Supplementary material for

Multi-type air pollutant emission inventory of non-road mobile sources in China for the period 1990–2017

Xianbao Shen[1,2,3], Lei Kong[3], Yue Shi[3], Xinyue Cao[1,2,3], Xin Li[1,2,3], Bobo Wu[1,2,3], Hanyu Zhang[1,2,3], Zhiliang Yao[1,2,3][1]

[1]State Environmental Protection Key Laboratory of Food Chain Pollution Control, Beijing Technology and Business University, Beijing 100048, China
[2]Key Laboratory of Cleaner Production and Integrated Resource Utilization of China National Light Industry, Beijing Technology and Business University, Beijing 100048, China
[3]School of Ecology and Environment, Beijing Technology and Business University, Beijing 100048, China

[1] Corresponding author: *Tel.: +86-10-68984852; E-mail address: yaozhl@th.btbu.edu.cn (Z. Yao)

Diesel consumption of construction machinery

$$Y = \frac{P \times LF \times hr \times 860 \times 10^{-3}}{(\eta \times q)} \quad (1)$$

where Y is the diesel consumption of construction machinery (10^4 ton), P is the power of construction machinery (10^4 kW), LF is the load factor (0.75) (Hou et al., 2019), hr is the average activity time (h) of construction machinery in one year (770) (MEPC, 2014), 1 kWh = 860 kcal, q is the calorific value of diesel, and η is diesel engine efficiency (0.35) (Zhang, 2007).

No statistical data were available on the total power of construction machinery of construction enterprises in various regions of China for the period 1990–1992. In this study, the proportion of the total power of construction machinery of construction enterprises to the total power of machinery of construction enterprises in various regions of China in 1993 was used to calculate the missing data. The method for calculation of the total power of machinery of construction enterprises in various regions of China during 1991–1992 is shown in Eq. (2):

$$P = P1 + P2 \quad (2)$$

where P is the total power of machinery of construction enterprises, $P1$ is the total power of machinery and equipment owned by state-owned construction enterprises, and $P2$ is the total power of machinery and equipment owned by collective-owned construction enterprises.

The method for calculation of the total power of machinery and equipment owned by construction enterprises in various regions of China in 1990 is shown in Eq. (3):

$$P = R \times N \tag{3}$$

where P is the total power of machinery and equipment owned by construction enterprises, R is the power of machines per labourer, and N is the number of staff and workers.

Diesel consumption of agricultural machinery

There were no agricultural diesel consumption data available for the period 1990–1992. Therefore, these data were obtained by estimation through linear fitting of the data from 1993–2003, as shown in **Fig. S1.**

In certain years, relevant activity data for some provinces and cities in China were missing from local statistical yearbooks. The missing data were estimated based on the proportion of provincial data to total national data in neighbouring years.

Power of other agricultural machinery diesel engines.

$$P_1 = P - P_2 \times \xi - P_3 \times \xi - P_4 \times \xi - P_5 \times \xi - P_6 \tag{4}$$

where P_1 is the power of other agricultural machinery diesel engines (10^4 kW), P is the total power of agricultural machinery diesel engines (10^4 kW), P_2 is the total power of large- and medium-sized tractors (10^4 kW), P_3 is the total power of small tractors (10^4 kW), P_4 is the total power of harvesting machines (10^4 kW), P_5 is the total power of vessels (10^4 kW), P_6 is the total power of diesel engines for diesel-powered agricultural drainage and irrigation machinery (10^4 kW), and ξ is the ratio of the total power of diesel engines to the total power of agricultural machinery.

In this study, the category of agricultural machinery was subdivided into different emission standards based on the principles of division of emission standards and the simulated survival curves of agricultural machinery. Owing to the lack of sales data for both irrigation/drainage machinery diesel engines and combine harvesters, it was assumed that the average power of irrigation and drainage machinery diesel engines is approximately equal to that of small tractors, and that the average power of a combine harvester is approximately equal to that of large- and medium-sized tractors. Therefore, the divisions of emission standards for drainage and irrigation machinery diesel engines were consistent with that of small tractors, and the division of emission standards for combine harvesters was consistent with large- and medium-sized tractors.

