



Guideline for preparation of a CircUse training course in partner countries

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1. Introduction

The aim of this document is to promote the idea of circular flow land use management (CircUse) through the implementation of training courses in different EU member states. Within this document the reader will find some help to prepare a CircUse training course. The basis of this description refers to a "pilot trainings course" which was held in May 2011 in Baernbach (Austria). The name of the pilot trainings course was "*Land using of tomorrow in the region of Voitsberg*".¹

This guideline contains training course materials which are separated in different training modules. These modules will include strategic and instrumental aspects of a circular flow land use management in the fields of urban and regional planning, soil and land use information, cooperation (e.g. municipalities, public and private partners), funding programs and schemes and economic incentives.

The curricula has to be adapted for each CircUse country by integration of aspects of policy framework, of countries and regions general grade and experience in the field of land use management, the situation of land consumption and the schedule of responsibilities for tasks of land use planning and land use decision making between all relevant stakeholders. It is important to remark that these several aspects are dependent from the relevant urban region or municipality and therefore not directly transferable from one to another EU member state. The adaption of the course material should be implemented on municipal or regional level! However, the course material will have a transnational character since it will be able to be transferred and used as a training support in other regions and also in other projects concerning brownfields, greyfields and greenfields management in a sustainable way.

1.1. How to read this document?

The following points show how this guideline is structured.

- ▶ chapter 2 describes tasks and organisation of a pilot training course (e.g. time schedule, participants, agenda).
- ▶ chapter 3 is divided in 6 subchapters according to the modules of the CircUse training workshop (please see chapter 3.1 to 3.6).

¹ Please read the following additional information: 2.4.1 Results of the pilot trainings course in Baernbach and http://www.circuse.eu/index.php?option=com_content&view=article&id=13&5dbab8e86df0b4b3a1f47bd7a00df032=13f28f7b095557e44fe9075d5a08640 (3. June 2011).





- ▶ modules described in chapter 3.1 to 3.6 consist of text like an introduction in the issue, the theoretical inputs and examples from the praxis.
- ▶ modules described in chapter 3.1 to 3.6 are the basis for the hand outs for the training course.
- ▶ modules described in chapter 3.1 to 3.6 are the basis for the presentations of the training course.
- ▶ modules described in chapter 3.1 to 3.6 can mostly directly used by interested groups but has to be adapted on local level. Therefore the text has partly *cursive* marked words in brackets which shows were adaption is needed respectively possible. For example: *(insert your country/region/city)*.
- ▶ Some module described in chapter 3.1 to 3.6 present examples which were used at the pilot trainings course in Baernbach and can be used as a template. These adaptable proposals are marked cursive and you will find also examples in the Annex of the guideline. *Example: Pilot training course example to land consumption in Austria*

However, the information presented in this guideline helps you to implement a “CircUse Trainings course” in your country but you have to adapt and optimise it referring to you national or regional purposes.

1.2. Overview training course modules

The training course materials consist of the following six main modules.

Module 1: Land use impact - Problem analysis and interactions

Module 2: CircUse - Principle, aims and strategy

Module 3: Pilot municipality - Land potentials and development scenarios

Module 4: Stakeholders of CircUse

Module 5: CircUse instruments

Module 6: CircUse action plans

The following chapters are structured according to the course materials and represent the working material for the development and implementation of a CircUse trainings course through the partner countries. Each chapter refer to one module.



2. Organisation of a training course

For the organisation it is important to start in an early stadium with the planning. It should be started 5 month before the fixed date of the training course. The following **time schedule** is recommended:

- First month: Fix the place and date for the training course. Please consider a good accessibility of the venue.
- Second month: First contact of the relevant stakeholders in the region (phone and mail).
- Third to fourth month: Planning the agenda, invitation to the workshop and preparation of the hand outs and the slides for presentation (see the following chapter 3). Please repeat contact to relevant stakeholder.
- Fifth month: Realisation of the workshop

Relevant **stakeholders** on the regional level vary from region to region, but you can identify them in the following groups:

- ▶ land use planners and environmental experts in municipalities and regions,
- ▶ decision makers on a municipal and regional level (in administration, as land owner and developer),
- ▶ other interested expert audience.

It is important to include decision makers and responsible stakeholders for the relevant issues (see introduction).

The **agenda** could be structured as follows:

First day

09:00 - 09:30	<i>Welcome and introduction (incl. round the table)</i>
09:30 – 10:30	<i>Module 1: Problem analysis and interaction – status quo and outlook</i>
10:30 – 11:15	<i>Module 2: Principle, policy- and strategy approach of CircUse</i>
11:15 – 11:45	<i>Module 3: Model municipality: Land potentials and development scenario</i>
11:45 – 12:30	<i>Lunch</i>

12:30 – 13:30	<i>leaded excursion through ..(insert City): Development- and land potentials in.....(insert City)..</i>
13:30 – 14:30	<i>Continue of Module 3: Model municipality: Land potentials and development scenario</i>
14:30 – 15:15	<i>Module 4: Actors of CircUse</i>
15:15 – 17:00	<i>Module 5: CircUse instruments</i>
<i>Second day</i>	
09:00 - 09:30	<i>Feedback day 1</i>
09:30 – 12:30	<i>Module 6: Action plans for the(insert City or region)..</i> <ul style="list-style-type: none">• <i>Development of action plans</i>• <i>Presentation of results</i>
12:30 - 13:00	<i>Feedback</i>

3. Preparation of modules for the training course

3.1. Land consumption – problem analysis and interactions (Module 1)

3.1.1. Introduction of module 1

Aims of this training module 1 are the following:

- ▶ introduction in the issue of circular flow land use management
- ▶ general sensitisation referring to problems with land take development
- ▶ identification of interdependency and interdisciplinary of problems of uncontrolled land take

Contents of this trainings module 1 are the following:

- ▶ land consumption in the relevant country (e.g. brownfields: inventory and potentials, settlement development and follow-up costs for infrastructure)

- ▶ objectives of the national sustainable strategy (if existing) or other relevant political documents of the relevant country
- ▶ current situation of the state, region or city
- ▶ outcome and results of land consumption in the last decades (ecological, social and urban development problems)

In the following sub chapters you will find the contents for the preparation of training module 1.

3.1.2. Land consumption in.....(*insert your country*)

Land - in a general sense - cannot be consumed. More explicit formulated the term "land consumption" means immediate and continuous loss of biological productive soil through building development and sealing for settlement and traffic purposes. Other reasons are intensive recovery uses for people, mining, landfills, power plants and other intensive uses. Land consumption in a wider sense is also visible in an agrar and forestry economic of primary productions. Soil which is sealed with layers of impermeable materials (e.g. asphalt, concrete) or which is separated from the atmosphere through immediate buildings.

There are some factors influencing land consumption and settlement patterns like e.g.

- ▶ demographic development
- ▶ economic development of the region
- ▶ ecological circumstances in the region
- ▶ price of estates

To introduce and to sensitise the participants of the training course information to the land consumption in your country and in the region it is helpful to demonstrate the importance of the issue. In the Annex 4.1 you will find an example from Austria.

a. Abandoned land – status and potentials

In the year.. (*insert year*).. the amount of abandoned land of former industrial and commercial used areas in.. (*insert country*)... has been estimated according to the study of...(*insert study*)...by... (*insert space e.g. 130 km²*). Parts of the space are going back in usage but every day new abandoned industrial and commercial of around.. (*insert space e.g. 30.000 m²*).. will accrue. The space was analysed according to the location and actual requirements. Results shows that around..(*insert result e.g. 20 percent*).. of the yearly requirement of new building areas could covered by revitalisation of abandoned land. Around ...(*insert amount e.g. 85 percent*).. of the space are not contaminated and only

by...(insert amount e.g. 15 percent)..it is suspicious. Only by ...(insert amount e.g. 2-3 percent)...a decontamination is needed.

b. Costs for development of settlement and infrastructure

Planning, preparing land for building and concomitant planning measures incur considerable costs. The nature and extent of the costs depend on the respective development investment and the standard of development. Costs are incurred in the following areas:

- ▶ Inner development: The level of site development costs is dependent on the share of the development land in relation to the building area as a whole (the sum of all building sites including pertinent land used for transport, green areas and expanses of water). The more expansive and less densely built-up the area is, the larger the share of the development land. Inner development includes transport facilities, road drainage systems, street lighting as well as public green spaces and noise mitigation barriers.
- ▶ External development: New building sites must be connected to existing areas of the community and to existing transport infrastructures and pipeline infrastructures. This can sometimes necessitate significant structural modifications beyond the actual area of new construction. The location of the new building site in relation to community borders and the size of the area of new development are the primary factors in determining the level of the costs such measures will incur.
- ▶ Costs for compensation measures: The granting of zoning permits for new development sites often entails encroaching upon nature and countryside; this encroachment must be offset (e.g. via renaturalisation measures, use expansion, reforestation etc.). The extent of the costs for such measures depends primarily on the endowment level and the quality of the measures.
- ▶ Planning and coordination costs: Apart from the direct costs linked to planning the building sites, there are additional process costs (planning preparation, project coordination, participation processes, expert opinions etc.).

