

## 15. Reducing Greenhouse Gas Emissions in the Hudson Valley, New York: An Urban-Rural Pilot Study

ROSENZWEIG Cynthia<sup>1</sup>, BARTGES Sarah<sup>2</sup>, POWELL Alison<sup>2</sup>, GARCIA Jake<sup>3</sup>, NEOFOTIS Peter<sup>2</sup>, LaBELLE Judith<sup>4</sup>, SNYDER Joan<sup>4</sup>, and HILLEL Daniel<sup>2</sup>

<sup>1</sup>NASA/Goddard Institute for Space Studies

<sup>2</sup>Columbia Earth Institute

<sup>3</sup>Hunter College

<sup>4</sup>Glynwood Center

### Abstract:

We estimate the potential of agricultural carbon sequestration in the Hudson Valley, a diversified farming region near New York City, through the use of the online agricultural carbon sequestration model Comet-VR (based on the CENTURY model); soil and land use maps; and a Geographic Information System. If farmers continue conventional agricultural methods, 16,000 tons of carbon would be lost from farm soils per year. If farmers adopt conservation tillage and intensive grazing management, agricultural soils of the Hudson Valley have the potential to store approximately 200,000 tons of carbon per year.

An urban-rural program for climate change mitigation in the NYC bioregion is recommended. The proposed program Reducing Emissions on Agricultural Lands (REAL) - would consist of a sponsorship program by New York City-based businesses via a non-profit organization to fund farmers for education and capital investment in new technologies and equipment. Certified carbon sequestration and emission-reduction credits would then be provided as offsets to sponsoring entities. The proposed REAL program would combine educational support with economic incentives and scientific verification of emission reductions as a new approach to landscape-based climate change mitigation for diversified small-scale agriculture near urban areas.

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### Information of corresponding author

Full Name: Cynthia Rosenzweig

Organization: NASA Goddard Institute for Space Studies

Mailing address: 2880 Broadway, New York, NY 10025

Tel: 212-678-5562

Email: crosenzweig@giss.nasa.gov