

Table S2. Mean emissions from the Taklimakan desert (75°E-90°E, 35°N-45°N), Gobi Desert (95°E-115°E, 40°N-50°N), and Thar desert (60°E-80°E, 20°N-40°N). SRC<sub>all</sub> is the sum of TAKL, GOBI and THAR deserts; SRC<sub>TAGO</sub> is the sum of TAKL, GOBI; Total is the entire domain (60°E-140°W, 20°N-60°N) and the values are taken from Figure 4.

Model	Emission (Tg yr <sup>-1</sup> )			<u>SRC<sub>all</sub></u> Total	Ratio	
	TAKL (TA)	GOBI (GO)	THAR (TH)		<u>SRC<sub>TAGO</sub></u> Total	<u>TAKL</u> GOBI
GO	252.9	209.4	134.4	0.88	0.68	1.21
GI	30.6	51.0	49.5	0.66	0.41	0.60
SP	208.6	166.0	273.2	0.78	0.45	1.26
EC	1.4	24.7	7.1	0.43	0.34	0.06
HG	31.2	103.5	200.9	0.69	0.28	0.30
Mean	104.9	110.9	133.0	0.7	0.4	0.68
STD	116.5	77.2	108.5	0.2	0.2	0.54
DIV	111.0	69.6	81.6	24.4	35.9	78.30