

Sustainable Transportation

INTRODUCTION

The motorized transportation of people and goods presents unique challenges for sustainable development. It causes or contributes to climate change, depletion of the ozone layer, spread of toxic organic and inorganic substances, local and regional air pollution including ground-level ozone (smog), acid rain, noise, depletion of oil and other natural resources, and damage to the landscape and soil. Worldwide, motorized transportation is responsible for up to 20 percent of the emissions from human activity that are resulting in climate change.

There is no widely accepted definition of sustainable transportation. One used by the Organization for Economic Development and Cooperation (OECD) may be noted: "Transportation that does not endanger public health or ecosystems and meets mobility needs consistent with (a) use of renewable resources at below their rates of regeneration and (b) use of non-renewable resources at below the rates of development of renewable substitutes".

Transportation is one of the few sectors for which the trends are mostly in the wrong direction with respect to this kind of definition of sustainability. Attempts to reduce harmful emissions during the last two decades—through improvements in fuel quality, vehicle efficiency, and control of vehicle exhaust gases, and through the introduction of alternative fuels—have enjoyed considerable success, but they have been more than offset by increases in the number, use, and power of motor vehicles of various kinds. There are now more than 800 million road vehicles worldwide. The number of vehicles is growing almost everywhere at higher rates than both the human population and the GDP; road traffic grows even more quickly. The largest increases in motor vehicle use over the next several decades will likely occur in non-OECD countries, particularly in the Asia-