Methodology and Results for
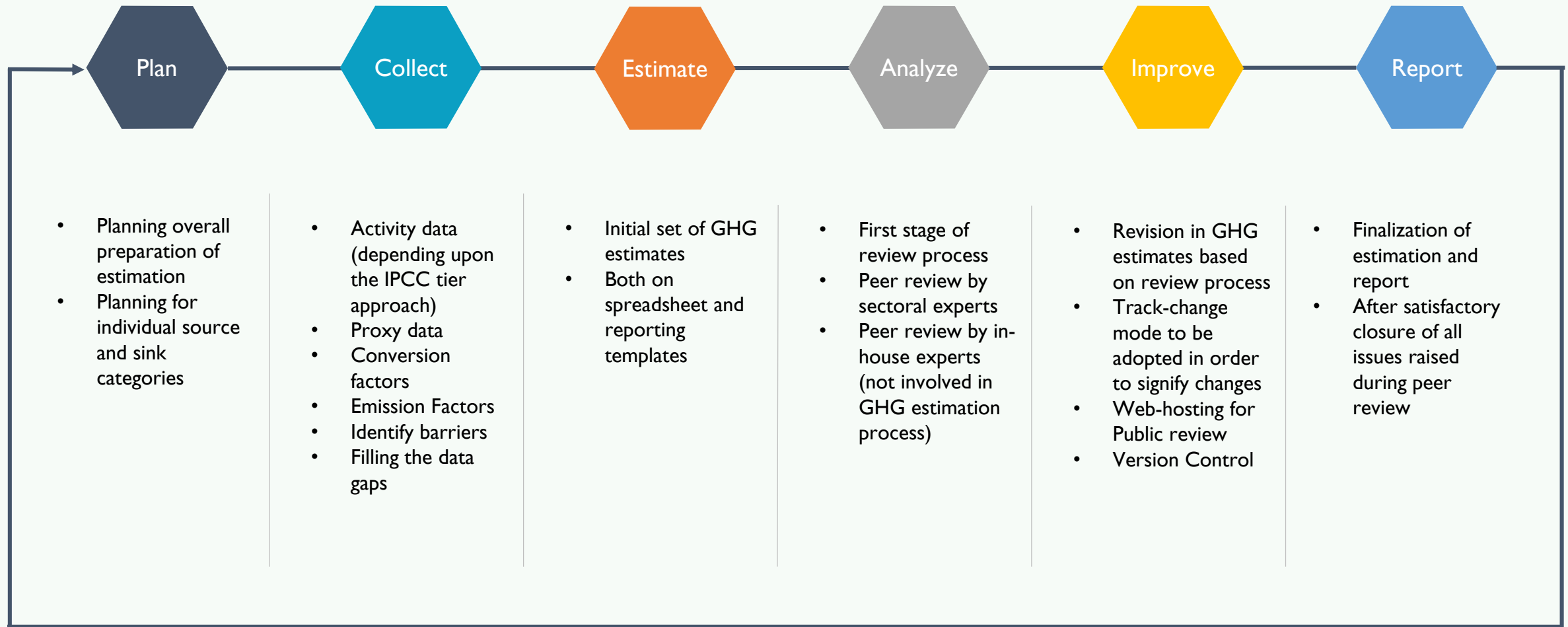# India's GHG Emission Estimates for 2005-2013

