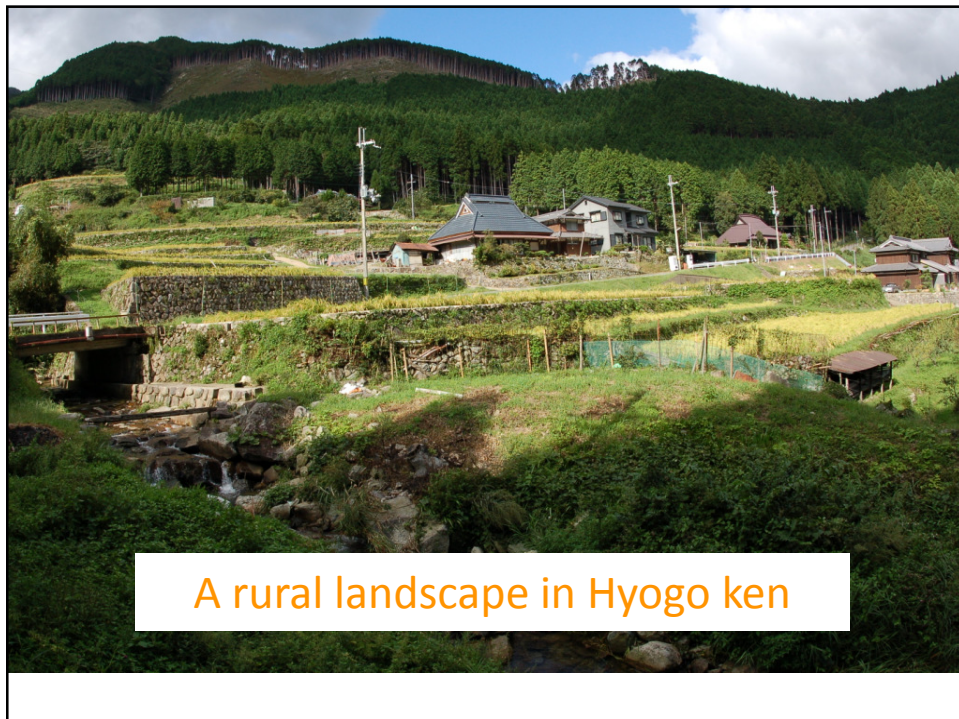


Concept of Rural Sustainability

M. Breiling







Rural areas can just change over night....



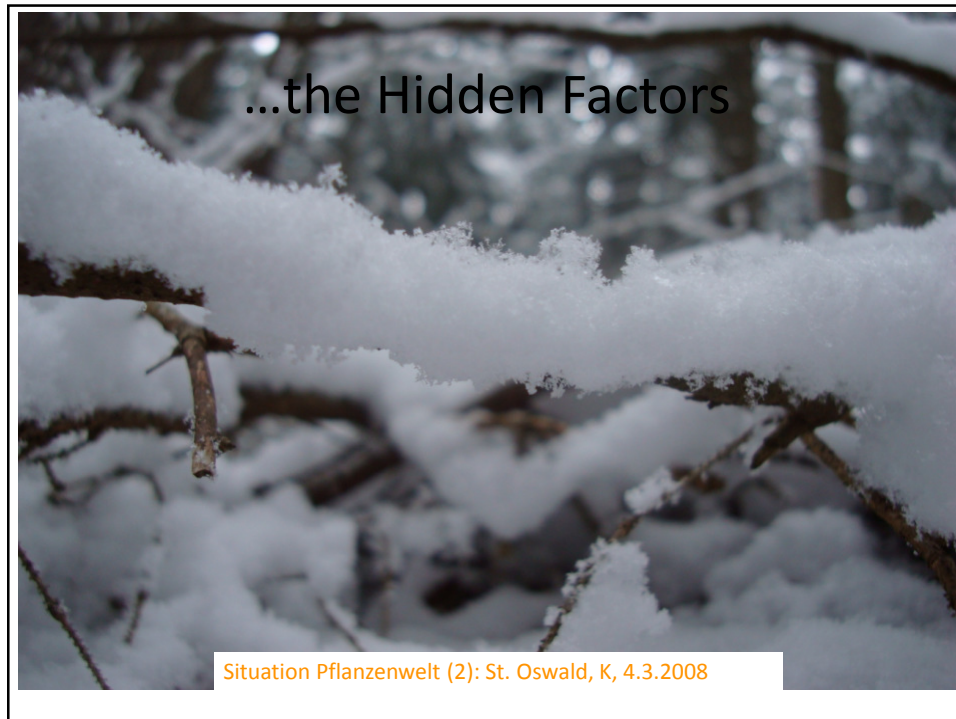
Surprises (1): St. Oswald, K, 2008-03-03