The demand for settlement development planning that is sustainable and meets demographic and cross-generational cause makes long-term follow-up costs of land development an "issue of the future" for cities, municipalities and regions. In the future, the costs and benefits of zoning land for development should receive greater attention in the context of site-related planning and decision making while an increasing emphasis is put on the long-term consequences of zoning, including, among other things, technical and social infrastructure.

The income system of the municipalities in...(insert country)... is oriented on the ...(insert examples e.g. inhabitants)... and is important for action possibilities on local level. Therefore municipalities are often in a competition situation among each other and competing for inhabitants esp. young families. An instrument which support this development is the ...(insert example e.g. allocation from the municipal financial compensation or income tax). The demographic change in many regions will support the development. The used instrument for the acquisition of families is often...(insert example e.g. designation of development areas for house buildings)... for one or two family houses. Within this development also new infrastructure is needed or the extension of existing infrastructure. In general social as well as technical infrastructure is affected.

c. Current and future development of land consumption in.....(insert your country)

- ▶ New development areas are mostly developed in rural regions and there not in central places and away from local traffic stations.
- ▶ The population forecast to the year ...(insert year and study)...showing that there are ...(insert result e.g. not many growing areas).....
- ▶ In the last years the population density of inner cities ...(insert result e.g. was decline)... and in outskirts ...(insert result e.g. the population was growing)... Typical examples are the regions ...(insert examples e.g. Salzburg, Graz)..- ▶ The growing of land use for settlements purposes leads to a reduction of density, urban sprawl and fragmentation of landscape.
- ▶ In many regions in ...(insert country).. is a high demand ...(insert result e.g. homes)..., on the other hand in inner area of cities and villages there are many ...(insert result e.g. empty houses or inhabited by only one person)... This results in desolation, reduction of density or to the loss of functions in centres and simultaneous growing of surrounding built-up areas.

3.1.3. Objectives of the (...insert your country) national strategy (...sustainable....or other relevant...) strategy

The national strategy ...(insert name).. of ...(insert country).. defines the ...(insert result e.g. protection of natural areas...or ecosystems...land use....sustainable regional development)... In this interrelation is the reduction of ...(insert issue e.g. sealed ares).. of an amount of ...(insert result e.g.)..intended.

3.1.4. The situation in the county... *(please insert your county)* and in the region ... *(please insert your region or city)*

a. Regional population forecast

In the ...*(insert year e.g. 2010)*.. the region had ...*(insert population)*.. inhabitants. The demographic tendencies in the last years were ...*(insert result)*.. According to the population forecast of ...*(insert source)*.. the region will have in the year ...*(insert year e.g. 2030)*.. ...*(insert results e.g. 10 percent less inhabitants)*.....

b. Age structure

It can be expected that the region of ...*(insert name of the region)*.. will be confronted by the year ...*(insert year)*..with ...*(insert result e.g. strong aging of the population)*. Even when the outlook is for the complete region the results indicates a future trend.

c. Existence of abandon land and building sites

In the year.. *(insert year)*.. the amount of abandoned land of former industrial and commercial used areas in.. *(insert region e.g. Voitsberg)*... estimated according to the study of...*(insert study)*...by... *(insert space e.g. 45.000 m²)*.

3.1.5. Consequences of land consumption

In a densely populated country like .. *(insert country)*.. is the use of land a risk for .. *(insert risks e.g. biological diversity and cultivated landscape)*..as well as on a long term perspective for the life quality of wider classes of the population. Obviously is the interdependency between land use and urban sprawl with climate change, flood water protection, traffic development and energy consumption. Furthermore the resource soil is getting more and more exposed by settlements and land consumption for biomass production and the production of high qualitative food and feed stuff.

Important is furthermore – beside social and ecological effects – the overall economic impacts concerning of the current phenomenon of urban sprawl. In the following the ecological problems will described.

a. Ecological consequences

- ▶ Land and greenfield lose their functions because of sealing
- ▶ Fertile soil and agricultural land for producing food or renewable energy can be lost.
- ▶ The landscape will separated through traffic ways like streets. Biotopes for animals and plants will separated and migration pathways interrupted as well as activity radius of animals disturbed. These facts results in a loss of living space.

- ▶ The microclimate will be affected. Built land is heating land near air layers up and reduces the air exchange and therefore the regional air movement.
- ▶ Sealed soils lose their functions like storage of groundwater and cleaning of water. The hydrologic balance will be affected and the risk of flood water events will rise.
- ▶ Recreational areas which are near to settlements will be affected or lost. People need long distances to find recreational areas.
- ▶ Additional traffic will arise due of longer ways, which leads to noise, damages climate and produces unhealthily emissions.

b. Economic consequences

- ▶ In a medium and long term perspective costs will rise for the preservation, maintenance or adaption of not required or underused infrastructure e.g. net for waste water or water supply, local public transport, schools.
- ▶ In a medium and long term perspective costs will accrue due to construction of infrastructure for new development areas.
- ▶ The increasing vacancy of buildings and constructions leads to increasing costs for maintenance.
- ▶ The individual costs for the maintenance and the use of one, two or more cars (each family) will rise.

Here you will find a best practice example:

Best Practice: Infrastructure cost calculator

The county Niederösterreich has developed an infrastructure cost calculator (Niederösterreichischer Infrastrukturkostenkalkulator (NIKK)). The NIKK should help the municipalities by the calculation of longterm effects of the development of bulding land. The focus is on infrastructure costs and tax income. The calculation bases on experienced data which was collected in Niederösterreich on the one hand and on the other hand of parameter which the user has to insert. The instrument compares different locations and gives a first estimation about receipts and expenditures. The instrument is actually in a test phase which will end in 2011.



c. Consequences for social and urban development

- ▶ The demographic change and new buildings in rural regions lead to a loss of inhabitants in traditional grown city areas and city centres.
- ▶ The concentration of the commerce or shopping malls on greenfields leads to a decline of supply units in the city centre.
- ▶ Growing desolation in inner cities due of vacancy in apartments, houses, shops and industry. It could result in social uncertainties.
- ▶ Distance between living, work, shopping, and free time areas grow due to the increasing separation of these operational areas. The expenditure of time and costs for the daily mobility increase.
- ▶ Problems of accessibility for specific population groups e.g. children, older people, households without car will increase.

3.2.Circular flow land use management – Principle, objectives and strategy (Module 2)

3.2.1. Introduction of module 2

Aims of training module 2 are the following:

- ▶ understanding of the methodical approach of circular flow land use management
- ▶ clarification of terms referring to the CircUse method
- ▶ additional value of CircUse to conventionally planning traditions

Content of training module 2 are the following:

- ▶ principle of circular flow land use management
- ▶ objectives of circular flow land use management
- ▶ strategy of circular flow land use management
- ▶ scopers of action of circular flow land use management

3.2.2. Principle of Circular flow land use management

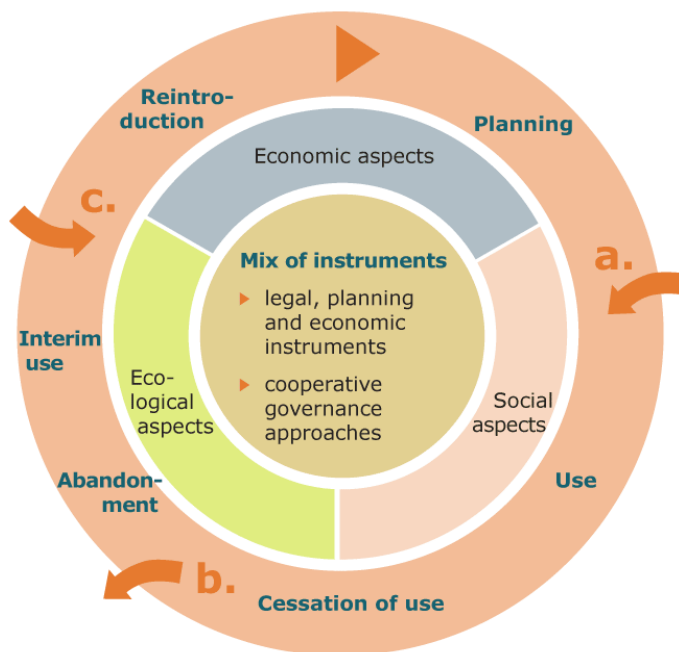
Similarly to the recycling based principles which have become commonplace in recent years in areas such as waste- and water management, "circular flow land use management" should become an established policy in sustainable land utilisation. Material cycles serve as a model for circular land use management: the constructed city is understood as a system



with a structural makeup which is subject to various usage phases and where, in certain instances entire districts and industrial areas are dismantled and made suitable for subsequent use, whereby the total area of land used should remain unchanged. Structures no longer fit for reuse are demolished or renaturalised; infill measures are implemented in areas with high settlement pressure. The idea of a “circular” of use thus seizes upon the notion of a cycle of the allocation of building land development, use, abandonment and reuse.