Date   : 28 September 2017
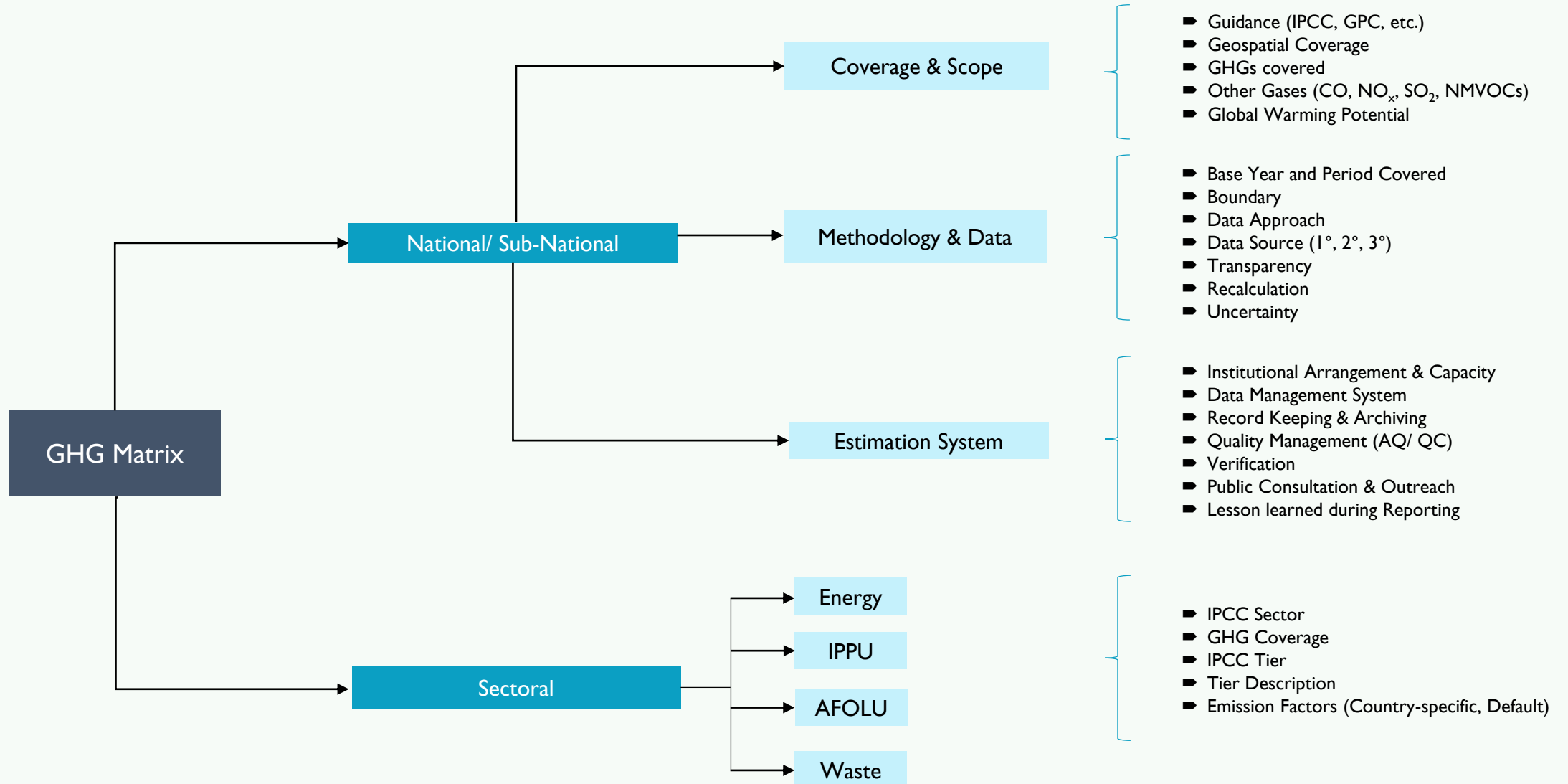Venue   : India Habitat Center, Delhi

Phase II

Plan	Collect	Estimate	Analyze	Improve	Report

- Planning overall preparation of estimation
- Planning for individual source and sink categories

- Activity data (depending upon the IPCC tier approach)
- Proxy data
- Conversion factors
- Emission Factors
- Identify barriers
- Filling the data gaps

- Initial set of GHG estimates
- Both on spreadsheet and reporting templates

- First stage of review process
- Peer review by sectoral experts
- Peer review by in-house experts (not involved in GHG estimation process)

- Revision in GHG estimates based on review process
- Track-change mode to be adopted in order to signify changes
- Web-hosting for Public review
- Version Control

- Finalization of estimation and report
- After satisfactory closure of all issues raised during peer review

GHG Matrix

GHG Matrix

National/ Sub-National

Coverage & Scope
- Guidance (IPCC, GPC, etc.)
- Geospatial Coverage
- GHGs covered
- Other Gases (CO, NO_x, SO_2, NMVOCs)
- Global Warming Potential

