Abstract

This paper provides an overview of suburbanisation in USA and Connecticut, with the intent of posing it as a possible model of future development in Estonia. Existing literature is analysed including the suburb/exurb debate and factors affecting suburbanisation. Related data are presented. Connecticut as a state especially impacted by suburbanisation is taken under closer consideration. Patterns of suburbanisation and the impact of it on the landscape are discussed as well as some views on the likelihood that Connecticut's, and more generally the USA's, suburban experience foretells similar trends in now rapidly developing areas of Central Europe, exemplified here in particular by Estonia. Trends in Estonian land use and population distribution are presented together with necessary background information. According to scenarios for Estonia’s future it is pointed out how Estonia could achieve a sustainable economy and settlement pattern, likely one that is technologically advanced and characterised by a fairly dispersed, suburbanised population, much the way Connecticut looks today.

Two figures on urban growth and the spatial distribution of population derived using satellite imagery are also presented.
the United States, in terms, of where its people live and work, has been a
decidedly suburban nation for the past three decades. In essence, the
American city has turned inside out since about 1970, thereby constituting
the most profound social and economic transformation in its history.
(Muller, p. 45)

1 Introduction

Connecticut has increasingly been identified as a "suburban" state. This
reflects the fact that residences of people employed in manufacturing and
service occupations, and to a lesser extent businesses themselves, have
been built in virtually all parts of the state. Population densities are, of
course, still highest near the centre of cities and decline steeply through the
suburbs out to rural areas. Some rural areas are preserved officially as
"open space" (e.g., state forests, municipal water supply areas, and wildlife
management areas), but other areas have begun to experience the impacts
of the in-migration of urban- and suburban-oriented commuters. Typical
population densities in Connecticut (see Table 1) are far greater than most
parts of the USA and more similar to densely populated areas in Europe.
Also, unlike many areas in the USA, but similar to Western and Northern
Europe, Connecticut and other areas in New England have, owing to
historical experience, a dense pattern of small villages and a strong land
use/landscape planning tradition. Though many elements of the
Connecticut land use/landscape pattern are quite recognisably "American",
other characteristics (e.g., strict size and placement limitations on outdoor
advertising and strict protection of wetlands) more resemble North
European practice than, for example, land use planning practices in Florida
and Texas.

The dramatic, on-going political and economic transition of Central
and Eastern Europe is in some ways, on the one hand, a unique event
punctuated by rapid transformation of planned economies directed by
authoritarian political structures into Western-style democratically ruled
market-economies. On the other hand, the political, economic, and social
transformations of Central and East European societies may well follow
development paths similar to those taken by the now highly developed
societies of Western Europe and North America. Estonia, until 1991 an
occupied state that became the most economically developed republic of
the USSR, has embarked on one of the most ambitious reform efforts in
Central and Eastern Europe, in some ways returning to its centuries-old
tradition of close ties to Western and Northern Europe (most notably with Germany and Sweden in the past and Finland in the present).

Estonia, with some features characteristic of both Eastern and Northern Europe, has an average population density of 32 persons per sq. km. To compare population densities of different centres may be very misleading due to the ways these areas are defined in Estonia or in Connecticut. Still, various means of calculation show that population densities in Estonian settlements are similar to corresponding numbers in Connecticut. Forty-one percent of the population in Estonia is living in its two biggest cities, 10 per cent in settlements smaller than 100 inhabitants. Scattered villages are a rather traditional type of inhabitation in the Estonian countryside.

Table 1: Generalised population densities for Connecticut settlement types, 1990

<table>
<thead>
<tr>
<th></th>
<th>Pop/sq. mile</th>
<th>Pop/sq. km</th>
</tr>
</thead>
<tbody>
<tr>
<td>Largest Urban Centres</td>
<td>7000-9000</td>
<td>2700-3400</td>
</tr>
<tr>
<td>Densely Settled Areas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>of Smaller Urban Centres</td>
<td>1000-5000</td>
<td>400-2000</td>
</tr>
<tr>
<td>Inner Suburbs of Larger Urban Centres</td>
<td>500-1000</td>
<td>200-400</td>
</tr>
<tr>
<td>Outer Suburbs</td>
<td>150-400</td>
<td>25-150</td>
</tr>
<tr>
<td>Rural/Exurban Areas</td>
<td>20-100</td>
<td>8-15</td>
</tr>
<tr>
<td>Connecticut</td>
<td>678</td>
<td>262</td>
</tr>
</tbody>
</table>

Data source: Bureau of the Census.

Estonia and its countryside are changing rapidly, owing especially to sharply decreased government intervention in the economy, increased incomes, and related increased personal mobility tied to greater auto ownership. The latter changes have important implications for the Estonian landscape and land use patterns, the development of which might benefit from examination of success and failure of landscape/land use development experiences in regions which earlier experienced the changes now underway in Estonia.

This paper outlines patterns and processes of suburbanisation in the USA, and more specifically in Connecticut, as a prelude to considering the trajectories of possible future land use/landscape changes in Estonia. There are several tenable bases for the comparison between Estonia and
Connecticut in that both regions have large urban areas bounded by extensive areas of scenic field and forest, and both regions have been impacted by external "shocks" that have dramatically and negatively affected agriculture. In Connecticut, there has been interregional economic competition from more agriculturally productive parts of the USA, driven by ever greater regional integration of the country over more than a century owing to declining transport costs. In Estonia, there is competition from other parts of Europe driven by the processes of European economic development and political-economic integration. In both regions, as the demand for agricultural land has fallen, the demand for land from populations decentralising from concentrated urban areas has been increasing.

These processes of population deconcentration, suburbanisation, and land use change began decades ago in Connecticut, where they continue. Estonia is now experiencing temporally compressed versions of the changes that began earlier elsewhere. Perhaps, with the benefit of prior example, Estonia and other Central and East European countries can avoid the economic and environmental costs of American suburbanisation, while still allowing people to enjoy the benefits of personal choice and "country-living lifestyles" apparently sought by many Estonians and Americans alike.

2 The process of suburbanisation in the USA

A very large, ever growing, and diverse literature exists on the process and pattern of American suburbanisation. The literature spans interest levels from publications on the USA written primarily for professional specialists (e.g., Muller47 and Stilgoe61) to ones intended to appeal to a wider readership (e.g., Garreau20 and Jackson31). There are also some corresponding works on Connecticut (e.g., Lewis36 and Meyer43, Berentsen2 and Janich32, respectively). Table 2 presents an initial overview of the major factors identified in the literature that, at one time or another, appear to lead to the development of suburbs.