Diesel consumption of vessels

$$Y = r \times T \times q \tag{5}$$

where Y is the fuel consumption for passenger transport by inland river/coastal vessels (10^4 ton), r is the passenger-kilometres by inland river/coastal vessels (10^4 passenger-km), T is the average weight of vessel passengers and carry-on baggage (80 kg/person)

(Feng et al., 2014), q is the fuel consumption per 10,000 tkm of inland river/coastal vessels (kg/10^4 tkm).

The method for calculation of the fuel consumption of cargo vessels is shown in Eq. (6):

$$Y = r \times q \tag{6}$$

where Y is the fuel consumption for inland river/coastal cargo vessels (10^4 ton), r is the freight ton-kilometres by inland river/coastal vessels (10^4 tkm), q is the fuel consumption per 10,000 tkm of inland river/coastal vessels (kg/10^4 tkm).

The parameters of fuel consumption per 10,000 km of inland and coastal vessels were divided into two cases: different provinces and units directly under the State Maritime Administration. Regarding the total turnover data of the direct totals after calculating the fuel consumption, the annual fuel consumption was distributed to provinces and cities based on the proportion of a province's turnover to the national turnover. Vessel passenger and freight data were missing for 1994 and 2017. This study collected the total passenger and freight data of the waterway transportation industry in those years, and then calculated the proportion of inland river and coastal passenger and freight data of the provinces and cities in the neighbouring years to the passenger and freight data of the waterway transportation of each province. Finally, the missing data were estimated based on the calculated ratio.

The method for calculation of the fuel consumption of fishing vessels is shown in Eq.

(7):

$$Y = \frac{P \times LF \times hr \times 860 \times 10^{-3}}{(\eta \times q)} \quad (7)$$

where Y is the diesel consumption of fishing vessels (10^4 ton), P is the power of fishing vessels (10^4 kW), LF is the load factor (0.75) (Hsieh et al., 2009), hr is the average activity time (h) of construction machinery in one year (1300) (Yu et al., 2008; Song, 2015), 1 kWh = 860 kcal, q is the calorific value of diesel, and η is diesel engine efficiency (0.35) (Feng et al., 2014).

There were no statistical data for 2017 for the power of motorized fishing vessels. The data for 2017 were obtained through linear estimation using data from 1990–2016, as shown in **Fig. S2**.

Diesel consumption of diesel locomotives

$$F = N \times F_i \quad (8)$$

where F is the total tonnage of railway locomotives (ton), N is number of railway locomotives, and F_i is the average total tonnage of freight locomotives (ton).

$$F = F_1 + F_2 + F_3 \quad (9)$$

where F is the total tonnage of railway locomotives (ton), F_1 is the total tonnage of diesel locomotives (ton), F_2 is the total tonnage of electric locomotives (ton), and F_3 is the total tonnage of steam locomotives (ton).

$$\eta = \frac{F_1}{F} \tag{10}$$

where η is the proportion of diesel locomotives in the national total of railway locomotives, F_1 is the total tonnage of diesel locomotives (ton), and F is the total tonnage of railway locomotives (ton). The value in 2014 was used to estimate the proportion of diesel locomotives in subsequent years.

The methods for calculation of the fuel consumption of diesel locomotives for railway passengers and freight are shown in Eqs. (11) and (12), respectively:

$$Y_1 = Q \times T \times q \times \eta \times \frac{t_1+t_2}{t_1} \tag{11}$$

$$Y_2 = Q \times T \times q \times \eta \times \frac{t_1+t_3}{t_1} \tag{12}$$

where Y_1 and Y_2 represent diesel consumption for passenger and freight transport by diesel locomotives, respectively (10^4 ton), Q is the passenger/freight-kilometres by railways (100 million passenger-km), T is the average weight of locomotive passengers and carry-on baggage (80 kg/person) (Feng et al., 2014), q is the oil consumption by diesel locomotives (kg/10^4 tkm), η is the proportion of diesel locomotives in the national total of railway locomotives, t_1 is the static load of freight cars (97.6 ton) (Feng et al., 2014), t_2 is the weight of the passenger car itself (879.4 ton) (Feng et al., 2014), and t_3 is the weight of the fright car itself (23 ton) (Feng et al., 2014).

