

Chapter 4.11

Eco–Municipalities and Municipal Applications for Sustainability

Seda H. Bostancı
Okan University, Turkey

ABSTRACT

Climate change effects, losses in natural environment, limited and diminishing energy sources are great threats for the countries in ecological and social aspects. In recent years some districts in Istanbul have been badly affected by disastrous floods. Climate change might have taken part of this problem but the main reason for the case is shanty housing, and poor location of settlements nearby to riversides, and even within riverbeds. All those experiences increase the necessity of the ecological planning for the settlements and of applying the Eco-municipal model for creating healthy environments. While some phenomena provide against the sustainable development of Turkish cities, solutions will be found in projects with ecological background.

The eco-municipality models and municipal applications for sustainability are criticized for not yet finding a sustainable development model for Turkish municipalities. In the improvement of the sustainable municipality concept, some common decision had been taken and defined the related standards. LA21, EMAS for municipalities, and ISO standards are the examples coming forward. The methodology is based on literature review of experiences of the eco-projects that have been made in municipalities and SWOT analyses for these projects. In Turkey, the first step has been taken in LA21 processes to adopt the eco-municipal approach in transformation. For the further steps, the need for establishing an integrated model among the different applications has been concluded.

DOI: 10.4018/978-1-4666-0882-5.ch4.11

INTRODUCTION

Eco-municipality is a municipal model for finding long term solutions in a participatory process for the community. The model is based on innovative municipal management system. Eco-municipality can be defined as ecologically, economically, and socially balanced, healthy community for continuous development. The term justice city is based on social justice and democracy. Additionally; ecological justice became a major key of that concept. A sustainable development is a kind of development which meets the needs of the present generations without compromising the ability of future generations to meet their own needs. Municipalities are the decision making organs for planning the urban districts and areas. So they are the main actors in the development process of the city. To balance among sustainability, ecology, sociability and justice, municipalities have the main role in collaborating among with the universities, government units, NGO's and inhabitants. And the private sector should also be given a financial role in sustainable municipal applications.

"The world is facing energy supply challenges. Rising prices and finite reserves of fossil fuels, combined with necessary reductions in their use in order to mitigate anthropogenic climate change, will dramatically reshape the future energy supply. Among the greatest contributors to greenhouse gas emissions are the energy systems that power transportation, heating and cooling and industrial processes. It is imperative that energy planning is sustainable, secure and effectively implemented for local development" (Cassidy & others, 2007). "Beyond good planning and carbon-free technological solutions, the post-modern sustainable city should also be a well-organized place with low unemployment, social equity, green open space, social interaction platforms and universal education with provisions for basic needs" (Sukhdev, 2009).

"The Climate Group, along with a group of major international financial institutions, launched

The Climate Principles in 2008. Adopting the Climate Principles means making a commitment to:

1. Minimize operational carbon footprint,
2. Make business decisions that will reduce climate change risks and allow the development of climate-change related opportunities,
3. Develop products and services that enable customers to manage climate change related risks and business opportunities,
4. Engage with customers, suppliers and wider society to seek opportunities for a low carbon economy,
5. Support the development of sound energy and climate change policy and
6. Disclose progress against these commitments" (The Climate Group, 2010).

The planning process in municipalities has been changing from physical planning system to participatory planning system. Before the last decade, the experts of urban planners and designers were doing the planning with less participation of the agents, but now, it has being changed to gather all contribution of public and private sectors and inhabitants for creating universe of ideas. So, participation of the actors to urban planning process become equal, for a creating a livable environment for all. Municipal applications for sustainability has wide range of studies such as, green city policies, renewable energy sources and their usages in urban areas, energy efficiency and standards, natural and cultural heritage, certificate systems and green dimensions in urban design, architecture and urban furniture. When those ecological applications by municipalities become the main aim for creating healthy cities, the local governments start to create eco-municipalities.

There are different eco technological tools the municipalities used. The main tools can be summarized as follows; using renewable energies in district areas of municipalities (Dincer, 2000; Reiche and Bechberger, 2003; Bruckner and others 1997), eco-technological models for waste

16 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/chapter/eco-municipalities-municipal-applications-sustainability/66150

Related Content

ICTs and Educational Benefits in Regional Development

James J. Rennie (2007). *Information and Communication Technologies for Economic and Regional Developments* (pp. 1-21).

www.irma-international.org/chapter/icts-educational-benefits-regional-development/22507

From Open Data to Smart City Governing Innovation in the Rennes Metropolitan Area (France)

Marie-Anaïs Le Breton, Mathilde Girardeau and Helene Bailleul (2021). *International Journal of E-Planning Research* (pp. 17-38).

www.irma-international.org/article/from-open-data-to-smart-city-governing-innovation-in-the-rennes-metropolitan-area-france/279269

Exploiting BIM and Sensor Data Through Web-Based CAFM: The AR4FM Project

Umberto Di Staso, Marco Piovano, Ambra Barbin and Dominik T. Matt (2021). *Handbook of Research on Developing Smart Cities Based on Digital Twins* (pp. 341-364).

www.irma-international.org/chapter/exploiting-bim-and-sensor-data-through-web-based-cafm/274675

Coupling BIM and Game Engine Technologies for Construction Knowledge Enhancement

A. H. Buhamood, Henry Abanda, Peter Garstecki, M. B. Manjia, Chrispin Pettang and Abdulrasheed Madugu Abdullahi (2023). *Research Anthology on BIM and Digital Twins in Smart Cities* (pp. 136-163).

www.irma-international.org/chapter/coupling-bim-and-game-engine-technologies-for-construction-knowledge-enhancement/315450

A Componential View of Urban Life and the Ambient in Smart, Learning, and Future Cities: A Summary and Synthesis

(2023). *Urban Life and the Ambient in Smart Cities, Learning Cities, and Future Cities* (pp. 239-256).

www.irma-international.org/chapter/a-componential-view-of-urban-life-and-the-ambient-in-smart-learning-and-future-cities/314655