It should first be noted that there also exists an emerging debate about what constitutes the difference between (a) suburbs and exurbs, the latter defined as areas settled by a non-farm population whose lives are tied to developments in nearby urban and suburban centres (e.g., by way
of commuting), and (b) other, non-metropolitan regions experiencing population growth as the result of another process of spatial population deconcentration in the USA, referred to as "counterurbanisation" (e.g., see Long and Nucci37). Though identifying the differences in causes and patterns of development in suburbs/exurbs and other non-metropolitan areas is an important one, it will not be directly addressed here. Some small town and rural areas in Connecticut may be somewhat influenced by forces influencing counterurbanisation, but the development of suburbs and exurbs seems much more dominant, given that virtually the entire area of the state is within about 40 miles (60 km) of a large urban centre, and much of south-western Connecticut (ultra-prosperous Fairfield County) lies well within the commuting zone of New York City.

A "suburb" as defined in this paper includes medium and low density residential settlement with a dominance of single-family detached homes; relatively large, landscaped lots; and separation of home from work resulting in commuting. Ever increasing population sizes and densities as well as decentralisation of economic activities from central cities have also resulted in a new type of suburban phenomenon, the "suburban downtown"24,48. These are important and ever more common nodes of population and commercial concentration outside a metropolis' historic CBD. The emergence of these quasi-urban centres and the overlapping areas of urban dominance in densely packed areas such as Megalopolis have resulted in the evolution of polycentric American cities and urban constellations, in contrast to the simpler structures identified in the original models of central place theory and urban land use. Reflecting these realities, for example, it is estimated that in the 1990s about 44 percent of all U.S. commuting trips take place between suburbs63.

"Exurbs" or areas sometimes referred to as "rurban", are defined as places where there are many people who live urban lifestyles (including commuting to urban or suburban areas), but in a setting that otherwise appears rather rural (e.g., much of such an area may still be dominated by field and forest). Truly rural areas, where people's occupations depend on small, local businesses and on local natural resources (e.g., in agriculture and forestry) and where fields and forest (or grassland in parts of the West) dominate, are now practically non-existent in Connecticut and
elsewhere in densely populated southern New England.

As elsewhere in the USA, the development of suburbs and exurbs has been influenced by a long list of interrelated factors (Table 2). Of the many factors noted and discussed in the suburbanisation literature, a few seem most important in making the USA the most suburbanised of all world countries.

1. The population of the USA is, on average, quite prosperous, including a very large and broad "middle class", whose members often aspire for and achieve residence in the sprawling hinterlands of the USA's cities.

2. A cultural preference for suburban residence in the USA is made economically feasible for millions of people owing to high average incomes; a dense net of good and ever-expanding, government-provided highways; and relatively low cost land, building materials, and energy for the country's 200 million cars and trucks.

3. A well developed set of industries, as well as formal and informal political interest groups, benefit from the on-going process of American suburbanisation and, in tandem with continuing population growth, help propel it forward with support from government subsidies and policies that more often favour suburbs rather than central cities.

4. Finally, American culture tends to lead to residential mobility of the population and suspicion of direct government action that might impede suburbanisation (e.g., stricter land use planning) or strengthen inner cities (e.g., subsidies for central city-focussed mass public transit).

Table 2: Interrelated, overlapping factors affecting suburbanisation in the USA

<table>
<thead>
<tr>
<th>technologic factors:</th>
</tr>
</thead>
<tbody>
<tr>
<td>improved modes and means of passenger and freight transport (e.g., rail and electric trolley transport in the past, and, more recently, automotive technology and highway design), decreasing commuting times from places more distant from cities</td>
</tr>
<tr>
<td>&quot;telecommuting&quot;</td>
</tr>
</tbody>
</table>
| "balloon frame" design for housing 

31
• earlier, widespread electrification, bringing many heretofore urban amenities to the "countryside"
• labour-saving devices for the home (creating more leisure time)
• increase in horizontally organised, and, therefore, land extensive manufacturing operations

**economic/resource-related factors:**
• post-WWII pent-up housing demand resulting from privations of the depression and war; further increased housing demand from rising incomes, population sizes, and number of households
• a relatively high income middle class, which can afford suburban homes, labour-saving devices, and commuting costs
• a reduced length of work week, allowing more time for commuting and emphasis on free time activities
• relatively low cost building materials, energy, and suburban and rural land
• high and rising tax burdens on central cities, which often have declining populations and increasing concentrations of poorer, minority residents
• concern for quality of public schools in central cities
• relatively free market ("capitalist") conditions, creating favourable conditions for businesses benefiting from suburbanisation, notably "developers"
• relocation of retail suppliers/employers and manufacturing employers to suburbs, in part to be near suburban residences of workers
• increased number of professionals (including writers and other artists) who can work in more remote locations (e.g., telecommuting)
• increased number of prosperous retirees and prosperous non-wage earners (e.g., based on inheritance and stock market returns) who can afford suburban or rural life

**sociocultural factors:**
• limited support for restrictions on property and for land use planning
• preference for private, non-urban residential sites, and especially
single-family detached homes
• preference for auto transportation
• acceptance of residential mobility, and social and technological change
• anti-urban attitudes, and status accorded to suburban residences
• concern for urban health problems (especially earlier) and crime (especially more recently)
• environmental and recreational appeal of suburbs
• class conflict and ethnic/racial discord within and "white flight" from cities
• in recent years, lessened discrimination toward minorities within the suburbs and increased "minority" suburbanisation (including development of "ethnoburbs")
• fragmentation of, first, the extended and, more recently, the nuclear family, leading to creation of more independent households
• larger number of households resulting from population growth and changes in family structure

political and public policy-related factors:
• Federal subsidies for home mortgages (e.g., FHA, VA) and highways, and local government subsidies for suburban infrastructure
• Federal tax deductions for mortgage interest and state/local property taxes
• relatively weak land use controls
• procedures that make local government incorporation easier than urban annexation
• political fragmentation of metropolitan areas and lack of co-ordination in planning

demographic factors:
• long era of relatively rapid population growth
• post World War II "baby boom"

Source: authors

There is a striking, ensuing pattern of a geographically deconcentrated population in the USA; no apparent end is in sight to this decades-old suburbanisation trend. Population and employment density
gradients have been decreasing in many metropolitan areas during the post World War II era (e.g., Heffley and Nate25, Mills45). Ever more people and greater proportions of the U.S. population live outside of central cities, though concentration of the U.S. population in geographically broad metropolitan regions continues to grow (Table 3). For example, in 1957, 57 percent of metropolitan residents and 70 percent of metropolitan jobs were located in central cities, but by 1990 this had declined to 37 percent and 45 percent, respectively44. And, even during a relative slowdown in metropolitan and suburban growth in the 1980s, all 21 metropolitan areas with over two million people experienced more population growth (or, in a few cases, less decline) in the suburbs than in central cities; the situation was only slightly less dramatic in metropolitan areas with populations between 500,000 and 2,000,000. An apparent relationship between metropolitan size and patterns of suburbanisation is suggested by the fact that during the 1980s in metro areas with less than 500,000 population, suburban population growth still also exceeded that of central city growth by the ratio of 2:1.