For the statistical data of cargo turnover not allocated to provinces and cities from 2003–2014, this study allocated this year's data to provinces and cities based on the proportion of cargo turnover of each province and city to the total national cargo turnover.

Calculation of agricultural machinery emissions

The engine-power-based approach was used to calculate the emissions of all agricultural machinery except agricultural transport vehicles, as shown in Eq. (13):

$$E_i = \sum_j \sum_k \sum_n \left(P_{j,k,n} \times G_{j,k,n} \times LF_{j,k,n} \times hr_{j,k,n} \times EF_{j,k,n}\right) \times 10^{-6} \quad (13)$$

where $E_{j,k}$ is the total emission (ton) of pollutant i, P_j is the population of agricultural machinery j, k is the emission standard, n is the power segment, G is the average installed engine power (kW), LF is the load factor (0.65) (MEPC, 2014), hr is the average activity time (h) of agricultural machinery in one year, EF is the corresponding emission factor (g/kwh). The pollutants (i) comprised CO, NO_x, HC, $PM_{2.5}$, PM_{10}, BC, OC, and VOCs; the activity time (hr) was obtained from the technical guidelines and literature (Fan et al., 2011; MEPC, 2014); and the population (P), average installed engine power (G), and emission factor (EF) were as described in Sect. 2.2 and 2.3.

Calculation of agricultural transport vehicle emissions

The method used for calculation of the emissions of agricultural transport vehicles was similar to that adopted for on-road vehicles, as shown in Eq. (14):

$$E_i = \sum_j \sum_k \left(P_{j,k} \times EF_{j,k,n} \times M_{j,k}\right) \times 10^{-6} \quad (14)$$

where E_i represents the emission (ton) of pollutant i, $P_{j,k}$ is the population of agricultural transport vehicle j in stage k, $M_{j,k}$ is the average annual number of kilometres travelled (km) (three-wheeled transport vehicles and low-speed trucks: 23,000 and 30,900 km, respectively) (MEPC, 2014), and EF is the emission factor (g/km). The pollutants (i) comprised CO, NO_x, HC, $PM_{2.5}$, PM_{10}, BC, OC, and VOCs, and the population (P) and emission factor (EF) were as described in Sect. 2.2 and 2.3.

Calculation of SO2 emissions from non-road equipment

Calculation of SO_2 emissions was based on the mass balance algorithm, as shown in Eq. (15):

$$E = 2 \times Y \times S \times 10^{-6} \quad (15)$$

where E is the SO_2 emissions of non-road equipment, Y is the annual fuel consumption (kg), which is described in Sect. 2.2, and S is the sulphur content of the fuel (Table S8 in the Supplementary material).

Calculation of emissions of pollutants other than except SO_2 from non-road equipment (except agricultural machinery and agricultural transport vehicles)

The CO, NO_x, HC, $PM_{2.5}$, PM_{10}, BC, OC, and VOCs emissions from non-road equipment other than agricultural machinery and agricultural transport vehicles were estimated based on fuel consumption, as shown in Eq. (16):

$$E = Y \times EF \times 10^{-6} \tag{16}$$

where *E* is the CO, NO_x, HC, $PM_{2.5}$, PM_{10}, BC, OC, and VOCs emission of the non-road equipment, *Y* is the annual fuel consumption (kg), which is described in Sect. 2.2, and *EF* is the emission factor, which is described in Sect. 2.3.

Uncertainty analysis

The 95% CI and CV are calculated using Eqs. (17) and (18), respectively (Wang et al., 2016).

$$CI_x = \mu_x \pm 1.96 \frac{\sigma_x}{\sqrt{n}} \tag{17}$$

$$CV_x = \frac{\sigma_x}{\mu_x} \tag{18}$$

where CI_x is the 95% confidence interval of x, CV_x is the confidence of variation of x, μ_x is the arithmetic average of x, σ_x is the standard deviation of x, n is the number of observations of x, x is emission factor.

