

THE COMPACT CITY: PLANNING STRATEGIES, RECENT DEVELOPMENTS AND FUTURE PROSPECTS IN THE NETHERLANDS

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ABSTRACT: The concept of the compact city is a key strategy to limit suburban sprawl and to obtain a more sustainable urban development. In the Netherlands, concepts for compact forms of urbanization have played a major role since more than half a century.

In various Dutch national spatial policy documents different concepts for urban compaction and urban densification have taken a prominent position. The Second and Third National Policy Document on Spatial Planning (1966 and 1973) introduced the concept of 'clustered dispersal' and 'growth centres', whereas the Fourth National Policy Document on Spatial Planning (1988) was based on the concept of the 'compact city'. More recently, the National Spatial Strategy (2004) set specific goals for so-called 'concentration areas' around greater urban conurbations and 'urban densification' in existing built-up areas.

However, recently ambitions concerning spatial planning and urban compaction have been decentralized to the regional and municipal level and national funds supporting urban regeneration projects are about to face substantial cuts. Moreover, a number of recent studies and publications claim that urban densification is reaching its limits in several Dutch cities because of complex constellations of ownership, increasing costs and complicated legal procedures.

This paper gives insight into recent developments of dwellings, inhabitants and jobs in Dutch cities and their surroundings. It raises the question if the recent developments can be described as compact urban developments. Furthermore, future possibilities for compact urban developments in the Netherlands are discussed.

KEYWORDS: compact city, urban densification, urban compaction, sustainable urban development, density, spatial quality, spatial planning

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1. Introduction

Since more than half a century concepts for compact forms of urbanization have played a major role in the Netherlands. In various Dutch national spatial policy documents different concepts for urban compaction and urban densification, strategies to achieve compact urban developments, have taken a prominent position. The Second and Third National Policy Document on Spatial Planning (1966 and 1973) introduced the concept of 'clustered dispersal' and 'growth centres', whereas the Fourth National Policy Document on Spatial Planning (1988) was based on the concept of the 'compact city'. More recently, the National Spatial Strategy (2004) set specific goals for so-called 'compaction areas' around greater urban conurbations and 'urban densification' in existing urban areas. Although each time in a different form, all of these concepts for compaction and densification were guided by the same aims: the protection of the surrounding landscape, the limitation of private car use and the ambition to sustain vital urban facilities and public transport. In order to achieve these aims and to promote urban densification in Dutch cities, urban regeneration projects have been supported by national funds throughout the past decennia.

However, a number of recent studies and publications (i.e. Ecorys, 2005) claim that urban densification is reaching its limits in several Dutch cities because of complex constellations of ownership, increasing costs and complicated legal procedures. Moreover, national funds supporting urban regeneration projects are about to face substantial cuts. Furthermore, recent publications question how the ambitions for urban densification match with the prevailing preferences for suburban living environments in the Netherlands. After all, the population within the existing urban areas of most Dutch cities continues to decline as affluent households and households with children keep moving to suburban areas.

1.1 International debate on the compact city and sustainability

The objectives of the Dutch national spatial policy documents are strongly related to the concept of the compact city and the general aim to create sustainable urban areas. In international research, the concern with sustainable urban development has grown enormously in the past 25 years. Following the publication *Our Common Future* (WCED, 1987), which introduced the idea of sustainable development, a great number of publications have been dedicated to the environmental impacts of urban developments and the improvement of life in the city. A couple of years later, the *Green Paper* of the Commission of the European Communities (CEC, 1990) and the United Nations *Earth Summit Agenda 21* (United Nations 1993) emphasized the role of compact forms of urbanization as a basis for a more sustainable urban development. More recently, the *Charter of Leipzig* (European Urban Knowledge Network, 2007) and the publication *Cities of Tomorrow* (European Commission, 2011) emphasize the importance of compact urban developments as an important sustainable strategy for the future development of European cities.

