Supplementary Material

Sampling

Downwind site dust-condition samples were collected from the windward coasts/points of the islands and only when the wind was blowing from the east, off the ocean. In the Caribbean, the Trade Winds blow steadily for days at a time, primarily from the northeast in winter and southeast in summer. In February 2006, a wind vane directional switch was installed to confine sampling to a pre-defined direction (NE-SE). Trinidad March and April 2006 samples and Tobago and VI 2008 samples were collected using the directional switch.

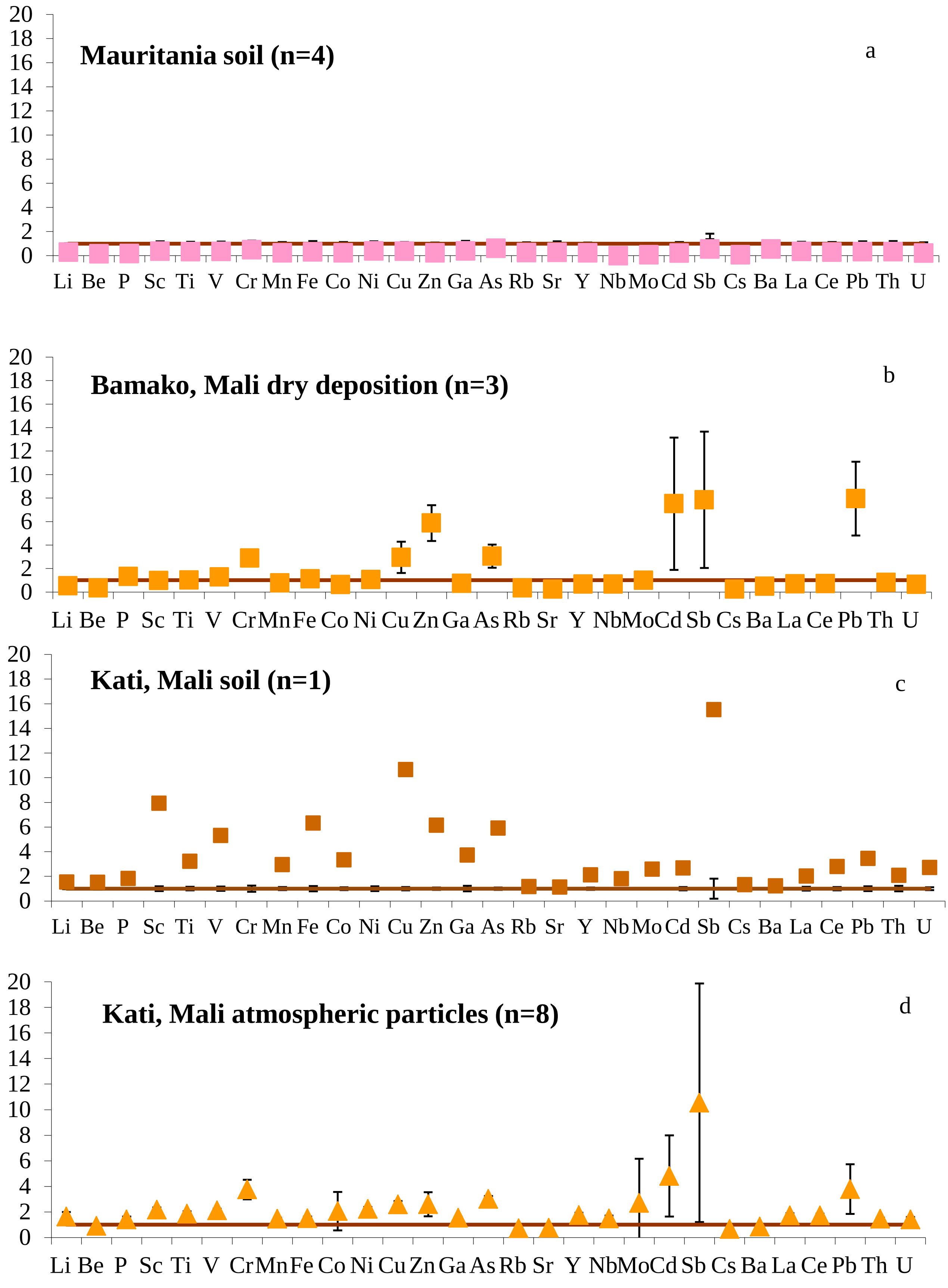
Elemental composition

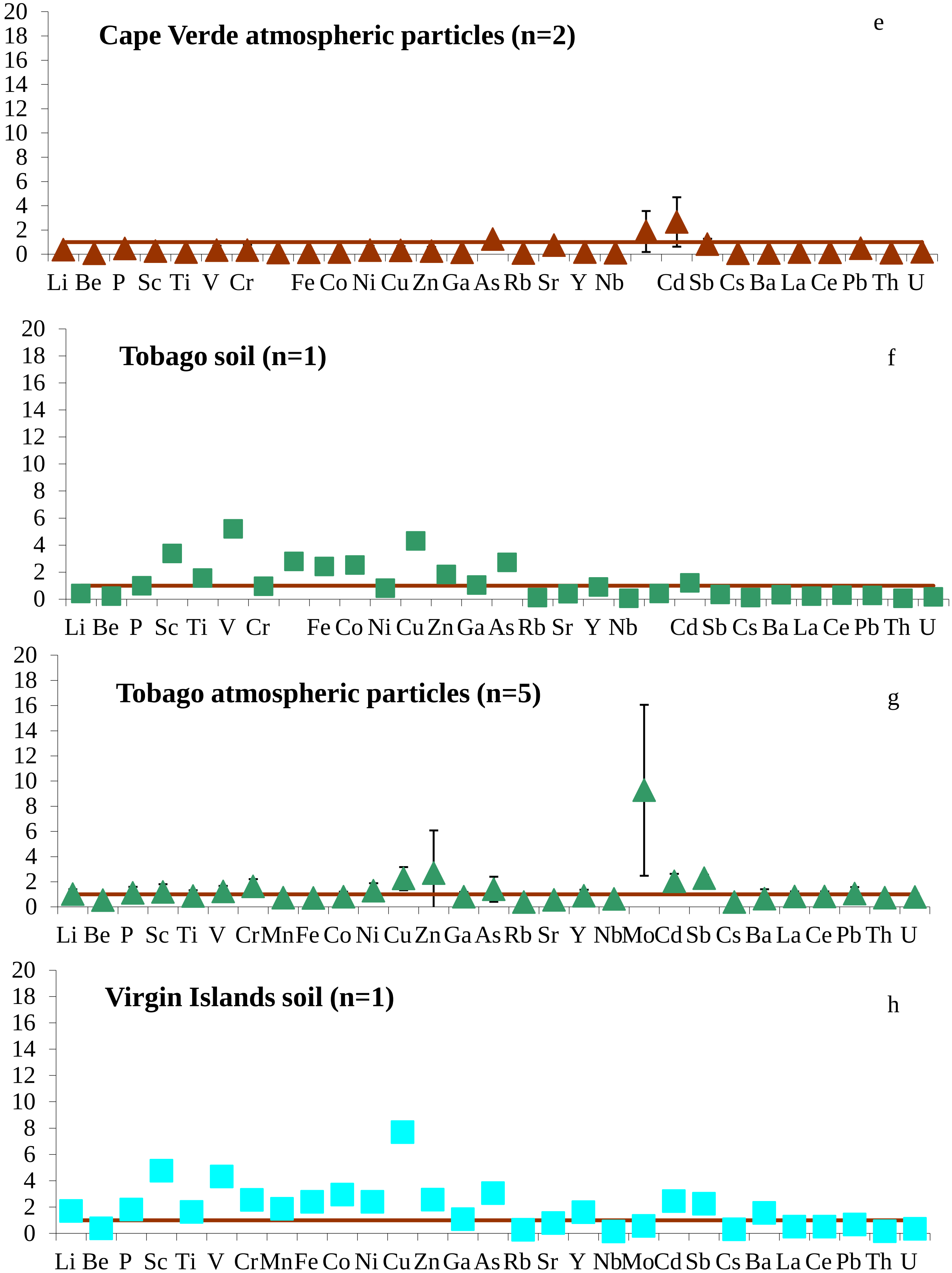
Fe concentrations ranged from 13,000 – 65,000 ppm in source-region, 2,100 – 32,400 ppm at downwind sites during dust conditions, and 450 – 2,000 ppm during non-dust periods. La-Sc-Th ratios separated samples with a Saharan dust origin from those of other origins (Fig. 2). Non-dust samples from the VI (NVI) and TRIN (NTRIN), TRIN-LC, soil (TOB and VI), Montserrat volcano ash, and one VI dust condition sample (VI 8 July 2006) did not cluster with Saharan dust origin samples. A single downwind sample collected from the VI during dust conditions showed a La-Sc-Th ratio (Fig. 2) similar to volcanic ash from Montserrat volcano (280 km SE). The back trajectory shows the air mass transited near Montserrat volcano less than 24-hr before reaching the VI sampling site (Fig. S.2), resulting in Montserrat ash dominating the particles in the air mass that originated over West Africa. Elemental enrichment factor profiles of atmospheric dust collected in Mali, TT, VI, and CV were similar and differed from soils from Mali, TT, and VI and Montserrat ash (Fig. S.2). No Cape Verde or Trinidad soil samples were collected. The apparent depletion of a number of elements in CV samples (Fig. S.2) is most likely a result of dilution by high loads of sea-salt on the filters during high wind conditions at the site. Kandler et al. (2011) documented mineral dust, sea-salt, sulfates and soot comprised atmospheric particles in CV.