Table 3: Geographic patterns of the U.S. metropolitan population

<table>
<thead>
<tr>
<th>Year</th>
<th>U.S. population, mill.</th>
<th>metropolitan population, mill.</th>
<th>metro. growth in previous period, %</th>
<th>non-metro growth in previous period, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1900</td>
<td>76.0</td>
<td>24.1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1910</td>
<td>92.0</td>
<td>34.5</td>
<td>43.2</td>
<td>10.8</td>
</tr>
<tr>
<td>1920</td>
<td>105.7</td>
<td>46.1</td>
<td>33.4</td>
<td>3.7</td>
</tr>
<tr>
<td>1930</td>
<td>122.8</td>
<td>61.0</td>
<td>32.4</td>
<td>3.7</td>
</tr>
<tr>
<td>1940</td>
<td>131.7</td>
<td>67.1</td>
<td>10.0</td>
<td>4.5</td>
</tr>
<tr>
<td>1950</td>
<td>151.3</td>
<td>85.9</td>
<td>28.0</td>
<td>1.3</td>
</tr>
<tr>
<td>1960</td>
<td>179.3</td>
<td>114.4</td>
<td>33.2</td>
<td>-0.8</td>
</tr>
<tr>
<td>1970</td>
<td>203.3</td>
<td>141.4</td>
<td>23.6</td>
<td>-4.6</td>
</tr>
<tr>
<td>1980</td>
<td>226.6</td>
<td>170.5</td>
<td>20.5</td>
<td>-9.4</td>
</tr>
<tr>
<td>1990</td>
<td>248.7</td>
<td>198.0</td>
<td>16.1</td>
<td>-9.6</td>
</tr>
<tr>
<td>1994</td>
<td>259.2</td>
<td>207.7</td>
<td>4.9</td>
<td>1.6</td>
</tr>
</tbody>
</table>

Data sources: Frey and Speare18, Bureau of Census6
Table 4: Average length (in miles) of journey-to-work for attorneys working in Manhattan

<table>
<thead>
<tr>
<th>Year</th>
<th>1888</th>
<th>1898</th>
<th>1908</th>
<th>1917</th>
<th>1928</th>
<th>1938</th>
<th>1949</th>
<th>1960</th>
<th>1973</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5.74</td>
<td>6.95</td>
<td>7.49</td>
<td>7.87</td>
<td>9.72</td>
<td>10.56</td>
<td>12.41</td>
<td>13.74</td>
<td>15.03</td>
</tr>
</tbody>
</table>

Source: Jackson\textsuperscript{31}, p. 319

The development of New York City suburbs began early, including suburban movement of people and jobs into south-western Connecticut throughout most of the 20th century. These patterns of development are fairly typical of those occurring in other U.S. cities (Tables 4-5). In short, suburbanisation is well advanced in the USA and in all of its cities, and the process continues without any clear indication of when some sort of equilibrium between forces of demographic and economic deconcentration and concentration might be reached.

Table 5: Geographic Pattern of Fortune 500 Headquarters Locations

<table>
<thead>
<tr>
<th>Percent Headquarters in U.S. Suburbs</th>
<th>Number of Headquarters in Metropolitan New York City</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1968</td>
</tr>
<tr>
<td>1969</td>
<td>11</td>
</tr>
<tr>
<td>1978</td>
<td>34</td>
</tr>
<tr>
<td>1994</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>1980</td>
</tr>
<tr>
<td></td>
<td>1994</td>
</tr>
</tbody>
</table>

Source: Muller\textsuperscript{48}

3 The process of suburbanisation in Connecticut

Factors affecting the process of suburbanisation in the USA in general all apply in the case of Connecticut. This small state, in fact, has been especially impacted by suburbanisation owing to its location amidst Megalopolis, its relatively "advanced" economic structure, and the prosperity of much of its population.

At the time of European settlement, the hunter-gatherer-gardener
native-American society in Connecticut had relatively little impact on broad landscape patterns, and it is estimated that 95 percent of the state was covered by forest. However, European settlement, beginning in the 1620s, led to ever an smaller native-American population and an ever larger, European-dominated population that until the early 1800s was agriculturally based. By the 1830s, Connecticut was only 25 percent forested, with most of its area in fields. Accounts and lithographs documenting landscapes in the early to mid-19th century indicate that the state's landscape must have looked like England's Yorkshire Dales region—rolling hill country with forest patches within a landscape punctuated by walled fields and nucleated villages dominated by tall church spires.

Table 6: Number of Farms and Land in Farms, Connecticut 1945-1992.

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Farms</th>
<th>Acres in Farms, 000s</th>
</tr>
</thead>
<tbody>
<tr>
<td>1945</td>
<td>22,241</td>
<td>1593</td>
</tr>
<tr>
<td>1950</td>
<td>15,615</td>
<td>1272</td>
</tr>
<tr>
<td>1954</td>
<td>12,753</td>
<td>1138</td>
</tr>
<tr>
<td>1959</td>
<td>8292</td>
<td>884</td>
</tr>
<tr>
<td>1964</td>
<td>6068</td>
<td>721</td>
</tr>
<tr>
<td>1969</td>
<td>4490</td>
<td>541</td>
</tr>
<tr>
<td>1974</td>
<td>3421</td>
<td>440</td>
</tr>
<tr>
<td>1978</td>
<td>3519</td>
<td>456</td>
</tr>
<tr>
<td>1982</td>
<td>3754</td>
<td>444</td>
</tr>
<tr>
<td>1987</td>
<td>3580</td>
<td>398</td>
</tr>
<tr>
<td>1992</td>
<td>3427</td>
<td>359</td>
</tr>
</tbody>
</table>

Note: The continued reduction in farmed area since 1974, without a fall in the number of farms, reflects in part an increase in "urban-oriented" farming (e.g., firms growing plants for suburban lawns), while the number of "traditional" dairy farms, covering much more area, has declined dramatically.