Since the publication of the CEC's *Green Paper*, a central debate focuses around the

Compact City idea. Many researchers and planners argue that a contained, well-connected city is the most sustainable form. They suggest that a compact city reduces energy, makes investments in public infrastructure more viable, reduces land usage thereby preserving agricultural land and natural areas, and is positively associated with social diversity and with cultural and economic development. The main supporters of the concept of the compact city include the CEC (1990), Jacobs (1961), Newman and Kenworthy (1989) and Elkin *et al.* (1991).

However, there is also a considerable group of researchers who argue that the case of the compact city is not proven and that there is evidence which suggests that the claims of the supporters do not reflect the hard reality of economic demands, environmental sustainability and social expectations. Some of the main arguments opposed to the compact city are that the concept contradicts the profound fondness of suburban living (Breheny, 1992), that the concept of the green city (also promoted by the CEC, 1990) is in contradiction to that of the compact city and that the compact city would cause congestion, with increased pollution, on the local scale (Knights, 1996). The relationship between transport, urban form and energy consumption has been investigated in several international research projects, but unfortunately the results are inconclusive. There is evidence that fuel consumption per capita is highest in more rural areas, but there are indications that the largest cities (e.g. London) are likely to be less efficient than medium-sized and smaller towns (Bannister, 1992).

The different arguments supporting and opposing the concept of the compact city show the complexity of the discussion. Unfortunately for the proponents of the compact city model, in-depth research has shown that simply employing policies to stimulate compact city style development will not necessarily always lead to sustainability of the urban environment. However, in general there seems to be an agreement that the compact city model is necessary, but not sufficient for sustainable urban development.

1.2 Recent research related to compact urban development

In recent years the PBL Netherlands Environmental Assessment Agency has conducted several research projects related to urbanisation, densification and the effects of urban density. A study on the changes of the urban area 2000-2006 has shown that the density of dwellings, shops and jobs has significantly increased around InterCity-train stations (Ritsema van Eck *et al.*, 2009). Furthermore, the areas around motorway exits are characterized by a relatively low overall density, but that that density has strongly increased over the last years. Also in general, the density has increased stronger in areas outside of the city centre, i.e. in subcentres and peripheral commercial zones. A research project on mobility has shown that work-related car-use around InterCity-train stations is more than half compared to car-use in areas around motorway exits. Moreover, a study on housing and segregation has concluded that urban renewal contributes to a reduction ethnic and socio-economic segregation, whereas suburban developments lead to higher segregation in most cases (van Dam *et al.*, 2010). Finally, a study on economic development in the Netherlands concludes

that a higher degree of urbanisation leads to higher economic productivity and a stronger growth in jobs (Raspe *et al.*, 2010). Although the researched topics show a high degree of complexity and results are not always conclusive, the general outcome of the mentioned studies supports the concept of the compact city. However, it can be argued if the recent urbanisation in the Netherlands actually can be called compact. In the period 2002-2008 most urban development took place in suburban areas adjacent to the existing urban areas. More than 60 per cent of the new dwellings and about 75 per cent of the new jobs were created outside the existing urban areas (Ritsema van Eck en Farjon, 2008). In comparison with other European countries, the suburban developments are rather compact and concentrated in surrounding of existing urban agglomerations. However, they still are suburban developments and have led to a significant growth of urbanized area.

2. Empirical research on urban densification 1996-2008

To get a more detailed insight into developments within the existing urban areas, the PBL Netherlands Environmental Assessment Agency has recently conducted a study on urban densification analysing developments of dwellings, inhabitants and jobs in the period from 1996 to 2008 (Nabielek *et al.*, 2012). Furthermore, this period is subdivided, the first period covering 1996-2002 and the second period covering 2002-2008. The study focuses on the developments within the boundaries of the existing urban areas. Moreover, the study consists of quantitative and qualitative analyses. The quantitative part of the study analyses how much densification (of dwellings, inhabitants and jobs) has taken place in the Netherlands. On the local scale, the development of density has been analysed within postcode 6 areas². The qualitative part of the research describes at which locations densification has taken place within the urban area, looking at a selection of Dutch cities.

