Supplement Material of

Development and analysis of spatially resolved technological high resolution (0.1°×0.1°) Emission Inventory of Particulate Matter for India: A step Towards Air Quality Mitigation

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Table S1: Sources of sector-specific activity data

Sl. No.	IPCC 2006 code	Sector	Source
1	1.A.3	Transport	Ministry of Road Transport & Highway https://morth.nic.in/ Ministry of Statistics and Programme Implementation https://www.mospi.gov.in/
2	EPA AP-42*	Wind-blown Road Dust	Ministry of Road Transport & Highway https://morth.nic.in/ Indian Metrological Department's (IMD) https://mausam.imd.gov.in/
3	1.A.2	Industry	Ministry of Petroleum and Natural Gas https://petroleum.nic.in/ Ministry of Micro, Small & Medium Enterprises https://msme.gov.in/ Ministry of Statistics and Programme Implementation https://www.mospi.gov.in/
4	1.A.1	Thermal Power Plant	Ministry of Power https://powermin.gov.in/ Central Electricity Authority https://cea.nic.in/?lang=en
5	1.A.4.b	Residential and Slum	Census of India https://censusindia.gov.in/census.website/

			Ministry of Housing and Urban Affairs https://mohua.gov.in/ UN World Urbanization Prospects https://population.un.org/wup/
7	1.A.4.a	Street Vendor	India's Street Vending (Protection of Livelihoodand Regulation of Street Vending) Act https://mohua.gov.in/upload/uploadfiles/files/StreetVendorAct2014
8	3.C.1.b	Crop Residue Burning	Ministry of Agriculture & Farmers' Welfare https://agricoop.gov.in/ Ministry of Statistics and Programme Implementation https://www.mospi.gov.in/
9	1.B.1	Crematorium	Ministry of Home Affairs https://www.mha.gov.in/en SAFAR- Delhi (2018), Pune (2020)
10		Diesel Generator	International Energy Agency https://www.iea.org/ Department of Telecommunication https://dot.gov.in/
11	4.C.2	Municipal Solid Waste	Central Pollution Control Board https://cpcb.nic.in/
12	4.C.1	Municipal Solid Waste Incineration Plant	Central Pollution Control Board https://cpcb.nic.in/
13	1.B.1	Brick Kiln	Central Pollution Control Board https://cpcb.nic.in/ Seay et al., (2021) https://doi.org/10.1088/2515-7620/ac0a66 Rajarathnam et al., (2014) https://doi.org/10.1016/j.atmosenv.2014.08.075
14		Cow Dung (Biofuel)	SAFAR- Delhi (2018), Pune (2020)
16	2.B.9.b	Incense stick/ Mosquito coil/ Cigarette	Cohen et al., (2013) https://doi.org/10.1016/j.scitotenv.2013.03.101 Kumar et al., (2014) http://dx.doi.org/10.4103/0972-6691.140770
17	1.A.2.k	Construction Activity	Central Pollution Control Board https://cpcb.nic.in/

Table S2: Technological Emission factors used for transport sector.

Transport	2W (Gasoline)	3W 2S (CNG)	3W 4S (Gasoline)	Buses (Diesel)	P Cars (Petrol)	C Cars (CNG)	C Cars (Diesel)	HCV (Diesel)	LCV (Diesel)	MSLV (Diesel)
5yr	0.015	0.118	0.015	0.795	0.002	0.001	0.015	1.24	0.475	1.24
10yr	0.035	0.118	0.011	1.213	0.005	0.002	0.125	1.965	0.655	1.965
15yr	0.035	0.118	0.011	1.213	0.008	0.002	0.163	1.965	0.655	1.965

(Source: ARAI, Air Quality Monitoring Project-Indian Clean Air Program, 2007 report/ CPCB 2010 Report/Sahu et al (2011)

Where; 2W – Two wheelers, 3W- Three Wheelers (2S- Two Stroke, 3S- Three Stroke), P Cars- Personal Cars, C Cars- Commercial Cars, HCV- Heavy Commercial Vehicle, LCV- Light Commercial Vehicle, MSLV- Miscellaneous Vehicles)

Table S3: Technological emission factors for all other sectors.

Sector	Fuel	$PM_{2.5}$ (g/kg)	PM10 (g/kg)	Sources
Power Plant	Coal/Lignite	0.6	2.3	Sahu et al.2017
Industry	Coal/Coke	1.84	2.925	Beig et al. 2018
Residential	LPG	0.33	2.1	Reddy et al. 2002
	Wood	12.24	15.3	
	Coal	12.2	20	
	Kerosene	1.9	1.95	
	Cow-dung	5.04	6.3	
Crop Residue	Rice	8.3	9.1	Khaiwal et al. 2019
	Wheat	7.6	8.36	Khaiwal et al. 2019
	Sugarcane	3.8	8.05	Khaiwal et al. 2019
	Cotton	5.9	10.85	Khaiwal et al. 2019
	Coarse Cereals	4.1	4.3	Zhang et al. 2018
	Mustard	7.8	8.58	Beig et al. 2018
	Groundnut	7.9	8.69	Beig et al. 2018
	Maize	7.9	8.69	Beig et al. 2018
Bio-Fuel (Cow Dung Cake)	Cow-dung	5.04	6.3	Reddy et al. 2002
	Wood	12.24	15.3	Reddy et al. 2002
Construction*	Demolition and Debris Removal - Buldozing	NA	0.75	EMEP/EEA Report, 2016
Municipal Solid-waste Burning	NA	13	14	Sharma et al. 2019

Municipal Solid-waste Incineration Plant[@]	NA	18.3	NA	Emission Inventory Guidebook 1 September, 1999
Brick Kiln	Coal	12.2	20	Reddy et al. 2002
	Biomass	7.931	8.713	Reddy et al. 2002
	Rubber	24.48	NA	Beig et al. 2018
Diesel Generator Set[#]	Diesel	7.2	9	Beig et al. 2018
Incense sticks	Biomass	7.931	8.713	Beig et al. 2018
	Charcoal	12.2	20	Reddy et al. 2002
	Resin	33.95	39.95	Cohen et al. 2013
	Bakhoor	153.72	180.85	Cohen et al. 2013
Mosquito Coils	Biomass	7.931	8.713	Beig et al. 2018
	Charcoal	12.2	20	Reddy et al. 2002
	Wood Dust	12.24	15.3	Reddy et al. 2002
Cigarettes	Tobacco	21.6	27	EMEP/EEA Report, 2016
Crematory	Wood	12.24	15.3	Reddy et al. 2002

Units- *lb/ton, @kg/ton, #g/KW-h