Data sources: Bureau of the Census 1980 and 1994

A variety of forces during the mid-19th century began to alter Connecticut's economy and landscape. The settlement of the agriculturally rich Midwest and associated improved transportation
systems spurred urban-economic growth in Eastern cities and undercut New England farmers, especially those working poorer soils and locations in, for example, Connecticut's western and eastern uplands (Table 6). There ensued a long era of urban growth and rural depopulation in the state, trends that persisted until the early part of the 20th century. Changes on the landscape resulting from this included growth of urban areas, decreases in farmland, and increased land in forest.

Another new era, with changing economic conditions and settlement and landscape patterns emerged by the 1920s and 1930s. Owing to its location near New York City, an era of suburbanisation began in the late 1800s in south-western Connecticut, originally supported by commuter rail and electric trolley movement, and was a well established pattern by the early 1900s. By the 1920s and 1930s, increased incomes and improved access to private autos and roads brought the impacts of suburbanisation to most other areas of the state as well. The combined effects of commuting by rural residents, inward migration of out-commuters, and the, by then, vastly reduced local farm-dependent population, resulted in a rural population turnaround. After many decades of population decline, most rural Connecticut communities began to experience population growth again, a pattern that continues through the present. During this era the proportion of the landscape "developed" and being used for roads, buildings, and suburban parcels (including lawns and gardens) has increased. This has again resulted in encroachment of people into Connecticut's forests (this time primarily for residential rather than agricultural purposes) as well as onto farmland (either productive land that is attractive to suburbanites, such as areas near large cities, or onto recently abandoned farmland; see Fig. 1 and Table 7).

Connecticut's metropolitan areas experienced the most extensive growth of suburbanisation in the post World War II era, peaking in the 1950s and 1960s. The trend continues into the 1990s, with clear indications that commuters are willing and able to travel ever greater distances (Table 3). Suburban/exurban growth continues to dominate population change in Connecticut today (Table 8), an era during which the state otherwise has one of the slowest changing populations among all U.S. states. These demographic and geographic patterns will also
Figure 1: Urban growth during two real estate market cycles which occurred between 1985 and 1995 in the greater Hartford, CT USA metropolitan area. Urban growth was derived from a post-classification change detection technique using Landsat Thematic Mapper data (for technical details write samara@ma.ultranet.com).
likely persist well into the 21st century.

Table 7: Land use/land cover and changes in the Hartford region, 1985-1995

<table>
<thead>
<tr>
<th></th>
<th>Percent of total 1985</th>
<th>Percent of total 1995</th>
<th>Change 1985-95</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forest</td>
<td>50.2</td>
<td>49.0</td>
<td>-2.2</td>
</tr>
<tr>
<td>Urban</td>
<td>22.4</td>
<td>30.3</td>
<td>+7.9</td>
</tr>
<tr>
<td>Rangeland</td>
<td>9.4</td>
<td>7.9</td>
<td>-1.5</td>
</tr>
<tr>
<td>Agriculture</td>
<td>6.0</td>
<td>4.5</td>
<td>-1.5</td>
</tr>
<tr>
<td>Other (inc. &quot;barren&quot;, &quot;wetlands&quot;, and &quot;water&quot;)</td>
<td>12.0</td>
<td>8.3</td>
<td>-3.7</td>
</tr>
</tbody>
</table>

Source: Derived from Samara56

Table 8: Components of population change for selected Connecticut towns, 1960-1970

<table>
<thead>
<tr>
<th>Town</th>
<th>% Pop. Change 1960-1970</th>
<th>Natural Increase</th>
<th>Net Migration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brookfield</td>
<td>184.5</td>
<td>965</td>
<td>5318</td>
</tr>
<tr>
<td>Ledyard</td>
<td>175.0</td>
<td>2244</td>
<td>7198</td>
</tr>
<tr>
<td>Tolland</td>
<td>166.3</td>
<td>1055</td>
<td>3852</td>
</tr>
<tr>
<td>Clinton</td>
<td>146.4</td>
<td>1148</td>
<td>4953</td>
</tr>
<tr>
<td>Ridgefield</td>
<td>122.8</td>
<td>1494</td>
<td>8529</td>
</tr>
<tr>
<td>Killingsworth</td>
<td>121.8</td>
<td>154</td>
<td>1183</td>
</tr>
<tr>
<td>Madison</td>
<td>113.9</td>
<td>467</td>
<td>4734</td>
</tr>
<tr>
<td>New Fairfield</td>
<td>108.4</td>
<td>517</td>
<td>3119</td>
</tr>
<tr>
<td>Montville</td>
<td>101.9</td>
<td>2324</td>
<td>5579</td>
</tr>
<tr>
<td>N. Stonington</td>
<td>89.1</td>
<td>452</td>
<td>1314</td>
</tr>
<tr>
<td>Monroe</td>
<td>88.2</td>
<td>1663</td>
<td>3982</td>
</tr>
<tr>
<td>Willington</td>
<td>87.3</td>
<td>311</td>
<td>1439</td>
</tr>
<tr>
<td>Somers</td>
<td>86.2</td>
<td>438</td>
<td>2753</td>
</tr>
<tr>
<td>Weston</td>
<td>83.6</td>
<td>355</td>
<td>3023</td>
</tr>
<tr>
<td>New Milford</td>
<td>75.5</td>
<td>1303</td>
<td>4980</td>
</tr>
<tr>
<td>Simsbury</td>
<td>72.4</td>
<td>1642</td>
<td>5695</td>
</tr>
</tbody>
</table>
The current era of suburban/exurban growth in Connecticut is generating another "landscape era" in Connecticut's history. In addition to the earlier, general eras noted above (an era of virtual wilderness landscape through the 16th century, an evolving agricultural landscape from about 1620 to about 1850, and an urbanising landscape with farm abandonment from about 1850 well into the 20th century), the state is now experiencing on-going deconcentration of residential and economic activities from urban and suburban areas into exurban and remaining