2.1 Quantitative analysis: developments within the urban area 1996-2008

From quantitative analysis of the study the following developments are notable:

- Within the urban area of the Netherlands the number of added new dwellings has decreased in the second period (2002-2008). The densification of dwellings has slowed down (see Fig. 1). Moreover, the total number of inhabitants within the existing urban area has decreased in the second period leading to a lower density of inhabitants (see Fig. 2). Furthermore, the number of added jobs is much lower than in the first period (see Fig. 3).
- Divergent developments can be observed comparing different cities. In all of the four biggest cities (Amsterdam, The Hague, Utrecht and Rotterdam) the net-production of dwellings within the existing urban area has declined significantly in the second period. In The Hague and Rotterdam the figures even show a loss of dwellings due to demolition of houses. Looking at the development of inhabitants, Amsterdam and Utrecht show an increase, whereas the number of inhabitants is decreasing in The Hague and Rotterdam.

² A postcode 6 area is an administrative classification representing the scale of an urban block.

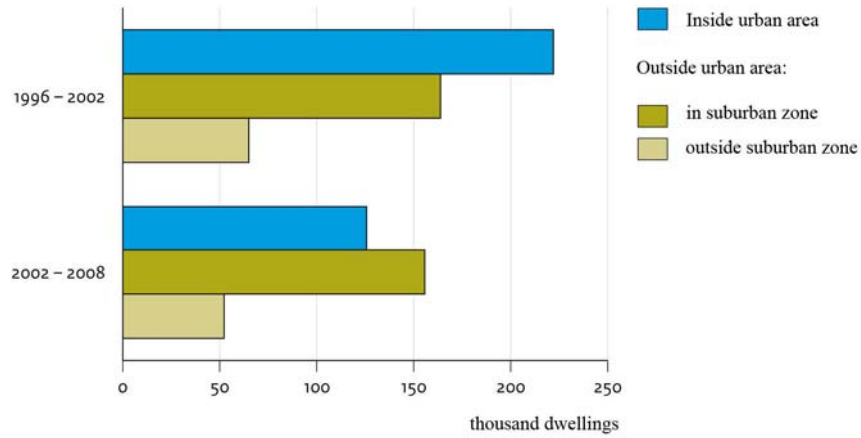


Figure 1 Development of dwellings in the Netherlands 1996-2008 (PBL)

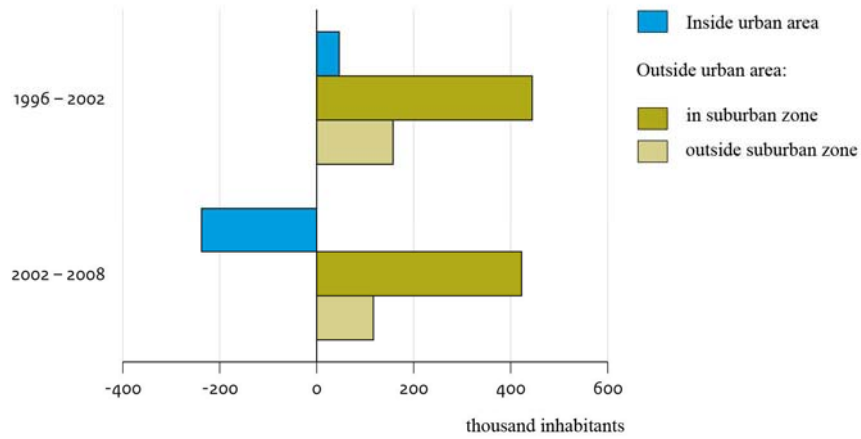


Figure 2 Development of inhabitants in the Netherlands 1996-2008 (PBL)

