

The Environment, Climate Change, and Land Policies

Planning and land policy experts recognize the need for timely and accurate information about how to take account of likely, if uncertain, environmental and climate change impacts on global land use and development patterns. The Lincoln Institute's fifth annual land policy conference in May 2010 addressed the status of many of these issues currently and through the twenty-first century.



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Transport and Land Use

Providing effective transit service—a smart growth policy—requires residential densities of at least 30 persons per hectare. A review of census tract data for 447 U.S. urbanized areas in 2000 indicates that about a quarter of the urbanized population resided in areas with such densities, down from half in 1965. Fully 47 percent of the 447 areas had no tracts with a transit-sustaining density. But, transit ridership requires more than just dense residential areas.

For example, New York and Los Angeles have similar average residential densities, but 51 percent of commuters in New York use transit compared to 11 percent in Los Angeles. An analysis of travel diaries from nearly 17,000 Los Angeles households indicates that accessibility to employment centers increases transit use much more than living in a high-density area. Alternatively, congestion toll schemes dating from the mid-1970s have yielded sustained increases in transit use and reductions in auto use and congestion. While such policies are likely to produce land use changes, theory is ambiguous about their direction, and virtually no empirical evidence is available.

Energy and Carbon Pricing

Analysis of 13 completed LEED-certified developments showed that their residents produced fewer vehicle miles travelled than the average for their metropolitan areas, suggesting that these developments are fulfilling one of their objectives. A review of the land intensity of alternative energy sources demonstrates that wind and solar sources are feasible in terms of their land coverage, whereas heavy reliance on bio-fuels would require unfeasibly large shares of current agricultural land. However, alternative energy sources

for electricity will require large investments in transmission lines across the continent.

An analysis of the effects of cap-and-trade, a carbon tax, and emissions standards as instruments to reduce carbon emissions shows that their impacts depend critically on implementation details. The first two approaches can appear very similar if permits are auctioned rather than given away. The regressivity of carbon taxes can be offset by

revenue recycling that is proportional to total tax payments. Emission standards are likely to involve efficiency losses but may be most attractive politically.

Climate Change Impacts

Models of how climate change will affect sea-level rise, temperature, and rainfall differ greatly at the micro level, but all indicate that major costs will be borne by coastal cities and areas in the lower latitudes, with lower costs and some benefits accruing to those in the higher latitudes. A temperature rise of two degrees centigrade in this century seems inevitable, and constraining it to that level will require both large investments and effective policies. Such policies will have to include coordinated management of the one-third of land in the United States that is publicly owned, carbon capture in the form of larger forest areas, and mobilization of revenues for protection of environmentally sensitive areas.

The Way Forward

Many subnational U.S. jurisdictions are already engaged in implementing relevant policies, but the federal government needs to develop an approach to climate mitigation that includes benefit-cost standards, a realistic financing framework with beneficiary and user fees, and a national plan consistent with state plans. Internationally, capacity to address governance issues related to global commons is developing slowly and is hampered by inadequate funds, insufficient consensus, and a lack of legitimacy of existing institutions to address these issues, as well as by an increasing popular skepticism about the very existence of climate change.

The conference volume, with papers and commentaries by more than 25 contributors, will be published in May 2011.