<table>
<thead>
<tr>
<th>Town</th>
<th>Current Population</th>
<th>Change 2000-2010</th>
<th>Change 2010-2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wilton</td>
<td>69.1</td>
<td>659</td>
<td>4887</td>
</tr>
<tr>
<td>East Lyme</td>
<td>68.1</td>
<td>1463</td>
<td>3154</td>
</tr>
<tr>
<td>Old Saybrook</td>
<td>60.6</td>
<td>676</td>
<td>2518</td>
</tr>
<tr>
<td>Avon</td>
<td>58.4</td>
<td>659</td>
<td>2420</td>
</tr>
<tr>
<td>Orange</td>
<td>58.2</td>
<td>695</td>
<td>4282</td>
</tr>
<tr>
<td>Trumbull</td>
<td>54.1</td>
<td>1526</td>
<td>9489</td>
</tr>
<tr>
<td>Guilford</td>
<td>52.1</td>
<td>1063</td>
<td>3057</td>
</tr>
<tr>
<td>Southbury</td>
<td>51.4</td>
<td>348</td>
<td>2318</td>
</tr>
<tr>
<td>Woodbridge</td>
<td>48.1</td>
<td>319</td>
<td>2172</td>
</tr>
<tr>
<td>Newington</td>
<td>47.4</td>
<td>2111</td>
<td>6262</td>
</tr>
<tr>
<td><strong>Urban</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stamford</td>
<td>17.3</td>
<td>11,419</td>
<td>4666</td>
</tr>
<tr>
<td>Norwalk</td>
<td>16.7</td>
<td>9074</td>
<td>2264</td>
</tr>
<tr>
<td>Windham</td>
<td>15.6</td>
<td>1873</td>
<td>780</td>
</tr>
<tr>
<td>Manchester</td>
<td>14.0</td>
<td>4217</td>
<td>1675</td>
</tr>
<tr>
<td>Middletown</td>
<td>11.0</td>
<td>3722</td>
<td>-48</td>
</tr>
<tr>
<td>Norwich</td>
<td>8.4</td>
<td>4133</td>
<td>-900</td>
</tr>
<tr>
<td>Meriden</td>
<td>7.9</td>
<td>5305</td>
<td>-1196</td>
</tr>
<tr>
<td>Ansonia</td>
<td>6.8</td>
<td>1778</td>
<td>-437</td>
</tr>
<tr>
<td>Torrington</td>
<td>6.3</td>
<td>1966</td>
<td>-59</td>
</tr>
<tr>
<td>New Britain</td>
<td>1.5</td>
<td>6794</td>
<td>-5554</td>
</tr>
<tr>
<td>Waterbury</td>
<td>0.8</td>
<td>8107</td>
<td>-7204</td>
</tr>
<tr>
<td>Bridgeport</td>
<td>-0.1</td>
<td>16,990</td>
<td>-17,196</td>
</tr>
<tr>
<td>Hartford</td>
<td>-2.6</td>
<td>19,874</td>
<td>-24,040</td>
</tr>
<tr>
<td>New London</td>
<td>-7.5</td>
<td>3782</td>
<td>-6334</td>
</tr>
<tr>
<td>New Haven</td>
<td>-9.4</td>
<td>13,705</td>
<td>-28,046</td>
</tr>
</tbody>
</table>

Data Source: Groff and Reiser\textsuperscript{23}, pp. 33-40
"rural" areas. The state's regrown forest, as well as some of its little remaining farmland, is in some cases being systematically suburbanised at the edges of built-up metropolitan areas, and individual businesses and residences are increasingly developing on "openings" in what had been for about a century a rural landscape marked by decreasing areas of farmland and increasing amounts of woodland (Fig. 1).

Though the latter trend continues, the process is now complicated by the newly established scattered homes and businesses and by a decades-long pattern of ever lengthening and intensifying ribbons of commercial development along major transport corridors, particularly in the vicinity of urban areas. In short, as indicated at the outset of the paper, suburbanisation now impacts all of Connecticut, and, indeed, may well typify its overall settlement and landscape structure.

4 Suburbanites: appreciating or plundering the landscape?

While there are clearly some forces in the USA and in Connecticut that are repelling people from cities and driving them toward the suburbs/exurbs, there are just as clearly many positive factors about suburbia/exurbia that appeal to people and draw them hither (Table 2). The impacts of the process have, however, now become so massive and intrusive that a loose, unofficial coalition of concerned "urbanists", disgruntled "native" rural dwellers, early urban "escapists", and "ecologists" see a number of problems with the interrelated social, settlement, and landscape structures that have emerged in contemporary America (Table 9). Many of these concerns, to the extent that they are real and well founded, are inconsistent with concepts of social, economic, or ecological sustainability.

Critics argue that American-style suburbanisation is decimating cities and contributing to social (including "racial" and ethnic) inequality and isolation, is wasteful of limited land and energy resources, and threatens further damage to the quality of air, water, and living species in areas now at least somewhat protected from the intensely intrusive impacts of urban civilisation (e.g., see Turner62). Though suburban residence may help some people fulfil an American "dream", many people believe it simply portends greater future problems and deprivations and offers neither a model for future modes of life in America or elsewhere. The concerns have for
decades been a consistent theme associated with suburbanisation in the USA and Connecticut (e.g., Berentsen, Commonwealth Research Group, Connecticut Interregional Planning Program, Hypes, Land Conservation Coalition of Connecticut, Meyer, Schneider-Sliwa). Of course, more or less dire forecasts and assessments of the impacts of suburbanisation in the USA and Connecticut are also challenged by people who emphasise benefits of less dense human settlement, and dispute and/or discount its supposed problems.

Table 9. Interrelated maladies ascribed to the suburbs

- conflict of personal and broader societal goals and costs (e.g., private benefits of detached, single family dwelling unit in areas of low density versus associated social costs, such as those noted below)
- wasteful use of land and energy, including loss of agricultural land and degradation of "natural" flora and fauna
- increased traffic congestion, resulting in a variety of negative economic impacts
- increased air pollution caused by greater movement of cars and trucks within dispersed metropolitan areas
- increased water pollution owing to dispersed, often untreated sewage and chemical sources
- social isolation and exclusion
- conflicts between "native" residents and "immigrants" over life-styles, values, and public policies (e.g., level of service provision and taxation)
- "spatial mismatch" hypothesis (growing geographic dislocation of jobs in suburbs without public transit access, and low income, minority populations "stranded" in inner cities without jobs)
- lack of support for public-sponsored "high culture", which normally requires broad-based support and is usually concentrated in or near city centres
- decline of central cities, creation of urban blight
- political fragmentation of metropolitan areas and related difficulties with planning
- conflicts between the interests of farmers, preservationists, and suburban residents over, for example, land uses and land use practices

Source: authors
5 The Connecticut suburb as model: could development in Connecticut portend future trends in Central European (human) landscapes?