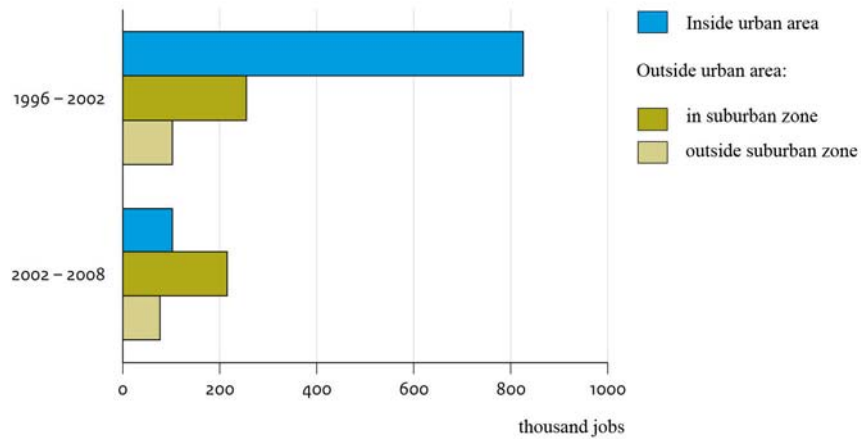


Figure 3 Development of jobs in the Netherlands 1996-2008 (PBL)

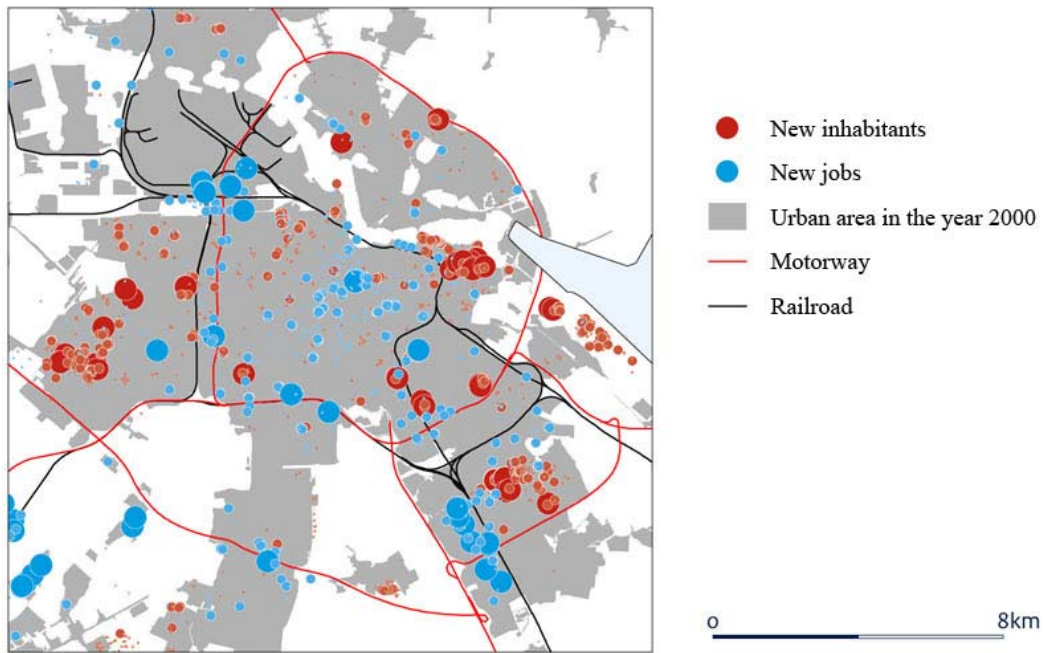


Figure 4 Densification areas in Amsterdam 1996-2008 (PBL)