..... And the situation is very different



Surprises (2): St. Oswald, K, 2008-03-04

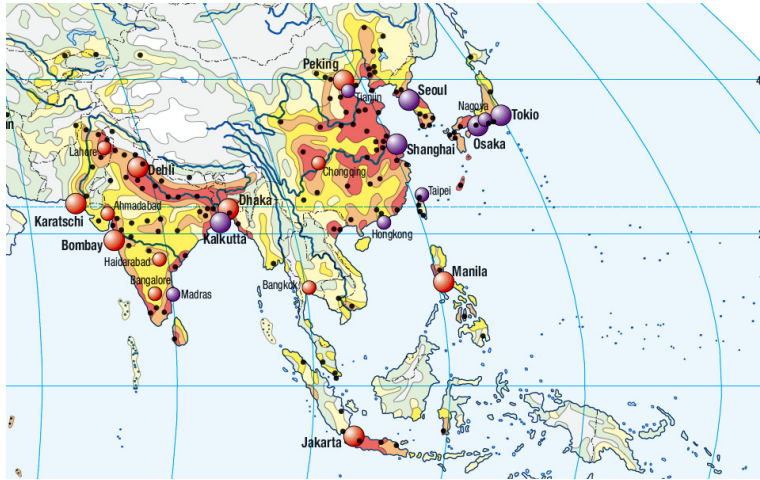




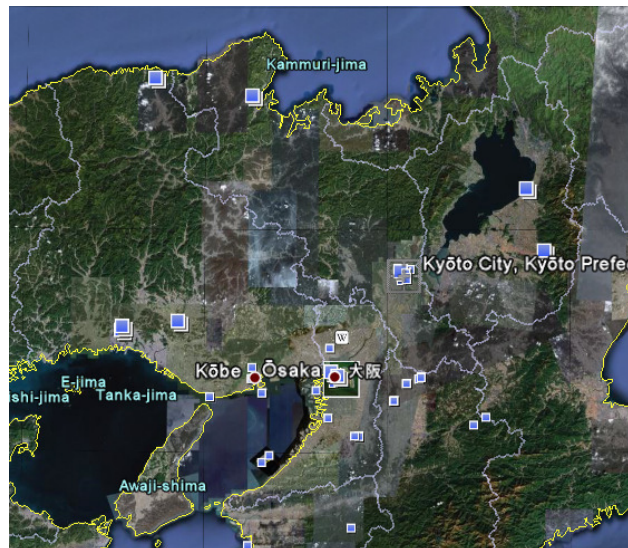
Planning is full of surprise

- Can a concept of rural sustainability help us to make a better planning?
- Today I will present a concept primarily as an inspiration for you
 - But not to teach it out to you
 - You will have to find it yourself if you want to use it in your planning work
- Hope this will be a useful exercise

South East Asia Region



Kinki Region



Local Landscape Awaji shima



Local Landscape Danube Delta



Do you believe there is rural sustainability in these regions?

- Then you have to argue why or why not
- By finding your position you will be able to do planning
- And convince and influence stakeholders in the field of rural sustainability

The region includes urban and rural



- According to the philosophy, yin and yang are complementary opposites within a greater whole. Everything has both yin and yang aspects, which constantly interact, never existing in absolute stasis.
 - Source: http://en.wikipedia.org/wiki/Yin_and_yang

Rural vs. Urban

- Rural and Urban together are REGIONAL
 - Rural is in focus here
 - Most of the land
 - Only a few percent of population
 - Even less percent of money
 - Japanese definition of rural is based on population density and only valid in Japan
 - < 350 people per km² is rural
 - > 350 people per km² is urban
 - Paradox: if rural develops it will disappear
 - Become new urban area

What is rural (1) ?

