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WASTE MANAGEMENT, WATER POLLUTION, AIR POLLUTION, INDOOR CLIMATE



**Proceedings of the 2nd International Conference on
WASTE MANAGEMENT, WATER POLLUTION, AIR POLLUTION, INDOOR CLIMATE (WWAP'08)**

Corfu, Greece, October 26-28, 2008

**Energy and Environmental Engineering Series
A Series of Reference Books and Textbooks**

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Preface

This book contains the proceedings of the 2nd International Conference on WASTE MANAGEMENT, WATER POLLUTION, AIR POLLUTION, INDOOR CLIMATE (WWAI'08) which was held in Corfu, Greece, October 26-28, 2008. This conference aims to disseminate the latest research and applications in Simulation and Analysis of Water, Air and Land Pollution, Waste treatment and disposal, Costs and benefits of waste management options, Water management and planning, Air quality management, Thermal analysis for building materials and other relevant topics and applications.

The friendliness and openness of the WSEAS conferences, adds to their ability to grow by constantly attracting young researchers. The WSEAS Conferences attract a large number of well-established and leading researchers in various areas of Science and Engineering as you can see from <http://www.wseas.org/reports>. Your feedback encourages the society to go ahead as you can see in <http://www.worldses.org/feedback.htm>

The contents of this Book are also published in the CD-ROM Proceedings of the Conference. Both will be sent to the WSEAS collaborating indices after the conference: www.worldses.org/indexes

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Expanded and enhanced versions of papers published in this conference proceedings are also going to be considered for possible publication in one of the WSEAS journals that participate in the major International Scientific Indices (Elsevier, Scopus, EI, ACM, Compendex, INSPEC, CSA see: www.worldses.org/indexes) these papers must be of high-quality (break-through work) and a new round of a very strict review will follow. (No additional fee will be required for the publication of the extended version in a journal). WSEAS has also collaboration with several other international publishers and all these excellent papers of this volume could be further improved, could be extended and could be enhanced for possible additional evaluation in one of the editions of these international publishers.

Finally, we cordially thank all the people of WSEAS for their efforts to maintain the high scientific level of conferences, proceedings and journals.

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Plenary Lecture I

Urban Pollution and the Impacts in Urban Kitchen Gardens Sustainability



Prof. Doctor Rui António Rodrigues Ramos

Territory and Environment Group,
Department of Civil Engineering,
School of Engineering,
University of Minho - Campus of Gualtar
4710-057 Braga
PORTUGAL
Tel: +351 253 604720
Fax: +351 253 604721

Email: rui.ramos@civil.uminho.pt

Abstract: The environmental dimension is a key factor in a city sustainable development and must be incorporated in the planning process of the dense and complex urban areas. Nowadays particular emphasis is given to the problems of water, soil and air pollution in urban context. However, those evaluations not always motivate the indispensable environmental and social conscience to mitigate the origin of the pollution problems. So, in some cases the public health is in risk, mainly when the presence of preoccupying levels of contamination can be identified in soils and plants.

In Portuguese cities, and around the world, people are making small but significant changes to help sustain our ecosystem every day. In that context, the kitchen garden is gaining renewed interest as one component of the movement towards local, fresh, and seasonal foods. But the urban pollution is a preoccupied threat to the sustainability and viability of kitchen gardens as domestic production areas of food with appropriate quality.

In a recent research work in the city of Braga, in the Northwest part of Portugal, a serious problem of contamination was detected and compromises the environmental viability of kitchen gardens in the urban area. The research identify that the lettuces produced in the urban area of the city, usually included in the inhabitants food diet, accumulates significant levels of cadmium, lead and zinc. Also the analytical results of soils samples reveal high values for those metals. The lettuce and soils samples from several urban kitchen gardens present cadmium, lead and zinc concentrations levels higher than the standard limited fixed by the European Commission Regulation. The concentrations levels are also higher than the samples from kitchen gardens in rural neighbourhood areas.

Understanding the interrelations between urban pollution and the sustainability of urban kitchen gardens is essential to the cities planning process. Healthier and better planned cities must integrate social and ecological conscience for more sustainable attitudes and behaviours.

Plenary Lecture II

Analysis of the European Market of New Passenger Cars and Correlations with their CO2 Emissions



Assistant Professor Efthimios Zervas
School of Environmental Engineering
Democritus University of Thrace
Vas. Sofias 12
67100 Xanthi
GREECE
Tel: +30 25410 79392

Email: ezervas@env.duth.gr

Abstract: Automobile CO₂ emissions constitute a significant percentage of the total anthropogenic CO₂ emitted. During recent years, significant efforts are made to control automobile CO₂ exhaust emissions; however, the decrease achieved is quite limited.

Several parameters influence automobile CO₂ emissions: fuel used, engine technology, after-treatment technology, vehicle weight, driving profiles, annual mileage, etc. However, fleet composition is another important parameter, not frequently taken into consideration. The European market of new passenger cars is very different from one country to another and also changes very rapidly during last years. Even within one European Union country, the characteristics of new passenger cars market are very different.

This work performs an analysis of the new passenger cars market in European Union (former 15 states members) during last years and presents the impact of the main characteristics of the new passenger cars and the exhaust CO₂ emissions. The parameters studied are vehicle weight, engine displacement, engine maximum and specific power, vehicle segment and firms distribution. The average values of these parameters, the distribution of their values and their change during last years are presented and discussed. This analysis aims to contribute from another point of view to the question “why automotive CO₂ emissions cannot easily decrease”.

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