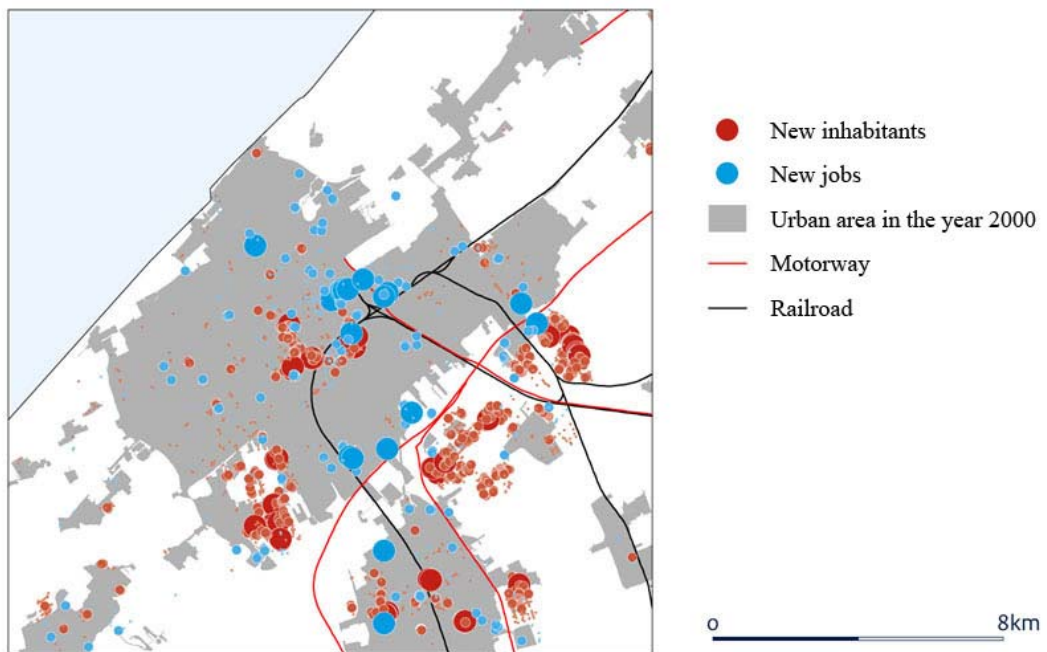


Figure 5 Densification areas in The Hague 1996-2008 (PBL)

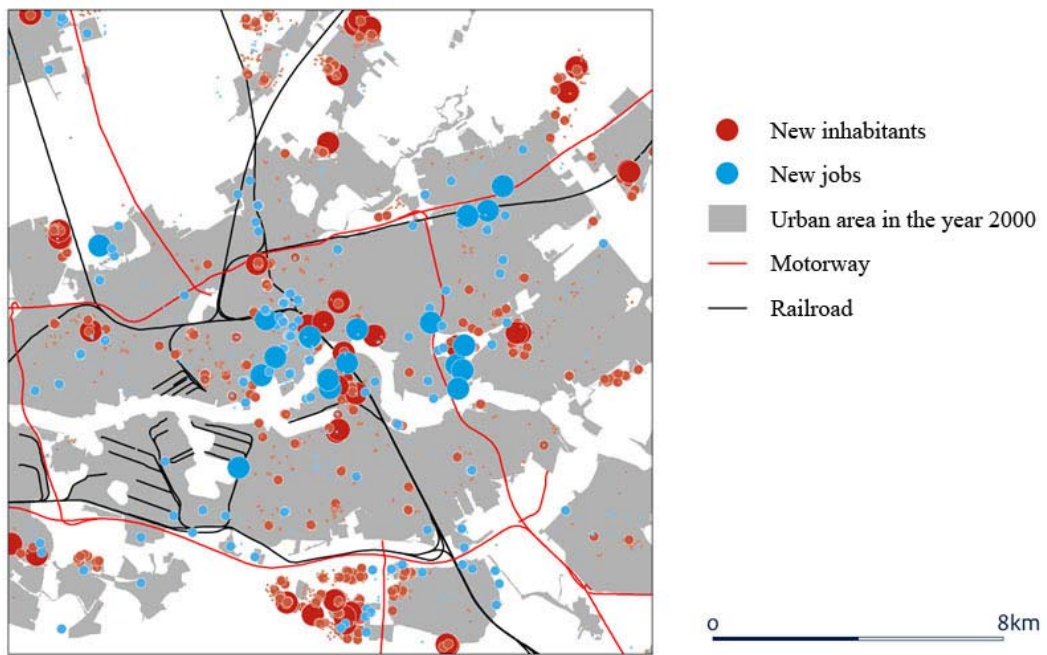


Figure 6 Densification areas in Rotterdam 1996-2008 (PBL)