Among the features of many areas in the northern parts of Central Europe, including Estonia, are: relatively rapid pace of economic liberalisation and growth, related weakening of land use controls, government subsidies for new housing, increasing incomes and auto ownership, relatively low land costs, and rapid growth of new consumer-oriented businesses on newly established suburban sites. These trends suggest that the region may be poised for the onset of a process of suburbanisation with at least some similarities to suburbanisation in the USA and Connecticut. Certainly it must be noted that the historic economic, political, and cultural legacies as well as the latter's impacts on existing landscapes will inevitably result in outcomes in Central Europe at least somewhat dissimilar to those in the USA. However, the similarity of some underlying processes and forces will likely lead to outcomes that will also to some extent resemble those now observable in the USA. Within the American context, the relatively stronger planning traditions of Vermont and southern New England mean that processes and landscapes in this region are more likely models for development in much of Central Europe than the much less constrained development of urban-suburban landscapes observable in parts of the U.S. South and Southwest (exemplified by the astonishingly high levels of sprawl around such cities as Miami, Atlanta, Dallas-Fort Worth, Phoenix, Las Vegas and Los Angeles).

Suburbanisation of residential and commercial activities is certainly occurring to a surprising extent in, for example, Poland and eastern Germany. In eastern Germany, as in other parts of Central Europe including Estonia, very strong central governmental control and relatively low incomes and private auto ownership focussed urban development in and near city centres from 1945 until 1989. However, during the first years following German unification, eastern Germany experienced strong forces favouring suburbanisation (e.g., greatly weakened central and local governmental control, rising incomes and
auto ownership, pent-up demand for housing and for commercial services, subsidies for new housing and business investments, and improving roadway conditions). The result has been a dramatic and rapid expansion of suburbs in eastern German metropolitan areas during the 1990s. Efforts are afoot and processes are emerging that will likely stem this burst of suburban development. However, stronger suburbanisation trends have also emerged during the 1990s in western Germany, and the country at the present seems to be accepting a higher level of deconcentration of population and businesses from historic settlement cores.

The Estonian case, in some ways comparable to other regions in Central Europe, will be discussed in more detail below.

6 The case of Estonia

How can Connecticut be compared with Estonia? The former has one of the highest standards of living in the USA; the latter, though prosperous in relative terms, was until recently rather agriculturally-oriented and within the economically faltering Soviet Union. However, looking back through time one can see that Connecticut was also once very agricultural. Contemporary suburbanisation results from the state's location with respect to New York City and from a successful transition to an information society. Estonia is also being transformed into an information society and its capital, Tallinn, is increasingly dominant as an employment centre. Will, in the future, the rest of Estonia be a mostly forested hinterland of Tallinn? Background on the nature of the Estonian transition follows.

6.1 Land use

Before World War II, agriculture was a substantial part of Estonia’s economy. Agricultural land covered 58.3 percent of the country’s territory (arable land -24.4%) and forested land made up 19.2 percent. Since that time the share of agricultural land has decreased steadily (Table 10), although due to political and economic factors during Soviet rule there were other, more complex (and sometimes contradictory)
During the socialist period (1940-1989) land in agriculture decreased by 44.5 percent and the area in forest more than doubled. During this period, the overwhelming majority of arable land belonged to 192 collective farms and 121 state farms. Eighteen percent of the employed population was engaged in agriculture, hunting and forestry (each of the two latter had about 1% of employment), who produced 21.5 percent of the GDP. The sale of relatively low quality output was oriented toward large Russian cities (e.g., Leningrad - now St. Petersburg). An example of Soviet-style agriculture included large pork production combines (50,000 animals in each), which used imported grain and caused serious environmental problems.

Table 10: Changes in the structure of Estonian land use

<table>
<thead>
<tr>
<th>Year</th>
<th>Agricultural land</th>
<th>Arable land</th>
<th>Forest</th>
<th>Forest **</th>
</tr>
</thead>
<tbody>
<tr>
<td>1940</td>
<td>58.7</td>
<td>24.6</td>
<td>19.3</td>
<td>20.6</td>
</tr>
<tr>
<td>1950</td>
<td>55.2</td>
<td>21.0</td>
<td>22.6</td>
<td>24.2</td>
</tr>
<tr>
<td>1960</td>
<td>45.1</td>
<td>21.8</td>
<td>32.3</td>
<td>34.6</td>
</tr>
<tr>
<td>1970</td>
<td>36.3</td>
<td>23.5</td>
<td>38.1</td>
<td>40.7</td>
</tr>
<tr>
<td>1980</td>
<td>33.2</td>
<td>25.1</td>
<td>42.1</td>
<td>45.0</td>
</tr>
<tr>
<td>1989</td>
<td>32.5</td>
<td>25.3</td>
<td>42.6</td>
<td>45.6</td>
</tr>
<tr>
<td>1997</td>
<td>30.3</td>
<td>21.4</td>
<td>44.6</td>
<td>47.7</td>
</tr>
<tr>
<td>...</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td></td>
<td>30.3</td>
<td></td>
<td>32.0</td>
</tr>
</tbody>
</table>

*percent of Estonian territory; **percent of terrestrial land

Data sources

During the period of transition, Estonian economic policy has been very liberal (e.g., no customs limitations on agricultural products), though Russia has established especially high custom taxes on Estonian agricultural exports. The Estonian "shock therapy" resulted in, among other things, rapid changes in agriculture. In 1996, the proportion of GDP accounted for by agriculture and hunting was down to 4.8 percent, and 11.2 percent of employed persons were engaged in agriculture, hunting and forestry (a decrease in absolute numbers by more than 50%—from 151,000 persons in 1989 to 74,000 in 1995). Yields of field crops and
the productivity of livestock are - after having had even lower levels - similar to those during the era of socialist agriculture.

The problem of the "demolition of Estonian agriculture" is a very severe one, both from a political, and especially, a social point of view. But looking at Estonia's geographical position on a map of European agro-climatology (see, for example, Brouwer⁴) and taking into account Estonia's struggles to join the EU, it is clear that if Estonia is successful, agriculture will never be a ‘substantial part of Estonia’s economy’. Radical change has caused many regional problems in rural areas, but it has enabled Estonia to go through this painful restructuring rapidly and enabled it to win a very important resource—time.

