Group

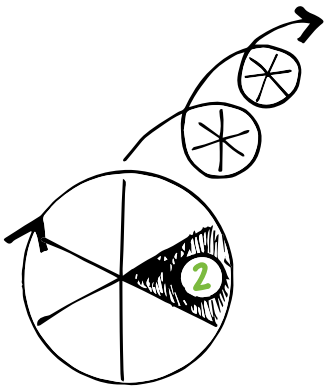
external facilitator

political support
linkages

KEY TERMS IN STEP 1

symbiosis	mutually beneficial interaction and interdependence
milestones	events or points in a process when specific important results are achieved
marginalised	excluded or disregarded
transparency	openness to scrutiny and active sharing of information

STEP 2
DIAGNOSING THE CURRENT SITUATION



WHY THIS STEP?

In order to find solutions you have to understand the problem situation. Even if you know the problem, or have even developed a project proposal, it is important to take a step back and assess the situation in more holistic terms before deciding priorities and solutions.

In Step 2 it is time to diagnose spatial, environmental, socio-cultural, economic, service systems and institutional dimensions, and identify key assets, as well as problems and their causes. You can do this by

- surveying stakeholders to get their views and feedback, e.g. residents or service users
- reviewing existing studies and data, e.g. numbers of informal households, service levels, and housing and service backlogs
- organising review workshops that include different stakeholders.

Exact numbers are not necessary at this stage, just a reasonably valid overview of the key development needs, problems, assets and opportunities for each dimension, as outlined below.

REVIEWING OR DEVELOPING A VISION

In some cases, there may already be a vision, or it may need to be developed during the planning process, at the start of Step 2. If the vision is not already in place, urban leaders should involve key stakeholder representatives in developing an inspiring shared vision.

There may also be a vision, but stakeholders may not have been sufficiently involved in developing it. In all cases, the best time to develop or review the vision is at the start of Step 2, after organising the process. This is also a positive way to start the process, rather than by first identifying problems. A positive, shared vision of the future motivates stakeholders to look at the often many and difficult problems with courage and hope.

If an existing vision was developed without sufficient participation, or if it does not include all dimensions that are considered in the *SymbioCity* Approach, consider redeveloping a more sustainable and integrated vision through a more participative process.

A shared vision guides long-term strategic planning, and is best developed with all

stakeholders, to initiate and motivate participation in the process. The vision should be far enough from the current reality for people to want to go there, yet close enough for them to believe that it is possible. A common time frame for an overall urban development vision is 20 to 30 years, as this gives time for ideals and goals to be realised.

However, as this is a distant and long-term time horizon, you can develop and update three or five-year medium-term visions or 'leading images', as milestones along the road to the long-term vision. A good vision contains ideals to strive for, and key values that leaders and citizens believe should guide how they get there.

Developing an overall city or town vision is described in Get Started, Move Forward, the *SymbioCity* decision makers guide, as it is a key responsibility of elected leaders and senior officials (see www.sklinternational.se/publications). However, they should also involve or consult internal and external stakeholders, including citizens.

Advice for vision development and sharing

- Draft your vision and key values with key stakeholder representatives, and then share the draft with all stakeholders and the public, and ask for feedback and input, to raise awareness and motivate support and participation.
- Communicate that the vision is only the first step in the process, and that existing conditions, problems and positive features will be assessed as a next step. Share the process plan, and that stakeholders and citizens will be consulted and involved.
- Introduce the concept and need for sustainable and integrated development, and encourage public debate around this, and on the draft vision and values.
- Use different media and creative ways to get attention and communicate.
- Acknowledge formal feedback and incorporate good ideas and changes in a second, improved version of the vision and values.
- Get key stakeholder groups to endorse the vision, as participants and partners in the process.

VISIONING EXERCISE – THE CITY YOUR CHILDREN WILL INHERIT

»Close your eyes and imagine you are looking down on your city in 25 years time at the legacy you have created for your children. Describe the key positive features of this much-improved future city. Consider spatial, environmental, socio-cultural, economic, systems and services and institutional aspects.«

The vision should be idealistic, but possible to achieve in 25 years. This exercise can be done by individuals in a team, smaller groups in a workshop, or in a number of different workshops, and the results synthesised into a draft shared vision. You can now share this draft with stakeholder groups and citizens, to get feedback and new input, towards a final version.

(For more on visioning processes, see Appendix A, Creating a shared vision, on page 64.)

EXAMPLE

VISION OF A GREEN, CLEAN AND SUSTAINABLE CITY IN 2030

Our city – a place to live a good life

good life

The beautiful, clean and green environment, its sustainable design, technology and resource use, its social atmosphere and spirit of humanity and cooperation, and the wide range of job opportunities, make it a good city in which to live a rich, meaningful and happy life.

Our city – the green city

green

Green parks are popular rest and recreation areas with flowers, shade and fresh-water ponds. The streets are lined with beautiful trees and flowerbeds. A long walkway lined with trees provides cool shade along the bay.

Small and clean public gardens are filled with fruit trees, and forests and nature reserves are within walking distance of the city centre. The riverbanks are lined with many kinds of fruit trees.

Some small industrial areas are now residential areas with two and three story apartment buildings, covered in green wall plants. Former sand and gold mining areas are now lush mango forests.

Our city – the clean city

clean

Our air is mountain-fresh, streets and public spaces are clean, as are our rivers and bay, with nice swimming spots close to town. Most households now have water-borne sewage, and the treatment plant produces fertilizer, biogas, and fresh water to irrigate parks and green areas with beautiful birdlife.

Our city – the resource-efficient city

resource-efficient

Natural resource use is reduced by conservation, reuse and recycling. Human resources and skills are valued and nurtured. The municipality cooperates with the university and businesses on eco-technology projects, including a wind farm and small-scale hydropower power plants in the mountain areas.

Fuel prices have risen dramatically, and a new factory converts motorbikes into electric bikes. Solar systems have replaced diesel generators and our city is approaching fossil fuel independence, and minimal air pollution. Thousands of local and international visitors come to our new eco-technology centre annually.

Our city – a sustainable city

sustainable

Streets have been rebuilt to accommodate bicycles and pedestrians, with narrower lanes for motorised transport. Only biogas buses and electric cars are allowed in the CBD, and through-traffic now uses the western and eastern bypass highways.

The city center has shaded paths leading down to a beautiful beach promenade, lined with small seafront hotels and lodges. All urban developments are eco-designed, based on the Urban Eco-design Guide, developed by the *SymbioCity* Process in 2014.

INTEGRATION OF SYSTEMS AND IDENTIFYING SYNERGIES

Even at this early stage of the process, the *SymbioCity* Approach identifies synergies and potential synergies between dimensions. While assessing each dimension, consider other systems and actual and potential synergies between.

DIAGNOSTIC QUESTIONS

- What is the situation for various stakeholder groups?
- What do they see as key assets and opportunities, as well as needs and problems?
- What are their interests and possible contributions?
- Are marginalised communities and groups involved?
- Are their views and needs being heard and included in the diagnosis?
- Are we developing an integrated diagnosis that includes interaction and possible synergies between different dimensions and stakeholder groups?

A. ASSESSING THE SPATIAL LAYOUT (THE FUNCTIONAL CITY)

The urban spatial layout is the framework in which all other dimensions are located. This includes the physical and built environment. The purpose of assessing this dimension is to identify characteristic features in the urban structure, and understand linkages between different parts of the urban landscape, as well as past, current, and future trends.

Assess the form and structure of the city or area concerned in terms of spatial sustainability characteristics and criteria in the checklist below.

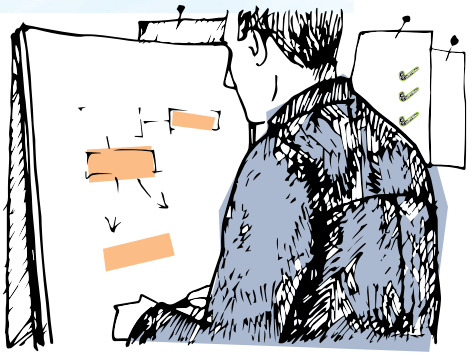
USING THE CHECKLISTS

The checklists can ensure that you do not miss important aspects, and can also be used, if you wish, to rate aspects and rank their priority in broad terms, as a starting point for assessment discussions. Checklists are intended as an aid to good quality working sessions, not as a substitute.

If you want to rate and /or prioritise the criteria, you can use the following scales.
Rating: 1 = Very Poor, 2 = Poor, 3 = Average or Acceptable, 4 = Good, 5 = Excellent
Prioritisation: H = High, M = Medium, L = Low

Individual group members can use the checklists, and then work out agreed ratings for the group, which will generate some initial discussion where rating and prioritisation differs. Or different groups in workshops can each work on a single checklist, and then share their assessments and thoughts with other groups, to develop an agreed overview assessment.

In this chapter a number of checklists are presented that aim to capture important aspects of the different urban development dimensions. However, the purpose is not necessarily to cover these checklists fully from 'A to Z' but to use what is relevant for your specific situation.

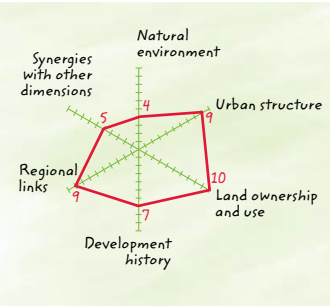


Spatial planning checklist

You can use the checklist below to identify positive features, problems and opportunities to improve the structure of the city. Rate and prioritise aspects if you wish, or just mark those you see as important to discuss. Feel free to add others, e.g. in a city with many rivers and waterways, their condition, use and potential uses could be an important addition.

SPATIAL PLANNING CHECKLIST

	ASPECTS	Rating	Priority
1	Spatial plans and compliance		
2	Density		
3	Physical characteristics (topography, natural environment, public spaces, defining features, historical heritage etc)		
4	Urban growth pattern		
5	Functional mix		
6	Spatial integration and barriers		
7	Land ownership and land use		
8	Regional links, and urban-rural links		
9	Development trends (including historical)		



ASPECTS TO CONSIDER – make you own spider diagram

- *Natural environment* – topography, vegetation, climate, resources, assets, and liabilities/lacks
- *Urban Structure* – positive and negative features; improvement needs
- *Land ownership and use* – land available; limitations to urban development
- *Development history* – key phases; positive and negative trends
- *Regional links* – regional and national positive and negative interdependencies
- *Synergies with other dimensions* – existing or potential.

METHODS AND TOOLS FOR ASSESSING SPATIAL ASPECTS

An asset mapping workshop, plus tour

You could start by holding a workshop for stakeholder representatives in which you map the assets in an area, and then go on a tour to observe the actual situation. If the area is not too large, you can go on a walking tour. If you are looking at a whole town or city, the tour could involve driving to a number of selected key locations for site visits. Then return to the workshop, or a subsequent workshop to share and discuss observations.

You can also use the above process to look for and map both assets and liabilities / positive features and problems.

Geographic Information Systems (GIS)

Geographic Information Systems are digital maps with various layers, each showing a different dimension, which can be overlaid and seen in relation to each other, or viewed separately, e.g. the street network, water supply infrastructure, electricity supply infrastructure, green spaces, and walking and cycling path networks.

You can use a data projector to project GIS maps on a wall, so participants in meeting and workshops use them as a basis to understand and analyse an area or particular systems.

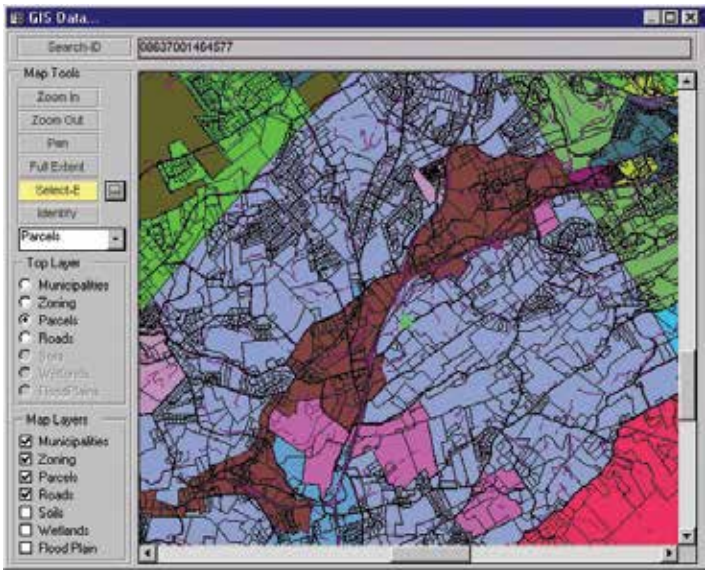


FIGURE 9
GIS map example

Google maps

Google Maps provides free digital satellite maps and aerial photographs on the internet, which enable you to get an overview, and zoom in to view different scales of detail. You can view your whole city, a district, neighbourhood, street, or particular site, and move between these levels (see www.maps.google.com – You can search for your city, access aerial photos on the same site, and zoom into areas by clicking on the maps or photos).

Sketch mapping

You can draw sketch maps to get an overview of particular dimensions of the city, e.g. natural areas, main transport routes, distribution of communities with different income levels, etc. Use flipcharts or tabletop maps, and use coloured crayons and Koki pens to add labels.

Such maps can be used or developed in workshops and working sessions, as a basis for discussion. You can also use them to show the current situation and possible changes and future situations. Use colour coding to distinguish these different time dimensions and/or spatial dimensions or systems.

Spider diagrams

A spider diagram has a single theme as the centre or body of the spider, while the legs (usually 6 or 8) are its key dimensions (see e.g. on page 20 for a city's spatial layout). Make each leg into a rating scale from 1 (very poor) to 10 (excellent), and rate each dimension with a mark on its scale.

Now connect the marks to get a profile shape, which shows each dimension as closer to, or further from the centre. The closer to the centre, and the smaller the overall shape, the poorer the dimension or overall situation, which indicates where to focus development efforts.

An »Our City Photo Exhibition«

A photo exhibition is a good way to illustrate key positive and negative features of the city, district or development area, or system. You can plan to have Before and After images of the same scenes, and even include historical photos, to show changes and trends over a longer period. You could also make a baseline video of the present situation, and later on, another showing the results of development.

FIGURE 10
Example from an Exhibition »Development of Our City«

A synergies map

Develop a sketch map, or series of maps that focus specifically on interfaces and synergies between the spatial dimension and other dimensions, e.g. spatial and environmental, spatial and socio-cultural, spatial and economic dimension s, etc. Use colour coding for different dimensions, and add labels as explanations.

B. ASSESSING ENVIRONMENTAL ASPECTS (THE CLEAN, GREEN CITY)

You can now review and assess environmental sustainability, using the checklist below.