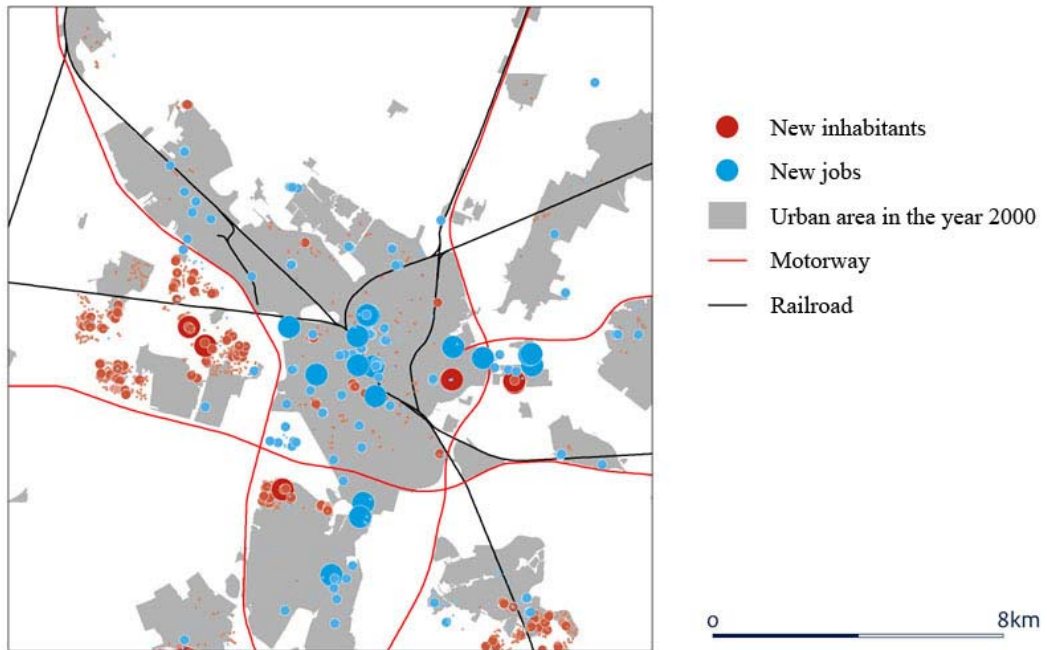


Figure 7 Densification areas in Utrecht 1996-2008 (PBL)

2.2 Qualitative analysis: spatial patterns of densification areas in Dutch cities

The maps of densification areas in different Dutch cities show different spatial patterns for the densification of inhabitants and jobs (see Figures 4-7). In this paragraph the main developments in Amsterdam, The Hague, Utrecht and Rotterdam are described.

In Amsterdam (see Fig. 4) major densification areas of inhabitants can be found in the former harbour areas in the vicinity of the central city area. Moreover, densification areas of inhabitants are located in peripheral areas where urban renewal has taken place. Development areas of jobs can be found in the central city area and along the motorway ring. There is little overlap between the densification areas of inhabitants and jobs.

In The Hague (see Fig. 5) the developments take place in a ring around the central city area, nearby the two central railway stations. Densification areas of jobs are mainly located north of the city centre and densification areas of inhabitants to the south of the city centre. Large developments can be seen outside of the existing urban area, in the urban fringe.

In Rotterdam (see Fig. 6) the development areas of inhabitants and jobs are less separated than in the three described cities and can be found in the central city area. This can be explained by the lack of an historic centre and the location of urban renewal areas in the city centre of Rotterdam. As in Amsterdam, a number of large development areas of jobs are situated along the motorway ring.