- Rural describes
 - a certain kind of landscape, area, region in smaller spatial scales
 - Everything is „rural“
 - Primarily local studies
 - Research concentrates on inner system of rural entities
 - E.g. the setting and irrigation system of rice fields, land improvement related to rice harvest, developments of machines and methods to improve rural outputs.
 - Interests related to rural prosperity are dominant

What is rural (2) ?

- Rural describes
 - a part of a landscape, area, region in larger spatial scales
 - We are in a mixed land, not everything is rural
 - Primarily regional studies
 - We find many competing interests
 - most of them currently stronger than rural ones
 - Research concentrates on the embedding of rural land and rural activities within a larger system
 - Key concern: Rural land value is decreasing
 - Appropriate income for rural population

What is rural (3)

- Rural lands are basis for human economic activities
 - Key interests of farmers and rural inhabitants are in focus
 - Improve living conditions
- Rural lands are basis for urban services
 - The region includes cities, urban areas
 - Water supply
 - Recreational areas
 - Analyze flows of the regional system!

What is planning (1)

- Planning is any activity directed to the future
 - The activity follows a certain aim
 - Requires the formulation of a certain aim
 - Is usually formulated in a written document
 - Involves Actors of Planning
 - follow different interests,
 - E.g. Maximization of product outputs
 - E.g. Improvements of environment conditions
 - E.g. better infrastructure systems
 - Actors are able to formulate planning aims
 - Some interest are proposed by mediators
 - » Wild cat project in Nagasaki prefecture
 - » Ecologically highly valuable areas

What is planning (2)

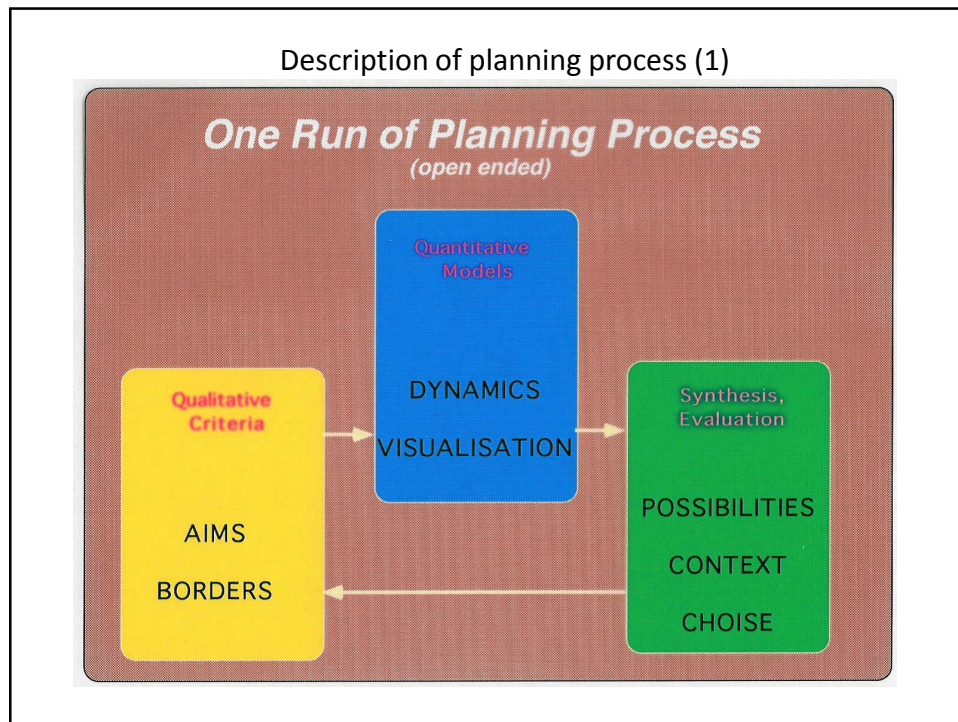
- Clients of Planning
 - Those who are supposed to profit from the change
 - Do not necessarily express their interest
 - » children, elderly people, animals, biotops, etc.
 - Owners of the Planning Process
 - can decide about a change or no change
- Change from State A to State B
 - Description of a transition
 - » Has to be subdivided into steps adjusted to the magnitude of the planning problem

What is planning (3)

- Is a process and different from the plan
 - Is a continuous process of getting influence
 - The larger the project scale, the more actors are involved
 - The aim of planners is to come up with a plan
 - A plan is a final output of the planning process and a compromise of the interests involved
 - The plan describes the change and how to achieve the change
 - In case of building a farm house, a plan becomes easier
 - Only one or few clients, owners, decision makers