Table S1. Time, region and pollutant types of emission inventories for non-road mobile sources since 2000.

#	Authors/Year	Time	Region	Pollutants
1	Zhang et al. (2010)	2006	Pearl River Delta	CO, NO_x, PM_{10}, VOCs, and SO_2
2	Kui (2013)	2010	Beijing-Tianjin-Hebei	CO, NO_x, $PM_{2.5}$, PM_{10}, VOCs and SO_2
3	Ning and Li (2016)	2000-2012	China	CO, NO_x, HC and PM_{10}
4	Wang et al. (2016)	2012	China	CO, NO_x, HC and PM
5	Li (2016)	2013	China	CO, NO_x, HC and PM
6	Xie and Zheng. (2016)	2014	Nanjing	CO, NO_x, $PM_{2.5}$, PM_{10}, VOCs, and SO_2
7	Zhang et al. (2017a)	2014	Nanchang	CO, NO_x, HC, $PM_{2.5}$, PM_{10}, and SO_2
8	Li (2017)	2013	China	CO, NO_x, $PM_{2.5}$, PM_{10}, VOCs, and SO_2
9	Lu et al. (2017)	2014	Yangtze River Delta	CO, NO_x, $PM_{2.5}$, PM_{10}, VOCs, and SO_2
10	Zhang et al. (2017b)	2015	Tianjin	CO, NO_x, HC, PM and SO_2
11	Bian et al. (2018)	2014	Guangdong	CO, NO_x, $PM_{2.5}$, PM_{10}, VOCs, and SO_2
12	Fan et al. (2018)	2015	Sichuan	CO, NO_x, HC, $PM_{2.5}$ and PM_{10}
13	Huang et al. (2018)	2014	Yangtze River Delta	CO, NO_x, $PM_{2.5}$, PM_{10}, VOCs, and SO_2
14	Xu et al. (2019)	2015	Jiangsu	CO, NO_x, $PM_{2.5}$, PM_{10}, VOCs, and SO_2
15	Jiang et al. (2019)	2015	Urumqi	CO, NO_x, $PM_{2.5}$ and VOCs

Table S2. Types and sources of activity data.

Type	Unit	Source	Year
Total power of machinery and equipment owned by construction enterprises[a]	104 kW	China Statistical Yearbook on Construction China Statistical Yearbook Sichuan Statistical Yearbook[b]	1993–2017
Total power of machinery and equipment owned by state-owned construction enterprisesc[d]	104 kW	China Statistical Yearbook on Construction China Statistical Yearbook Chongqing Statistical Yearbook[b]	1991–1992
Total power of machinery and equipment owned by collective-owned construction enterprisesc[d]	104 kW	China Statistical Yearbook on Construction China Statistical Yearbook Chongqing Statistical Yearbook[b]	1991–1992
Power of machines per laborer	kw/person	China Statistical Yearbook	1990
Staff and workers	104 persons	China Statistical Yearbook	1990

[a]Starting from 2004， statistics on machinery and equipment owner refer to construction machinery and equipment.

[b]Chongqing municipality was founded in 1997, and relevant activity level data of Chongqing municipality from 1990 to 1996 were obtained by searching the local statistical yearbook.

[c]With horsepower converted to kilowatt by 1 horsepower= 0.735 kilowatt.

[d]After accounting, the sum of the two is the total power of machinery of construction enterprises.

Table S3. Types and sources of activity data.