A strategy of this nature primarily and systematically seeks to exploit the potential to develop existing building sites and reuse derelict land. It focuses solely on internal development (recycling abandoned sites, higher density development, infill development, multiple use, etc.). The entire use cycle, from planning to utilization, disuse, dereliction, and building and land recovery form the core of the strategy. The ultimate aim is dynamic site preservation. In an ideal scenario this vision would be realized if only land which is currently in use were utilized for new settlement initiatives. Zoning small areas of new land for development is not categorically ruled out, assuming abandoned sites are being reused in other areas. Circular land use management, therefore, aims to minimize rezoning of “green belt” land (for development) and activate existing building land, including, among other options, derelict land, gaps between buildings and exploiting possibilities for infill development.

Figure 1: Circular flow land use management: phases, potentials and instruments



- a. Zoning new "greenfields" (to minimize)
- b. Rejection of land not suitable for subsequent use
- c. Activating land potentials (to strengthen)
 - ▶ brownfields (industrial, commercial, military)
 - ▶ gaps between buildings in internal areas
 - ▶ urban renewal sites
 - ▶ sites under going planning

Source: German Institute of Urban Affairs (Difu 2005).

Circular flow land use management is an open system. Abandoned land without use potential will release the cycle – and therefore it also release the settlement- and traffic area statistics. However, it is not impossible that land will be developed, if the demand of available stock cannot be covered. Circular flow land use management focuses on a systematic consumption of potentials of the stock development and the reuse of brownfields. Furthermore the principle follows the idea of a consequent inner development (brownfield recycling, growing the density, multiple use...). Both ecological and economic interests can be considered.

From the ecological view circular flow land use management means, that only brownfields or renaturalised brownfield can be required for new uses. Herewith is the ecological equality of the "lost" and the "won" land to aspire. From the economic view circular flow land use management means, that the use of sites will realised at areas where it deliver the highest benefits – this by a constant overall use of land. This could also include the use of "new" land, when it is compensated adequate on another place. Economic effectiveness and economic efficiency are working hand in hand. Effects of circular flow land use management are e.g. optimised efficiency by the land use, stabilisation of settlement density and the avoidance of bad investments in oversized settlement infrastructures – because of the use of existing settlement areas and infrastructures.

In practice there is often the problem that needs or wishes of e.g. investors are not fitting together with available brownfields. Reasons are often costs for clean-up of polluted sites, inadequate chronological coordination of the availability of the land and open questions concerning the finance of revitalisation costs.

Strategies to support circular flow land use management are needed to face the anymore high demand on land. Only if different instruments work together it is possible to achieve a reduction of land take.

3.2.3. Objectives of Circular flow land use management

Political objectives with a focus on Circular flow land use management should support both following aspects:

- ▶ Quality management: protection of spatial areas through inner development as well as rehabilitation of already used areas (e.g. settlement),
- ▶ Restrictive land steering: avoidance of the usage of new land.

Both aspects are linked, because the objectives are complement together: absolute reduction of new land use on the one hand and on the other hand qualitative objectives regarding the inner development and rehabilitation of cities.

In the year *...(insert year e.g. 2005)..* the *...(insert country)..* has published the *...(insert strategy e.g. national sustainability strategy)..* which contain quantitative as well as qualitative objectives for a sustainable use of land:

- ▶ Reduction of the yearly land take of *...(insert amount e.g. 90 percent)* by *...(insert year 2011)*.
- ▶ Definition of binding landscape concepts by the *...(insert year)*.
- ▶ Avoidance of uncontrolled expansion of cities in rural areas.
- ▶ Reduction of land use through reduction of excess supply of building land, freezing of building land reserves, active building land policy of the public, fostering the redevelopment of old buildings, support of land friendly construction forms and the recycling of land.
- ▶ Foster density on a small scale basis through the principle of "peripheral concentration".
- ▶ Establishment of a strong identification with the region, to avoid emigration out of structural underdeveloped regions.

These qualitative and quantitative objectives can only be reached by a new "way of thinking" in the land use policy and at the same time by support/development of "intelligent" instruments.

The necessity of circular flow management is also driven by economic efficiency aspects. It is important to avoid cost producing underused or non-used infrastructure. The demographic change in many regions in Europe leads to an economic and structural change which has to be considered.

However, in general the countries have to foster the rehabilitation of existing settlement structures, this for the background of energy policy aspects (e.g. climate change). It is

reasonable to use directly instruments of circular flow land use management to achieve ecological and economic benefits.

3.2.4. Strategy of Circular flow land use management

Circular flow land use management is a strategic policy approach with a long term perspective. Based on the principle of Circular flow land use management it is possible to pick up ideas of the debate concerning sustainability and to transform these on land use issues. The strategy of circular flow land use management has to be integrated because only the:

- ▶ integration of all relevant stakeholders and the consideration of their specific incentive- and reaction pattern,
- ▶ combination of incentive adequate instruments for steering the supply- and demand of land markets,
- ▶ combination of decentralise and central steering instruments as well as
- ▶ the consideration of city- or region specific interdependencies,

will enable a practical implementation of circular flow land use management. Circular flow land use management in the same time is a management approach for the overall region, which consider the bundling and combination of relevant measures to utilise potentials of existing buildings and the reuse of brownfields.

Circular flow land use management is more than recycling of land. The strategic approach of circular flow land use management includes the management of existing buildings, reuse of brownfields, mobilisation of building areas, qualifying of the settlement structures as well as the interim use and deconstruction of land. More specific the circular flow land use management follows the strategic elements which are important for an action oriented implementation:

- ▶ systematic recording, registration and monitoring of existing and future land potentials,
- ▶ systematic comparison of potentials with actual and estimated demand for building land,
- ▶ steering of land use by higher planning level by determination of binding aims for land take as well as the of quality of land-use,
- ▶ co-operation in the municipalities, between the municipalities and furthermore in city regions as well as between public and private stakeholders for steering of quantity and quality of land use or for location search.

- ▶ mechanisms of compensation of benefits and costs with respect to zoning and abandonment of zoning within the city region.

3.2.5. Scope of actions in the field of circular flow land use management

Circular flow land use management needs an integrated and therefore a comprehensive policy- and action oriented procedure. This integrative approach leads to an implicit instrument use (instrument mix). The following action areas have to be considered:

- ▶ **Information:** all instruments of information are positioned to avoid wrong decisions of the stakeholders of circular flow land use management. All relevant land data are transparent e.g. brownfields, gap between buildings, building area register, property pass, information of soil quality, etc. Further complement elements are: awareness building instruments, the preparation of best practice examples and inter municipal competitions to circular flow land use management.
- ▶ **Planning:** planning contains formal as well as informal aspects, which means also urban development and restructuring concepts, quarter- and location oriented concepts. This collects local instruments like the land development plan or regional planning like *...(insert planning instruments)*.
- ▶ **Cooperation:** cooperation means institutional, formal cooperation e.g. in a collective legal entity as well as informal cooperation like coordination meetings. Cooperation includes also cooperative instruments between public institutions e.g. inter municipal industrial real estates, also public-private-partnerships for mixed-economy real estate development enterprises.
- ▶ **Organisation/Management:** this action field contain organisationally instruments e.g. development of regional or administration internally function unit or working groups for circular flow land use management, the aggregation of administrative proceedings or different personal competences.
- ▶ **Economic incentives, budgets and investments:** This contains existing support programmes of the country, county as well as on the regional and municipal level (e.g. public land property funds). Focus of the implementation of new economic instruments or the optimisation of existing instruments is among others the allocation of a municipal financial compensation for inner development measures, a reform of the property tax inquiry, the trade of land certificates or dues for new land designation. In *...(insert country)..* and in particular in *...(insert county)..* the following economic incentives exists:
 - ▶ *...(insert example e.g. inner development supported by the residential house fund)..*

- ▶ *...(insert example e.g. service devices for investors to support the reuse of brownfields)..*
- ▶ **Marketing:** active marketing strategies for the inner development (e.g. target oriented marketing concepts, provision of amenities like financial procurement), the integration of the private real estate business in marketing activities or the optimisation of the reactive marketing, both with a focus on circular flow land use management (e.g. creation of a common contact point for land management issues).
- ▶ **Legislation and requirements:** since *...(insert year)..* is the mobilisation of land for building a mayor point of the *...(insert name of legislative)...* In the following you will find relevant requirements:
 - ▶ *...(insert relevant requirement)..*
 - ▶ *...(insert relevant requirement)..*
 - ▶ *...(insert relevant requirement)..*

However, a selective separation between the action fields is not possible and not reasonable. Moreover all these action fields are single elements work together and they are part of one circular flow land use management approach.