What is planning (4)

- Planning focus on a particular time horizon
 - Long term: over 25 years ahead
 - Countermeasures for expected impacts of climate change
 - Longer term: 10 to 25 years ahead
 - Kyoto protocol and reduction of greenhousegases
 - Water framework directive in Europe
 - Medium term: 5 to 10 years ahead
 - Conventional long term planning of roads, settlement areas, etc.
 - Short term planning: 1 to 5 years
 - Agenda 21 initiatives
 - Planning under 1 year, I consider as management



Description of planning process (2)

– Qualitative Criteria

- Aims
 - Are related to the interest of actors, clients
 - The more people involved the more planning aims we find
- Borders
 - Spatial borders
 - Time borders
 - Interest Borders
 - » Intensity of interests
- Formulation of the Planning Task

Description of planning process (3)

- Quantitative Models
 - Model is simplified reality
 - 3D models of architects, dentists, etc.
 - Computer models since appr. 1970
 - Tremendous increase since then
 - Require data and analysis
 - Focus on key parameters
 - Spatial scales analysis with support of GIS
 - Differences of smaller scales within a larger scale
 - Particular objects, measurement stations, etc.
 - Average, mean values of parameters
 - Change over time analysis with dynamic models
 - Development of a parameter over time
 - In selected period, in selected time steps
 - Forecasting becomes possible

Description of planning process (4)

- Synthesis and Evaluation
 - Based on qualitative criteria and quantitative models
 - A mix between formulation of interests and analysis of key parameters
 - Done by decision makers, who can decide
 - Can differ from individual to individual despite there is the same basis
 - We will get a range of possibilities to solve the problem
 - The decision will be made in a certain context
 - Dependent on policies
 - E.g. support of rural communities: less pressure for migration, control of land
 - Protection of agricultural landscapes: importance for tourism, biological diversity, etc.
 - Safety considerations due to risks in mountainous landscapes: avalanches, torrents, mudflows, etc.
 - Lost understanding for importance of rural land due to high costs
 - An alternative will be selected

Description of planning process (5)

- The continuation of planning
 - With the agreement on a plan, one step of the planning process comes to an end and new planning starts
 - New context, different interests, perhaps different actors
 - Major changes observed
 - E.g. 60s and 70s economic interests in focus
 - E.g. 80s and 90s environmental interests much stronger than previously
 - Currently, social issues, concern for jobs, occupation and issues of rural decline are very strong

Sustainability:

Every State is Subject to Change

- Parameters observed are changing over time
 - The change or the degree of change (dynamics) is different
- There is no state that exists forever
 - Processes where we can not observe change we consider as stable or stationary in time
 - Geological processes
 - Evolutionary processes

Rural Sustainability is not defined

- It is an exercise we have to do if we use the concept in rural planning
 - This concept can widely vary
- It is a normative concept including simultaneously
 - Ecological concerns
 - Ongoing of Environmental services
 - Maintaining Biodiversity
 - Economic concerns
 - There should not be major differences in income opportunities
 - Social concerns
 - Chance that development proceeds over three generations
- We must outline a working definition
 - to make sustainability an operational concept

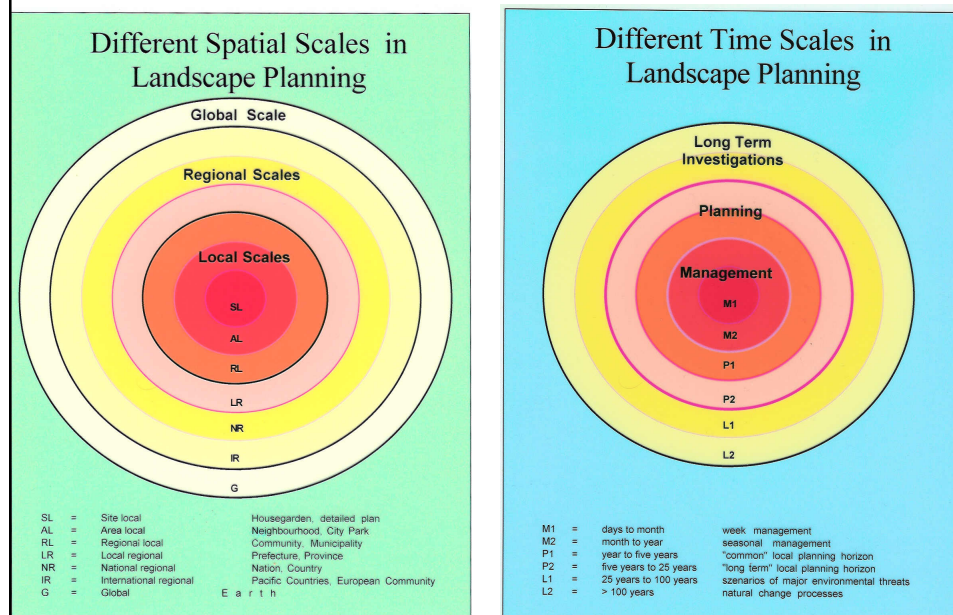
Evaluate Your Task within Rural Sustainability

