

Supplementary data (supplementary data Table 1, supplementary data Table 2, supplementary data Fig. 1)

Supplementary data Table 1. Statistic of active mine and mining-induced forest loss at country level.

ISO3	Active mine	Forest loss	Total mine	Percentage_ active mine (%)	Total forest loss	Percentage_ forest loss (%)	Active mine number (Growth rate>0)	Percentage (Rate>0) (%)	Active mine number (Growth rate<0)	Percentage (Rate<0) (%)
BRA	372	684.33	787	47.27	979	69.90	316.00	84.95	56	15.05
GHA	53	20.536	106	50.00	27.5	74.68	48.00	90.57	5	9.43
VEN	29	84.131	84	34.52	198	42.49	27.00	93.10	1	3.45
IDN	8	6.801	49	16.33	55.6	12.23	7.00	87.50	1	12.50
CHN	9	0.300	56	16.07	2.29	13.10	6.00	66.67	3	33.33
CIV	5	1.955	8	62.50	3.52	55.53	5.00	100.00	0	0.00
SLE	6	2.027	22	27.27	3.17	63.95	4.00	66.67	2	33.33
CHL	3	0.296	7	42.86	0.383	77.31	3.00	100.00	0	0.00
ESP	4	0.177	22	18.18	0.437	40.60	3.00	75.00	1	25.00
MEX	4	0.152	24	16.67	3.85	3.94	3.00	75.00	1	25.00
SUR	5	2.107	25	20.00	12.4	16.99	3.00	60.00	2	40.00
GRC	4	0.101	30	13.33	0.617	16.35	3.00	75.00	1	25.00
FRA	5	0.230	44	11.36	10.7	2.15	3.00	60.00	2	40.00
DEU	5	1.473	65	7.69	10.7	13.77	3.00	60.00	2	40.00

USA	3	0.077	84	3.57	13.5	0.57	3.00	100.00	0	0.00
GIN	2	1.582	11	18.18	2.94	53.80	2.00	100.00	0	0.00
VNM	2	0.245	12	16.67	0.882	27.78	2.00	100.00	0	0.00
COL	2	1.864	14	14.29	3.99	46.72	2.00	100.00	0	0.00
BGR	2	1.435	16	12.50	3.5	41.01	2.00	100.00	0	0.00
CAN	2	0.160	24	8.33	1.27	12.64	2.00	100.00	0	0.00
POL	3	3.910	27	11.11	6.41	60.99	2.00	66.67	1	33.33
NZL	2	0.128	31	6.45	3.25	3.95	2.00	100.00	0	0.00
PHL	4	0.047	35	11.43	7.5	0.63	2.00	50.00	2	50.00
HUN	2	0.118	37	5.41	0.749	15.77	2.00	100.00	0	0.00
RUS	2	0.300	58	3.45	10.6	2.83	2.00	100.00	0	0.00
MMR	1	13.757	2	50.00	13.9	98.97	1.00	100.00	0	0.00
GUY	2	0.385	3	66.67	0.595	64.76	1.00	50.00	1	50.00
HND	1	0.021	3	33.33	0.088	23.80	1.00	100.00	0	0.00
CUB	1	0.126	4	25.00	0.271	46.36	1.00	100.00	0	0.00
JAM	1	0.006	4	25.00	0.049	12.33	1.00	100.00	0	0.00
MOZ	2	0.112	6	33.33	0.459	24.44	1.00	50.00	1	50.00
MDG	1	1.987	8	12.50	2.78	71.48	1.00	100.00	0	0.00
COD	2	1.252	12	16.67	3.62	34.58	1.00	50.00	1	50.00
UKR	2	0.007	13	15.38	0.111	6.10	1.00	50.00	1	50.00
TZA	2	0.277	17	11.76	5.72	4.84	1.00	50.00	1	50.00
ZMB	1	0.007	19	5.26	39.4	0.02	1.00	100.00	0	0.00
SVK	1	0.003	25	4.00	0.357	0.96	1.00	100.00	0	0.00
GTM	1	0.076	1	100.00	0.076	100.00	0.00	0.00	1	100.00

IND	1	0.001	2	50.00	0.003	45.48	0.00	0.00	1	100.00
DZA	1	0.003	4	25.00	0.167	1.72	0.00	0.00	1	100.00
AUS	9	0.352	85	10.59	19.7	1.79	0.00	0.00	9	100.00