The need for an integrated policy approach becomes explicit with a view on urban development and rehabilitation, because it focuses on reduction (e.g. deconstruction of empty houses) and upgrading of living areas and also on optimisation and extension of infrastructure. Therefore it is necessary to consider informal planning (e.g. framework plan, integrated development concepts), economic incentives and the activation of participation of inhabitants (e.g. planning, implementation). Furthermore there are links to the social urban development, because new projects could be implemented on building gaps or brownfields.

Best Practice: Increase of the urban density in the cities of Graz and Eisenerz (Austria)

The project „Dichtedialog – Sozial verträgliche Bebauungsdichte“ (see: www.dichtedialog.at) generates possibilities to foster an increasing urban density in traditional settlement areas. Proposals for increasing the urban density are submitted and discussed with the inhabitants of the concerned areas.

The presentation of different action fields in the frame of circular flow land use management highlights that the strategy approaches integrates the practical planning



aspects and procedures. Circular flow land use management is therefore more a “planning” approach because of combination of relevant stakeholders and instruments.

3.3.Pilot municipality - Land potentials and development scenarios (Module 3)

Circular flow land use management should be an active part of municipalities policy. Herewith an objective overall monitoring of all land potentials and a realistic estimation of actual and future demand for building land is needed. But circular flow land use management has to be integrated in a sustainable development perspective of the municipality. Main factors for the formulation of actual and future possibilities are scenarios.

3.3.1. Introduction of module 3

Aims of the training module 3 are the following:

- ▶ development of the future City ...(insert city).. with consideration of the CircUse principle
- ▶ check of inventory potentials for inner development
- ▶ become acquainted with balancing approaches and scenario development to achieve sustainable land management
- ▶ become acquainted with practice tools for the implementation of circular flow land use management in the municipality/region

Contents of training module 3 are the following:

- ▶ circular flow land use management in the municipality
- ▶ land take potentials in the inner- and outskirt area
- ▶ land balances and prognoses for the land demand
- ▶ data management
- ▶ development of planning at municipality level
- ▶ scenario techniques

3.3.2. Land potentials for an internal and external development

Within preparatory and legally binding land use planning, the future land use in a municipality is given by external/expansion and inner development areas, which are in line with existing land requirements for housing and commerce.

Table 1: Areas with great potential for external/expansion and inner development

External/Expansion development opportunities (undeveloped outskirt area)	Theoretical development reserves with no (specific) planning status
	Regional planning reserves (anticipated building land)
	Preparatory land use plan reserves (building land awaiting development)
	Legally binding land use plan reserves which are fundamentally reclaimable (raw building land)
Inner development opportunities	Gaps between buildings (land ready for development) within the ambit of settlement-expanding legally binding land use plans
	Gaps between buildings within the ambit of legally binding land use plans, more precisely within existing developments and unplanned interior areas.
	Scarcely developed lots/opportunities for infill
	Brownfields
	Vacant buildings
	Land which will be abandoned in the foreseeable future

Source: German Institute of Urban Affairs, own diagram.

Circular land use management primarily focuses on systematically exploiting the potentials of existing structures. Therefore, the following potentials for development can be distinguished:

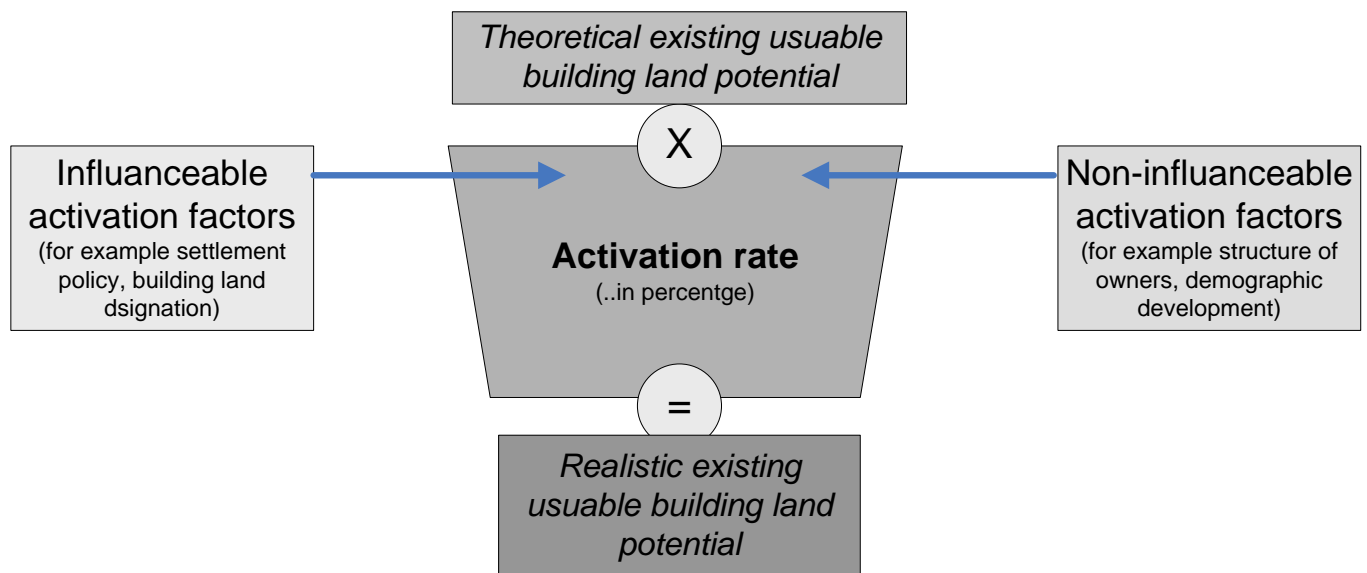
- ▶ Legally binding land use plan reserves (land ready for development)
- ▶ Brownfields (former commercial, industrial or military land or derelict land after the demolition of residential buildings within urban redevelopment)
- ▶ Potential for higher-density development in housing and
- ▶ Gaps between buildings (as a result of building demolition as well as an incomplete development of legally binding land use plan reserves)

- ▶ Retrofit and reuse existing structures
- ▶ Potentials of unsealed or varying surfaces

Given the demographic change, there is a growing need to evaluate the suitability of existing land potentials in regards to differences by age and changing needs on the demand side (Life-Cycle Management: Opportunities of revitalisation, whilst considering the structural design and social dimensions of residential quarters). By means of a prospective management, a precise monitoring of changes in the development of vacant land, within the living and the commercial areas, is needed. In case of a gradually decreasing demand, older industrial or commercial areas in particular, can suffer long-lasting phases of underutilisation of existing land and buildings (underutilised land use, residual land use).

In fact, only a limited amount of recorded existing land potentials are available to the land market. Planning limitations, municipal council resolutions on land management policy, as well as ownership interests or demographic factors, lead to an imbalance in the theoretical and the actual realizable existing land potentials. Therefore the theoretical potentials are always higher than the realizable existing land potentials. Based on the possibility of activation, so called activation rates estimate the amount (percentage) of land, which annually can be utilised for building purposes. Therefore, existing land can be included more easily in mid- to long-term area balances and prognoses (Figure 1).

Figure 2: Activating factors for existing building land potentials



Source: City of Freiburg i. Br. (Germany)

3.3.3. Land status and prognoses for land requirements

Concerning the estimation of actual land requirements for housing and commercial sites, improved prognoses with calculations on land requirements, as well as binding population forecasts are needed. Both tools are essential to a settlement development in line with the aim to reduce land utilisation to *...(insert amount e.g. 30 ha)..* per day by *...(insert year)..*, and to prioritize inner development over external development.

Cities and urban regions aiming to implement circular land use management policies should pay special attention to realistically appraising land needs. Furthermore, the projection of binding population and land use forecasts, the establishment of standards for ascertaining land use potentials and the setting of specifications for own needs and allowances for land, which have potential for housing and commercial development, need to be taken into account. Just after these steps have been taken the land consumption minimizing effects of preparatory and legally binding land use planning would take shape. As long as the establishment of standards for ascertaining land use potentials and the setting of specifications for own need and allowances for land, which have potential for housing and commercial development, takes place, demand forecasts enable an adequate consideration of inner development opportunities. Even though political land management decisions are more often less dependent on forecasts than on other considerations, the integration of demand forecasts would consequently lead towards an objectification of political decision-making processes on the municipal level. By considering a quantitative designation of protected areas, as well as a prioritized inner development, regional planning and preparatory and legally binding land use planning are able to more effectively implement a circular land use management. A land-use forecast, that considers the appraisal of land requirements, is able to contribute to a greater awareness of how land is used and ensure more transparency regarding the costs (and long-term residual costs) and benefits of zoning decisions.