The map of Utrecht (see Fig. 7) shows predominantly densification areas of jobs within the city boundaries. In existing urban area the densification areas of inhabitants are very small. As in The Hague, major developments can be found in the urban fringe.

Looking at the maps of the four described cities, it can be concluded that every city shows a different spatial pattern of densification areas. Generally, we can observe that densification areas of inhabitants can be found at the edge of the city centre, around train stations and in urban regeneration areas, whereas densification areas of jobs predominantly are located in central city areas and at more peripheral sites along motorways. With the exception of Rotterdam, the maps show a clear functional separation between development areas for inhabitants and development areas for jobs.

2.3 Results

The study on densification has shown that the density of dwellings and jobs has increased in the period 1996-2008 but that the growth has slowed down between 2002-2008. At the same time, a strong shift towards suburban areas can be noted in recent years and the density of inhabitants within the existing urban areas has decreased in the period 2002-2008. In this period more than 60 per cent of the new dwellings and about 75 per cent of the new jobs were created outside the existing urban areas. Therefore, it can be argued if the national policy of the compact city has

been successful or not. The answer to this question obviously depends on the definition of the compact urbanisation and densification. However, it can be assumed that without a national policy the urban development would have been even more dispersed than it is now. Furthermore, the quality of the urban areas has improved strongly in the past decennia. Urban renewal, transformation of industrial sites and improvement of public and green spaces has had a positive effect on the quality of living in the Dutch cities.

3. Conclusions

Strategies for compact urban structures and urban densification face many challenges on the local scale, such as complex ownership, functional transformation and environmental regulations. Furthermore, factors as built-in parking facilities, the development of public space and ambitions to realize social housing make inner city projects expensive. However, it has to be noted that suburban locations also are costly. Especially, if long term maintenance, infrastructural and environmental costs are taken into account. Furthermore, the international debate on the compact city model has brought forth significant arguments questioning the concept of compact urbanisation, such as preferences for suburban living and possible social, economic and environmental disadvantages of compact cities. However, recent research of the PBL Netherlands Environmental Assessment Agency has shown that a higher degree of densification supports the development of economic productivity and the emergence of new jobs on a regional scale. Moreover, the concentration of functions around multi-modal infrastructural nodes reduces car-use significantly and can help to limit the growth of mobility. Additionally, PBL research has underpinned that inner city developments help to reduce ethnical and social-economic segregation, leading to a more mixed city. The results of these studies support the concept of the compact city.

The results of the empirical analysis of developments within the existing urban area 1996-2008 show that there has been a significant decline in densification of dwellings, inhabitants and jobs within the urban areas in the period 2002-2008 compared to the period 1996-2002. This decline can be explained by the substantial production of suburban areas around the existing urban cores and an increase of the amount of demolished houses within the existing urban areas in this period. However, there will be no alternative other than to focus on the possibilities of urban densification in Dutch cities since there are no plans for large suburban developments in the near future. Important points of attention for future urban densification are to differentiate ambitions according regional development prospects (with different strategies for shrinking and growing regions) and to focus on urban developments around existing multi-modal infrastructural nodes on the regional level. It should be noted that potential development areas around infrastructural nodes are not only located in central but also in peripheral urban areas, i.e. in the vicinity of smaller train stations. Furthermore, it will be important to improve the development of multi-functional areas with high quality public spaces on the local level. Medium and high density developments will have to be combined with sufficient open and green spaces to create attractive and sustainable urban environments. Moreover, it will be vital that housing

types match the preferences of (future) inhabitants and are flexible enough to be adjusted for prospective demands. On basis of the conducted research we can conclude that urban densification will stay a necessary tool to sustain and develop urban areas in the Netherlands regarding environmental challenges, economic viability and the quality of urban life.

The future success of compact urban developments will strongly depend on decisions of local and regional authorities since the national government has recently decided not to continue with the ambitions for compact urbanisation and has given more responsibilities to municipalities and provinces. At the moment the economic crises has led to a slowing down of urban developments inside and in the surrounding cities and there are no new plans for large suburban residential areas. However, municipalities have more possibilities to allow small scale developments outside the existing urban areas. Depending on local decisions, this could lead to a more dispersed and less sustainable urban structure in the future.