The purpose of assessing environmental dimensions is to identify environmental resources and assets, to understand the impact of urban activities on the environment, and identify the main urban environmental challenges.

Environmental aspects are a key concern for sustainability, due to the increasingly damaging impacts of human activities on the natural environment, including climate change. Economic aspects include assets and resources, climate change, waste and pollution, green technologies, nature, public health, food and agriculture, and much more. This dimension also includes the quality of the built environment, as experienced by residents.

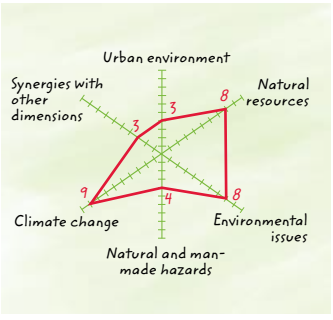
ENVIRONMENTAL SUSTAINABILITY CHECKLIST

	ASPECT	Rating	Priority
1	environmental assets and sensitive areas are protected		
2	resources are conserved		
3	compact urban structures that limit urban sprawl		
4	green technologies for infrastructure and transport services		
5	renewable energy sources		
6	effective waste management		
7	recycling of waste		
8	limited air pollution CO2 / greenhouse gas emissions		
9	integration of green areas and the built environment		
10	minimised environmental health risks		
11	urban agriculture		
12	marketing of local agricultural products		
13	accessible public transport		
14	mixed development and accessible local services and employment to limit the need to travel		
15	safe, quality public open spaces and green areas		
16	climate change prevention, mitigation and adaptation measures		

Identify any emerging or potential climate change threats that may affect urban development, e.g. increases in extreme weather conditions, drought, flooding, rising sea levels and storms. Urban planning needs to include measures to address the causes and mitigate the effects of climate change, to develop a resilient city. For example, current and future floodplains should not be built upon, unless such areas are protected from flooding.

ASPECTS TO CONSIDER – make you own spider diagram

- *Urban environment* – Sustainable and unsustainable aspects; integration of the built and natural environment
- *Natural resources* – key assets and lacks; areas, resources and assets needing protection, rehabilitation or development
- *Environmental issues* – key problems and trends
- *Natural and man-made hazards* – flooding, landslides, earthquakes and storms; pollution, waste-dumping, depletion of water and energy sources
- *Climate change* – the present and potential impact; causes and effects; mitigation and adaptation measures
- *Synergies with other dimensions* – existing and potential.



METHODS AND TOOLS
FOR ASSESSING ENVIRONMENTAL ASPECTS

Climate change threats and impact analysis

You can use the following table to identify various possible effects of climate change, the threats they pose, and possible mitigation (making them less severe) and adaptation measures.

CLIMATE CHANGE EFFECT	THREATS (examples)	EXTENT / SERIOUSNESS OF IMPACT L-M- H	RISK LEVEL /LIKELIHOOD RATING L-M-H	MITIGATION MEASURES	ADAPTATION MEASURES
increasing temperatures	Increased risk of fires in summer				
droughts	Decreasing water resources and water supply				
rising sea levels	Flooding of low-lying areas and informal settlements				
etc.					

This table can be used to brainstorm an overview, as a framework for further discussions, assessments and research on priority threats. Remember that climate change prevention requires limiting CO_2 emissions from burning fossil fuels that are causing global warming, and planting trees and vegetation that absorb CO_2.

SWOT Resilience Analysis

A SWOT Resilience Analysis focuses on Strengths, Weaknesses, Opportunities and Threats in relation to the resilience of an area, i.e. it ability to withstand the impacts of likely threats and changes. (For guidelines on conducting a SWOT Analysis, see Appendix D, page 67.)

Spatial mapping and analysis

(See Section A Tools, earlier in this chapter, on page 20.)

C. ASSESSING THE SOCIO-CULTURAL DIMENSION (THE HUMAN CITY)

Cities are for people, and the socio-cultural dimension of sustainability concerns social and living conditions, inter-group relations, levels of inequality, and the education, consciousness and culture of citizens. In most developing cities, poverty is a significant problem and challenge.

The purpose of assessing this dimension is to better understand important socio-cultural issues of importance in the city, the spatial distribution of income, services, and access to other resources, and to strengthen awareness about issues of inclusiveness and participation in urban development.

QUALITY OF LIFE CHECKLIST

	ASPECT	Rating	Priority
1	housing		
2	security of tenure		
3	food security		
4	water and sanitation		
5	waste management		
6	health services		
7	access to education		
8	quality of education		
9	safety and security / limited crime		
10	sense of community and civic responsibility		
11	income and livelihood opportunities		
12	mobility via public transport		
13	access to services		
14	access to cultural activities		
15	access to information and media		
16	access to / integration of the green environment		
17	quality of the environment / lack of pollution		
18	quality of the built environment		
19	social security for the poor, unemployed and aged		
20	participation in civic life / democratic governance		
21	public information and transparency		
22	tolerance and inter-group harmony		
23	sense of belonging and community		
24	reasonable class equality / fair income distribution (Gini Coefficient)		
25	overall quality of life for the majority of citizens		
26	overall quality of life for the poorest citizens		

ASPECTS TO CONSIDER – make you own spider diagram

- *Social issues* – positive and negative social features; and differences between areas
- *Cultural, educational activities* – arts; sport and recreation
- *Access to assets and services* – access to resources, facilities and services for different groups/ areas
- *Community* – active community groups; social cohesion
- *Synergies with other dimensions* – existing or potential, but lacking.

METHODS AND TOOLS

FOR ASSESSING SOCIO-CULTURAL ASPECTS

SWOT Analysis

(For guidelines on conducting a SWOT Analysis, see Appendix D, page 67.)

Poverty mapping

You can make or use an existing large outline map (or GIS map) showing the different areas in the city to show differences in income (degrees of wealth and poverty), e.g. by colour coding different areas as below.

	Rich / upper
	Well-off / upper middle
	Average / middle
	Below average / lower middle
	Poor / lowest

Shade areas on your map with the colour of their income level. Mixed income areas can have different colours in different parts, e.g. an informal settlement on open land in a predominantly well-off area (or visa versa).

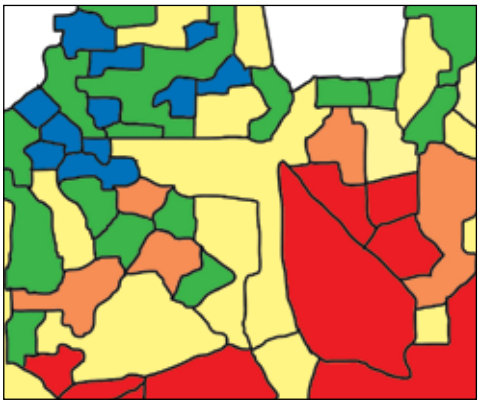


FIGURE 11
Poverty map for part of a city

This map may influence where you plan development projects, if poverty alleviation is a key long-term objective for your city, and you can use this map to discuss targeting, and prioritise areas and communities.

Citizen's experience exercise

Form three groups (or more) to represent rich, middle-class and poor areas. They now imagine a day in the life of a typical person living in their area, e.g. Where do you live? What do you do during the day? What problems do you face? What do you like and

dislike about your city? Also ask them to consider how they would like their life and the city to be different in 25 years time.

Now describe your person's lived experience to the other groups.

D. ASSESSING THE URBAN ECONOMY (THE THRIVING CITY)

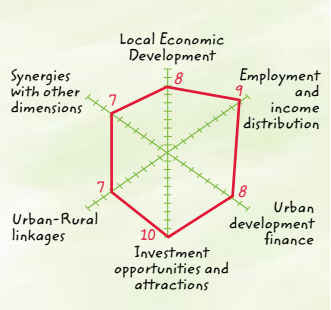
The economic dimension of urban sustainability includes issues such as employment, investment, production and consumption, assets and resources, poverty, municipal finance, etc.

The purpose of assessing economic dimensions is to identify assets and barriers to urban economic development, to understand sources of livelihood and employment, strengthen awareness of local economy structures and sector distribution, and to analyse the real and potential financing opportunities of urban development.

You can use the following checklist as a starting point for assessment discussions on the economic dimension of the area you are considering.

URBAN ECONOMY CHECKLIST 

	ASPECTS	Rating	Priority
1	Economic assets and liabilities		
2	Economic opportunities, needs and challenges		
3	Viable local production and service industries		
4	Local production that meets local needs		
5	Employment levels		
6	Social support for the unemployed and indigent		
7	Balance between formal and informal sectors		
8	Sustainable, clean, green industries and sectors		
9	Sustainable use of natural resources		
10	Energy sources		
11	Management of waste and control of pollution		
12	Extent to which the economy meets the basic needs of all		
13	Equality (difference between wealthy and poor areas and conditions)		
14	Support for local economic development		
15	State of the city's finances? (budget deficit, debt, clean audits)		
16	Financing of public services and local economic development		



ASPECTS TO CONSIDER – make you own spider diagram

- *Local Economic Development* (LED) – Main sectors; changes over time; formal and informal sectors; LED drivers; support for small businesses
- *Employment and income distribution* – Main employers; informal sector work and livelihoods; spatial income distribution
- *Urban development finance* – Sources of municipal income and capital funding
- *Investment opportunities and attractions* – Enterprise support; incentives and disincentives for investors, businesses and tourists
- *Urban-Rural linkages* – Exchange of products and services; regional natural resources; transportation; urban migration
- *Synergies with other dimensions* – existing or potential (this can be shown as extensions or 'fingers' on each arm of the spider diagram, as in a mind map).

METHODS AND TOOLS FOR ASSESSING ECONOMIC ASPECTS

GIS – Spatial maps, e.g. spatial poverty distribution

(See previous section.)

SWOT or Grid Analysis of the local economy

You could do a SWOT on the local economy. (For guidelines on facilitating a SWOT, see Appendix D, page 67.)

Force Field Analysis – Factors helping and hindering economic development

Force Field Analysis is a tool for assessing the potential for change or development in any situation, by identifying the helping and hindering forces or factors. (For guidelines on Force Field Analysis, see Appendix E, page 68.)

Group discussions and workshops on economic assets, liabilities, problems and challenges

(For guidelines on facilitating group discussions, see Appendix B, page 65.)

E. ASSESSING INSTITUTIONAL FACTORS (THE WELL-MANAGED CITY)

The key institutional factor to assess is the effectiveness of the municipality and its capacity to deliver services and undertake sustainable development. Other levels of government may also be involved, e.g. policing may be a provincial / national function. You can also assess areas where governance is lacking, e.g. informal taxi-based public transport in many developing cities.

There may also be civil society organisations involved in aspects of local governance, e.g. civics, residents' associations, and various types of partnerships, e.g. local economic development forums involving various stakeholder groups, or community-policing forums.

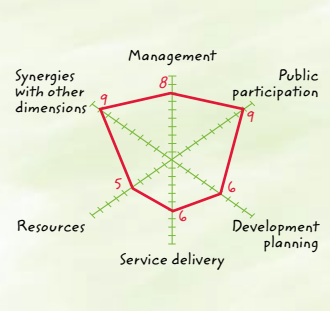
The purpose of assessing institutional aspects is to strengthen awareness of administrative and decision-making structures and processes, and to identify important issues related to participation and inclusiveness.

INSTITUTIONAL FACTORS CHECKLIST 

	ASPECTS	Rating	Priority
1	LEADERSHIP		
	representative and effective political leadership		
	vision, values and culture		
	strategy		
	organisational structure		
	resource mobilisation		
2	MANAGEMENT		
	management effectiveness		
	performance management and accountability		
	financial management		
	asset management and infrastructure maintenance		
3	RESOURCES		
	cooperation between functions		
	sufficient financial resources		
	sufficient human resources		
4	SERVICE DELIVERY		
	service delivery capacity and technical skills		
	service delivery processes		
	service quality (you can make another checklist to rate all services)		
	public-private partnerships for service delivery		
5	COMMUNICATION, COLLABORATION AND PARTNERSHIPS		
	public communication, openness and transparency		
	public consultation and participation		
	partnerships and collaboration		
	support from other levels of government		
	responsiveness to customers and citizens		
	feedback and complaints mechanisms		
6	GOVERNANCE		
	clean administration / lack of corruption		
	overall urban governance		
	a safe and well governed socio-economic environment		
	lack of corruption		

You could first do a SWOT Analysis, and then use the above checklist to check that you have covered all aspects. Each functional department can also assess themselves in the same way.

External stakeholders can be involved in this assessment, to get a citizens' and customers' perspective. Factors that are rated poorly and are high priorities should be analysed, and addressed in Steps 3 and 4.



ASPECTS TO CONSIDER – make you own spider diagram

- *Management* – clear roles and responsibilities, effective decision making, performance management, cross functional communication and cooperation
- *Public participation* – stakeholder involvement
- *Development planning* – An integrated development strategy and plan. Clear strategic priorities
- *Service delivery* – Good and poor services; delivery strategies
- *Resources* – Human, financial, infrastructure
- *Synergies with other dimensions* – existing and potential.

METHODS AND TOOLS

FOR ASSESSING INSTITUTIONAL FACTORS

Force Field Analysis

(See Appendix E, page 68.)

SWOT or Grid Analysis

(See Appendices D and G, pages 67 and 70.)

Service rating and discussion

First develop a catalogue of all municipal services if you don't have one already, and then develop a checklist for rating them, and / or as a basis for discussion and qualitative assessment.

WATER SERVICES

TIMES: ALL SERVICES ARE AVAILABLE MONDAY TO FRIDAY BETWEEN 8.30 AND 4.00

SERVICE	DEPARTMENT & LOCATION	CONTACT/ PHONE NUMBER	SERVICE STANDARDS (RESPONSE TIME, SERVICE LEVEL, COST)	REQUIREMENTS /CONDITIONS TO ACCESS THE SERVICE
ACCOUNT PAYMENTS AND BILLING QUERIES	Finance payments counter	029-12345	Max. wait 1 hour. Bill correction – 5 days	Last account
CONNECTIONS AND METER INSTALLATION	Technical – Room 46	029-23456	5 days Meter on pavement, connection at site boundary $500	Title deed, erf number, ID
TECHNICAL PROBLEMS – FAULTY METER, BURST PIPES, LEAKS, BLOCKED SEWERS, ETC.	Technical – Room 46	029-34567	Emergency 2 hrs., other 48 hrs. No on-site repairs No cost	None
INDIGENT APPLICATION – FOR HOUSEHOLDS THAT CANNOT AFFORD TO PAY THEIR SERVICE ACCOUNTS	Finance – Room 23	029-45678	Investigate and agree in 14 days Individual agreement, depending on your circumstances No cost	Household income less than $ 2 500 household members list and IDs, municipal bill, unemployment registration (if applicable)

FIGURE 12
Example of a page from a Catalogue of Services

F. ASSESSING URBAN SYSTEMS AND SYNERGIES (The *SymbioCity*)

The *SymbioCity* Approach sees an urban area on any scale as a complex system consisting of various functional subsystems, and emphasises the effective integration and coordination of subsystems, to achieve synergies. The purpose of assessing this dimension is to improve understanding of components of urban systems (main characteristics, quality, backlogs etc.) and their existing or potential level of coordination and cooperation.