Unlike the accurate appraisal of land requirements for housing, forecasts for commercial land requirements imply a lack of accuracy as being dependent on supply-orientated challenges.

Please see an example concerning the population development in the region of Voitsberg (Austria) in Annex 4.2.

3.3.4. Scenario planning technique

Scenario planning is a technic that allows looking into the future. In the context of a circular land use management scenario planning offers relevant information for a settlement of policy and development.

Scenario planning is a technique that stimulates different perspectives and images on the future, by including a relatively big uncertainty about the future. Neither probability, nor accuracy is of core interest but rather to test out the different factors and interdependencies within a clearly defined framework. Scenarios as “possible futures” do not attempt to predict which of those futures will occur (prognosis) or which of those are desired outcomes.

Several scenario techniques can be distinguished, whereas the so called exploratory scenario method is the one mainly used. The exploratory approach explores a range of possible future developments and finally provides several future scenarios. In doing so, trend scenarios and alternative scenarios are used to be developed for the purpose of “forecasting”. Scenarios are able to demonstrate the room for manoeuvre to control the community development, for example by balancing the pattern of supply and demand.

Scenarios are generated to support the decision preparation concerning land-use distribution. However, they neither replace necessary political discussions, nor evaluation and opinion making processes. Based on different assumptions regarding the availability of existing land potentials and future land requirements, different types of scenarios can be developed, for example the efficiency scenario, the basic scenario, and the pessimistic scenario. Subsequently, all scenarios outline a common development corridor.

3.4. Stakeholders of a circular flow land use management (Module 4)

3.4.1. Introduction of module 4

Aims of training module 4 are the following:

- ▶ identification of approaches for all relevant administrative and private actors
- ▶ identification and analysis of behaviour pattern, motivation, support and opposition
- ▶ sensitization for network development and creation of adequate cooperation and organisation structures

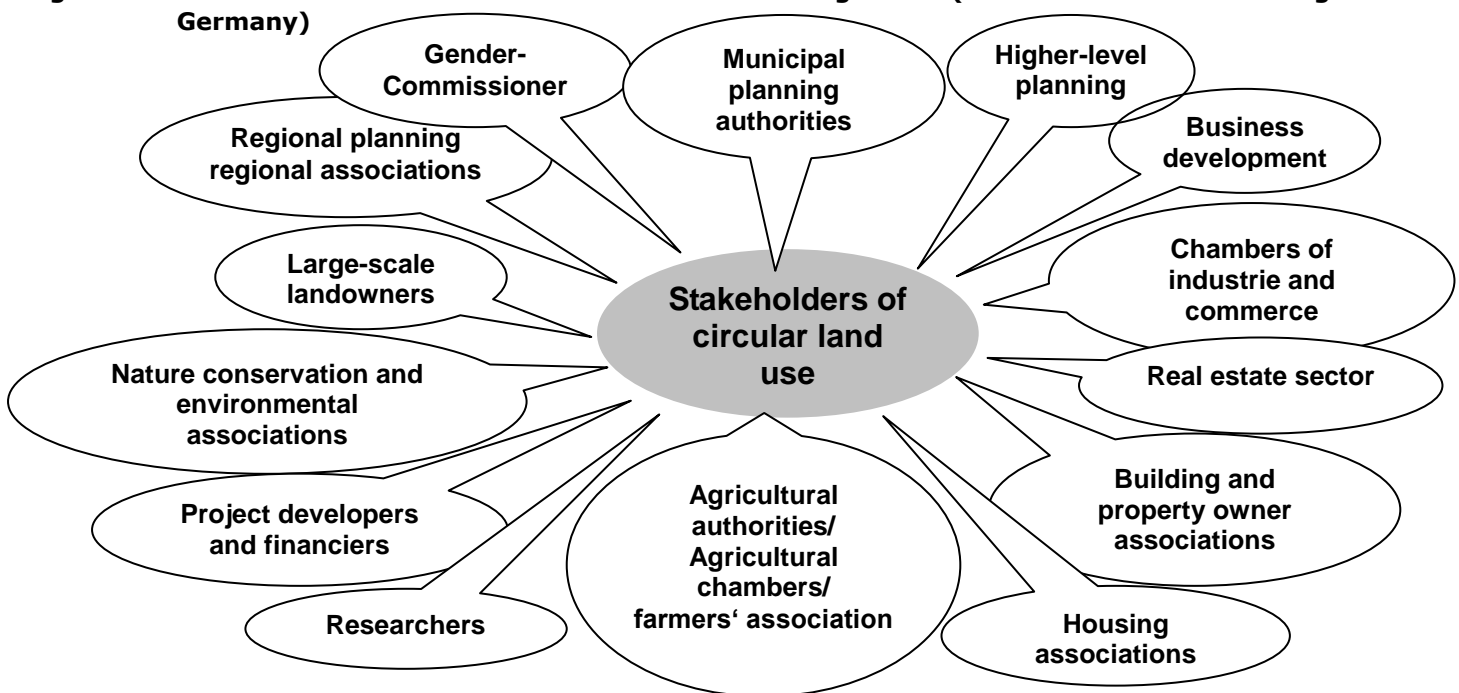
Contents of training module 4 are the following:

- ▶ spectrum of actors
- ▶ demands for land-use
- ▶ setting up of building, types of cooperation and organisational forms

3.4.2. Actors spectrum

Circular flow land use management in urban regions cannot be driven by the action of a single primary stakeholder. However, it can only be achieved through the coordinated efforts of the various public and private stakeholders. This includes municipal policymakers, the various local administrative departments (urban affairs, urban planning, environment, business development, real estate and finance), regional planning departments, businesses, business development associations, developers, estate agents, large property owners, banks, planning offices, environmental and nature conservancy associations, committees made up of members of civil society et al.

Figure 3: Stakeholders of a circular flow land use management (based on research findings in Germany)



Source: German Institute of Urban Affairs (Difu) 2008.

Conceiving tenable circular flow land use management strategies and taking the steps necessary for their implementation can only be achieved through constructive collaboration and consideration of these stakeholder's interests. This is in particular relevance to reusing derelict land, which is often viewed as the sole task of the municipality and too rarely as an undertaking which must be resolved through a cooperative effort of both the public sector and the private enterprises. The ability to cooperate, appropriate cooperative structures and communication, information dissemination and mediation services are therefore of the utmost importance for successful circular flow land use management.

With respect to municipal or regional requirements, objectives, tasks and institutional settings a sound network of stakeholders for establishment of a circular flow land use managements is to be selected. The selection has to be done against the backdrop of stakeholders role with regard to a sustainable land use flow management. The stakeholders should be early involved in the process of defining targets on a municipal or regional level, in selection and adaption of a suitable set of instruments and in the development of action plans.

3.4.3. Land use demands and land use interests

Land in general is subject of different using demands, which vary according to the consumer group and the location. To achieve a functional circular flow land use management these factors have to be considered and analysed on local level.

In the field of housing is the request of people for more living space or privately own homes as well as the trend to build up residential properties (e.g. as part of the retirement provisions) to consider. There is a demand of living in green and noise free areas (e.g. house with gardens and terrace) and a healthy and play friendly region for children. Further characteristics for the choice of residential locations are the possibilities for education, regeneration and free time. Also specific living and free time demands for young adults, singles and older people as well as a parking place often play a role.

In the field of industry and business is the demand for space a main factor. Industry needs often single story buildings with parking spclce and potential extension areas. Other businesses need space which could divided into small sections and which is close to living areas (e.g. handcraft enterprises). For these user groups it is important to avoid problems with the neighbourhood because of noise or emissions and to have close accessto highways.

In the field of services and trade also a rise of land demand is noticeable especially for commerce. Also the amount of trading areas for commerce increases. Service areas which are not dependent on consumer leave inner cities and go to cheaper peripheric areas. On the other hand there is a demand on small and medium size places which are close to commerce and services – this also in centres. Important is the reachability with public transport, car etc.

These manifold location and using demands are representing one side, the opposite side represents land use planning and the approaches of inner development or the compact city. However, the reality shows that the demands have lead in the last periods to an increasing land use mostly in suburbs or agglomerations of cities and in not centralised areas of the country side.

