2nd INTERNATIONAL WORKSHOP
ADVANCES IN CLEANER PRODUCTION
"KEY ELEMENTS FOR A SUSTAINABLE WORLD: ENERGY, WATER AND CLIMATE CHANGE"

SusUrbia – Sustainable Urban Life Beyond Peak Oil

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Abstract

Cities are highly dependent on fossil energy. Mechanization of agriculture has resulted in a situation where food is produced and transported to urban areas by using significant quantities of fossil fuels. While there is little dispute that oil will ultimately peak, recent estimates indicate that fossil energy use in food production also contributes some 25% of global CO_2 emissions. With less available fossil energy, and to reduce climate change, providing future urban populations with food hence imply a major challenge. This paper therefore explores urban agriculture as a strategy for reducing climate change derived from food production, and for sustaining urban life in times of increasing energy and resource scarcity. Past experiences are examined, mainly from Cuba, with the purpose to explore some common opportunities and constraints of urban agriculture as a strategy for sustainable development. The paper also presents a recently initiated research project on urban agriculture in Brazil. The project will run until the end of 2010 and includes case studies and participatory fieldwork on urban agriculture in Rio de Janeiro. By applying a trans-disciplinary approach to urban agriculture, the study explores opportunities and constraints for increasing urban self-sufficiency, sustainability and food security, while decreasing energy consumption at aggregate levels of society. In the study, the methodologies Emergy Synthesis, Participatory Learning and Action and Participatory Rural Appraisal are used in parallel. Few previous studies have in this way applied physical and social science methodologies simultaneously to urban agriculture. At this point, some preliminary results from the study are discussed, emphasizing methods of farming and experiences among urban dwellers. The paper then concludes by relating these local aspects to global issues of energy use, climate change and sustainable development.

Keywords: Urban agriculture, peak oil, climate change, sustainable development, Brazil.