Functional subsystems include

- input systems that provide water, energy, food and other commodities
- output systems that manage waste, wastewater and storm water, and pollution
- service systems, e.g. housing, transport infrastructure, safety, security and emergency services, and health, social, cultural and educational services
- municipal institutional systems that manage and coordinate other systems.

In assessing the various dimensions, you will probably have identified some existing synergies between systems, and potential synergies between systems or functions that could enhance efficiency and sustainability, e.g.

- How can storm water be naturally channelled and contained to enhance green areas, and be used for irrigation, to reduce pressure on water services and treatment capacity?
- How can walking and cycling paths be integrated with green corridors, to achieve synergy between environmental, mobility, recreational and public health objectives?
- How can waste management turn waste into valuable resource inputs, while creating employment and reducing negative environmental and health impacts?

A systems approach always considers a function, subsystem or service in relation to others, and its integration in the whole urban system, to achieve the sustainability vision and objectives.

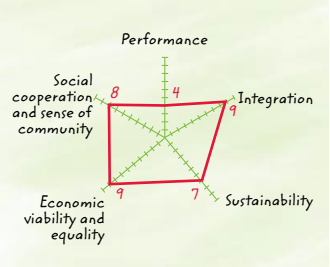
SYSTEMS INTEGRATION AND SYNERGIES CHECKLIST

	ASPECT	Rating	Priority
1	capturing and using rainwater and stormwater		
2	recycling grey water for gardens and urban agriculture		
3	using wastewater in energy systems		
4	recycling waste materials as resources		
5	using natural, local materials for building		
6	clean production to reduce waste		
7	composting of organic waste for use in urban agriculture		
8	generating electricity from natural, renewable energy sources (wind and solar)		
9	integrating walking and cycling paths into green areas and street systems		
10	promoting healthy nutrition and living, and reducing environmental health risks to reduce the need for health services		
11	involving local communities and schools, environmental projects, recycling and urban agriculture		
12	creating areas for organic urban agriculture linked to green areas and composting facilities to enhance nutrition and health		
13	community policing forums / neighbourhood watch schemes		
14	multi-service centres (one-stop service 'shops')		
15	consolidated billing for services		





ASPECTS TO CONSIDER – make you own spider diagram



- *Performance* – service levels and quality in different areas
- *Integration* – synergies between sectors, functions and services
- *Sustainability* – urban systems sustainability in relation to environmental, socio-cultural and economic dimensions
- *Economic viability* – cost saving and income generation via synergies
- *Social cooperation and sense of community* – social synergies, participation and partnerships.

Overall quality of life and well-being – citizens' and visitors' experience of the city in all respects.

METHODS AND TOOLS
FOR ASSESSING SYSTEMS AND SYNERGIES

Mapping of existing and potential systems synergies

For example, draw parallel process diagrams or PERT charts of key stages in

- the solid waste management process
- the wastewater management process
- the energy generation process.

Now look for existing synergies and potential synergies. Use different colours to draw connecting lines between the processes. For example, organic waste can be used for compost making and producing biogas.

This analysis can lead to planning connections and synergies, and changes in one or both processes to enable these, e.g. separation of organic waste on the one end, and development of compost or biogas production facilities on the other.

SWOT Analysis on systems integration and synergies

You can do a SWOT focusing on integration and synergies. (For guidelines on how to conduct a SWOT, see the Appendix D, page 67.)

STEEP(L) Analysis

STEEP is a well-known acronym and used all over the world as a basis for analysis of the (past, current, future) development of the external environment affecting an organisation, community, business, or project. STEEP stands for Social, Technological, Economic, Environmental and Political. Later versions have also added Legal and sometimes other aspects to the analysis.

(For more information about the STEEP(L) Analysis see Appendix F, page 69.)

ADVICE ON DIAGNOSING THE CURRENT SITUATION

- Assess strengths, assets and positive features, as well as problems, lacks and challenges.
- Assess threats and opportunities.
- Identify and understand the main causes of problems as a key aspect of diagnosing problems. This will be useful when developing solutions and proposals in Step 4.
- Link assessments to different community areas and the class structure of the city.
- Map the location and extent of key problems in different areas of the city or town, e.g. the lack of housing and services in informal settlements.
- Make a summary of key challenges and share it with all stakeholders and the public, and invite comments and feedback to raise awareness and gain commitment to sustainable development.

METHODS AND TOOLS
FOR DIAGNOSING THE CURRENT SITUATION

SWOT Analysis
(See Appendix D, page 67.)

Grid Analysis
A Grid Analysis uses the following framework to diagnose any situation.

	DON'T WANT	WANT
HAVE	1	2
DON'T HAVE	3	4

The quadrants will contain the following: 1. Problems, 2. Assets and positive factors, 3. Threats, and 4. Needs and Opportunities. (See the example of a Grid Analysis used in the first case study at the end of this chapter and in Appendix G, page 70.)

Appreciative Inquiry
Appreciative Inquiry is a method that focuses on assessing assets and positive features of the situation. The following short story illustrates the attitude underlying appreciative inquiry.

Two shoe companies sent salesmen to a remote tropical island to market their products. After one day on the island, each sent a telegram back to their headquarters. One wrote »This place is a disaster…no one wears shoes!« The other wrote »This place is a gold mine … no one wears shoes!«

However, to get a balanced view, one should look at both positives and negatives. (For more on Appreciative Inquiry, see the Appendix C, page 66.)

Problem Tree Analysis
Problem tree analysis helps to find solutions by mapping the causes and effects of a particular problem. This enables you to

- break down the problem into manageable chunks
- prioritise causes and effects
- understand multiple causes and effects and their interconnections / negative synergies
- identify possible solutions that address causes rather than symptoms and effects
- identify possible positive synergies.

Joint working group work sessions and workshops
Joint or multi-functional working sessions and workshops are the 'engine room' of a *SymbioCity* review or planning process. It is thus important that these are well timed, well organised and well chaired or facilitated, and that outcomes are documented and communicated to participants and other stakeholders.

Make a one or two page summary report, especially for stakeholders who did not attend, rather than sending lengthy reports that are less likely to be read.

Function or dimension based teams or working groups

While integrated cross-functional working is essential in a *SymbioCity* process, function or department based working groups need to assess and plan for sustainability in their own areas, e.g. transport planners need to develop a sustainable transport review and plan, and the waste management department needs to develop a sustainable waste management review and plan.

The important thing is that they do so in connection with other functions, to identify and develop synergies and integrated solutions, e.g. both waste collection trucks and city buses could run on biogas from landfills.

Group discussions, focus groups and workshops with stakeholders

Working in groups and teams of different kinds is the core method in the *SymbioCity* Approach, as this enables the sharing of different perspectives, engaging in comprehensive analysis and joint assessment, and developing integrated solutions and synergies. There is no substitute for real meetings between people, which enable participation, build relationships, and generate shared learning, ownership and commitment.

To ensure effective group work, good chairing or facilitation is essential, as well as good management of group and inter-group processes over time. (See Facilitating effective working sessions in the Appendix B, page 65.)

EXAMPLE – AN INITIAL DIAGNOSIS USING A GRID ANALYSIS

Representatives from a municipality including students, teachers, youths, street vendors, religious groups, academics, environmentalists, journalists, and other stakeholders used a Grid Analysis to identify the 'Wants, Don't wants, Haves and Don't haves' of their city. The group work resulted in a preliminary situation analysis (see e.g. below), which formed the basis for continued discussion.

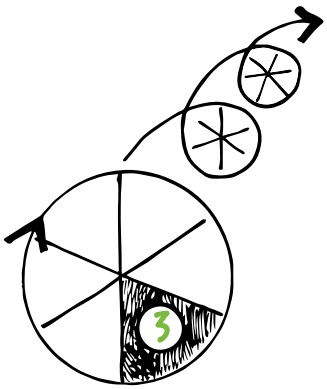
	DON'T WANT	WANT
HAVE	1. Crime 2. Prostitution 3. Illegal mining 4. Drugs 5. Natural disasters 6. Slum areas 7. Poverty	1. Beach 2. Landfill 3. Open green space 4. Rivers 5. Cattle 6. Mass transportation 7. Clean water 8. Electricity networks 9. Drainage
DON'T HAVE	1. High rate of crime 2. Horizontal conflict 3. Terrorism	1. Clean beach 2. Integrated waste management 3. Green open space management 4. Transportation and water tourism 5. Bus lanes 6. Clean water / improved water treatment / management 7. Revamped electricity infrastructure 8. Proper waste management in all areas, based on re-using, reducing and recycling waste


TRAINING

KEY TERMS IN STEP 2

peri-urban	the outskirts of an urban area or an area just outside urban boundaries
heritage preservation	protection of cultural and historical assets
topography	the character of the land in terms of geographic features
renewable resources and energy	resources and energy replenished through natural processes
mitigate	prevent and reduce risks or hazards
adaptation	protection against hazards to achieve a resilient society

STEP 3
IDENTIFYING KEY ISSUES AND SETTING OBJECTIVES



WHY THIS STEP?

You can't address everything at once. It is necessary to decide together with other stakeholders what you are going to focus on, and the goals and objectives of an initiative. This will give a clear focus to development proposals.

Step 3 involves identifying priority issues from among the many issues identified in Step 2, and setting long-term objectives. Detailed proposals and solutions are developed later, in Step 4.

Issues are not necessarily problems – an important but under-utilised asset, or an opportunity for potential synergy can also be issues. But it makes sense to focus on the most important needs and issues. If you have already decided on the priority issue/s, proceed with formulating goals and objectives; if not, first identify and prioritise the key issue/s.

You can use the table below to rank areas, issues and objectives against key criteria, e.g. urgency, importance, etc. Each functional department can outline its key issues and objectives in their plan, in consultation with other functions, in order to identify and include synergies.

If the focus is on a specific geographic area, or a project, rather than the whole city or town, the same integrated approach and concern for synergies to enhance sustainability and efficiency is appropriate, just applied on a smaller scale.

If you are using the *SymbioCity* Approach for a review and assessment process, this will be the last step, and key issues and their causes will be central to the conclusion of the study, while objectives, if included, will be in the form of recommendations.

QUESTIONS FOR IDENTIFYING KEY ISSUES AND SETTING OBJECTIVES

- Who identifies the key issues? Are those who experience the issues and needs sufficiently involved?
- What makes an issue a key issue? What criteria are we using to prioritise issues and needs?
- Are we thinking in an integrated way and looking at the interrelationships between key issues, and the potential for synergies?

Rating key issues

Rating: **1** – Low/Limited, **2** – Medium/Average, **3** – High

KEY ISSUES		Importance for the vision of sustainable development	Addresses a priority problem	Meets the needs of the poor	Realistic / Affordable	Potential synergies	Total score
1	Water pollution						
2	Unemployment						
3	Lack of housing						
4	Poor water and sanitation services in informal settlements						
5	Poor public transport						
6	Conditions in the Sibaya Settlement						
7	Potential for wind energy generation						

The checklist and rating is just a starting point for discussion. You can add other criteria, e.g. alignment with existing plans. However, we suggest you do look at the situation afresh first, wearing your 'multi-lens *SymbioCity* spectacles', which will see all dimensions, asset and opportunities for synergies. For example, 7 in the table above is not a problem but a positive opportunity, based on an unused natural asset.

You can then compare the resulting priority issues with those in previous assessments or existing plans, which may have had a narrower focus. In the past, spatial planners and engineers often planned urban development as a technical exercise, without an overall vision or concern for sustainability and integration or synergies, or a wider assessment of all dimensions, and with limited or no stakeholder consultation or involvement.

SETTING LONG-TERM OBJECTIVES

Once you have prioritised the key issues and challenges, it is time to set long-term objectives for sustainable urban development that will address the issues and challenges.

Ensure that overall objectives are aligned with the vision, and with national development policies, plans and priorities. It is very important that the objectives include integrated solutions and synergies, which require multi-sector and stakeholder participation in setting them.

Long-term objectives should be

- **D**irectional – provide guidance and purpose
- **R**easonable – achievable, or they will not be taken seriously
- **I**ntegrated – to achieve synergies with other objectives and between functions and systems
- **V**isible – clearly communicated, understood and shared
- **E**ncouraging and inspiring, to motivate commitment and action.

Overall objectives can specify both quantitative and qualitative results, and are more specific than goals, as they include targets and indicators.

QUESTIONS FOR SETTING LONG-TERM OBJECTIVES

- Are our long-term objectives aligned with the vision
- Do the objectives address the prioritised issues and needs?
- Do our objectives include appropriate indicators and targets?
- Have we involved all stakeholders sufficiently in setting the objectives?
- Is there broad agreement regarding the priorities and objectives?
- If there are differences, how can we best resolve them?

IDENTIFY ISSUES AND SET OBJECTIVES IN EACH DIMENSION

Continue thinking and working in terms of the framework of dimensions used in the *SymbioCity* Approach, as in Step 2, i.e. spatial, environmental, socio-cultural, economic, service systems, and governance.

This framework can be used throughout the process, and in some tools, .e.g. a SWOT Analysis on each dimension, so long as it is used as a basis for integrating dimensions and seeking synergies, rather than for treating them in isolation.

THREE LEVELS OF RESULTS – OUTPUTS, OUTCOMES AND IMPACT

Objectives specify future results, and should specify outcomes and impacts, not just outputs, especially in the medium and long-term.

Outputs	are services or products delivered, e.g. a water treatment plant
Outcomes	are the effects and benefits of outputs, e.g. all households have clean, safe water
Impacts	are the long-term effects of the outcomes, e.g. improved health of residents

Outcomes are the reasons why the outputs are needed and important, as they state the actual benefits for beneficiaries. Impacts are similar to outcomes, but broader and often longer term.

SPECIFY INDICATORS AND TARGETS

Long-term objectives include indicators and targets that describe the extent of planned outcomes, e.g. the percentage of citizens commuting to work by bicycle: 20% by 2015, 30% by 2020 and 40% by 2030.

Indicators can be quantitative, e.g. number or percentage of people using public transport, or qualitative, e.g. how safe people feel using public transport. Develop key

- social indicators (e.g. accessibility of services)
- economic indicators (e.g. start-up of small businesses)
- environmental indicators (e.g. decreased pollution).