3.4.4. Networks as well as cooperation- and organisation models

The interest's network of relevant stakeholder is manifold. Furthermore the interests are often oppositional. Therefore it is important to use a compromise oriented procedure to motivate them all. It could be helpful to contact existing local or regional networks e.g. development agencies for co-operation. These existing networks have in general experience with competitions, allocation conflicts as well as disclaim costs. This is from also importance for city/country co-operations because of the – in general – perceived imbalance between the partners. Smaller municipalities in the surrounding of larger cities are often afraid to be fleeced.

Formal and informal public-law organisation forms could be: city/urban hinterland-organisations, neighbourhood organisations, planning – and administration unions. These kinds of co-operation forms could be of interest for building up an institutional for circular flow land use management. It is also possible to organise *...(insert example e.g. public-law agreements)..* or *...(insert example e.g. municipal cooperation's)..* In inter municipal cooperation's it is possible to prepare together *...(insert examples e.g. common land development plans, common industrial parks, development of compensation of land pools or regional development concepts)..* In the last years moreover *...(insert examples e.g. informal cooperation structures with a focus on communication and consensus building and the integration of private and citizen stakeholders)..* were established. Furthermore it is possible to organise private-law organisations which often have more economic and operational margin for developments e.g. for the reactivation and marketing of brownfields. But these private-law organisations have no responsibilities of public administration.

Independent from the co-operation or organisation structure it is important for municipalities which are limited in land development activities – in a sense of a successful cooperation – to create strong incentives for co-operative proceedings.

Circular flow land use management lives from interaction of public and private stakeholders. These stakeholders have to:

- ▶ consider the political objectives of land use,
- ▶ use the different mix of instruments,
- ▶ steer the land supply and demand
- ▶ use the existing land potentials.

3.5. Instruments of a regional circular flow land use management (Module 5)

3.5.1. Introduction of module 5

Aims of training module 5 are the following

- ▶ development of understanding regarding effects, potentials to achieve objectives and efficiency of single instruments
- ▶ development of knowledge concerning an adequate use of instruments
- ▶ sensitization for possible new (e.g. economic) steering instruments for sustainable land-use management

Contents of training module 5 are the following

- ▶ mix of instruments: fields of action and strategic objectives
- ▶ existing instruments for stronger regional circular flow land use management to foster an inner development
- ▶ additional existing instruments of a circular flow land use management in regions with a growing development dynamic (especial issue: protection of free space and regeneration areas)
- ▶ additional existing instruments of a circular flow land use management in regions with a shrinking development dynamic (especial issue: re- and deconstruction, renaturation)
- ▶ new instruments for a regional circular flow land use management

3.5.2. Mix of instruments: Action fields and strategic aims

Circular flow land use management needs an integrated and comprehensive proceeding in the field of policy- and scope of action – which demanded a complex use of instruments (mix of instruments). Also the policy mix has to be appropriate to achieve the objectives and has to consider the different frame conditions which are a combination of existing and new legal, planning and economic instruments.

General instruments with a focus on circular flow land use management are listed and described in chapter 3.2.5:

- ▶ information,
- ▶ planning,
- ▶ co-operation,

- ▶ organisation/Management,
- ▶ investment and funding programmes, budget,
- ▶ marketing,
- ▶ arrangements
- ▶ other.

The instruments has to be geared towards the main strategic circular flow land use management objectives:

- ▶ strengthening the inner development,
- ▶ protection of undeveloped and recreational space,
- ▶ conversion, dismantling and renaturalisation.

This ensures instrument packages will meet the needs of cities and urban regions apart from respective dynamics of development (growing, stable or shrinking).

3.5.3. Existing instruments for the regional circular flow land use management to strengthen the inner development

Independent of the development pattern in individual urban regions, the following existing instruments proved particularly suitable due to their great effectiveness in achieving CircUse aims. The following instruments can reflect the individual dynamic developments and help to fulfil the aim of inner development:

- ▶ regional schemes,
- ▶ intermunicipal planning,
- ▶ appraisal of land requirements (a key component of regional planning and preparatory and legally binding land use planning),
- ▶ informational instruments to influence municipal and administrative land use management decisions,
- ▶ additional neighbourhood and site planning (e.g. test planning, framework plans, master planning),
- ▶ delegation of responsibilities for urban region circular flow land management tasks
- ▶ municipal council resolution on land management policy,
- ▶ informational instruments for property owners,
- ▶ marketing
- ▶ existing funding programmes

3.5.4. Additional existing instruments which promote circular land use management in urban regions with patterns of increasing development (particular aim: protecting undeveloped and recreational space)

The following existing instruments target activity required in growing regions where high demand for land leads to a continual disappearance of open space, increasing use conflicts and strains land utilization capacities:

- ▶ concepts to establish resource compensation areas (land for equalization and alternative measures, resource compensation areas and compensation measure pools),
- ▶ designation of protected areas through nature conservation authorities,
- ▶ preservation and enhancement of open spaces: recreational spaces, special use zoning in peripheral areas, (glasshouse production), agriculture.

3.5.5. Additional existing instruments which promote circular land use management in urban regions with patterns of decreasing development (particular aim: conversion, demolition, renaturalisation)

Shrinking regions and cities require additional instruments to adequately address the consequences of population loss, vacant buildings, functional deficits and surplus space:

- ▶ urban redevelopment,
- ▶ funding programmes targeting brownfields and C sites respectively (C-Sites are not in a condition where regeneration can be profitable. Their regeneration relies on mainly public sector or municipality driven projects).

3.5.6. New instruments for regional circular flow land use management

Existing instruments are often not appropriate to achieve the objectives of circular flow land use management with focus on land use reduction and quality. There is a demand for instruments which complement existing planning and economic instruments and which gives economic incentives for a land use reducing development. Herewith a wide discussion from local- to EU level is in progress. For example in Switzerland a petition for a referendum was submitted which claims for a general land use moratorium (Landschaftsinitiative „Raum für Mensch und Natur“ 2011).

However, the main, economic instruments for circular land use management comply with the following three approaches:

- ▶ influencing property prices (e.g. reforming the property tax system or land-transfer tax reform) to roll back/decrease the incentives to build on new sites offered to public and private parties who want to build;

- ▶ introducing price mechanisms for zoning new land for development (e.g. establishing tradeable land-use certificates or apportionment for zoning building land in combination with cost-benefit analysis) to further motivate municipalities to pursue inner development planning;
- ▶ creating financing options and tailoring funding measures to suit circular land use management (e.g. by reforming the fiscal equalization scheme at municipal level, low-interest loans, real estate funds, demolition liability insurance, subsidizing renaturalisation) to greatly strengthen inner development.

3.6. Action plans for a circular flow land use management (Module 6)

3.6.1. Introduction of module 6

Aims of training module 6 are the following:

- ▶ introduction into requirements, objectives and development of action plans
- ▶ knowledge building of a general processing algorithm and adaption approaches on the way to action plans
- ▶ Implementation of objectives und instrument proposals to measurements and activities in the frame of integrated action plan

Contents of training module 6 are the following:

- ▶ general information on action plans
- ▶ preconditions for the development of action plans
- ▶ land policy objectives of action plans
- ▶ structure of action plans
- ▶ exemplary measurement packages for a regional action plan

3.6.2. General aspects

For urban region circular land use management realisation are also - in addition to examining existing instruments - integrated action plans important.

The – integrated – action plans for urban region circular land use management represent an instrument package which can be implemented or initiated locally, and which can contribute to brownfield redevelopment and reducing land utilization. The packages of measures described usually aim at reducing zoning undeveloped land and exploiting the potential of existing land on previously developed sites. Integrated action plans for urban

region circular flow land use management are informal instruments to establish circular land use management in the short- and mid-term. They result from discussions on land use policy aims for urban regions, analysis of how existing governance instruments to regulate land utilization are employed and assessments of instrumental, spatial and organizational shortcomings. They specify a package of measures necessary in the short and mid-term to go towards accomplishing city and urban region land policy aims. These measures are normally closely linked with established instruments of formal and informal spatial planning. The action plans also list stakeholder responsibilities, aspects of process organisation and management as well as performance reviews and time schedule for implementation. Integrated action plans are extremely implementation oriented. They cannot and should not replace current planning, instead the measures depicted in the action plans should be meshed with spatially relevant formal and informal planning or existing sectorial planning and draft planning. The key element of an integrated action plan is providing a detailed portrayal of each measure foreseen in the measures package. Recommendations for outlining such a portrayal are:

- ▶ a brief description of each measure,
- ▶ a description of how the measures assist in eliminating
- ▶ current problems/achieving established goals,
- ▶ a list of the responsibilities of city and urban region land use management players,
- ▶ a description of the type, extent and source of financing for measures,
- ▶ a time schedule for implementing measures,
- ▶ expected effects of each measure.

