

Trend Analysis of GHG Emissions in ANDAMAN & NICOBAR ISLANDS

GHG Platform India is a civil society initiative providing an independent estimation and analysis of India's Greenhouse Gas (GHG) emissions across key sectors, namely- Energy, Industrial Processes and Product Use (IPPU), Agriculture, Forestry & Other Land Use (AFOLU) and Waste.

The Platform seeks to add value to the various ongoing GHG emission estimation efforts by helping address existing data gaps and data accessibility issues, extending beyond the scope of national inventories to state inventories, and by increasing the volume of analytics and policy dialogue on India's GHG emissions sources, profile, and related policies.

The initiative estimates and assesses GHG emissions and removals from the following sectors:



ENERGY



IPPU*



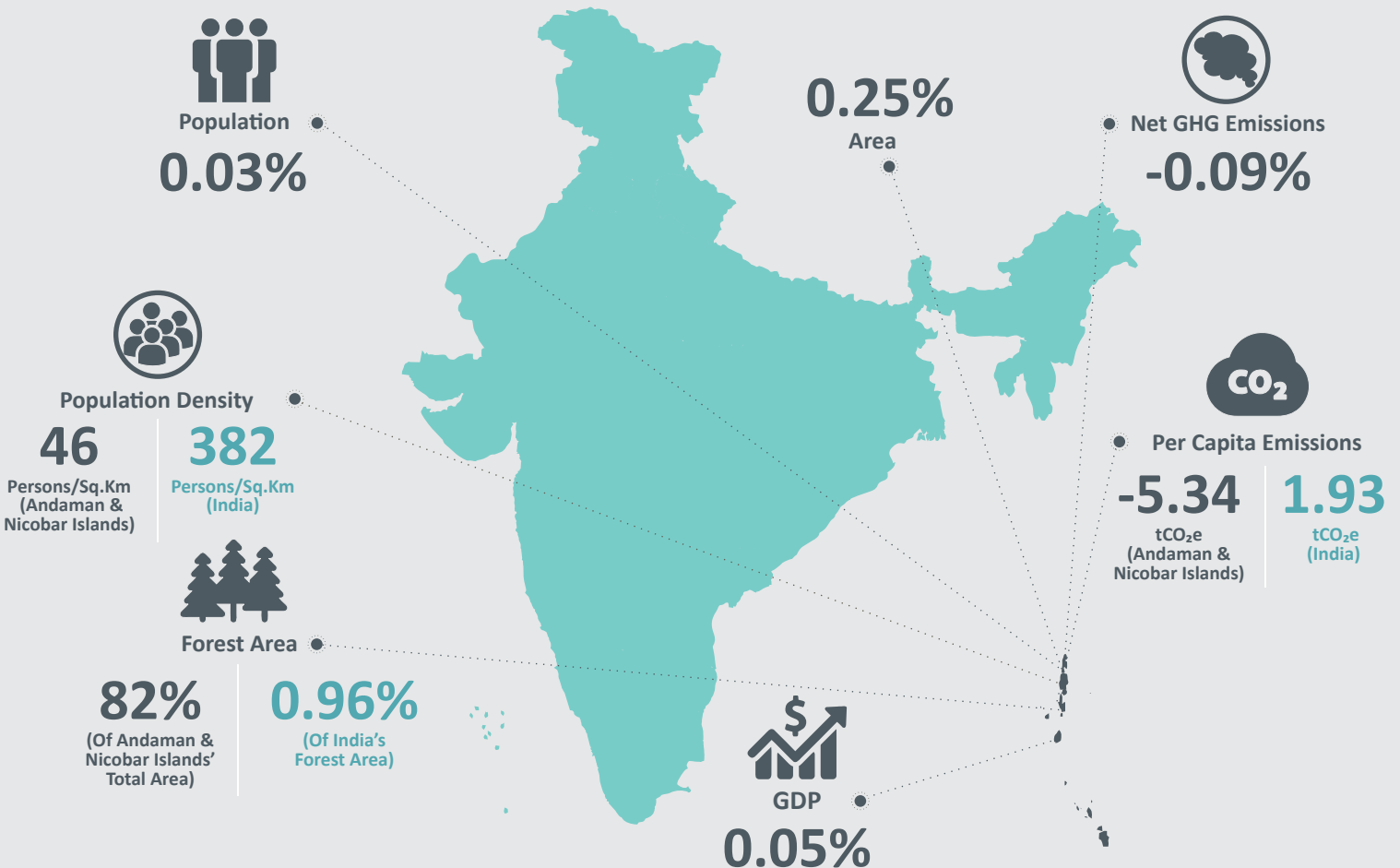
AFOLU



WASTE

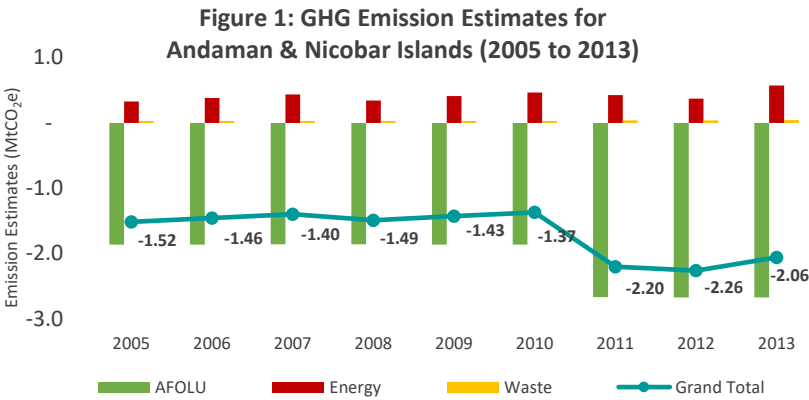
*Fuel combusted for Captive Electricity Generation (Auto-Producers) has been reported under Energy sector.

Andaman & Nicobar Islands at a glance (2013)



Economy-wide Emission Estimates

Andaman & Nicobar Islands were a net sink of GHGs throughout the reference period and removed 2.06 MtCO₂e of emissions in 2013¹. While the Energy and Waste sector were emitters of GHGs, the AFOLU sector in the UT was a net sink of GHG emissions.



Notably, no emissions were registered from the IPPU sector in the UT throughout the reference period. The removals from the AFOLU sector were much higher than the emissions from the other two sectors throughout the reference period. Hence, Andaman & Nicobar Islands remained a remover of GHG emissions throughout the reference period. Removals from the UT grew at a positive CAGR² of 3.92% from 1.52 MtCO₂e in 2005 to 2.06 MtCO₂e in 2013 as illustrated in Figure 1. A sudden rise in overall removals was observed in 2011 owing to increased removals by the AFOLU sector.

Per capita removals of Andaman & Nicobar Islands grew at a CAGR of 3.22% from 4.14 tCO₂e in 2005 to 5.34 tCO₂e in 2013 (Figure 2). When compared to India, Andaman & Nicobar Islands recorded per capita removals unlike most states and the country as a whole which recorded per capita emissions of GHGs. Contrary to increasing per capita removals by the Andaman & Nicobar Islands, the observed CAGR of the per capita emissions of India was 4.07% from 2005 to 2013.