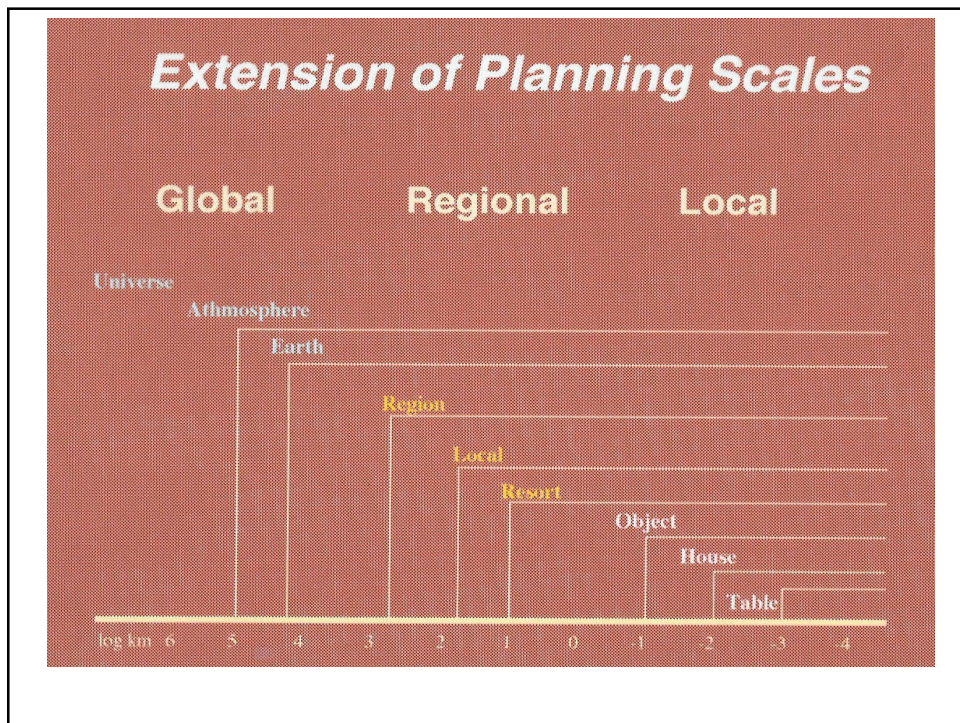
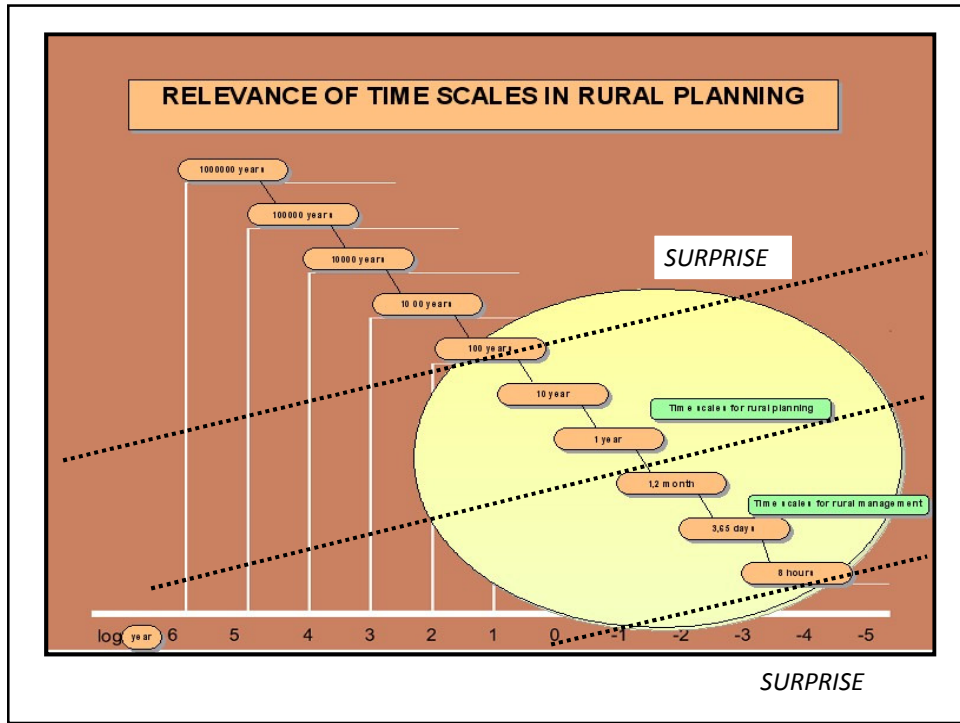
- What spatial scales are relevant for me?
 - Making obvious where I stand and how far I want to reach others.
- What time periods for planning and management are under consideration?
 - Explain how long you think into the future.
- Who shares and supports my interests?
 - With whom you can join to make a larger impact.