Methodology & Data
- Base Year and Period Covered
- Boundary
- Data Approach
- Data Source (1°, 2°, 3°)
- Transparency
- Recalculation
- Uncertainty

Estimation System
- Institutional Arrangement & Capacity
- Data Management System
- Record Keeping & Archiving
- Quality Management (AQ/ QC)
- Verification
- Public Consultation & Outreach
- Lesson learned during Reporting

Sectoral
- Energy
- IPPU
- AFOLU
- Waste

- IPCC Sector
- GHG Coverage
- IPCC Tier
- Tier Description
- Emission Factors (Country-specific, Default)

Key Information

Guidance

Flexibility to choose from IPCC Good Practice Guidance and National Good Practice Guidance.

Choice on GWP

Reporting based on SAR values for comparability with NATCOM Reports;
Reporting based on latest AR values to be in-line with IPCC good practice.

GHG Boundary

Clear guidance on physical perimeter of inventory boundary;
Two levels of classification:
1. National; and
2. State level

Data Approach

Guidance on data approach (top-down or bottom-up);

Apportionment guide (e.g. econometric, FY to CY)

QA/ QC

Guidance on ensuring quality of GHG estimates
(e.g. AD, EF, assumptions, time series consistency, calculations, completeness, etc.)

Recalculation

Clear guidance on possible reasons;
Clear guidance on reporting of recalculations to ensure accuracy and completeness.

Uncertainty

Identifying and Reporting on type of uncertainty;
Good practice guidance on statistical methods;
Combined uncertainties: IPCC Good Practice.

Specific Guidance

Agriculture, Forestry and Fishing;
On-road and off-road transportation;
Waste-to-Energy, Others.

What are we trying to accomplish?

Quantificationn is neither over nor under actual emissions. Uncertainties are removed as far as practicable.

Consistent methodologies allows meaningful comparison of emissions over time.

Ensuring GHG emission estimates reflects the actual GHG emissions of national and/or state boundary
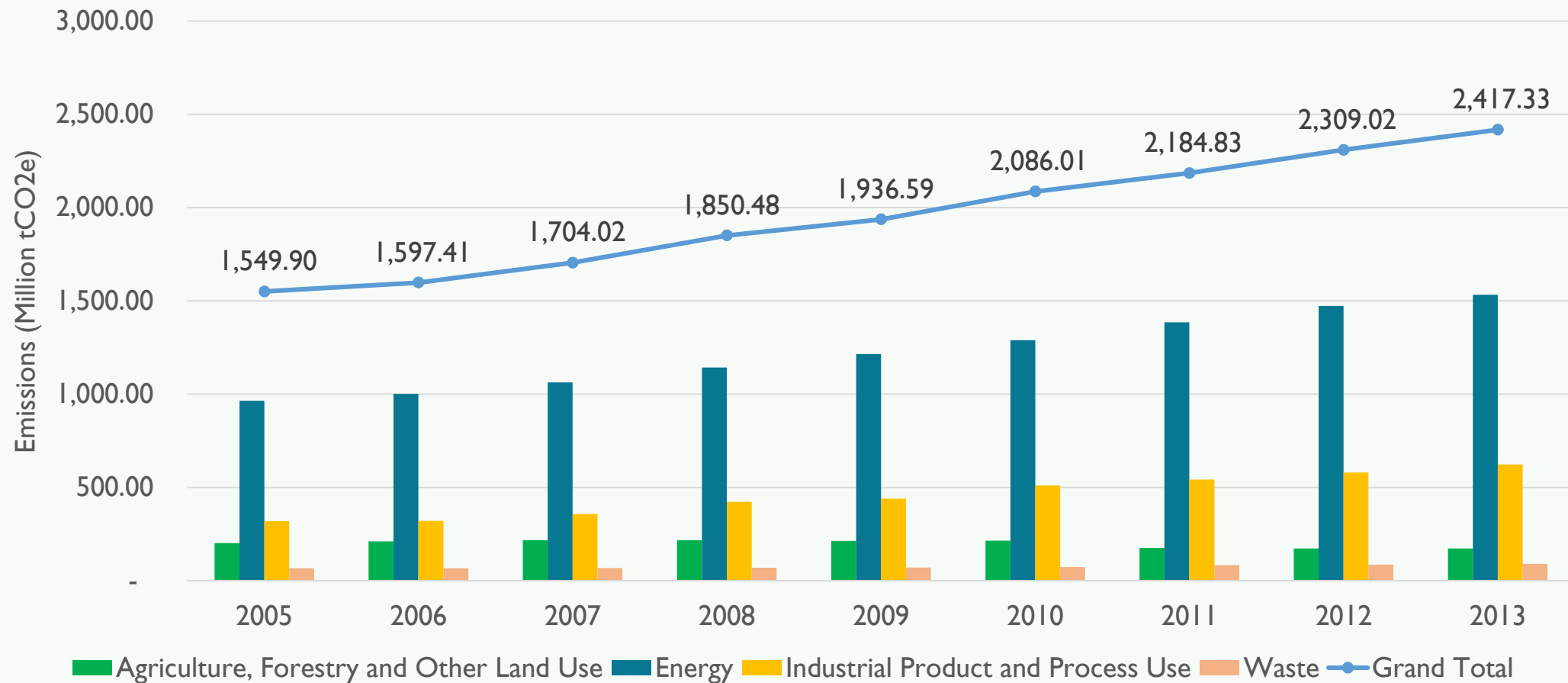
A Accuracy