Type	Unit	Source	Year
Agricultural diesel consumption	104 t	China Rural Statistical Yearbook Chongqing Statistical Yearbook[b] China Agriculture Statistical Report	1993–2017
Number and power of larger and medium-sized tractor and small tractor/agricultural drainage and irrigation machinery/ harvesting machine	104 unit 104 kW	China Agricultural Machinery Industry Yearbook China Statistical Yearbook China Rural Statistical Yearbook Tibet Statistical Yearbook[c] Chongqing Statistical Yearbook[b] China Agriculture Statistical Report	1990–2017
Number of three-wheeled transport vehicle/Low-speed truck	104 t	China Agricultural Machinery Industry Yearbook	1990–2017
Total power of agricultural machinery	104 kW	China Agricultural Machinery Industry Yearbook China Statistical Yearbook China Rural Statistical Yearbook Chongqing Statistical Yearbook[b] China Agriculture Statistical Report Fifty years of agricultural statistics of new China. China Machine Press	1990–2017
Total power of diesel engine	104 kW	China Agricultural Machinery Industry Yearbook China Statistical Yearbook China Rural Statistical Yearbook Chongqing Statistical Yearbook[b] China Agriculture Statistical Report Comprehensive Statistical Data and Materials on 50 Years of New China	1990–2017
Sales of larger and medium-sized tractor/small tractor	unit	CEIC Global Databases	1995–2015
Sales of three-wheeled transport vehicle/Low-speed truck	unit	China Automotive Industry Yearbook	1995–2015

[a]To avoid double counting, fishing vessel diesel consumption has been subtracted from agricultural diesel consumption.

[b]Chongqing municipality was founded in 1997, and relevant activity level data of Chongqing municipality from 1990 to 1996 were obtained by searching the local statistical yearbook.

[c]In some years, the statistical data of Tibet province is missing from the national statistical data, which can be obtained by searching the local statistical yearbook.

Table S4. Types and sources of activity date.

Type	Unit	Source	Year
Passenger-kilometers by inland river vessels	104 passenger-km	Year Book of China Transportation & Communications Sichuan Statistical Yearbook[b] CEIC Global Databases	1990–1993 1995–2016
Freight ton-kilometers by inland river vessels	104 t-km	Year Book of China Transportation & Communications China Ports Yearbook Sichuan Statistical Yearbook[b] CEIC Global Databases	1990–1993 1995–2017
Passenger-kilometers by coastal vessels	104 passenger-km	Year Book of China Transportation & Communications Sichuan Statistical Yearbook[b] CEIC Global Databases	1990–1993 1995–2016
Freight ton-kilometers by coastal vessels	104 tkm	Year Book of China Transportation & Communications China Ports Yearbook Sichuan Statistical Yearbook[b] CEIC Global Databases	1990–1993 1995–2017
Power of fishing vessel	104 kw	China Agricultural Machinery Industry Yearbook China Agricultural Yearbook	1990–2016
Fuel consumption per 10,000 TKM of inland river/coastal vessels[ac]	kg/104tkm	Year Book of China Transportation & Communications	1990–2007

[a]The statistical data of 2001 were wrong, and the average values of 2000 and 2002 were used for calculation. After 2006, the data will not be counted and 2006 data will be used for estimation.

[b]Chongqing municipality was founded in 1997, and relevant activity level data of Chongqing municipality from 1990 to 1996 were obtained by searching the local statistical yearbook.

[c]Before 1999, the data were divided into directly under the jurisdiction of state and sub-total of provinces.

Table S5. Types and sources of activity date.

Type	Unit	Source	Year
Passenger-kilometers by railways	100 million passenger-km	China Statistical Yearbook Year Book of China Transportation & Communications Chongqing Statistical Yearbook[c]	1990–2017
Freight ton-kilometers by railways	100 million tkm	China Statistical Yearbook Year Book of China Transportation & Communications Chongqing Statistical Yearbook[c]	1990–2017
Number of railway locomotives	unit	Year Book of China Transportation & Communications	1990–2017
Average total tonnage of freight locomotives[a]	ton	China Statistical Yearbook	1990–2014
Oil consumption of diesel locomotives[a]	kg/104 tkm	China Statistical Yearbook	1990–2014
Static load of freight cars[b]	ton	China Statistical Yearbook China Railway Yearbook	1990–2016

[a]After 2014, the data will not be counted and 2014 data will be used for estimation.

[b]After 2016, the data will not be counted and 2016 data will be used for estimation.

[c]Chongqing municipality was founded in 1997, and relevant activity level data of Chongqing municipality from 1990 to 1996 were obtained by searching the local statistical yearbook.

Table S6. Emission standard determination method based on sales date.

