Available online at www.sciencedirect.com

ScienceDirect

Transportation Research Procedia 24 (2017) 81–88

Transportation Research Procedia

www.elsevier.com/locate/procedia

3rd Conference on Sustainable Urban Mobility, 3rd CSUM 2016, 26 – 27 May 2016, Volos, Greece

Sustainable mobility and physical activity: a meaningful marriage

Pantoleon Skayannis[a*], Marios Goudas[b], Petros Rodakinias[c]

[a]University of Thessaly, Department of Planning and Regional Development, Volos 38334, Greece
[b] University of Thessaly, Department of Physical Education and Sport Science, Trikala 42100, Greece
[c]University of Thessaly, Department of Planning and Regional Development, Volos 38334, Greece

Abstract

Since 2008 more than half of world's population lives in cities some of which grow bigger every day. The number of people requiring all transport modes is also increasing rampantly, with all possible consequences such as pollution, lost useful working or leisure hours, etc. Combined with climate change this can create and unbearable situation as was evident in Beijing, in December 2015. One of the major responses to these has been the effort to create compact cities and sustainable transport. Combining both, means the use of public transport, or physical transport modes (walking, cycling, etc.)

This paper in the context of a wider international research, SPAcE (Supporting Policy and Action for Active Environments) deals with the latter specific case of the physical transport modes, considering them as offering much more than just a version of sustainable transport. In particular, the paper highlights the merits of physical mobility not only from the aspect of transport sustainability but also from the point of view of physical activity and exercise that, in addition, has a multitude positive impacts on human health. The positive effects of physical exercise on health have been well-documented to prevent several diseases and to decrease relevant risks. Further on, a physically active lifestyle enhances feelings of energy, well-being and quality of life (American College of Sports Medicine, 2011).

Drawing from the examples of two major interventions in Greek metropolises, the Acropolis promenade in Athens and the Thessaloniki waterfront redevelopment, the paper shows how these major urban interventions have created spaces used for a variety of purposes ranging from mobility needs to clear leisure, and investigates how transport restructuring towards non-motorised means and physical activity are integrated in this context of urban regeneration.

The paper raises the question of how these two good practices of a combination between urban regeneration and sustainable mobility including physical exercise can be adopted from other cities in Greece or elsewhere, adding experience to the international terrain of modern active healthy environments.

Peer-review under responsibility of the organizing committee of the 3rd CSUM 2016.

Keywords: sustainable mobility; non-motorised transport; physical exercise; physical activity; Thessaloniki waterfront redevelopment; Athens archaeological sites unification; sustainable transport
*Corresponding author. E-mail address: leonska@prd.uth.gr

1. Introduction

Mobility is generally treated as a critical and universal challenge faced by cities all over the world. As the population of urban areas increases the challenge of meeting rising demands for efficient mobility within the constraints of existing infrastructure and available land becomes more difficult. At the same time, people's

2352-1465
Peer-review under responsibility of the organizing committee of the 3rd CSUM 2016.
10.1016/j.trpro.2017.05.072

expectations and preferences are changing, affected by technological innovation and environmental concerns. Large urban areas are the centre of intensive economic and social activity, at various spatial levels (regional, national and international).

The above factors, combined, lead to increasing demand for urban travel (between city centres, suburbs and peri-urban areas) and this demand affects, besides the volume of urban transport, its quality and overall conditions (speed, safety, gas emissions, noise etc.). Failure to meet this demand can result in restricted urban mobility, congestion, polluted environment and an overall unpleasant experience for urban citizens (ARUP, 2015).

So, the challenge of meeting transport needs has to be addressed, not only in an effective way, but also in a sustainable way, meaning the movement of people (and urban goods) in urban areas in such a way that it is environmentally, economically, institutionally and socially sustainable. Sustainable urban mobility planning should be focused on allowing for efficient mobility, with minimal environmental impact, while being accessible and affordable to users. A common response to this challenge has been to turn to the compact city idea and redefine it focusing on sustainable mobility.

At the European level, increasing demand for urban transport is a challenge for governments and transport authorities in all EU countries. Congestion in urban areas is contributing to pollution and accidents, and is increasing costs while limiting accessibility. These problems negatively affect economic competitiveness, social cohesion and sustainable growth in Europe. Urban mobility issues in Europe have reached such proportions that the EU had to develop and promote new directions and policies in urban mobility (TRIP, 2013). The European Commission supports local authorities across Europe in developing Sustainable Urban Mobility Plans (SUMPS). This support includes technical training and awareness raising initiatives, such as the Sustainable Urban Mobility campaign, that give an award to European cities based on their SUMPs (TRIP, 2013).

This paper, in the context of a wider international research, SPAcE (Supporting Policy and Action for Active Environments http://activeenvironments.eu/), puts emphasis on non-motorised mobility, highlighting the merits of physical mobility not only from the aspect of transport sustainability but also from the point of view of physical exercise that, in addition, has a multitude positive impacts on human health. Drawing from the examples of two major interventions in Greek metropolises, the Acropolis promenade in Athens and the Thessaloniki waterfront redevelopment, the paper shows how these major urban interventions have created spaces used for a variety of purposes ranging from mobility needs to clear leisure.

The use of case studies as a tool allows an actual insight into already applied measures, policies and approaches while it offers the advantage of comparison between similar practices in different spatial, temporal, cultural, economic or social settings. The paper raises the question of how these two good practices of a combination between urban regeneration and sustainable mobility including physical exercise can be adopted from other cities in Greece or elsewhere, adding experience to the international terrain of modern active healthy environments.

2. Sustainable urban mobility, non-motorised transport and healthy urban environments

In order to achieve sustainability on all levels, i.e. environmental, economic, social, and institutional (Dimitriou, Ward, and Wright, 2013) compact city policies with mixed land use and concentrated urban formations as a sustainable urban form have been increasingly considered and related to sustainable urban mobility including mass transit, such as buses, tramways and metros as well as non-motorised transport (CEC, 1990; Jenks et al., 1996; Newman and Kenworthy, 1999; Stead and Marshall, 2001; Naess et al., 2011). This city concept obviously allows for shorter transport distances encouraging walking and cycling, low energy consumption and reduced pollution (Dempsey, 2010; ACOLA, 2015). These non-motorised transport modes are low cost, have low to medium infrastructure cost, have high accessibility, low complexity and negligible environmental impact. Yet, others claim that there are contradictions between the compact city and other urban concepts (e.g. compact city vs. green city) that cannot be overlooked (Breheny, 1992; Nabeliek 2012). Some of the shortcomings of the compact city commonly cited concern higher densities, congestion, pollution, housing availability and affordability, quality of life, energy and other resources' demands, as well as limitations in (public) open and recreational spaces (OECD 2011). It is clear that the compactness of urban areas highly influences urban mobility sustainability, albeit in many different ways, depending on policy approaches. Yet, by merely applying the compact city policies in terms of transport modes, still remains unclear whether this can lead to physically healthy urban environments and have an overall positive impact on the population. For this a more active urban environment would be required, hence the question is raised whether physical activity