EARTH SCIENCE RESEARCH

Day/night air monitoring
Atmospheric chemical analysis
Improved circulation models
Deposition analysis
Food security detection sensors
Aerosol and trace gas characteristics
Plant stress and vegetation indicators
Robust satellite data assimilation
Aerosol and trace gas characteristics
Effects of global atmospheric chemistry on regional air quality and plume dispersion

EARTH OBSERVING MISSIONS

GRACE Aura CloudSAT QuikSCAT NPOESS

Decision-Support Inputs

Outcomes: Streamline flow of information and tasking for priority threats
Impacts: Avoid major illnesses and deaths from events
Outcomes: Rapid identification of air/water biological agents, trace sources and destinations; issue health alerts
Impacts: Manage public reaction, fear, and overreaction
Outcomes: Identify downstream exposure to airborne/waterborne contaminants; increase warning time to people
Impacts: Reduce health effects and exposure to livestock, food, and people. Reduce hospital admissions and lost productivity
Outcomes: Model coordination and planning for specialized models; coordinate with Homeland Security Tiger Team
Impacts: Minimize subsequent exposure to populations and secondary effects

State 2
IMAAc Air & Water Situation Center replaces "DHS Situation Center (c. 2012)"

State 1
Interagency Modeling and Atmospheric Assessment Center (IMAAc)

Where we are now
Investigation of the utility of NASA Earth science data and models to improve the estimation of biological or chemical agent fate

Where we plan to be
Integrated Earth science observations and modeling support more accurate prediction of plume transport and dispersion
Improved satellite and modeling products provide a more comprehensive understanding of chemical changes of releases due to solar radiation
Vegetative stress analysis allows for improved food and plant supply security

2004 2012

2003 2005 2007 2009 2011 2013