Class		Pre-Stage I	Stage I	Stage II	Stage III
Agricultural machinery	Larger and medium-sized tractor	~2008.10.1	2008.10.1 ~2010.10.1	2010.10.1 ~2016.4.1	2016.4.1 ~
	Small tractor	~2008.10.1	2008.10.1 ~2010.10.1	2010.10.1 ~2016.4.1	2016.4.1 ~
	Agricultural drainage and irrigation machinery	~2008.10.1	2008.10.1 ~2010.10.1	2010.10.1 ~2016.4.1	2016.4.1 ~
	Harvesting machine	~2008.10.1	2008.10.1 ~2010.10.1	2010.10.1 ~2016.4.1	2016.4.1 ~
	Others	~2008.10.1	2008.10.1 ~2010.10.1	2010.10.1 ~2016.4.1	2016.4.1 ~
	Three-wheeled transport vehicle	~2007.1.1	2007.1.1 ~2008.1.1	2008.1.1~	
	Low-speed truck	~2007.1.1	2007.1.1 ~2008.1.1	2008.1.1~	

Table S7. Assuming the emission standard determination method after two years of delay.

Class		Pre-Stage I	Stage I	Stage II	Stage III
Agricultural machinery	Larger and medium-sized tractor	~2011.1.1	2011.1.1 ~2013.1.1	2013.1.1 ~2018.1.1	2018.1.1 ~
	Small tractor	~2011.1.1	2011.1.1 ~2013.1.1	2013.1.1 ~2018.1.1	2018.1.1 ~
	Agricultural drainage and irrigation machinery	~2011.1.1	2011.1.1 ~2013.1.1	2013.1.1 ~2018.1.1	2018.1.1 ~
	Harvesting machine	~2011.1.1	2011.1.1 ~2013.1.1	2013.1.1 ~2018.1.1	2018.1.1 ~
	Others	~2011.1.1	2011.1.1 ~2013.1.1	2013.1.1 ~2018.1.1	2018.1.1 ~
	Three-wheeled transport vehicle	~2009.1.1	2009.1.1 ~2010.1.1	2010.1.1~	
	Low-speed truck	~2009.1.1	2009.1.1 ~2010.1.1	2010.1.1~	

[a]The standards implemented in 2008 or 2010.10.1 are assumed to be implemented in 2009 or 2011.1.1 for data processing.

[b]The standards implemented in 2010 or 2012.10.1 are assumed to be implemented in 2011 or 2013.1.1 for data processing.

[c]The standards implemented in 2016 or 2018.4.1 are assumed to be implemented in 2016 or 2018.1.1 for data processing.

Table S8. Sulfur content of the fuel.

Non-road equipment	Fuel type	Sulfur content (mg/kg)	Year
diesel engine	diesel	2000	1990–2002
		500	2003
		350	2004–2006
		350	2007–2017
Coastal vessels	heavy oil	27000	1990–2017

Table S9. Emission (Gg) inventory from non-road mobile sources in China (2017).