***Active mine:** the number of active mines identified as contributing to forest loss within PAs,

***Forest loss:** active mining-induced forest loss,

***Total mine:** the total number of mines,

***Percentage_active mine (%)**: the percentage of *Active mine* to *Total mine*,

***Total forest loss:** mining-induced forest loss,

***Percentage_forest loss (%)**: the percentage of *Forest loss* to *Total forest loss*

***Active mine number (Growth rate>0)**: the number of active mines with annual growth rates of forest loss greater than 0,

***Percentage (Rate>0) (%)**: the percentage of *Active mine number (Growth rate>0)*,

***Active mine number (Growth rate<0)**: the number of active mines with annual growth rates of forest loss less than 0,

***Percentage (Rate<0) (%)**: the percentage of *Active mine number (Growth rate<0)*

Supplementary data Table 2. Statistic of forest loss within and outside PAs at country level.

ISO3	forest loss within PAs	forest loss outside PAs	times (outside PAs/within PAs)
PAN	8.66	0.07	0.0
VEN	198.92	2.46	0.0
BEL	0.30	0.02	0.1
CYP	0.03	0.00	0.1
GIN	2.98	0.38	0.1

TZA	5.79	0.76	0.1
CRI	0.14	0.03	0.2
PNG	0.86	0.24	0.3
NGA	0.04	0.01	0.3
BRA	984.96	346.72	0.4
SLV	0.02	0.01	0.4
DZA	0.17	0.10	0.6
BGR	3.52	3.09	0.9
ZMB	39.67	51.77	1.3
HUN	0.70	1.03	1.5
MEX	3.87	5.70	1.5
KHM	0.82	1.31	1.6
NLD	0.03	0.05	1.8
POL	6.47	13.59	2.1
HRV	0.05	0.10	2.1
SVK	0.45	0.95	2.1
FRA	10.32	25.49	2.5
PHL	7.45	22.42	3.0
MOZ	0.46	1.51	3.3
CHL	0.40	1.36	3.4
MDG	2.81	9.59	3.4
BOL	1.54	5.31	3.4
NZL	3.27	11.56	3.5

SLE	3.26	12.33	3.8
AUT	0.20	0.79	4.0
FRA	0.29	1.21	4.1
NIC	0.24	1.13	4.7
COD	3.57	16.77	4.7
UGA	0.01	0.03	5.3
DEU	10.75	61.97	5.8
CHN	2.36	14.58	6.2
GRC	0.63	3.91	6.2
MWI	0.01	0.09	6.4
COL	4.07	32.19	7.9
HND	0.09	0.73	8.1
CIV	3.55	28.94	8.1
MYS	3.80	31.41	8.3
KAZ	0.00	0.02	8.3
KOR	0.26	2.41	9.2
ZWE	0.00	0.02	9.5
MMR	13.90	134.36	9.7
ALB	0.03	0.31	10.9
LBN	0.00	0.03	12.7
RUS	7.88	100.13	12.7
IDN	55.42	732.42	13.2
AUS	18.82	253.20	13.5

VNM	0.92	13.37	14.6
GHA	27.99	529.65	18.9
RUS	2.89	58.65	20.3
ITA	0.02	0.50	21.6
GTM	0.08	1.77	22.6
GUY	0.25	6.65	26.6
ESP	0.46	12.42	27.2
FRA	0.22	6.63	29.5
PER	9.91	295.48	29.8
JPN	0.08	2.32	30.1
SRB	0.02	0.63	31.6
USA	13.76	512.81	37.3
PNG	0.06	2.71	43.6
MNG	0.04	1.68	44.2
CUB	0.29	12.97	45.1
PRT	0.06	2.94	46.9
ZAF	0.44	22.27	50.1
MKD	0.01	0.62	50.8
DOM	0.12	9.43	80.7
IRL	0.00	0.18	82.2
UKR	0.11	9.71	85.2
LBR	0.02	1.40	87.6
GBR	0.09	8.08	94.0

SUR	0.84	81.78	97.2
CZE	0.04	4.25	110.0
EST	0.21	25.32	118.2
CAN	1.29	159.84	123.8
ROU	0.06	7.84	139.4
JAM	0.05	7.53	142.7
SWE	0.19	27.97	151.2
FIN	0.21	38.43	181.7
ARM	0.00	1.89	458.5
ECU	0.02	14.27	695.6

Supplementary data Fig. 1. the number of active mines with annual growth rate of forest loss greater than 0. Brazil (BRA), Ghana (GHA), Venezuela (VEN), and Indonesia (IDN) account for 67.4%, 10.2%, 5.8%, and 1.5%, and other countries account for a total of 15.1%.