Some people are hoping that trends in climate change will give more opportunities to Estonian agriculture. However, concrete research¹³ indicates that warming will take place primarily in the cold season and changes in agro-climatological conditions (although favourable) will be small. Another available reserve within Estonian agriculture are the soils of some traditional arable lands not used during the Soviet period due to their peripheral location with respect to centres of collective and state farms. These soils were unpolluted by pesticides and fertilisers. Probably, ecological agriculture in Estonia may find its niche in the European market, but this will include a limited number of farmers (which will use the latest biotechnology in order to be competitive). Finally, it should be mentioned that the Estonian food production industry may be able to achieve some success, based on factors beyond simply the availability of extensive local raw materials.

In forestry, total timber quantities felled doubled during the 1990s⁶⁰. Estonian forests are producing 5.8 cub. m of wood per capita per year¹⁴, which may offer good potential for economic development if the wood is exported not just as timber (as it is today) but in higher value-added forms, e.g. via the furniture industry (a traditional activity, which increased output by 26.4% in the early 1990s⁵⁵). Cultivation of spruce may be an optimal solution both climatologically and economically for several rural areas in Estonia, but it is not easy to start modern forestry in abandoned croplands and grasslands (fungi cause root rot, there is a long payback time for capital investment, etc.).

A very important factor to be taken into account with respect to contemporary land use changes in Estonia is the land reform process,
consisting of reprivatisation (restitution of ownership as it existed before the Soviet annexation of Estonia in 1940) and introduction of a new taxation system (see Land Policy\textsuperscript{35}). Due to political factors this process is a very slow one today, causing ownership fragmentation (small farms are divided between the heirs of former owners), and will take many years before the land market stabilises.

6.2 Population distribution

Since 1990 the resident population of Estonia has decreased steadily and at the beginning of 1997 was on the level of the early 1980s - 1,462,130\textsuperscript{60}. Forecasts indicate that this decrease will continue (e.g. Hillebrecht & Harter\textsuperscript{27}). Both components of population change are negative: net migration (negative since 1990, with a maximum net loss in 1992) and natural increase (negative since 1991). In 1996, each component had a fifty per cent impact on population change\textsuperscript{60}. The share of urban population (Table 11) was the greatest (71.8\%) in 1987-88\textsuperscript{40}; in 1997 it was 69.4\%\textsuperscript{60}. Also notable is that about one third of Estonia's resident population is non-native Estonian (primarily Russian), three fourths of whom live in four major cities. (One can find an overview of other demographic trends\textsuperscript{46}).

Table 11: Changes in Estonia's urban population

<table>
<thead>
<tr>
<th>Urban population: % of total</th>
<th>Urban population: annual growth rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>57.1</td>
<td>69.9</td>
</tr>
</tbody>
</table>

Source: Estonian Human...

A more detailed analysis of the dynamics of rural population has been made by Ann Marksoo\textsuperscript{40}. She describes the temporal and spatial pattern of this process (Fig. 2). An outflow of rural population into towns in the 1970s was a result of concentration of industry into large enterprises. In a period of industrial deconcentration in the 1980s\textsuperscript{53} living standards in towns were falling, and many collective farms offered better job conditions and salaries than these urban centres. Young people and ethnic Estonians went to work in rural settlements (centres of large-scale farms), where
there were also jobs in the secondary and tertiary sectors.

The Estonian tradition is for people to live in villages, in which houses are far apart. Soviet-style rural centres had large, pre-fabricated apartment houses and were oriented toward collective farm workers. Population redistribution in rural settlements is described by way of a case study of the Ida-Virumaa region: during 1979-89 population in large farm centres

Figure 2: Changes of rural-urban population redistribution in the settlement hierarchy of Estonia (simplification of Marksoo 40, 134; courtesy from A. Marksoo).
increased, but in all other rural settlements; small residential villages retained less than half of their 1959 population. Pragi shows that the rural settlement system has, however, stabilised in local communities where developed farm centres existed.

Dramatic changes in agriculture (1989-1997) have reversed rural population trends prevalent during the Soviet era. In many places the facilities of large farms have been abandoned. The number of jobs in the former rural centres has decreased dramatically. Lack of investments and a long tradition of agricultural production are hindering the re-orientation and growth of non-agricultural enterprises, especially in eastern and southern Estonia. Around larger urban centres commuting is a way out of difficulties, especially for more qualified people. For example, Tartu (the second largest city having 56.5 thousand people in the working age population) has about 5 thousand commuters.

Tallinn is the major city, with an average population density of 2722 person per sq. km (data 1995 according to Estonian Human...). Its agglomeration is growing quickly, creating great differences between the capital region and other areas. For example, in 1994 only Tallinn and its neighbouring communities had incomes per capita higher than the Estonian average.

Table 12: Net-migration of Tallinn, Tartu and their surrounding counties (respectively, Harjumaa and Tartumaa)

<table>
<thead>
<tr>
<th></th>
<th>Tallinn</th>
<th>Harjumaa</th>
<th>Tartu</th>
<th>Tartumaa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population 1997</td>
<td>420,470</td>
<td>542,054</td>
<td>101,901</td>
<td>152,046</td>
</tr>
<tr>
<td>Net migration 1995</td>
<td>-5,250</td>
<td>233</td>
<td>-1,153</td>
<td>495</td>
</tr>
<tr>
<td>Net migration 1996</td>
<td>-5,160</td>
<td>937</td>
<td>-1,335</td>
<td>497</td>
</tr>
</tbody>
</table>

Source: Statistical

Net-migration to the two largest urban centres and surrounding counties (Table 12) is resulting in suburbanisation. Also, Tallinn’s influence is now much greater in the country’s labour market than in its regional distribution of population, because many senior officials and managers are weekly commuters to the capital and have their primary residences in small cities distant from Tallinn. Restitution of farms is also used to establish summer houses in the recreational landscapes of southern
Figure 3: Spatial distribution of population in Estonia (one black dot represents 1 ha of area where buildings are the most prevalent land cover; source: the digital Base Map of Estonia compiled using Spot imagery) and 1 hour time distances from Tallinn (1 – in contemporary conditions, 2 – in 1935, according to Kant\textsuperscript{33})
Estonia. In all, there are, thus, a number of indications that a process of suburbanisation of the population is underway in Estonia and conditions are favourable for the trend to accelerate (e.g., incomes are increasing; the number of cars has doubled during the nineties, bringing with it the need for substantial road improvements in near future; and pent-up demand for consumer services is being met by new businesses located along major roads, offering new employment and shopping opportunities for rural people).