Provinces	CO	NO_x	HC	$PM_{2.5}$	PM_{10}	BC	OC	VOCs	SO_2
Beijing	7.02	22.5	2.20	1.24	1.26	0.85	0.26	3.05	0.38
Tianjin	17.6	63.0	5.52	5.50	5.93	2.63	0.83	9.06	35.4
Hebei	178	296	44.8	20.2	21.2	12.1	3.77	50.6	18.2
Shanxi	63.6	108	16.8	6.55	6.82	4.11	1.28	18.8	1.00
Inner Mongolia	73.9	123	17.0	9.86	10.3	5.82	1.84	17.8	0.89
Liaoning	61.1	141	15.9	11.0	11.6	5.98	1.88	20.4	25.5
Jilin	62.3	100	14.3	8.67	9.08	5.13	1.62	15.3	0.74
Heilongjiang	86.3	141	19.2	12.4	13.0	7.39	2.34	20.6	1.32
Shanghai	21.7	121	7.56	13.4	14.7	5.27	1.67	16.0	119
Jiangsu	127	335	35.5	25.9	27.2	14.9	4.70	48.9	59.8
Zhejiang	85.5	353	27.2	32.2	34.9	14.8	4.66	47.1	197
Anhui	178	332	43.5	26.6	27.8	15.6	4.93	48.4	16.9
Fujian	47.3	204	15.2	19.2	20.8	8.49	2.68	27.0	126
Jiangxi	37.1	83.7	10.4	5.61	5.81	3.55	1.12	12.9	2.35
Shandong	227	387	56.2	29.0	30.4	17.0	5.33	64.9	23.7
Henan	226	363	53.3	28.3	29.5	17.3	5.43	59.3	2.64
Hubei	110	231	28.5	17.8	18.6	10.6	3.35	34.3	18.2
Hunan	69.3	165	19.9	10.2	10.5	6.89	2.16	25.7	1.23
Guangdong	79.5	267	24.1	22.9	24.5	11.4	3.59	37.6	113
Guangxi	49.1	125	13.3	9.51	10.0	5.46	1.72	17.4	21.5
Hainan	13.3	45.6	3.75	4.16	4.52	1.82	0.58	5.63	19.1
Chongqing	38.0	85.3	10.6	5.85	6.05	3.64	1.15	12.2	1.39
Sichuan	49.8	122	14.5	7.43	7.58	5.23	1.64	19.4	1.42
Guizhou	32.0	64.9	9.63	3.69	3.80	2.50	0.78	11.6	0.45
Yunnan	49.7	99.9	12.7	7.21	7.45	4.72	1.49	15.5	1.06
Tibet	13.7	19.9	3.19	1.77	1.87	1.03	0.33	3.27	0.06
Shaanxi	45.2	88.8	11.9	5.53	5.72	3.61	1.13	14.2	1.33
Gansu	57.4	93.9	13.8	6.87	7.18	4.20	1.32	15.2	0.76
Qinghai	11.1	20.9	2.62	1.68	1.75	1.03	0.32	3.01	0.16
Ningxia	15.2	23.6	3.66	1.76	1.85	1.07	0.34	3.97	0.24
Xinjiang	43.5	77.6	10.1	6.40	6.69	3.87	1.22	11.1	0.91
Total	2176	4704	567	368	388	208	65.5	710	811

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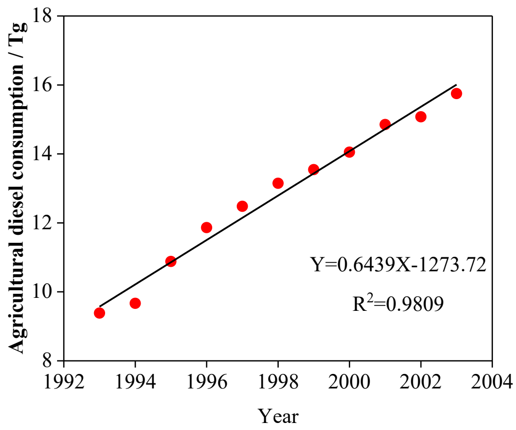

Fig. S1. Agricultural diesel consumption in China (1993–2003).

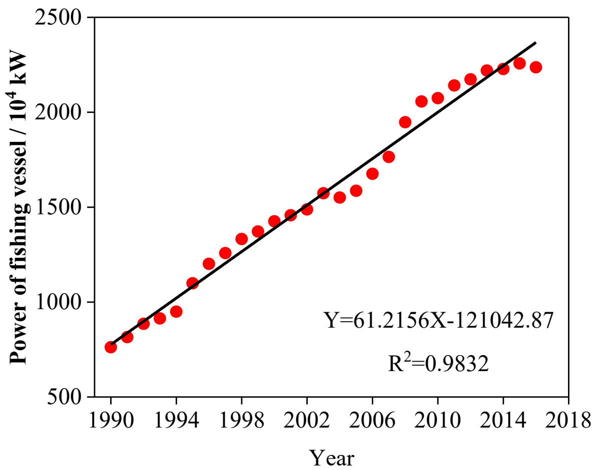

Fig. S2. Power of fishing vessels in China (1990–2016).