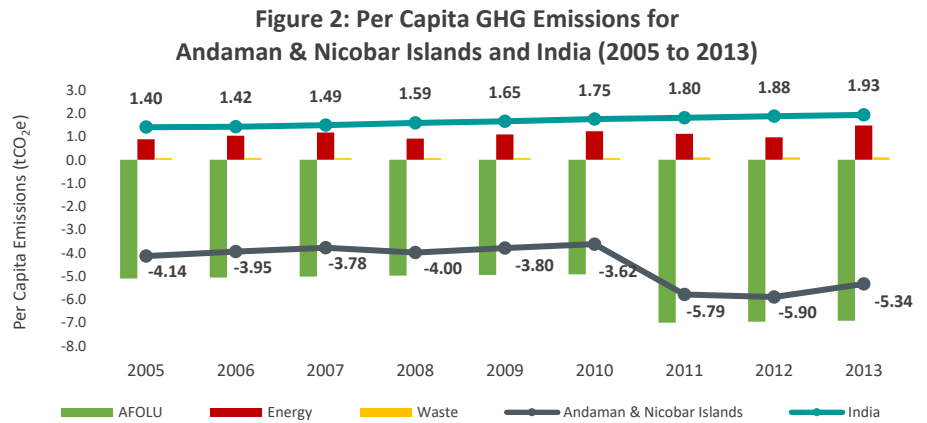
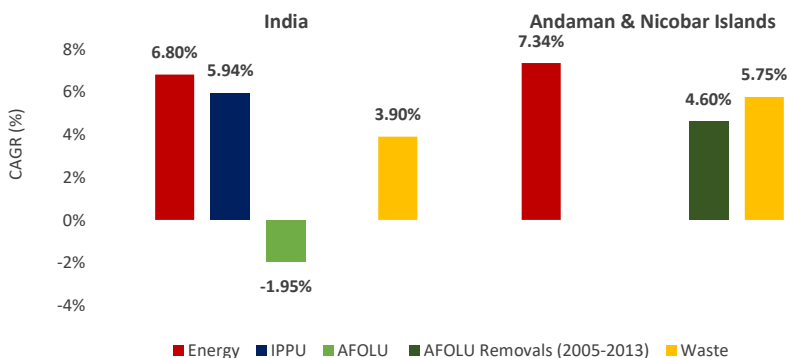


Figure 3: Sector-wise GHG Emissions Growth Rate from 2005 to 2013

These growth rates have been compounded annually.



GHG emissions from the Energy sector of Andaman & Nicobar Islands grew at the highest CAGR of 7.34%³ from 2005 to 2013 amongst all other sectors (Figure 3). This was followed by the Waste sector which also recorded a growth rate of 5.75%⁴. The removals from the AFOLU sector registered a growth of 4.60% during the reference period. When compared to India's sectoral growth rates, all the sectors recorded a higher growth rate from 2005 to 2013. However, the AFOLU sector was an exception which recorded a growth in removals when compared to India's AFOLU sector, the emissions of which declined at compounded rate of -1.95%

¹ Calendar year values have been considered for this analysis. For Global Warming Potential (GWP) calculations IPCC-ARII values have been considered

² Compound Annual Growth Rate

³ The CAGR value is very high but the corresponding change in absolute emissions was only of the order of 0.25 MtCO₂e from 2005 to 2013

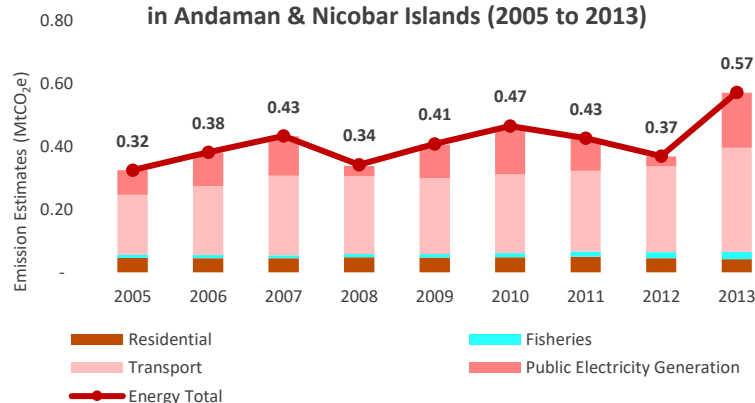
⁴ The CAGR value is very high but the corresponding change in absolute emissions was only of the order of 0.01 MtCO₂e from 2005 to 2013

Energy Sector



The Energy sector represented 0.57 MtCO₂e of GHG emissions in Andaman & Nicobar Islands in 2013. In general, emissions from the Energy sector arise from two main sub-sectors – Fuel Combustion (Public Electricity Generation, Transport, Industries and Agriculture, Commercial and Residential categories) and Fugitive. All the Energy sector emissions emanated from the Fuel Combustion sub-sector of Andaman & Nicobar Islands. The Energy sector emissions increased at a CAGR of 7.34% from 0.32 MtCO₂e in 2005 to 0.57 MtCO₂e in 2013 with several peaks and troughs in the Energy trend line during the reference period owing to varying emissions from Public Electricity Generation (Figure 4).