Referring to the importance of action plans one main module of the workshop should be the development of action plans. Therefore: Please include in the frame of the CircUse workshop *...(include name.... e.g.: „Land using of tomorrow in the region of.... include name....)*... a module for the development of an regional action plan for regional circular flow land use management.

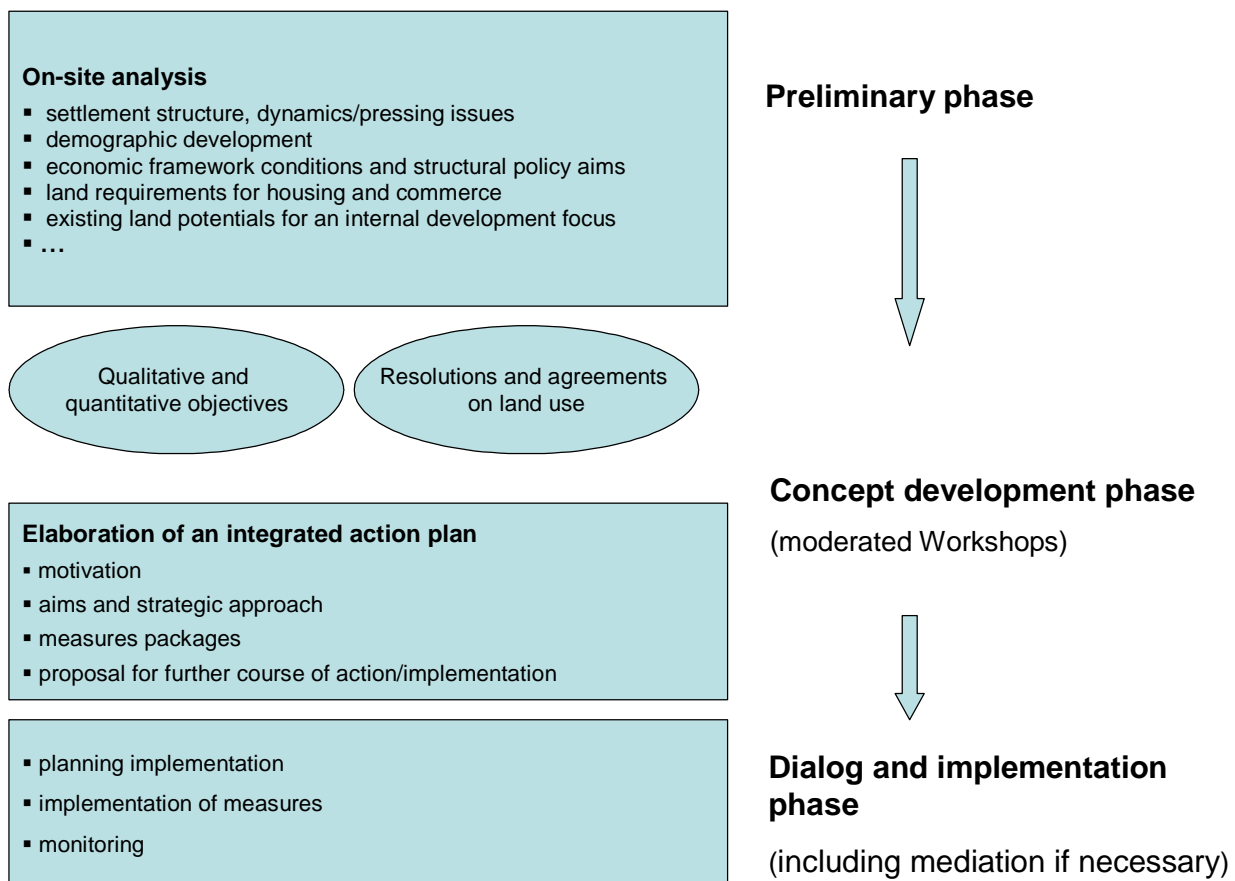
A local action plan is an important strategic element for the establishment of a circular flow land use management, because:

- ▶ it helps the region/city *...(include name....)*... as an informal instrument for processual development and implementation of the strategy of circular flow land use management,

- ▶ it is close connected with the choice of instruments- and discussions. Because it reflects possible adjustment of existing instruments with a focus on the area of action in the region,
- ▶ action plans reflect the different views of stakeholders and their instrumental need for changes,
- ▶ conceptional innovative impulses of the concept of circular flow land use management is reflected in a regional action plan.

The following figure shows an ideal process for the development of a regional action plan to foster a circular flow land use management.

Figure 4: Compiling an action plan to promote circular flow land use management



Source: Difu, own digram.

Important for a successful implementation of action plans is on the one hand the assignment on basis of a resolution of local authorities (e.g. municipal council, regional parliament or regional planning committee) and on the other hand the continuous back coupling of semi results with the local policy or furthermore with the public.

3.6.3. Requirements for the preparation of action plans

Different requirements are needed for the preparation of integrative action plans. In particular data concerning existing and coming problems, developments and scope for actions has to be known. Every action plan has a focus on specific regional framework conditions like:

- ▶ development and problems of settlement structure,
- ▶ demographic development,
- ▶ economic framework conditions and structural political objectives
- ▶ demand on space/land for living- and business as well as
- ▶ relevant stakeholders
- ▶ existing land potentials for the inner development.

The regional framework conditions have to be analysed and evaluated initially to achieve qualified objectives like the stabilisation of the settlement density and to increase the land productivity transparent data base is needed.

3.6.4. Land policy objectives and action plans

The action plan presents different quality objectives on the basis of a specific regional problem analysis. The quality objectives have to develop consensual. Possible quality objectives are:

- ▶ Inner development prior outside development: Focus on revitalisation and activation unused land and buildings, building gaps, conversion areas and brownfields,
- ▶ Reduction of suburbanisation (in a defined area/in multiple areas of the region),
- ▶ Concentration of building land determination on areas with existing und efficient infrastructure,
- ▶ Reduction of supply oriented planning in the municipalities in favour for a demand oriented development of existing land,
- ▶ Stabilisation of settlement density
- ▶ Increase of the land productivity

- ▶ Retaining of infrastructure services in a long-term perspective
- ▶ Maintenance and development of qualitative high grade natural land (in a defined area/in multiple areas of the region)

Furthermore it is important to declare specific amounts of land demand on the regional level.

3.6.5. Structure of an action plan

The integrated action plan includes measures in different action fields with a high relevance for circular flow land use management objectives. Existing and planned activities should be integrated in the plan. The structure of an action plan is following:

1. Reason
2. Objectives and strategic approach: Circular flow land use management as a guideline for the development of the city or region
3. Package of measure for circular flow land use management
4. Proposal for further proceedings to implement the package of measures

Reason: Description of the background and land consumption related needs for the discourse of quantitative and qualitative land demands stands at the beginning of the action plan. In case of present, existing regional adjudications, arrangements or objectives with relevance for reduction or qualification of land use demand should also be considered at that stage.

Objectives and strategic approach: Actual and future problems, requirements and objectives with relevance for the land use demand have to be discussed. Furthermore the (successful and not successful) activities to solve known problems and also the tasks for implementation of the idea of circular flow land use management have to be formulated. The easy mention of the package of measures for a city or regional circular flow land use management described in the following chapter should be the closure of this chapter.

Preparation of a package of measures: Central element of the action plan is the detailed description of the planned package of measures (in general five to seven packages). The description could follow the following outline:

- ▶ Short description of the measure,
- ▶ Reason for the measure – Why we can reach our objectives with this measure?,
- ▶ Description of responsibilities from relevant stakeholders of the city or region,
- ▶ Description of kind, amount and source for financing the measure,

- ▶ Time schedule for implementing the measure,
- ▶ Expected effects of the measure.

As mentioned the action plan should present the responsibilities of stakeholders for specific measures. If it's needed to include non-public or non-regional stakeholder (also if changes on county level are needed) to implement a package of measures successful, proceedings are sensible to contact stakeholder on an upper level (e.g. include of investors, funding institutions, proposals for optimisation of county or regional planning). Thinkable is also to bundle this activities in a development agency.

Furthermore it is only possible to estimate the costs for the measures at this stage of the action plan. More specific settings or cost calculations are possible in a later stage of the proceedings, mostly in the frame of discussions and negotiations after the action plan is drafted.

Proposals for further proceedings: The closure chapter of the action plan should include proposals for the next steps respective priorities for the implementation. It is also possible to formulate proposals for procedural manner of the monitoring, reporting system and efficiency control.

The action plan and also the included recommendations to further proceedings should underlined by local or regional decision making bodies or responsible bodies for implementation (e.g. administrative) by measure- or time schedules.

3.6.6. Examples for packages of measures for action plan to foster regional circular flow land use management

Table 2: Examples for packages of measures for integrated action plans in growing and shrinking cities or regions.