Indicators enable sustainability progress monitoring and reporting, including to citizens. Test the quality of your indicators using the criteria below.

GOOD INDICATORS

A good indicator should be

Direct – measure the change it is intended to measure
Objective – clear and agreed
Relevant – what it measures is important
Practical – data can be gathered and organised (e.g. by sector, area, gender, etc.)
Reliable – data will be sufficiently reliable to support decision making.

EXAMPLE

OF A KEY ISSUE, OVERALL OBJECTIVE, INDICATORS AND TARGETS

KEY ISSUE: The poor condition of informal housing in Sibaya Settlement			
Objective A: Increased # formal houses in the area		Objective B: Improved water and sanitation	
Indicator 1: % of informal dwellings	Indicator 2: # of newly built houses	Indicator 1: % houses with own taps	Indicator 2: % houses with proper sanitation
Target 2016: 50% formal dwellings Target 2020: 70% formal dwellings	Target 2016: 800 new low-cost houses Target 2020: 1500 new low-cost houses	Target 2016: 50% of houses Target 2020: 80% of houses	Target 2016: 50% of houses Target 2020: 80% of houses

ADVICE

FOR IDENTIFYING KEY ISSUES AND SETTING OBJECTIVES

- Involve all stakeholders in identifying key issues and setting long-term objectives
- Formulate objectives that include synergies with other objectives
- Objectives should be smart (S – Specific results, M – Measurable, A – Agreed with key stakeholders, R – Realistic, in terms of resources and time frames, T – Time based)
- After identifying key issues, overall objectives and indicators, revisit Step 2, if selected key issues have not been sufficiently assessed.

METHODS AND TOOLS

FOR IDENTIFYING KEY ISSUES AND SETTING OBJECTIVES

Function-based and joint team workshops and working sessions

In a *SymbioCity* review or planning process, effective function-based and joint team workshops are essential (see Facilitating effective working sessions, Appendix B, page 65).

Workshops and focus groups with stakeholders

(See Facilitating effective working sessions in the Appendix for advice and guidelines.)

Force Field Analysis

(See Appendix E, page 68.)

Logical Framework Approach (LFA)

LFA is a well-established method for project planning and management, which many large donor agencies require. A 'logframe' is a standard table for summarising programme and project proposals. It provides a structured framework for planning objectives on output, outcome and impact levels, and includes columns for indicators and means of verification. (For a short introduction to LFA, see the *SymbioCity* Approach handbook, page 131.)

EXAMPLE

THE HUNGRY CITY – FOOD AS A KEY ISSUE AND POTENTIAL SYNERGY NUCLEUS

cities consume 75% of all energy and food

Food is fundamental to our daily lives and environmental impact, and must be transported, sold, cooked and eaten, and food and human waste disposed of daily in vast quantities, in every city. Cities consume 75% of all energy and food, which increasingly comes from a global economic hinterland.

Damaging diet

The diet of city dwellers is shifting from grains and vegetables to meat, which is an environmentally costly food to produce, as it takes 11 times more grain to produce meat than if eaten directly. Farm animals also produce 20% of global greenhouse gas emissions.

five companies control 90% of the grain market

Cities used to be fed by many small, mixed organic farms in the surrounding countryside. Now, large-scale, commercial, monoculture farms controlled by a handful of giant global corporations use chemicals and artificial fertilizers to produce most of our food, e.g. five companies control 90% of the grain market, and a few giant biotech companies are creating increasing dependence on patented GMO 'terminator' seeds.

Biodiversity, climate change and hunger

The loss of crop biodiversity and seed sovereignty, climate change and hunger are interconnected problems that require integrated solutions. Dr Vandana Shiva in India states:

»While farmers breed for diversity, corporations breed for uniformity. While farmers breed for resilience, corporations breed vulnerability. While farmers breed for taste, quality and nutrition, industry breeds for industrial processing and long distance transport in a globalized food system. Monoculture of industrial crops and monocultures of industrial junk food reinforce each other, wasting the land, wasting food and wasting our health.«

local and urban agriculture

The worldwide food sovereignty movement promotes citizens' democratic right to control their own food, including via food production in urban areas. When local and urban agriculture flourish, people eat healthier food, fewer are hungry and malnourished, local jobs are created, neighbourhoods are greener and safer, and communities are more inclusive.

Grow and eat more local food

Eating local food reduces oil dependency, puts fresher, healthy, tastier food on the table, and makes communities more resilient and self-sufficient. Small-scale backyard and community food gardens ease poverty by saving costs, and can even generate much-needed income in poor communities.

Urban farming involves healthy exercise and open space transformation. Buying local organic food helps small farmers, builds healthy soils and reduces environmental impacts, while industrial agriculture depends on fossil fuels, is environmentally damaging and economically unsustainable. It enables the rich 20% to over-eat increasingly poor quality food, resulting in escalating obesity and ill health, while the poor majority is hungry and malnourished.

Canadian research shows that the industrial food chain uses 70% of agricultural resources to provide 30% of the world's food, whereas small-scale peasant farmers produce

the remaining 70% using only 30% of the resources. Small farmers produce more, and more varied kinds of food with fewer resources and lower transport costs, and without the huge subsidies that agribusiness has enjoyed for decades.

the poor are hungry, not because food is lacking

Reduce food waste and use it wisely

The poor are hungry, not because food is lacking, but due to inequitable income and food distribution. A third of all food goes to feed animals, and up to a third is wasted along the food supply chain. This should be rescued for the poor, e.g. by Foodbanks, or used to make compost to produce more food, or to produce biogas, as a clean and renewable energy source.

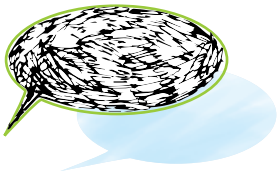
policies and integrated solutions

Local government policies for food and sustainable development

Sustainable cities and towns need policies and integrated solutions that promote local, healthy, organic food production and marketing, and reduce transport and packaging.

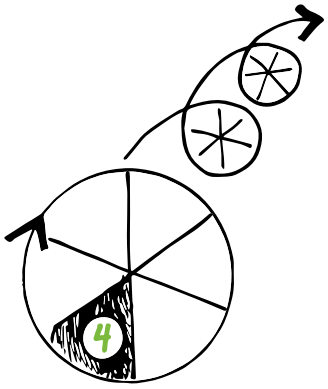
What is your city doing to educate and support citizens regarding healthy eating, local and urban agriculture and food waste recycling?

KEY TERMS IN STEP 3



criteria	factors to consider when evaluating or assessing something
indicators	definite signs / measurable facts that show that planned results are being achieved
targets	measurable expected results

STEP 4
DEVELOPING PROPOSALS



WHY THIS STEP?

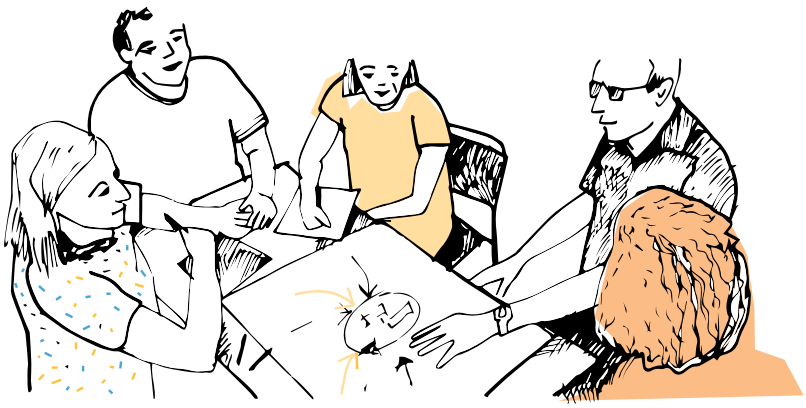
It is not enough to know where you want to go. You also need to know how to get there, and what the alternative paths are. With a proposal that describes suggested solutions in convincing terms, it will be much easier to gain support, including financial resources, for its realisation.

You should aim to develop the optimal proposal and provide decision makers with well-defined options and sufficient information to compare their advantages and disadvantages, e.g. a cost-benefit analysis of renewable energy options, combined with energy conservation strategies.

In Step 3, you decided which sustainability issues were priorities, and proposed overall objectives and targets. However, there are often a number of ways to get there. In Step 4, you consider and assess different possible strategies and methods for achieving the objectives.

The *SymbioCity* Approach favours proposals that enable synergies between different urban systems, and that are flexible and financially sustainable, e.g. using waste as a resource to generate energy.

In developing proposals, it is important to remember the vision and the assets, potentials and opportunities identified, including for synergies, as well as developing solutions to the key issues and problems you have identified.



COMBINING PREVENTION AND MITIGATION MEASURES

It is usually better and cheaper to prevent problems than to have to solve them, but often both are necessary at the same time, as in the following example.

PROBLEM: Air quality in the city is deteriorating:

Mitigation measures: Plant more trees to absorb CO2, create green streets in the CBD; a toll on cars entering the CBD; require catalytic converters on vehicles and filters on chimneys; build a ring road to limit traffic through the city.

Prevention measures: Raise public awareness of the health risks of air pollution and the need to travel less and to use public transport to reduce emissions; improve public transport and infrastructure for walking and cycling; encourage and subsidise the use of electric vehicles.

CONSIDER A VARIETY OF SOLUTIONS TO A PROBLEM

For each key problem, consider the different types of measures that could contribute to solving it, e.g. spatial, technical, social, institutional, legal, and financial measures. Now see how best to combine these to achieve synergies and an optimum combined solution. (See the Problem Causes and Solutions Tool in the Tools section at the end of this Step.)

Assess solutions to problems

You can use the table below to rate the scope, time frame and cost of solutions to a particular problem, as part of a problem-solving discussion.

Scope: **S** – Small, **M** – Medium, or **L** – Large-scale.
Time frame: **S** – Short, **M** – Medium, or **L** – Long-term.
Cost: **L** – Low, **M** – Medium, or **H** – High

Solutions assessment table

PROBLEM:				OBJECTIVE:		
	TYPE OF SOLUTION	POSSIBLE SOLUTIONS	SCOPE	TIME FRAME	COST	POSSIBLE SYNERGIES WITH OTHER SOLUTIONS
1	Spatial					
2	Technical					
3	Social					
4	Institutional					
5	Legal					
6	Financial					

A good solution often combines a number of different types of solutions. You can use the last column to consider good combinations of solutions that will achieve synergies and enhance effectiveness. Remember, such tools are a starting point for, and aid to good discussions and analysis, not a substitute.

CONSIDERING ASSETS AND OPPORTUNITIES

Only focusing on problems is a one-sided and sometimes demotivating approach, so it is important to also consider assets, potentials and opportunities. This will enhance the types of solutions you develop. For example, a river flowing through the city that is used as a sewer and place for dumping waste, if seen only as a problem, could lead to solutions such as fencing it off, and stronger regulations and enforcement.

However, seeing the river as an asset leads to considering positive opportunities, e.g. for irrigation, recreation, fishing, fish breeding, and river transport, which will all contribute to people taking better care of the river.

Sustainable development requires open-minded, positive and creative thinking, rather than a bureaucratic approach that often involves social engineering or 'policing' to eradicate problems. For example, if informal settlements are seen only as a problem, this could lead to hasty attempts to eradicate them, e.g. poorly built peripheral mass housing projects, or even influx control and forced removals and demolition of shacks.

On the other hand, seeing informal settlements as assets and areas of opportunity could lead to creative upgrading solutions that involve residents, e.g. participatory house building and upgrading projects that support local job creation and economic development, leading to phased development and voluntary relocation to well-designed community housing over time, as income levels improve.

QUESTIONS FOR DEVELOPING PROPOSALS

- ➔ Have we identified all the assets and resources, including the capacities and good will of citizens?
- ➔ What are alternative ways of achieving a particular long-term objective?
- ➔ What other positive future scenarios are possible?
- ➔ What less than ideal, or even negative scenarios do we need to avoid?
- ➔ Have we identified all opportunities for synergies?
- ➔ What synergies are possible in terms of combined or multi-dimensional solutions?

DESCRIBING ALTERNATIVE SCENARIOS

»I do not need to know the future, I just have to be prepared for it.«

Pericles (495–429 BC), Greek Statesman

When developing proposals, it is useful to consider and assess alternative scenarios or future options, which may involve different development paths and outcomes. Scenarios include what will change, how much things will change, who will be involved, and how change will take place, and a particular combination of solutions.

Imagine different possible solutions and positive future situations e.g. high or low-rise densification; improving public transport into the city centre or decentralised business and service nodes (so fewer people need to go to the city centre). Different scenarios can often be combined to create synergies and an optimum scenario, e.g. combining decentralisation and improved public transport.

Remember to learn from other cities that already have good practice examples of sustainable development interventions and projects to share. This includes other cities working with the *SymbioCity* Approach, and others such as Curitiba in Brazil, the best-known example of an early leader in successful sustainable city development (see the documentary video, A Convenient Truth).

SEEK SYNERGIES

The *SymbioCity* Approach encourages consideration of all urban dimensions and systems in order to find synergies between them, which will deliver optimum and sustainable solutions. Synergy means mutually beneficial interaction, and combined solutions

are usually more effective than single or independent solutions. For example, waste used as a resource to produce biogas to fuel buses results in sustainable waste management and clean public transport, with better air quality and reduced fossil fuel imports and CO_2 emissions.

Synergies can also be achieved on the social level through the cooperation of different stakeholders and sectors, e.g.

- independent renewable energy producers supplying power via the public distribution network
- public-private partnerships to finance infrastructure or deliver a service
- citizens cooperating in reducing, reusing and recycling waste.

Synergistic solutions that solve several problems at once are often more cost-effective (as they 'kill two birds with one stone'). But remember, cross-functional and multi-stakeholder collaboration is essential to identify and achieve synergies!

EXAMPLES OF SYNERGIES

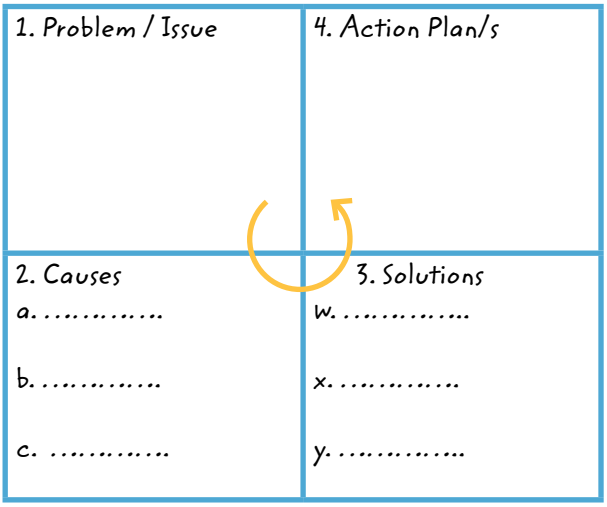
- ➔ High density, mixed function areas decrease the need to travel to work and to access services, improve social cohesion in a neighbourhood and decrease CO2 emissions.
- ➔ Designing urban spaces that interface with residential areas, work places and restaurants increases safety, security and social interaction.
- ➔ Storm water channelled into streams and ponds cools urban areas and make them more attractive, and can be used for irrigation.
- ➔ Renewable energy solutions and conservation measures, developed by local research organisations cooperating with businesses, contribute to local job creation, economic development and an improved environment.
- ➔ Organic waste can be used to produce biogas for public transport, and the residues can be composted and used for urban agriculture and greening. Such processes can also be sites for educational visits and learning about sustainable technology.