The contemporary spatial distribution of population can be depicted using maps of built-up areas compiled by means of satellite imagery (Fig. 3). Official data on internal migration are not very reliable, because the strict Soviet-era system of ‘propiska’ has been cancelled and new systems tracking current residential locations (e.g. tax and voter registration records) are not very well established. As shown by Sjöberg & Tammaru59, based on a questionnaire of a thousand respondents, official statistics systematically underestimate in-migration to cities. These authors characterise the current stage in Estonia as reurbanisation. However, in the current transition situation many families also have more than one dwelling (e.g., a flat in town, a privatised and rented out flat in another (bigger) town, and/or an old house somewhere in countryside acquired by way of restitution).

3 Scenarios for Estonia’s future

Developments in Estonia during the last ten years have come so quickly and are so manifold that their simple extrapolation will certainly not provide good long run forecasts. Therefore an approach using alternative prospective scenarios is used by the Estonian Institute for Futures Studies. (Reviews of these in English are available15, 54). Formal methods (polynomial approximation) are used by H. Palang51 to predict land use changes for 2005.

Due to the size of Estonia and its geopolitical location, external factors (first of all, developments in Russia and the EU) are very important. Therefore, respective works for Europe42 and for the Baltic Sea Region64 offer a framework of possible future worlds. Premises and possible results for Estonia’s future are summarised in Table 13.

If current developments continue, the most probable future outcome
Table 13: Scenarios for Estonia’s future

A. Three primary options associated with economic co-operation and political relations:
   - ‘Bridge’ - Estonia develops as a transit country, open both to the East and the West;
   - ‘Cordon sanitaire’ - Estonia forgoes political/economic integration with the East;
   - ‘Window to Europe’ - Estonia falls under the influence of the Russian economy.

B. Three options on Estonia’s role in the global development of information and advanced society:
   - ‘Leader’ - Estonia focuses its economy on selected high technology branches and becomes a technologically advanced state;
   - ‘Drifter’ - Estonia develops passively along with its neighbours (Finland, Sweden);
   - ‘Absentee’ - retrocession from the current trend toward computerisation of society; regression toward the status of a developing country.

C. Three most important scenarios for ‘Estonia 2010’ formulated according to above-described options:
   - ‘Ferryman’ - Estonia becomes an industrial society with a dominant transit and service economy;
   - ‘Periphery of Finland’ - Estonia develops by way of extensive Nordic (Finnish) integration;
   - ‘Interface’ - Estonia becomes an innovative information society; the aims of this direction and necessary changes in society are accepted by most of people (assumes that public agreement will be achieved).

Sources: Jaanson et al.30, Raagmaa & Terk35

for Estonia is a ‘Periphery of Finland’ scenario. Helsinki and Tallinn will become twin cities, or Tallinn will become a suburb or satellite city of Helsinki. If relations with Russia improve and market economy development continues in Russia, the probability of the ‘Ferryman’ scenario ensuing will increase. ‘Interface’ is a dream for 2010, and several indicators suggest that this direction is less unrealistic than it might seem at first glance:
   - Internet access density as an indicator of computerisation: While
Finland has first place in Europe (one host per 12 persons), Estonia is now in 14th place, having 1 connection per 78 persons (approximately the same level as Japan);

- The general level of education and trends towards a ‘learning society’: traditionally, education has been highly valued by Estonians.

  Due to a crisis in the present system of education inherited largely from the Soviet era, it is expected that radical changes will occur. The ‘Tiger Leap’ programme (http://www.tiigrihype.ee/english/) to promote computer-aided education is halfway implemented; another, more general programme (http://www.president.ee/aknoukogu/Learning.htm): “The Learning Estonia” is under preparation.

  An evaluation of the probability of the ‘Interface’ scenario is not an aim of the current paper. Even if the development trajectory falls somewhere between this scenario and the ‘Periphery of Finland’ scenario, the number of remote working places will grow considerably. To work at home is already popular today, even when possibilities for this are limited. If Estonian society can achieve social agreement on its future, an argument could be made that small, sparsely populated and mostly forested Estonia can achieve a sustainable economy and settlement pattern, likely one that is technologically advanced and characterised by a fairly dispersed, suburbanised population, much the way Connecticut looks today.

**Conclusions**

The following conclusions can be formulated:

- Suburbanisation is widespread and well studied in the USA.
- Suburbanisation leads to a dispersed distribution of population, which in some regions is more consistent with ecologically balanced and sustainable landscapes as opposed to a tendency toward landscape polarisation.
- Although suburbanisation has its pros and cons, the case of Connecticut is a good example of how the transformation from an agricultural society to an information society is mirrored in changes in land use and in settlement pattern.
- Former socialist countries in Europe are transforming their centrally planned economies and several of them will join with European
Union; therefore changes are rapid and good examples for land use are welcome.

- The relatively rapid, unplanned expansion of auto-oriented retail stores on the edges of eastern German and Polish cities, similar to recent developments in the southern and western USA and to earlier development in the north-eastern USA, are not especially good examples for Estonia.
- Among former socialist countries Estonia is most suitable to compare with Connecticut, even though several dissimilarities exist.
- Estonia's planning culture is now more *laissez-faire* than many others in Europe, and stricter than in many parts of the USA, but somewhat akin to the culture of states like Connecticut and Massachusetts in the USA.
- As a relatively small country with a relatively well educated population and few natural resources, Estonia should change from a food producer for Russia to an innovator in information technology.
- A high concentration of working places in urban centres and the traditions of having cottages close to towns foretells for Estonia that the model of suburbanised Connecticut is a suitable alternative to the centres of collective farms (where population was concentrating in Soviet times) and to 5...12-story high-rises in urban centres (where a substantial part of population is living now).

The challenge for Estonia will be to achieve a balance between allowing population deconcentration/suburbanisation from urban centres, preserving the socio-economic stability of large urban centres, minimising the inherent short- and long-term economic costs associated with suburbanisation, and preserving rural landscapes and animal and plant habitats for posterity during this era of inevitable change.

**Acknowledgements**

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[38] Mällo, R., Tartu - centre of South Estonia, An unfinished research project, data of which are published in the newspaper ‘Postimees’, 22.07.98.