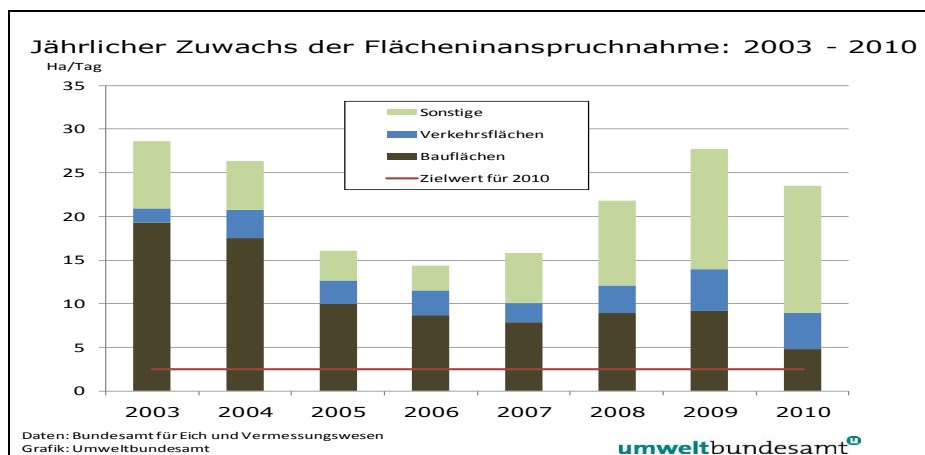
Regional development dynamic	Examples for packages of measures
growing	Optimisation of information background for policy decision makers as well as for public administrations on local and regional level. Also on other stakeholders can put a focus. Information could be: e.g. cost-benefit analysis of new land designation.
	Optimisation of steering effects on the regional planning level with help from binding restrictions for land use consumption. Furthermore for common and binding methods and criteria for consideration of inner development potentials.
	Balancing and constructional mobilisation of divided small sections of land potentials in the frame of public-private-partnerships with active contacting of owner of these grounds.
	Preparation of qualified land demand estimations for the region und subspaces by using common criteria. This under consideration of inner development potentials also as a background for the regional development planning.
	Initiation of a strong inter-municipal dialogue regarding new land designation for optimisation of the inter-municipal cooperation in the region. In addition adoption of land policy resolutions and by informal as well as inter-municipal planning.
	Financial support of objectives of circular flow land use management by the country and county through implementation or adaptation of appropriate funding programs.
shrinking	Using the city reconstruction for handling the demographic change to foster the integrated city development in dialogue with housing associations and other owners.
	Optimisation of steering effects on the regional planning level with help from binding restrictions for land use consumption. Furthermore for common and binding methods and criteria for consideration of inner development potentials.
	Implementation of a regional balance of interests in the land development
	Implementation of a revolving municipal property funds for revitalisation of small brownfields.
	Further development of cooperation between the city and private stakeholders e.g. land owner, industrial real estate management and the marketing of commercial space.
	Land political decision to anchor relevant objectives and basic principles of circular flow land use management
	Development of a regional brownfield management on the basis and to continue existing brownfield recording.
	Financial support of objectives of circular flow land use management by the country and county through implementation or adaptation of appropriate funding programs.

4. Annex

4.1. Example of land consumption in Austria

14 hectare was the average land demand for the settlement- and traffic area in a period between 2003 and 2010 for each day. Furthermore each day 10 hectare for free time use and other land.

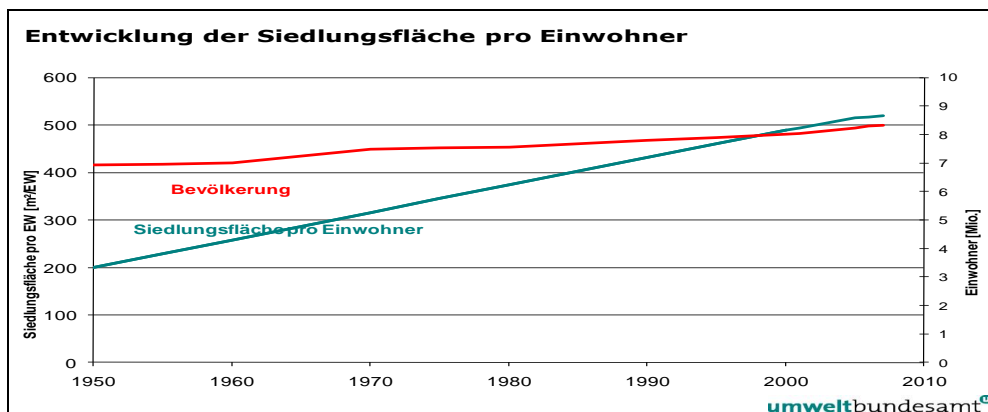
Figure 5: Land consumption in Austria, 2003 to 2010



Source: BMFLUW, 2011.

The development of the settlement- and traffic area over proportional refer to the development to the population growth. The average settlement area in Austria was in 195 200 m² per capita and in 2010 by 500 m² per capita.

Figure 6: Development of the settlement area pro capita

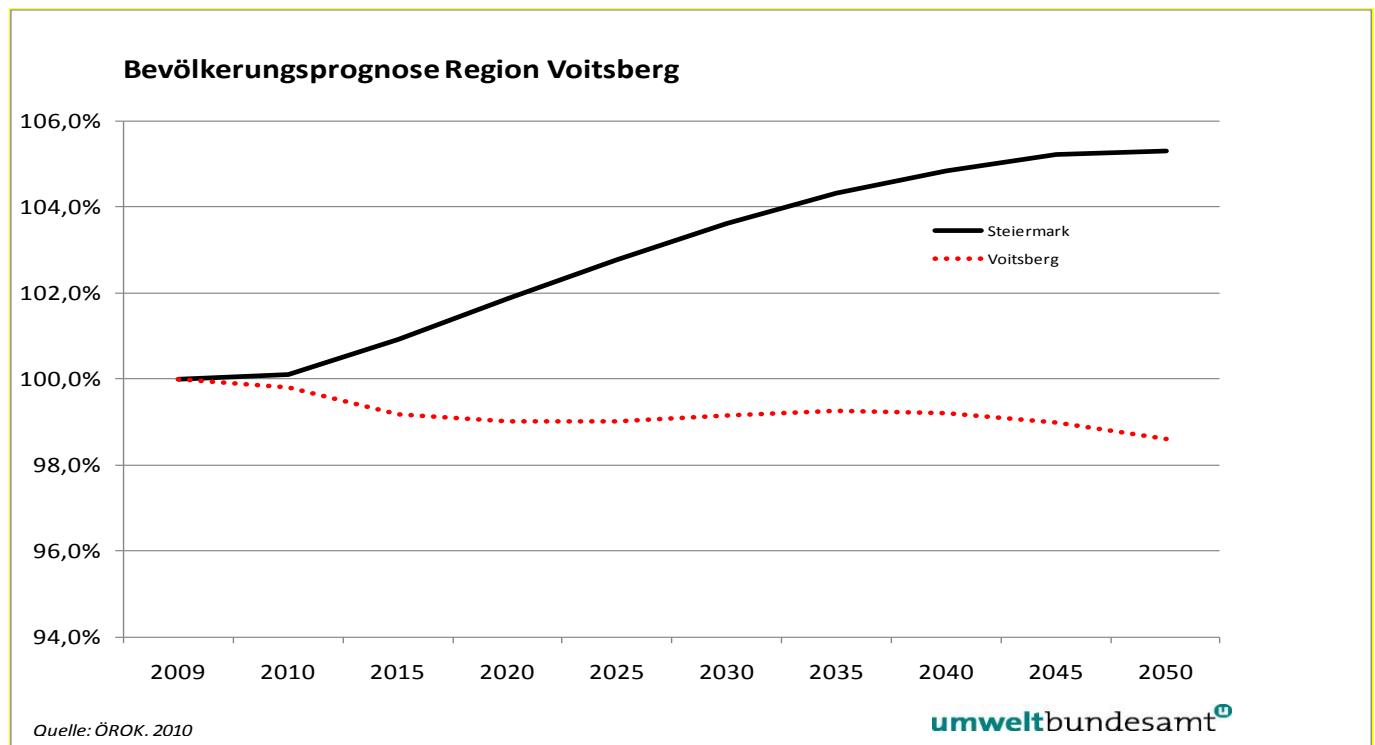


Source: BMFLUW, 2008.

4.2.Example to population development in the region Voitsberg

The following figure shows the estimated development of the population in the region of Voitsberg (red line) and the county Styria (black line).

Figure 7: Population development in Styria and region Voitsberg (Austria)



Source: ÖROK, 2010.

The region of Voitsberg consists of 25 municipalities, which are mostly small with less than 2000 Inhabitants. The overall population is by 52,500 inhabitants in 2010.



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