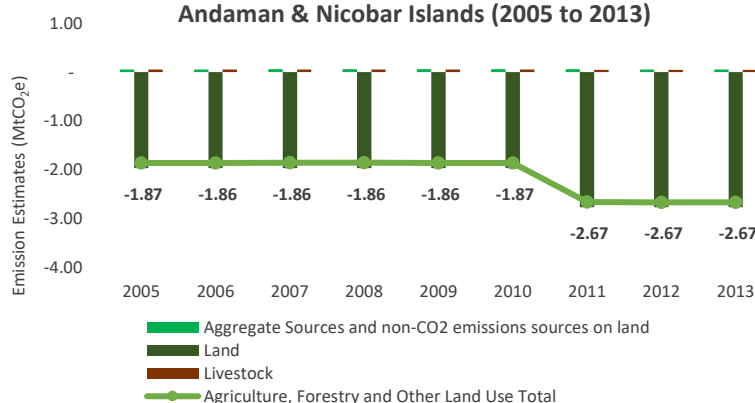
Figure 4: GHG Emission Estimates for Energy Sector in Andaman & Nicobar Islands (2005 to 2013)



AFOLU Sector



Figure 5: GHG Emission Estimates for AFOLU Sector in Andaman & Nicobar Islands (2005 to 2013)



The AFOLU sector absorbed 2.67 MtCO₂e of GHG emissions in Andaman & Nicobar Islands in 2013. Emissions/removals from this sector arise from three main sub-sectors namely Livestock, Land and Aggregate Sources and Non-CO₂ Emissions Sources on Land. Notably, the Land sub-sector was a sink whereas, the other two sub-sectors under AFOLU were emitters of GHGs across all years from 2005 to 2013. However, removals from the Land sub-sector were much higher than the emissions from the other two sub-sectors thus making the AFOLU sector a net sink of GHG emissions. The removals by the AFOLU sector grew at a CAGR of 4.60% from 1.87 MtCO₂e in 2005 to 2.67 MtCO₂e in 2013.

A significant rise in the removals was observed in 2011 owing to increased removals from the Land sub-sector as illustrated in Figure 5 above.

Waste Sector



The Waste sector emitted 0.040 MtCO₂e of GHG emissions in Andaman & Nicobar Islands in 2013. Municipal Solid Waste⁵, Domestic Wastewater and Industrial Wastewater are the key sources of GHG emissions in the Waste sector.

Emissions from the Waste sector grew at a CAGR of 5.75% from 0.026 MtCO₂e in 2005 to 0.040 MtCO₂e in 2013 (Figure 6). A significant rise in the overall Waste emissions was registered in 2011 which is attributable to higher Domestic wastewater emissions, which reflects changing trends in use of various treatment systems as reported in Census of India 2011. Domestic Wastewater was the major emitter of GHGs in the Waste sector across all the reference years with a share of ~78% in total Waste emissions in 2013. Under this sub-sector, ~54% emissions were registered from the rural areas of Andaman & Nicobar Islands in 2013.

Figure 6: GHG Emission Estimates for Waste Sector in Andaman & Nicobar Islands (2005 to 2013)



⁵ Refers to emission in urban areas. Emissions from Municipal Solid Waste Disposal in rural areas are not considered, as disposal predominantly occurs in a dispersed manner and does not generate significant CH₄ emissions'



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The Platform comprises of the following civil society:



An initiative supported by



The **Council on Energy, Environment and Water (CEEW)** is one of South Asia's leading not-for-profit policy research institutions. It uses data, integrated analysis and strategic outreach to explain – and change – the use, reuse, and misuse of resources.

The **International Maize and Wheat Improvement Center (CIMMYT)** is the global leader in agricultural research for development in wheat and maize-based farming systems.

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