ADVICE ON DEVELOPING PROPOSALS

- Revisit Step 1 of the process and think about who should be included in Step 4
- Revisit Step 2 to find more data and information to substantiate proposals
- Use the *SymbioCity* conceptual model (see Introduction) to discuss urban systems synergies
- Assess the advantages and disadvantages / costs and benefits of proposals
- Ensure that proposed solutions are aligned with the overall vision for sustainability
- Use pictures, images and maps to describe and visualize scenarios, as they are often more powerful than words. Complement these with hard facts and figures, using business and financial modelling, also based on existing good practice case studies, e.g. of Bus Rapid Transport (BRT) Systems in other cities, that assess levels of usage, costs, savings, traffic reduction and time saved.

Problem Causes and Solutions Analysis

Understanding the causes of problems is important for developing effective solutions. You can use the following problem solving process to identify causes and related solutions for each key problem.



Some solutions may address more than one cause. Remember to look for solutions that involve synergies between different dimensions, e.g. citizens' awareness and behaviour change in reducing, re-using and recycling waste as a key socio-cultural solution for sustainable waste management.

Good solutions are usually composite solutions that achieve synergies and greater effectiveness by combining a number of possible single solutions.

Back Casting

Back casting involves defining a future vision and then looking at different ways of realising it by combining short, medium and long-term strategies. (See The *SymbioCity* Approach handbook, page 123, for more on Back Casting.)

Scenario development and assessment

Scenario development involves imagining and comparing a number of possible alternative futures (scenarios). Sometimes best case and worst-case scenarios are developed, usually with a third between the extreme scenarios. These high, middle and low road scenarios are then compared and analysed in order to identify trends and factors leading to the different scenarios. Worst case scenarios also serve as a 'wake up call' and motivation to make changes.

However, you could also develop two or three different positive scenarios for a situation, if this seems relevant. There are also advanced scenario planning software applications such as Envision Tomorrow Plus, Urban Footprint, CommunityViz and INDEX/SPARC which can be used to develop scenarios in complex situations.

Visualisation tools

These include diagrams, sketch maps and GIS (see Chapter 2 tools).

EXAMPLE

»PRIORITISING ISSUES IN OUR CITY«

benefit of working together

The benefit of working together is that you learn to see things differently. In our city, all municipal departments are represented in the *SymbioCity* Working Group. This leads to new understanding of the challenges and opportunities in the city. The group agreed on four key issues and challenges, that if met, would significantly improve the sustainability of the city.

POVERTY ALLEVIATION

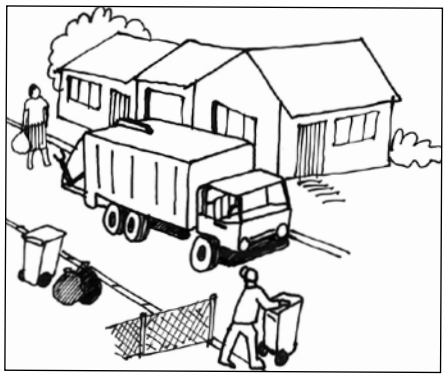
poverty is not just about money

There are about 20 000 poor families in our city, or 10% of the ± 200 000 inhabitants, and poverty is a widespread problem throughout the city. The problem is enhanced by the fact that there is no clear definition of what constitutes a poor family. Poverty is not just about money, but about the ability to fulfil basic needs and access basic services and opportunities. Poverty also has to do with the environment in which people live.

SOLID WASTE MANAGEMENT

only one landfill

Solid waste is generated by households, businesses and industries in all parts of the city, but there is only one landfill of four hectares, which will soon be full, despite the fact that much of the waste is not collected at all. Increasing proper waste disposal will accelerate the landfill capacity problem.



WATER POLLUTION

water pollution – a serious health threat

Six rivers flow through our city, but they are badly polluted. Wastewater and sewage flow into the rivers from households and industries along the riverbanks. Close to 30% of households lack proper sewerage, and many have septic tanks that are never emptied, and therefore overflow.

The rivers and springs in the city are also filled with household waste and inorganic fertilizer. This is a serious health threat, as only 28% of residents get their water from the regional water company.

CLIMATE CHANGE

CO_2 emissions in the city are expected to rise

Climate change is a locally caused global problem, with local effects. CO2 emissions in the city are expected to rise from about 380 000 tons in 2010 to close to 650 000 tons in 2020. This 77% increase in only ten years will be largely driven by the rapid increase in motorized transport. According to the predictions of climate science experts, rising sea levels and the increased risk of floods will pose real threats in coming decades.

EXAMPLE

»SUSTAINABLE DEVELOPMENT IN A PILOT DISTRICT«

An eco-friendly village for a better life!

In our city, a pilot district characterised by poverty, polluted water and poor waste management was chosen to pilot sustainable solutions, under the slogan «An eco-friendly village for a better life.« The *SymbioCity* Working Group, in consultation with local stakeholders, decided to improve infrastructure and management of services, and use community education to raise awareness and motivate change in three areas: the local market, a residential block and a stretch of the local river.

community education

THE MARKET

education and improved waste management

The marketplace is a natural hub, which brings people together to trade, but it also generates a lot of waste, which needs sustainable management. Planned solutions were education and improved waste management services, including

- improved waste collection
- improved sorting of market waste
- educating traders on how to reduce littering
- enforcing regulations to ensure that businesses have waste disposal facilities
- collecting organic waste and turning it into biogas.

THE RESIDENTIAL AREA

educate households to manage waste better

The project aimed to educate households to manage waste better and keep their surroundings clean to improve the quality of life. Solutions included

- providing waste trolleys and waste bins for waste separation
- testing different systems for waste collection, e.g. at individual houses, from groups of houses, and at public collection points
- promoting waste separation and waste reduction
- initiating a cleaning up-campaign to reduce littering.

THE GREEN RIVER CORRIDOR

The six rivers in our city are vital water resources, as only 25% of households are supplied by the regional water company. The rivers are beautiful, but badly polluted. The project planned to create a green corridor along the river that flows through the district, to contribute to cleaner water and improved health. Solutions included

- a grid in the river to collect solid waste
- a save-the-river campaign, teaching people not to throw garbage into the river
- a clean-up campaign in and around the river
- communal funding for improved sanitation facilities and septic tanks
- planning of housing facing the river, rather than it being a backyard sewer
- developing walkways and bicycle paths along the riverbanks, and a cycling to work and school programme.

The pilot project includes efforts to alleviate poverty, e.g. a training programme for entrepreneurship and job creation, a social housing programme for poor families, and education and micro-credit programmes.

rivers are beautiful, but badly polluted

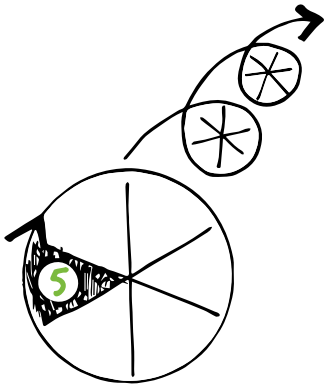
green corridor along the river

training programmes

KEY TERMS IN STEP 4

scenarios	possible future situations
business nodes	commercial, business and service centres within the urban structure
public-private partnership	formal cooperation between a government agency and a private company

STEP 5
ASSESSING THE IMPACT OF PROPOSALS



WHY THIS STEP?

Any urban development intervention will have certain impacts – positive and negative. It is important to assess these in order to enhance positive and sustainable outcomes, and to assess the best proposal with the least potential negative impact. Also, by assessing impacts, you can identify ways to reduce or eradicate negative effects.

Different proposals will have varying social, environmental and economic impacts, which need to be evaluated, in order to maximise positive impacts and minimise negative impacts.

This step involves assessing the likely positive and negative outcomes and impacts of the proposals developed in Step 4.

IMPACT ASSESSMENT AT THE PLANNING STAGE

Impact assessments during planning are essential to evaluate plans in terms of their probable results, in order to

- identify and minimise possible risks and negative impacts
- stop or change interventions/projects, if the risk of negative impacts is unacceptable
- enhance positive and sustainable outcomes
- improve project plans and implementation strategies
- enhance synergies via integration of social, economic and environmental aspects
- support proposals and inform good decision making
- protect and promote human well-being, heritage and culture
- provide a basis for informed dialogue on development priorities with different levels of government and other stakeholders.

Both longer-term strategic interventions and planned projects of all sizes should be assessed. The scope and nature of assessments will vary, depending on the type of intervention proposed.

Strategies and interventions with significant consequences require comprehensive assessments, which often include financial modelling, as large investments are involved, which impact on future finances.

For smaller projects, impact assessments can be more limited, but all assessments should consider environmental, social and economic impacts and synergies. Strategic Environmental Assessments (SEAs) and Environmental Impact Assessments (EIAs) are a legislated requirement in many countries, and these usually include social and economic dimensions and criteria.

ASSESSING SOCIAL IMPACTS

Social impacts affect people and how they live, work, organise or relate to one another, and therefore their quality of life. As with other impacts, social impacts may be positive and beneficial, or negative and harmful.

It is important to assess the social impact of proposed interventions and projects for those affected. This is an area in which there can be unintended consequences, e.g. due to inter-group competition for limited resources. Proposals with benefits for some may have disadvantages or even high costs for others.

For example, a project to redevelop an informal settle may not be able to accommodate everyone, creating a divide between those selected as beneficiaries and others who are not, who may have to wait for a later phase to benefit, or even be displaced to a less convenient location.

QUESTIONS FOR ASSESSING SOCIAL IMPACT

- How will beneficiaries be selected?
- Will selection be fair and accepted?
- Will the target population participate in deciding the selection process?
- Could those left out or disadvantaged oppose the proposal or prevent implementation? How, and the possible consequences of this?
- How can negative social impacts be prevented or mitigated?
- How can synergies be developed to enhance positive social impacts?

SOCIAL IMPACT CHECKLIST

PROJECT:						
Types of social impact	Target group/s and others affected	Positive outcomes and impacts for A, B, C …	Negative outcomes and impacts for A, B, C …	Extent of impact (rate on 1 to 5 scale)	Short, medium or long term	How to max. + ve & min. – ve impacts?
quality of life / well-being						
socio-economic						
culture / heritage						
community						
services						
health						

When conducting a social impact assessment, do a survey to involve the target group and community representatives in assessing their own situation, and provide them with feedback and an overview. Also use existing data, plus the views of experts who have done research, if this is available.

Avoid general statements of benefits or disadvantages, e.g. »*Proposal B will improve the lot of women*«. Rather, specify how women will benefit. Assess 'impact equity' i.e. positive or negative impacts for particular groups, and especially marginalised or vulnerable groups, e.g. a new transport system may benefit people with reasonable incomes, but be unaffordable for the poor and the aged.

ASSESSING ENVIRONMENTAL IMPACTS

Environmental Impact Assessments (EIAs) are often a prerequisite for the approval of planning proposals and projects. If probable negative impacts on the ecology, biodiversity, natural areas and resources are significant, a project may be refused permission, or need to be redesigned to reduce impacts.

Strategic Environmental Assessments (SEAs) are larger scale and more comprehensive EIAs, and often include many areas of impact, which can require considerable research capacity. In some areas, indicators are well established, e.g. air and water quality; in others, setting agreed indicators can be challenging, e.g. access to open space. The table below gives the most common criteria used in SEAs.

STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA) CRITERIA	
Liveability	Air quality
Built environment	Water quality
Cultural heritage	Land and soil quality
Access to open space	Landscape quality
Natural habitats	Energy efficiency
Biodiversity	Renewable energy
Renewable natural resources	Non-renewable natural resources

The need for comprehensive and scientific assessments depends on the nature and scope of the intervention or project, but the environmental impacts of all proposals should be assessed. The checklist below can be used to identify impacts, as a starting point for discussions, and, if necessary, further investigation.

ENVIRONMENTAL IMPACT CHECKLIST

	Probable or potential +ve environmental impacts	Likelihood / level of risk - High, Medium or Low	Seriousness - High, Medium or Low	Consequence for the poor	Short, Medium or Long-term	Possible solutions
1						
2						
3						
	Probable or potential -ve environmental impacts					
1						
2						
3						

ASSESSING ECONOMIC IMPACTS

Economic impacts affect trade, tourism, employment, incomes, and access to natural resources, investment and funding, etc. It is usually necessary to assess the financial viability, costs, savings and economic returns and benefits of proposed interventions and projects in the short, medium and long term.

Investments that increase sustainability are often more cost-efficient over time, e.g. improving the thermal performance of buildings or solar water heating to reduce energy consumption have initial capital costs, but result in considerable future savings.

When assessing economic impacts and doing a cost-benefit analysis, distinguish between expenditure and investment. Expenditure involves purchasing goods or services that are consumed in the short term, while investments should yield significant future returns and savings, which may be financial, environmental, social and economic.

The questions in the table below can facilitate thinking about the economic and financial impacts of proposed interventions and projects.

ECONOMIC IMPACT CHECKLIST

QUESTIONS	Discussion – answers
Is the estimated cost affordable?	
How will capital funding be mobilised?	
How will Operation and Maintenance (O&M) be funded?	
Savings from the proposal / project?	
Synergies saving externalised costs or delivering benefits in other areas?	
Revenue from the project?	
Impact on sector or area economic growth?	
Impact on business development and employment?	
Possibility of loans, investment, or grants?	
Socio-economic impact on the poor?	
Other economic or financial benefits?	

IDENTIFY POSSIBLE CONFLICTS

Besides analysing the potential environmental, social and economic impacts of a proposed intervention or project, it is important to consider whether it could generate any conflicts related to e.g.

- the selection of beneficiaries – who benefits and who doesn't
- control of project resources and benefits
- groups, areas, sectors or industries that may be threatened
- issues of land rights or use, and stakeholders affected by any such changes
- economic development interests vs. environmental protection
- lack of alignment with national policies.