4. Acknowledgements

This paper is based on a research project published by the PBL Netherlands Environmental Assessment Agency in February 2012. The Dutch title of the publication is: *Stedelijke verdichting: een ruimtelijke verkenning van binnenstedelijk wonen en werken*. The authors of the research and the publication are Kersten Nabielek, Sanne Boschman, Arjan Harbers, Maarten Piek en Auke Vlonk.

5. References

- Bannister, D., 1992. Energy use, transport and settlement patterns, in Breheny, M.J. (ed.). Sustainable Development and Urban Form. London, Pion.
- Breheny, M.J., 1992. Sustainable development and urban form; an introduction, in Breheny, M.J. (ed.). Sustainable Development and Urban Form. London, Pion.
- Commission of the European Communities (CEC), 1990. Green Paper on the Urban Environment, Brussels, European Commission.
- Ecorys, 2005. Maatschappelijke kosten en baten IBO Verstedelijking. Rotterdam: Ecorys.
- Elkin, T., McLaren, D. and Hillman, M., 1991. Reviving the City: Towards Sustainable Urban Development. London: Friends of the Earth.
- European Commission, Directorate General for Regional Policy, 2011. Cities of tomorrow - Challenges, visions, ways forward. Luxembourg: Publications Office of the European Union.

- European Urban Knowledge Network, 2007. Leipzig Charter on Sustainable European Cities.
- Jacobs, J. 1961. *The Death and Life of Great American Cities*. New York: Vintage Books/Random House.
- Jencks, M., Burton, E. and Williams, K. (ed.), 1996. *The Compact City: A Sustainable Urban Form*. London: E&FN Spon.
- Knights, C., 1996. Economic and social issues. In: Jencks, M., Burton, E. and Williams, K. (ed.). *The Compact City: A Sustainable Urban Form*. London: E&FN Spon.
- Nabielek, K., Boschman, S., Harbers A., Piek, M. and Vlonk, A., 2012. *Stedelijke verdichting: een ruimtelijke verkenning van binnenstedelijk wonen en werken*. Den Haag/Bilthoven: PBL Netherlands Environmental Assessment Agency.
- Newman, P.W.G and Kenworthy, J.R., 1989. *Cities and Automobile Dependency: An International Source Book*. Aldershot, Gower Technical.
- Raspe, O., Weterings, A. and van Oort, F., 2010. *De economische kracht van de Randstad*. Den Haag/Bilthoven: PBL Netherlands Environmental Assessment Agency.
- Ritsema van Eck, J. and Farjon, H., 2008. *Monitor Nota Ruimte. De eerste vervolgmeting*, Rotterdam/Den Haag/Bilthoven: NAI Uitgevers/Ruimtelijk Planbureau/Milieu- en Natuurplanbureau.
- Ritsema van Eck, J., van Amsterdam, H. and van der Schuit, J., 2009. *Ruimtelijke ontwikkelingen in het stedelijk gebied; dynamiek stedelijke milieus 2000-2006*. Den Haag/Bilthoven: PBL Netherlands Environmental Assessment Agency.
- United Nations, 1993. *Earth Summit Agenda 21: The UN Programme of Action from Rio*. New York: United Nations.
- Van Dam, F. *et al.*, 2010. *Nieuwbouw, verhuizingen en segregatie: effecten van nieuwbouw op de bevolkingssamenstelling van stadswijken*. Den Haag/Bilthoven: PBL Netherlands Environmental Assessment Agency.
- Van der Valk, A. and Faludi, A., 1992. Growth regions and the future Dutch planning doctrine. In: Breheny, M.J. (ed.). *Sustainable Development and Urban Form*. London: Pion.
- World Commission on Environment and Development, 1987. *Our Common Future*. Oxford: Oxford University Press.