Interests in Sustainability

- Ecological interests
- Economic interests
- Social interests
- Combination of all interests
 - Joint implementation
- Balance of all interests
 - All interests should be obviously covered
 - Best in equal shares

Space and Time Interactions





Local Scale Projects

- Local scale planning
 - From gardens, to farms, up to wards
 - This scale can be entirely „rural“
 - The local scale is closest to people and comes first
 - Predominant form of physical planning
 - Where the individual interest borders to society
 - Few actors in planning
 - Decisions about plans are standardised and fast
 - E.g. construction of houses, water supply and disposal, waste management, local roads or storage hall

Regional Scale Projects (1)

- (Local-) Regional scale planning
 - From wards, to municipalities, prefectures
 - Projects of infrastructure planning
 - Road network, rail networks and other traffic,
 - Energy and electricity supply networks
 - Water supply and disposal
 - Waste management and recycling stations
 - Projects to ensure quality of life
 - Shopping and service centers,
 - » Schools and hospitals
 - Skiing resorts, recreational areas,
 - Nature protection areas
 - Hazardous zones and disaster prevention areas

Regional Scale Projects (2)

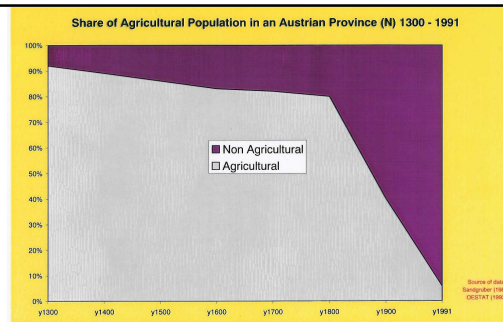
- (National-) Regional scale planning
 - From prefectures to Japanese regions
 - Advanced projects of infrastructure planning
 - Airport, Shinkansen and highway network,
 - Nuclear power plants
 - Major waste incineration plants
 - Appropriate scale for plans for the future of agricultural production schemes and rural settlement structures

National Scale Projects in Rural Areas

- Ensure domestic food supply
 - Decrease the dependence from foreign food imports
 - This aim can be achieved by intensification of Japanese agriculture in low lands with help of high resources input.
- Control of rural lands
 - Keep people and population densities in remote landscapes
 - This aim is difficult to achieve: overaged society, lack of young people, lack of social facilities, unattractive salaries.
 - As a consequence most males not retired move at least temporarily to cities. Children do not return to the villages after schooling. Woman and retired people care for farms.