ADVICE ON ANALYSING THE IMPACT OF PROPOSALS

- Use common sense and cost-effective methods of assessment – e.g. working group and joint working group discussions and workshops, surveys, focus groups and workshops with affected stakeholders.
- Consult or use experts when necessary, but don't commission expensive research studies and assessments by consultants unless essential, and if the outcomes will justify the cost. If these are going to confirm the obvious or what you already know, or if there are easier and cheaper ways, don't waste the time and money.
- If you do commission studies, put assessments out to tender and follow proper, open tendering procedures, to get alternative proposals and competitive prices.
- If you lack the expertise to assess the different proposals submitted, engage experts and or stakeholder representatives with expertise to assist you in assessing proposals.

METHODS AND TOOLS FOR ASSESSING THE IMPACTS OF PROPOSALS

SWOT

(For guidelines on how to conduct a SWOT Analysis, see Appendix D, page 67.)

SEA

A Strategic Environmental Assessment (SEA) evaluates the environmental impacts of strategic, complex and long-term interventions. A SEA should support effective overall sustainable development planning and policy development. (See the *SymbioCity* Approach handbook, page 127 for more on SEAs).

EIA

An Environmental Impact Assessment (EIA) is an assessment of the possible impacts that a proposed project may have on the environment, including social and economic aspects. The purpose of an EIA is to inform decisions regarding whether or not to proceed with an intervention, or determine how it needs to be modified to avoid or reduce negative environmental impacts. (See the *SymbioCity* Approach handbook, page 126 for more on EIAs).

EXAMPLE

»SOCIO-CULTURAL IMPACT ASSESSMENT OF A HYDROPOWER SCHEME«

In 2011, a Social Impact Assessment was done to complete an Environmental Impact Assessment for a Pumped Storage Power Project in a particular area. Two important issues required deeper analysis – threatened cultural sites and connectivity between communities. The EIA objectives were

- to update the database and elaborate on previous surveys of cultural sites
- to assess the importance of the various sites and the significance of the impact
- to develop mitigation and management plans
- to describe and elaborate on connections between communities in the reservoir areas, and how they would be affected by the project.

threatened cultural sites and connectivity between communities

Secondary data was collected by reviewing previous studies. Primary data was collected by field investigation in the project areas, including in-depth interviews with affected stakeholders such as village headmen, informal and religious leaders, local communities, schools, and relevant external stakeholders, e.g. archeological institutions and the national cultural heritage department.

Physical and cultural resource studies included movable and immoveable objects, sites, structures, groups of structures, natural features and landscapes that have archeological, paleontological, historical, architectural, religious, and aesthetic importance. Other physical resources included more recent graves, and sacred trees, rocks, temples and other historical buildings.

objects with archeological, paleontological, historical, architectural, religious, and aesthetic importance

Connectivity issues studied included public interest in using the project bridge to access other areas, alternative routes that could be used once the reservoir was filled, the infrastructure needed for alternative routes, and the impact of the loss of the reservoir area.

public interest in using the project infrastructure

The impact assessment found numerous issues that were of great importance for local communities and which needed mitigation measures. These include public cemeteries and old graves that were sacred for villagers. A dialogue on how to minimise the impact of construction was thus needed.

the impact assessment

Other important threatened cultural resources were a local Mosque and Madrasa that are important religious and educational facilities for Muslims in surrounding villages. A land acquisition and relocation process was thus initiated, as there was a high risk of serious discontent in local communities.

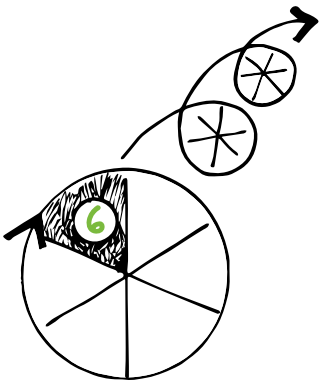
The project was initiated at the beginning of the 1990s, and the first generator will be commissioned in 2016. This is clearly a major project, which will make a significant contribution to the regional energy supply, but also have significant impacts on the surrounding environment and communities.

clearly a major project

KEY TERMS IN STEP 5

EIA	Environmental Impact Assessment – A study to determine and prevent or reduce possible harmful effects of a development project on the environment
SEA	Strategic Environmental Assessment – A study to determine the possible long-term harmful effects of a large-scale and longer-term development intervention on the environment
beneficiaries	people and groups of people that will benefit from a project

STEP 6
DEVELOPING A STRATEGY FOR IMPLEMENTATION



WHY THIS STEP?

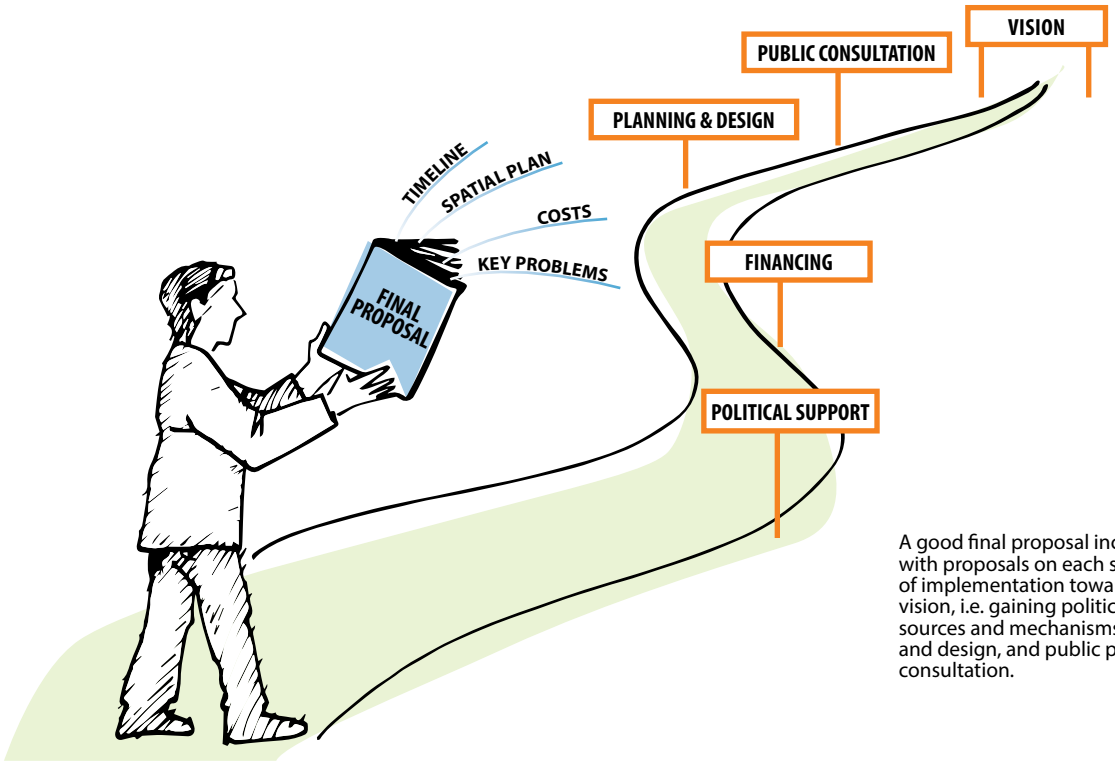
If you have a good strategy for implementation, the work conducted in the previous steps will more likely result in tangible change. A strategy is important as it forms the basis for formal approval, is a shared and agreed document, and will serve to guide management and implementation of proposed interventions.

The last step in the *SymbioCity* process involves finalising the proposals developed and assessed in Steps 4 and 5, and developing a strategy for implementation and follow-up. This step is important, as it moves from analysis and planning to action.

DEVELOPING A FINAL PROPOSAL

It is now time to develop a final proposal, based on previous steps and the outcomes of any assessments. If an intervention is concerned with a whole city or town, this proposal may be an overall integrated, sustainable development plan, which could include

- An introduction – a brief overview of why and how the plan was developed, including stakeholder and public participation processes
- The shared vision for sustainable development
- An overview of key problems, needs and challenges from the diagnosis
- An overall spatial plan and related sector plans with planned interventions and projects, outcomes and key indicators, and showing how they will be integrated to achieve synergies
- An estimated implementation timeline, with proposed short, medium and long-term interventions and main projects
- Estimated costs and proposed financing mechanisms
- Appendices and references – supporting documents, maps, GIS, etc.



A good final proposal includes sections with proposals on each stage of the path of implementation towards realising the vision, i.e. gaining political support, financing sources and mechanisms, project planning and design, and public participation and consultation.

The final draft proposal can now be considered by stakeholders, e.g. via interactive sessions and workshops, and by inviting written comments and submissions, towards a final draft that includes input from stakeholders, including citizens. Stakeholder participation is important, as the final plan should enjoy wide support, as the strategic 'road map' for the journey of realising the long-term vision of sustainability.

If a review or planning intervention focuses on a specific area or sector, adapt the above guidelines accordingly. You will also need to take account of existing plans and legally required planning frameworks when finalising your sustainable development plan.

You may also need to put your plan or parts of it into specific formats, e.g. a 'log frame', required by many donors as a format for summarising funding proposals. This is quite possible, as you should have all the required content, which just needs to be rearranged. The *SymbioCity* Approach handbook, Chapter 6, shows how the *SymbioCity* process and log frame format can be integrated.

An overall urban plan, sector plan or larger urban area development plan often has a number of implementation phases. These usually include a pilot phase, which is evaluated before going to scale, to test solutions, identify and solve problems, and learn lessons at an early stage.

GUIDING IMPLEMENTATION

Implementation of urban sustainability plans or interventions needs to be integrated into the normal management of the organisation, but there is a danger that the initial focus on synergies and sustainability 'disappears' into different departmental 'silos', and integration and coordination become weak.

This can be avoided by maintaining the steering group, joint working groups and forums, and periodic review and replanning workshops that focus on inter-functional and systems coordination and synergies, and joint evaluation and learning.

All departments can also contribute to regular progress reports, which highlight and acknowledge effective cooperation and synergies. Such reports to stakeholders and citizens can be communicated on your website and via newsletters, preferably in summarised versions with a strong graphic component, i.e. photos, diagrams, graphs, etc.

PLANNING OF OPERATION AND MAINTENANCE

Operation and maintenance (O&M) is an ongoing need, which should be included in all project plans and budgets. The neglect of O&M has made many initially successful infrastructure projects unsustainable, or shortened their design life.

O&M includes sustained, regular performance monitoring, periodic systems assessments, and maintenance and rehabilitation to preserve and sustain the functioning of systems and infrastructure assets.

KEY ASPECTS OF A PROJECT PROPOSAL

- ➔ Introduction – the background, the need to be addressed or problem to be solved
- ➔ Vision, aim, goals / key objectives
- ➔ Intervention approach and methods
- ➔ Project organisation, including stakeholder participation
- ➔ The process, stages and time schedule
- ➔ The budget
- ➔ Supporting documents, e.g. survey / research results, maps, partnership agreements.

ADVICE ON IMPLEMENTATION PLANNING

- > Focus on results, as well as the activities that produce them.
- > Effective process and performance management are essential to success.
- > Encourage an action learning approach, where everyone regularly reviews, evaluates and learns from what they have done, and plans to do better.
- > Encourage and facilitate open communication and cross-functional cooperation.
- > Develop a learning culture in which mistakes are valued as learning opportunities.
- > Identify and address any communication or relationship problems or conflicts.
- > Ensure effective leadership that communicates the vision and shared values and progress in realising them on an ongoing basis, and motivates participation.

Regular review and planning workshops

The frequency of joint review and planning workshops will depend on the intervention time frame. For overall city or town sustainable development interventions, it is good to have at least annual workshops, which can be aligned with, and feed into normal planning, budgeting and reporting processes.

Implementation work plans and budgets

An overall implementation plan usually includes a work plan or schedule which shows the successive stages, and when interventions and projects are planned to happen in terms of

1. the vision period – e.g. 25 years, (broad overview)
2. long-term – e.g. 10 to 12 years (overview)
3. medium-term – e.g. 3 to 5 years (strategic, but with specific projections)
4. short-term – 1 year (specific and operational work plan).

Shorter time frames and work plans fit within longer-term ones, which show less detail as the time frame lengthens. 1 and 2 above usually involve broad cost estimates, based on long-term, high-level financial modelling and scenarios, while 3 is the basis for a medium-term expenditure framework or budget projection over 3 or 5 years. This is a strategic level budget, without the detail necessary in 4, the annual budget, which requires detailed expenditure planning.

Implementation management plan

An implementation management plan could contain

- definition of structures, roles, responsibilities and accountability
- policies, principles and procedures
- internal and external processes and meetings
- communication and cooperation with internal and external stakeholders
- stakeholder and citizens' participation
- planning, budgeting and reporting processes
- monitoring and evaluation
- documentation requirements and management
- the role and contracting of consultants
- tendering procedures
- construction policies, e.g. 'green' building materials and methods.

Internal structures and cooperation diagram

You can develop a diagram of the intervention or project structures and working groups, and their links with each other, and with other municipal structures, including council, the senior management team and departments.

There will naturally be overlaps between the formal organisational structure and this network structure, e.g. functional working groups may be hosted by functional departments, but have links to and representatives from other departments, e.g. a spatial planning group should include, at very least, a transport planner and a bulk infrastructure engineer.

This map is the equivalent of an organogram, but it will look less like an abstract hierarchy of role boxes, and more like an integrated network of interacting groups. However, it has a similar purpose – to clarify who is involved and how they are related and interact, which is best shown in a graphic form.