T Transparency

C Consistency

C Completeness

R Relevance
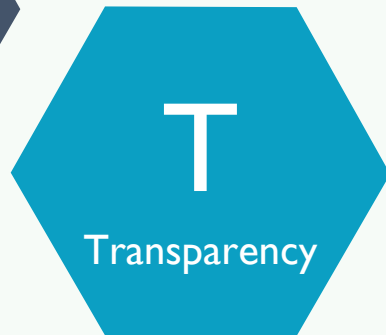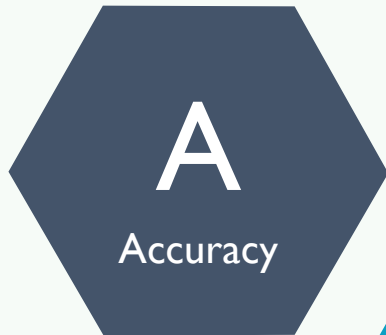
Disclosure of all assumptions and clarity on methodologies and data sources used.

Account for and report on all GHG emissions within boundary. Justify any specific exclusions.

National Estimates

Trend of GHG Emissions from India (2005-13)

All emissions in Million tCO$_2$e

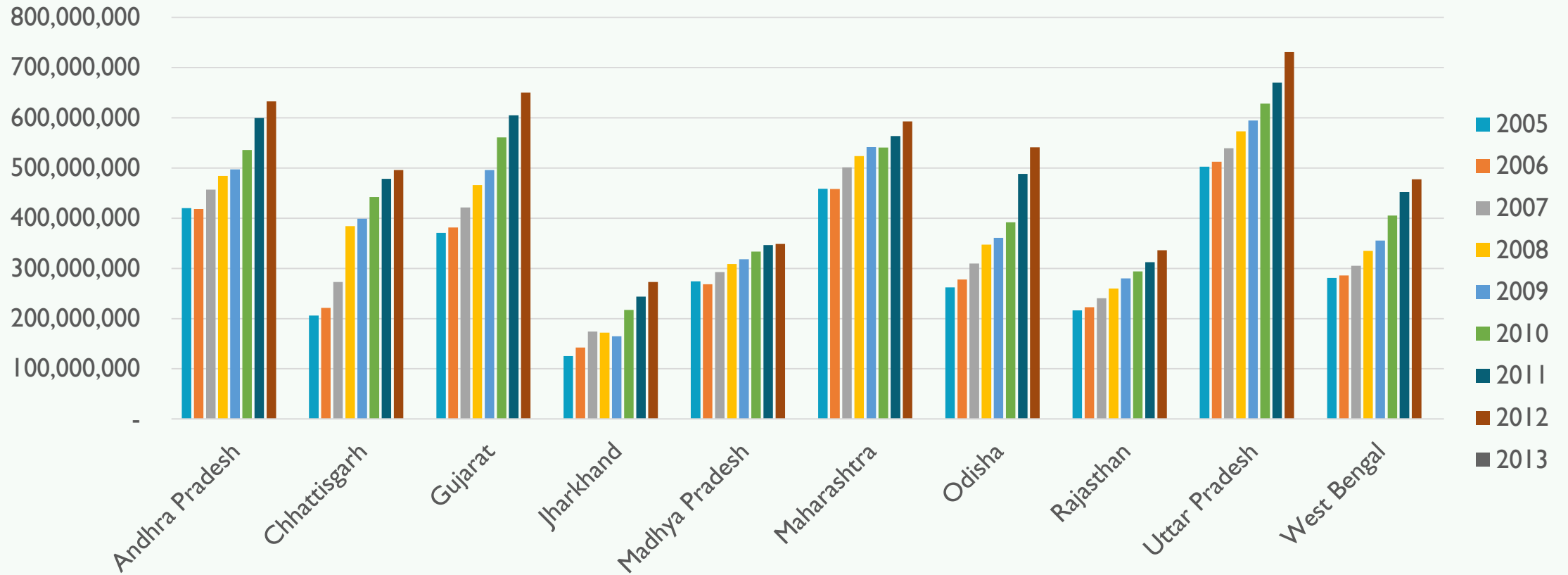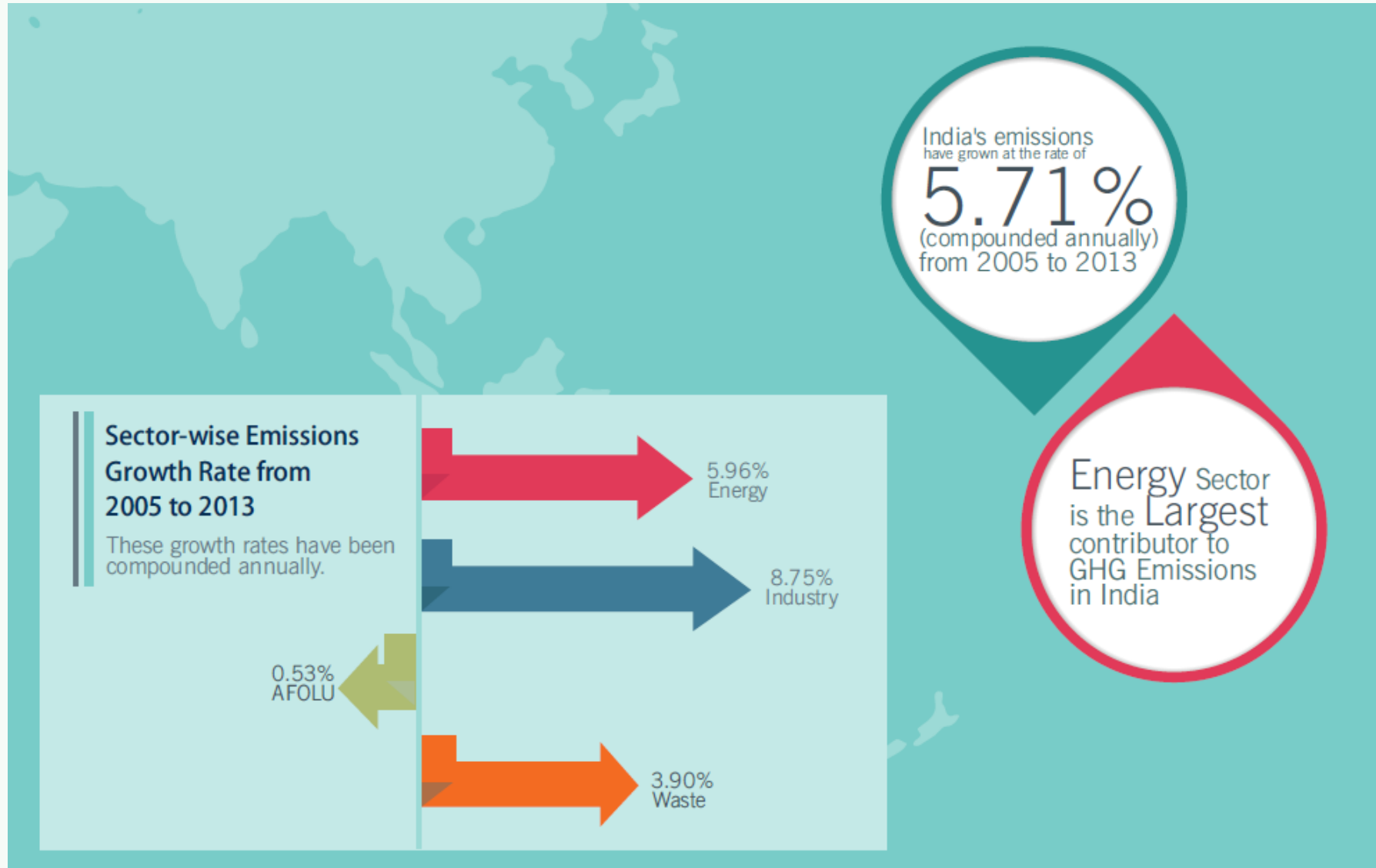# Top 10 States in 2005
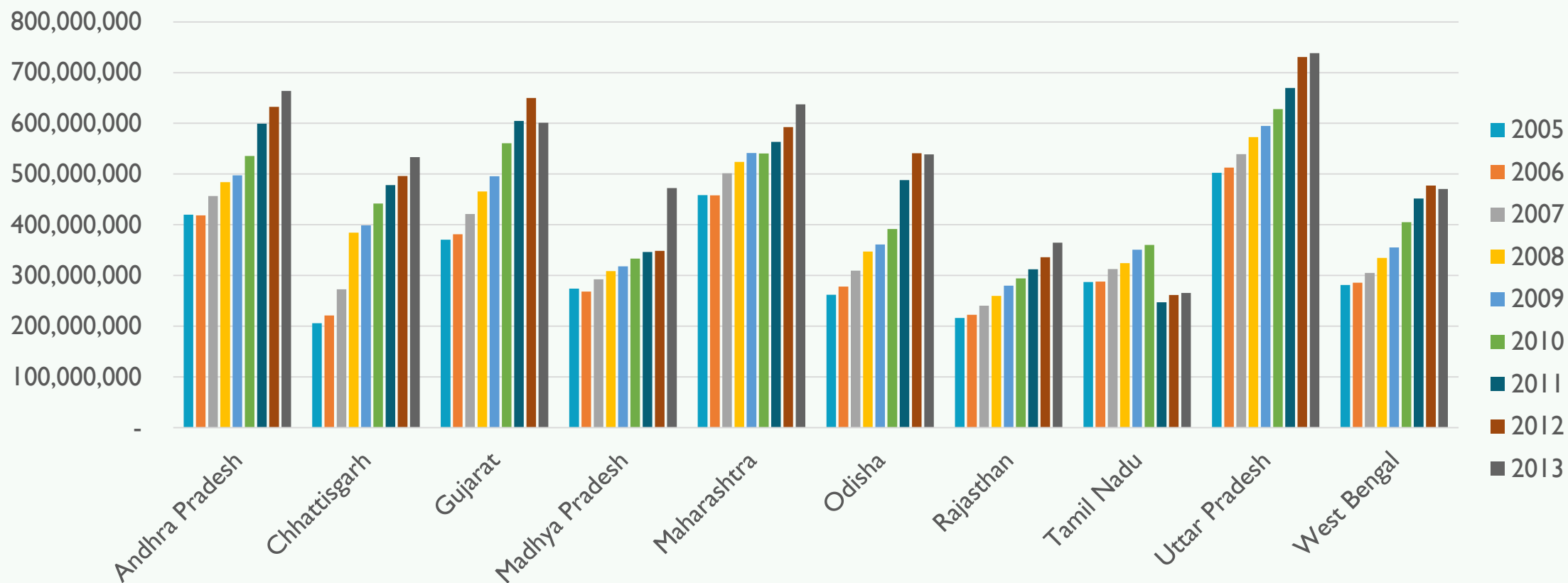
Top 10 States in 2013

Change in National GHG emissions