The Role of Rural over Centuries (1)

- In historical times planning was more easy
 - All planning was predominantly rural and local.
 - did not exceed a local regional scale, interactions to larger scales not yet necessary.
 - A Japanese nationale scale was established in 17th century
 - For the first time national planning to avoid wars
 - Less farmers, and more manufacturers
 - Industrialisation in 19th century brought a further increase of planning scales
 - Local and even national resources were not adequate
 - Motive behind colonialisation
 - Centralisation was required
 - This process is still going on in many countries of the world

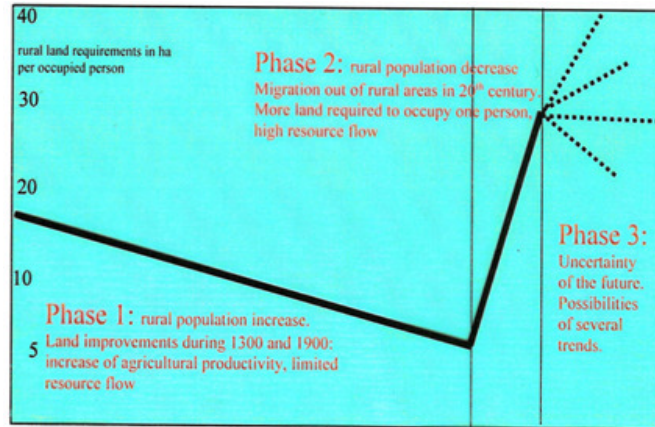


- The figure above from an Austrian province is taken as an example for a curve in an industrialised country.
- Until the 14th century, more than 90% of the population was occupied in agriculture
- Until the 18th century there was only a slight decrease to appr. 80%
- Industrialisation brought a rapid decrease and fundamental change in agriculture and land management
- Rural areas were the nuclei for development on which the whole land use system was established.

The Role of Rural over Centuries (2)

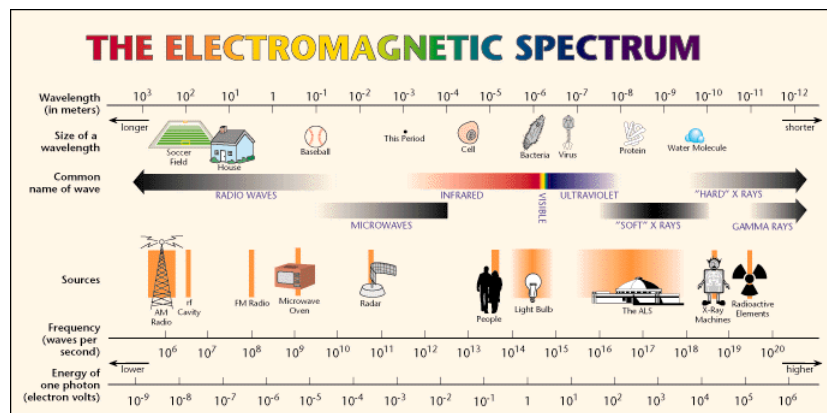
- **Phase 1**
 - There was clear dominance of agriculture and rural
 - Population increased
 - Labour intensity remained stable
 - Advanced agricultural methods enabled increase in carrying capacity
- **Phase 2**
 - Industrial development phase, agriculture remains important
 - Population increased
 - Labour intensity increased
 - Centralization in the cities and in villages. Rural population shifted to other activities than farming. Less people were available for farm land.
- **Phase 3**
 - Agriculture has widely lost importance
 - Population stabilized
 - Labour intensity in agriculture further increases
 - Advanced in agricultural methods increases, but lack of opportunities in cities is perhaps an incentive to stay.

The Role of Rural over Centuries (3)



- The figure is based on population numbers of the last slide and related to development of Austria.
- Size of farm units is very different in Austria and a comparison is perhaps appropriate if we take Hokkaido alone as reference, but not entire Japan.
- Uncertainty about future development is very high, no one has the „truth“

Possible Reasons for Surprise in Rural Planning at Different Smaller Scales



Source: Lawrence Berkely Laboratory, <http://www.lbl.gov/MicroWorlds/ALSTool/EMSpec/EMSpec2.html>

Possible Reasons for Surprises in Rural Planning at Different Smaller Scales

- 10^{-9} km size of bacteria -> bacterial disease for man, animals and plants
- 10^{-10} km size of virus -> virus disease for man, animals and plants
- 10^{-11} km size of genomes -> mutations, genetically modified organism
- 10^{-12} km size of molecules -> pollutants, accumulations

Source: Lawrence Berkely Laboratory, <http://www.lbl.gov/MicroWorlds/ALSTool/EMSpec/EMSpec2.html>

Thank you!

- Welcome to a disucssion if time allows it!