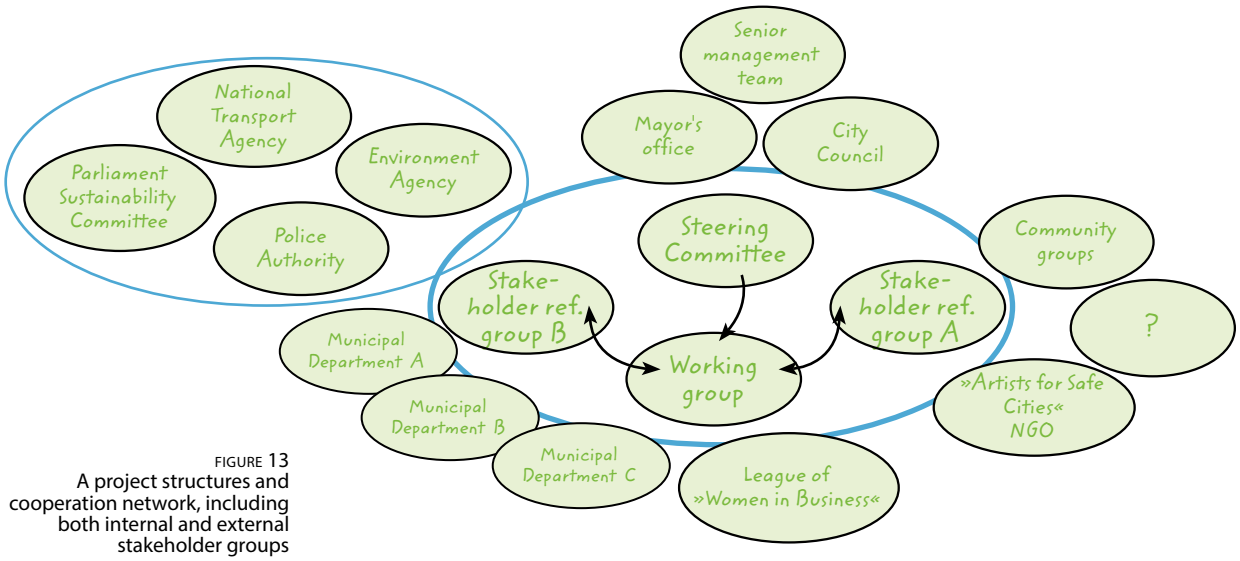


FIGURE 13
A project structures and cooperation network, including both internal and external stakeholder groups

External structures and cooperation diagram

This diagram is similar to the internal diagram above, but shows the network of external stakeholders with whom the municipality is cooperating in a *SymbioCity* process. You can put the municipality in the centre, with other stakeholders around it. A more complex version could also show key departments, plus the external stakeholders that each relates to and engages.

INTERVENTION / PROJECT SUCCESS FACTORS CHECKLIST

	Success factors	Comment
1	Leadership support / sponsorship	
2	Team leadership and management	
3	Shared vision and values	
4	Clear plans and objectives, and a focus on results	
5	Regular team meetings	
6	Appropriate team members	
7	Teamwork, cooperation and support	
8	Inter-team communication and cooperation	
9	Addressing of team and inter-team problems	
10	Effective process and performance management	
11	Clear roles and responsibilities, and accountability	
12	Realistic and updated schedules and work plans	
13	Stakeholder communication and participation	
14	Sufficient resources	
15	Good and transparent financial management and reporting	
16	Ongoing learning and performance improvement / an action learning approach	

KEY TERMS IN STEP 6

outputs	immediate and tangible results or products of plans or projects
outcomes	medium and long-term effects and consequences
strategic budget	estimate of long-term financial requirements
GIS	computer-based mapping and data information system
piloting	early implementation in order to test a proposed approach
accountability	reporting on results for which one is responsible

A. CREATING A SHARED VISION

You can use the following processes for developing a vision with a group or in a workshop.

Process options

A. Summarise each key feature of the vision in 3 to 5 words on a separate A4 or A5 card or page (use koki pens and writing that will be visible to the whole group). When everyone/all groups are ready, stick all the cards up on a wall. Group similar features together, e.g. using the different dimensions as headings.

B. Give each individual or group a box of coloured crayons and ask them to sketch or map their vision, on A3 or A4 pages (or flipchart pages for groups). Now put these up as an 'exhibition' and ask each individual or group to share and explain their picture. Don't discuss or question the different visions as they are shared - this happens in the next step of synthesising the different pictures into one.

C. You could also invite different stakeholder groups to develop their vision for the city and contribute it to the overall city visioning process, or organise a public City visions competition, e.g. for schools.

Draft your vision statement

Don't try to do this in a group, rather mandate one or two people who are good with words to craft a draft vision statement after the workshop, and then circulate it for feedback. Use the feedback to improve the draft, and consider and agree on a next final version. At this stage, you don't need the final version that will be formally adopted by council (and hopefully other stakeholders), just a working draft to guide the planning process, which may be improved during the process.

Sector visions

Each function and department can develop its own vision, as a component of the overall vision. These sub visions give more detail for a specific aspect or function, e.g. sustainable transport, energy, waste management, the built environment and housing.

Develop a mission statement

A mission statement should state the overall purpose of an organisation in one sentence. This should describe the core business in terms of results, and link to the vision.

B. FACILITATING EFFECTIVE WORKING SESSIONS

Working and discussing in groups or teams is the basic method for assessing, planning, problem solving, etc. This is based on the old saying that 'Two heads are better than one', and a few more are even better! However, too many people in a working group make it inefficient and ineffective.

A good size for a working group is between five and 10 people, though it is possible to work with 11 to 25 people in a single group. A basic method for working with larger groups (e.g. in workshops, joint working sessions, forums and conferences), is to break into sub groups at times, to enable greater participation. Then get the smaller groups to report back to the large group, and discuss the input in plenum.

Using flipcharts

In working groups of all sizes, a flipchart is an essential working tool, for brainstorming, recording key points, sketching maps, diagrams, schedules, etc. In workshops, it is useful to have a flipchart for each group, or have them work on flipchart pages on tabletops, or taped up on the walls.

The useful thing about flipcharts, as opposed to PowerPoint slides, is that you can work on them during discussions, and put a number of pages on the walls for viewing at the same time. Get different colour koki pens, coloured crayons for drawing, shading, and colour coding different elements in maps and diagrams.

Group facilitation

Working groups and especially larger groups need a facilitator or chairperson to guide the process, to ensure focused and efficient working, and completing task/s in the allocated time. They also care for the interaction and participation, so others can focus on the content.

Archetypal stages of a group process are:
1. Planning the process/agenda
2. Information sharing/picture building
3. Assessing the information/picture
4. Deciding
5. Evaluating the meeting/process.

A common problem is people wanting to jump over stages, which can result in poor decisions. (Mark Twain said (in jest) »Let's first get all the information, before we distort it.«) It is also a good practice to review and evaluate a working meeting at the end, as a way of learning to do better next time.

It is important for a working group to have regular meetings, and to document meetings. Agendas and minutes or reports of meetings link them together, and provide a record of the process and its outcomes, which can also be shared with others.

Effective working groups and inter-group processes are the heart of a successful sustainable city planning process. They are even more important in the *SymbioCity* Approach, as processes that create social synergy, as the basis for identifying and realising other synergies.

C. APPRECIATIVE INQUIRY

Appreciative Inquiry is an approach and working method for assessing any situation. It focuses on identifying assets, strengths and opportunities, in order to enhance what is positive and working well. This contrasts with a problem-oriented approach, which identifies what is not working well or is lacking.

Appreciative Inquiry encourages people to study, discuss and build on what is working, rather than trying to fix what is not working. It is based on the idea that organisations change in the direction in which they inquire. If you inquire into problems, you will keep finding problems, but if you assess what is best in a situation, you will discover more and more that is good. These discoveries can then be used to build a new future where the best becomes more common.

Appreciation includes recognition, valuing and gratitude. This word has a double meaning – recognition and enhancing value. Individuals and organisations benefit from greater appreciation. Inquiry involves exploration, discovery, questioning, investigating and researching. The spirit of inquiry involves learning and a quest for new possibilities, and requires genuine curiosity and openness to new directions, possibilities and learning.

The 4-D Cycle

Appreciative Inquiry in practice uses the following model

Discover – people talk to one another, often via structured interviews, to discover and appreciate times and situations when the community, organisation, district or city is at its best

Dream – the dream phase is often run as a large group meeting where people are encouraged to imagine and envision that the peak moments discovered in the discover phase are the norm rather than the exception

Design – a smaller task team is assigned to plan ways of realising the vision developed in the larger meeting. Different teams can take the responsibility for different parts of the vision.

Deliver – the fourth and final phase is to implement changes.

Eight guiding principles

Appreciative inquiry is informed by eight guiding principles, or essential beliefs and values regarding how we bring about change.

PRINCIPLE	SIGNIFICANCE	WHAT IT MEANS
Constructivism	Words create worlds	'Reality' is subjective rather than objective, i.e. is socially created through language and conversations
Questioning	Inquiry creates change	Inquiry is intervention. When we ask a question, we begin to create change.
Learning	What we study affects what we learn	Organisations and groups are an endless source of study and learning. What and how we study them makes a difference. It describes - even creates – the world as we know it.
Anticipation	Images inspire action	Human systems move in the direction of their images of the future. A positive and hopeful image of the future leads to positive actions and outcomes.
Positivity	Positive questions lead to positive change	Momentum for change requires positive affection and social bonding. Momentum is best generated through positive questions that amplify the positive.
Wholeness	Wholeness brings out the best	Wholeness brings out the best in people. Bringing all stakeholders together in forums stimulates creativity and builds collective capacity.
Enactment	Acting 'as if' is self-fulfilling	To really make a change, we must 'be the change we want to see.' Positive change occurs when the process used to create the change models the ideal.
Free Choice	Free choice liberates power	People perform better and are more committed when they freely choose how and what they contribute. Free choice stimulates excellence and positive change.

D. SWOT ANALYSIS

A SWOT Analysis is probably the most common tool used to assess organisations and their operating environments, e.g. as the basis for strategic planning. A SWOT can also be used to assess any intervention, programme, project, sector, district, or functional area, and in various steps in a review or planning process. However, a SWOT is often done at the beginning of a process, as an overview assessment.

SWOT stands for Strengths, Weaknesses, Opportunities and Threats. Strengths and Weaknesses are internal; Opportunities and Threats are external factors in the operating environment, e.g. political, economic, technological, social-cultural and environmental factors.

Opportunities that are taken can enhance results, while threats may diminish planned results. It is a good idea to include any significant limitations or lacks under weaknesses, and put any key constraints in the environment under threats, though they are not active threats, e.g. national legislation does not yet permit x.

A SWOT analysis is a simple way to characterise and assess the current situation, as a basis for strategic planning. It identifies key positive and negative features and issues that affect or are likely to affect the entity being considered.

Guidelines for facilitating a SWOT Analysis

A SWOT Analysis is best done by people who know the organisation or situation, e.g. leaders and stakeholder representatives who have an overview. A degree of trust is important, so that weaknesses and threats can be identified openly and honestly.

A SWOT analysis involves subjective judgements, and people may have different views on the strengths, weaknesses, opportunities and threats. However, this enables discussion to arrive at an agreed assessment.

SWOT Analysis

Internal	External
Strengths	**O**pportunities
Weaknesses	**T**hreats

Five SWOT steps

1. Define the situation being assessed and explain the SWOT format
2. Participants fill in the SWOT template individually, or small groups can do so on a flipchart. Start with Strengths and Weaknesses, and then do the Opportunities and Threats.
3. Now synthesise the individual SWOTs into a agreed common version
4. You can now prioritise the Strengths, Weaknesses, Opportunities and Threats if you wish.
5. Work with the questions in the box below, and develop action plans.

Document the agreed SWOT and action plan and share it with all group members as soon as possible.

Assessing the operating environment

Assessing the operating environment is an essential aspect of any SWOT Analysis. This can be done more thoroughly by dividing the operating environment into different sections, e.g.

- The resource environment, i.e. expertise, funding, material and physical resources etc.
- The macro-socio-economic environment, e.g. political, legal, macro-economic and cultural conditions, policies, constraints, etc.
- The beneficiary environment, e.g. community conditions and needs
- The (other) stakeholder environment, e.g. main partners or competitors

By looking at the environment from these different perspectives, you are less likely to miss any opportunities and threats.

Working with SWOT results

The following questions are now useful for working with results of a SWOT

- What strengths can be used to seize key opportunities?
- How can strengths be enhanced?
- How can weaknesses be transformed into strengths
- How can threats be seen as opportunities?
- How can threats and weaknesses be minimised?
- How can strengths be used to counter threats?
- How serious and likely are particular threats?

A SWOT Analysis is useful for getting an essential and balanced overview of any situation, and key internal and external factors that need to be addressed.

E. FORCE FIELD ANALYSIS

Force Field Analysis is commonly used to assist decision making in change management or development programmes. It provides an overview of the helping and hindering forces or factors in a situation. It can help to address resistance to change, and mobilise people's motivation and commitment to act.

In any situation there are both driving and restraining forces or factors that influence what change occurs. Helping forces push things in a positive direction, while hindering forces and factors work against positive change forces, maintaining the status quo, or making things worse.

A Force Field Analysis identifies helping forces in order to strengthen them, and hindering forces in order to reduce them. This exercise can best be done with 8 to 10 people using a flipchart, so that everyone can see the analysis as it is built up, and as a record.

STEPS

1 Agree on the situation to be assessed

Identify and define the situation to be considered, e.g. progress towards sustainability in our city.

2 Brainstorm forces

Now brainstorm all the helping forces and factors, including internal subjective or emotional forces and factors. Remember the ground rules for brainstorming – don't debate or criticise, just list what group members suggest. List the hindering forces on a flipchart. Now brainstorm hindering forces and factors.

3 Rate the strength of forces

Now rate the strength or magnitude of each force on a 1 to 5 scale (1 = very weak, 2 = weak, 3 = average, 4 = strong, 5 = very strong) draw a line under each force to show its relative strength.

4 Prioritise and summarise

Discuss the result and identify key forces that you want to strengthen or reduce. You can rank or just discuss the relative importance of each helping and hindering force, and the degree of influence you have or could have on each.

Now discuss which forces can be influenced and how. Sometimes it is easier to reduce the hindering forces than to strengthen helping forces. Also consider what new helping forces could be brought into play.

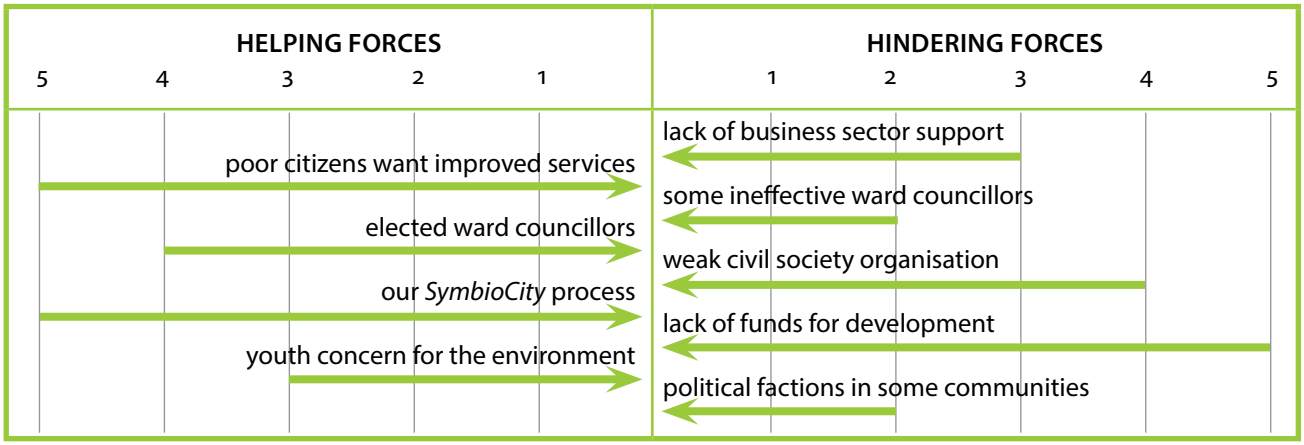
5 Review the overview and agree on the way forward

Review the result and note your conclusions and action plans, including who will do what and by when.

6 Document and report

Document the flipchart pages in a summary report. You could photograph your force field analysis and include this. Distribute the report as soon as possible to all group members and other key people who should be informed, or who need to approve the way forward.

EXAMPLE of a Force Field Analysis: Citizen's participation in the development process



F. STEEP/L ANALYSIS

STEEP(L) stands for a Social, Technological, Economic, Environmental and Political / Legal analysis of the external environment of an organisation, community or project.

Systematic analysis of the context enables positive alignment with forces in the environment, and taking advantage of external trends and changes. This increases the likelihood of success, while interventions planned without considering the external environment are more likely to fail.

A STEEP/L Analysis can be used to describe the regional setting of an urban development intervention. It is best done before a SWOT Analysis, as it describes factors without interpreting them as opportunities or threats.

The analysis can be done in three steps

1) Brainstorm the factors in the specific context.
2) Identify where more information on factors is needed.
3) Draw conclusions from the information - What does this mean for us?

The aspects below in each category can serve as a starting point for brainstorming, and you can add others, relevant to your situation.

Socio-Cultural environment

- Population growth rate and demographic (age) profile
- Population health, education and social mobility
- Employment patterns, job market freedom and attitudes to work
- Media independence, freedom of information and public opinion
- Social and cultural attitudes, norms, taboos, etc.
- Lifestyle choices and values
- Socio-Cultural changes

Technological environment

- Impact of emerging technologies
- Impact of the Internet and social media
- Research and development activities
- Green technology trends
- Skills and know-how

Economic environment

- Small and medium business environment
- Current and projected economic growth, inflation and interest rates
- Unemployment, and labour supply and costs
- Levels of disposable income and income distribution
- The impact of globalisation
- Likely changes in the economic environment

Environment and natural resources

- Water, air and soil quality
- Noise pollution
- Open space and green areas
- Waste production levels – organic, non-organic, plastic, hazardous
- Waste management and disposal systems (sanitation & solid waste)
- Energy use, by type, using a common equivalent unit
- Energy management
- Local renewable resources, resource use, management and conservation
- Local non-renewable resources, resource use and depletion rates
- Conservation of the built environment, cultural & historical structures and areas, cityscapes and heritage sites
- Public awareness of environmental issues

Political

- Government – type and stability
- Rule of law and levels of bureaucracy and corruption
- Levels of democracy, pluralism and public participation
- Capacity and commitment of leadership in relation to urban development
- Regulation and deregulation trends
- Likely changes in the political environment

Legal

- National, regional and local legal frameworks
- Independence and integrity of the judicial system
- Construction and building policy and regulation
- Social and employment legislation
- Tax policy, and trade and tariff controls
- Environmental and consumer-protection legislation

G. GRID ANALYSIS

Grid Analysis is similar to a SWOT, but has a more explicit focus on hopes for the future. The purpose of a Grid Analysis is to

- share and agree on perceptions of, and hopes for a city, district or sector.
- identify existing assets that should be cherished, future assets that should be developed, and undesirable aspects that should be addressed in the present, or prevented in future.

The results of a Grid Analysis can be used in various ways at different stages of a planning or review process, e.g.

- to identify assets
- to develop a vision, goals and objectives
- to describe preconditions for, and possible hindrances to development.

Before starting, it is crucial to specify and agree on the subject or theme for analysis.

A Grid Analysis can be done as an individual or group exercise, or a combination of the two, starting with individual reflection, and then sharing and developing a common version. It is important to give sufficient time for individual reflection and to facilitate a process that encourages free thinking and discussion.

THE GRID

The Grid consists of the four quadrants below.

	DO NOT WANT	WANT
HAVE	1	2
DO NOT HAVE	3	4

QUADRANT 1

contains things that you **don't want** but currently **have**, i.e. PROBLEMS, e.g., a polluted river, poor education, high crime rates, slums, etc.

When reviewing items in this quadrant, the following steps are useful

- **Remove**: Identify ways to get rid of each undesirable aspect, and decide on practical steps to deal with the problems.
- **Reduce**: If a problem cannot be totally removed, consider what can be done to reduce its negative impacts?
- **Convert**: Consider ways to convert undesirable items into desirable ones.

QUADRANT 2

contains things that you want and that you currently have, i.e. ASSETS and positive factors, e.g. a good library, a clean beach, social harmony, caring leadership, etc.

When reviewing items in this quadrant the following steps are useful:

- **Cherish**: Does the community appreciate and value its assets sufficiently? If not, how can this be enhanced?
- **Conserve**: Are valuable features in danger of being lost? What can the community do to preserve them?

- **Leverage**: How can the community use its assets to greatest advantage, to build a stronger community and enhance external support?
- **Share**: Can assets be made more accessible or available to others in and outside of the community? How can they be used proactively to create a positive image of the community?

QUADRANT 3
contains things that you don't want and currently don't have, i.e. THREATS, e.g. corruption, traffic jams, discrimination against minorities, etc.

When reviewing items in this quadrant, the following steps are useful:
- **Prevent**: Identify precautions to prevent threats materialising.
- **Evaluate**: Prevention may entail giving up something else of value. If this is the case, is it worth the sacrifice? Are there other ways to prevent a threat?
- **Invest**: Estimate the amount of time, money and effort needed to safeguard the community from a threat. Are these resources available?

QUADRANT 4
lists things that you want in your community but currently don't have, i.e. NEEDS, opportunities and objectives, e.g. recreation opportunities, low-cost public transport, clean drinking water, etc.

When reviewing items in this quadrant, the following steps are useful:
- **Plan**: What steps can be undertaken to meet this need?
- **Explore options**: What alternatives are there to achieve an objective?
- **Sacrifice**: Is there a need for trade-offs to attain this, i.e. giving up something to gain a greater benefit, e.g. commuting in private vehicles, in order to develop a clean, green and people-friendly city and public transport system.
- **Evaluate**: Do a cost-benefit analysis - How much time and effort will be needed to obtain this item? What potential benefits will the community gain? Is the cost worth the benefit? Will the community as a whole benefit, or only some residents?

Paired comparisons
Compare the number, significance, and type of items on
- the right (**Want**) side and the left (**Don't want**) side of the grid (comparative focus on positive vs. negative aspects)
- the top (**Have**) half and the bottom (**Don't have**) half of the grid. (comparative focus on current status and future status)
- the two diagonals (comparative inclination toward optimism or pessimism)

H. ANALYSING GENDER EQUALITY IN URBAN DEVELOPMENT PLANNING

»It is easy to identify groups that are vulnerable and to some extent victims. There you find the disabled, children, and immigrants. There is a risk that also women as a group are categorized as vulnerable.«

Professor Tora Friberg, in Arkitekten, November 2002

Professor Tora Friberg, at Linköping University, and Associate Professor Anita Larsson, at Blekinge Institute of Technology, have both spent considerable time and effort on studying and analysing issues of gender equality in urban planning.

Together they wrote the report *Att bedriva jämställdhet med kommunal översiktsplanering* (*Pursuing equality with municipal comprehensive planning)* where they elaborated a gender equality index based on ten survey questions. The purpose of the index is to compare attitudes to gender equality between municipalities and assess opportunities to practically apply a gender equality perspective in urban planning.

One of the reasons for the often relatively low awareness of gender equality issues among urban planners is, according to Tora Friberg, the fact that architecture as a scientific discipline is found in technical universities. Even though physical planning and architecture concern people, the focus is often technical, and not on human beings.

The Gender Equality Index

The ten questions in the index should be answered with YES, NO, or PARTLY, and given 0, 0.5, or 1 point. The minimum score is 0, and the maximum 10. Friberg and Larsson used the index to assess the comprehensive planning processes of 128 Swedish municipalities in the year 2000. The average score was 1.8 points, with the best score at 8 points. Using the index can serve as a basis for discussion on how to strengthen gender equality perspectives in development processes and plans.

QUESTION	YES/ PARTLY/ NO	**SCORE**
1. Is special emphasis placed on a gender equality perspective?		
2. Is special emphasis placed on issues of women's safety, and public places that are assessed as dangerous or unpleasant, especially for women?		
3. Have transport and traffic issues been assessed from a gender equality perspective?		
4. Is there a commitment to strengthen gender equality by aiming for a certain proportion of women among participating officials?		
5. Is there a commitment to strengthen gender equality perspectives by putting special attention to issues that are seen to more concern women than men?		
6. Is there a commitment to highlight gender equality by particularly promoting women citizens engagement in the planning process?		
7. Is there a pronounced ambition to highlighting gender equality issues in other ways in the planning process?		
8. Is it considered meaningful/relevant to discuss gender equality issues in relation to urban development or planning?		
9. Is gender equality paid special attention in a specific area or part of the planning document?		
10. Are gender equality issues considered in any other way than the above in this specific process or project?		
TOTAL SCORE		

Gender equality Index

The Friberg and Larsson index can be useful in analysing planning documents or processes as a whole. To gain a more detailed picture of different aspects of gender equality, and the extent that they are highlighted in documents, projects, or processes, the Swedish gender expert Fredrik Lundkvist has developed a gender equality matrix.

The basis of the model is three aspects that need to be carefully formulated

- Goals – What will be achieved?
- Problems – What is wrong today?
- Concrete action – How are goals to be achieved?

These three aspects are combined in the matrix with five main gender equality policy areas relevant for regional and local planning

- Description of gender equality at a general level
- Equal distribution of power and influence
- Economic equality between the sexes
- Equal distribution of unpaid care and household work
- Opportunities in terms of physical integrity, and ending of gender based violence.

If gender issues are thoroughly addressed, it is then possible to describe a problem definition, a goal and what action can be taken in each of the five policy areas.

	PROBLEM DEFINITION	GOAL	ACTION
Description of gender equality at a general level			
Distribution of power and influence			
Economic equality between the sexes			
Distribution of unpaid work and household work			
Opportunities in terms of physical integrity			

I. THE 3R METHOD FOR GENDER ANALYSIS

The 3R method is used by many of Sweden's municipalities to analyse and review municipal activities from a gender perspective. It provides a general picture of how the operation is currently run and financed, and changes required to meet the differing needs of women and men. The survey seeks to answer the question: Who gets what, and on what terms? The analysis answers the question: How can we improve matters?

The idea is that the gender patterns that are detected will form the basis for a discussion with those running the organisation. How can we formulate a vision and new objectives for our work when we look at our organisation from a gender equality perspective? What must change if we are to achieve the objectives?

The3R method is most suitable when there is a clearly defined problem, or area of attention. In relation to sustainable urban development the method could be used to analyse the planning process itself, and who has influence and in what way? How are different interests and needs balanced? It could also be used to analyse a specific dimension of urban development, e.g. safety in public places or usage of public transport.

The three R's in the instrument are:

R1 – Representation: How many men and how many women? This question should be asked throughout the organisation, at executive level, among staff, and among users of goods and services. Count the heads! What is the gender balance among those who take the decisions, those who work with them, and those who are exposed to them.

R2 – Resources: How are the organisation's resources – money, space and time – distributed between men and women? These questions should answer what women and men get out of the organisation and how much of the resources they have to put in. In regards to municipal services, for example how much of the resources - money/space/time – are spent on activities used by women/men. The results of the resources review should be related to the representation review.

R3 – Realia *: How come representation and resource distribution are divided between the sexes the way they are? What are the real and imaginary barriers or support structures for women and men in the specified area of analysis? This review should give an indication of how women and men are viewed in the organisation, and the normative ways in which men and women are valued. For example, how come more resources are put into recreational activities used by boys than those used by girls? What is the reason?

* Realia – objects or activities used to relate classroom teaching to real life, especially that of people studied

3 Realia answers the question:
What are the reasons for the gender distribution of representation and resource allocation? On what terms are women and men able to influence the design and use of the activity concerned? Representation and resources are about quantity. Who has access to what? 'Realia' are the qualitative substance of an activity. The idea is that patterns will become clear through a survey of the first two Rs – patterns that will then lead on to questions about why things are the way they are.

FURTHER READING AND RESOURCES

A Convenient Truth: Urban Solutions from Curitiba, Brazil
Documentary film directed by Giovanni Vaz Del Bello, 2006

4 big leaps and 20 small steps – Conceptual guidelines on sustainable spatial planning
Ranhagen Ulf, 2012, Swedish Energy Agency

Get Started, move forward! – Leadership in sustainable urban development – a guide for decision makers
SKL International, 2012 (on www.sklinternational.se/publications)

Sustainable urban development in Sweden
Lundström MJ, Fredriksson C & Witzell J (editors), 2013, Swedish Society for Town and Country Planning.

The SymbioCity Approach: A Conceptual Framework for Sustainable Urban Development,
SKL International, 2012 (on www.sklinternational.se/publications)

The Urban Food Revolution. Changing the Way We Feed Cities
Ladner P, New Society Publishers Canada, 2011

Tools for Integrated Sustainability Management in Cities and Towns
Uppsala Center for Sustainable Development, 2008

Urban Planning for City Leaders
UN-Habitat, 2012

WEBSITES

Forum for social innovation Sweden
http://socialinnovation.se/en/

Open source scenario planning tools
http://scenarioplanningtools.org/

SKL International
www.sklinternational.se

The *SymbioCity* Website
www.symbiocity.org

UN Habitat
www.unhabitat.org

World Urban Campaign
www.worldurbancampaign.org

This ***SymbioCity* Process Guide** offers practical advice, guidelines and methods for assessing and planning inclusive and sustainable urban development processes that deliver results. It is based on substantial international experience in using the six-step process of the *SymbioCity* Approach in different contexts.

The *SymbioCity* Approach applies a multi-dimensional, multi-functional and multi-stakeholder perspective to urban development. It integrates spatial, environmental, socio-cultural, economic, urban systems and institutional dimensions, to achieve synergies which enhance urban sustainability and resilience.

Key perspectives emphasised in the guide include
- an integrated systems approach to urban development
- ensuring broad stakeholder involvement and ownership
- assessing assets and opportunities, not only problems
- poverty alleviation and socio-economic well-being for all
- integrating gender equality throughout the process.

The ***SymbioCity* Process Guide** is the fourth in a series of SKL International *SymbioCity* publications, the others being
- The *SymbioCity* Approach – A conceptual framework for sustainable urban development (2012)
- Developing Sustainable Cities in Sweden (2012)
- Get started, move forward! – Leadership in sustainable urban development (2013).

These handbooks are available at www.symbiocity.org

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