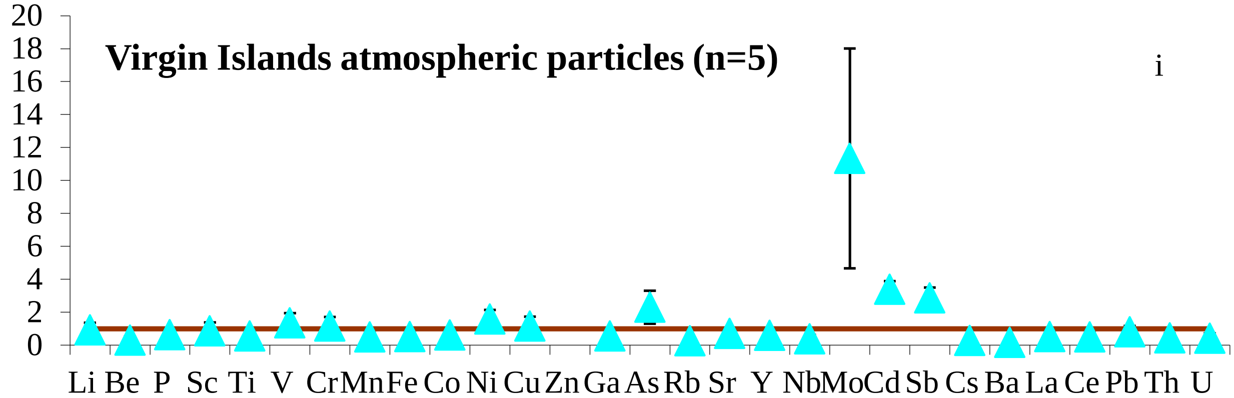
Back trajectories

HYSPLIT back trajectories confirmed that air masses for all samples collected during dust conditions had originated in or transited West Africa, within the SAL and/or the mixing depth. Conversely, the four downwind non-dust samples (collected in December and January, when the eastern Caribbean does not normally experience Saharan dust incursions) were from air masses that had not crossed over Africa, but had transited North America above the boundary layer, spent days over the Atlantic, and one sample (Fig. S.6) was over western Europe prior to crossing the Atlantic to the eastern Caribbean. The movement of air from SW Europe directly across the Atlantic to the Lesser Antilles boundary layer may explain the greater PAH concentrations than would be expected from a downwind site during a non-dust period (SOCs 426.5 pg/m^3).

Figure S.1 Trunk Bay, St. John, U.S. Virgin Islands looking north to Jost Van Dyke, British Virgin Islands 11 km to the north during clear (12 June 2010) and Saharan dust conditions (2 June 2010). Panoramas from spliced images with no color or other correction.


Mauritania soil (n=4)
a
0 2 4 6 8 10 12 14 16 18 20
Li Be P Sc Ti V Cr Mn Fe Co Ni Cu Zn Ga As Rb Sr Y Nb Mo Cd Sb Cs Ba La Ce Pb Th U
Bamako, Mali dry deposition (n=3)
b
0 2 4 6 8 10 12 14 16 18 20
Li Be P Sc Ti V Cr Mn Fe Co Ni Cu Zn Ga As Rb Sr Y Nb Mo Cd Sb Cs Ba La Ce Pb Th U
Kati, Mali soil (n=1)
c
0 2 4 6 8 10 12 14 16 18 20
Li Be P Sc Ti V Cr Mn Fe Co Ni Cu Zn Ga As Rb Sr Y Nb Mo Cd Sb Cs Ba La Ce Pb Th U
Kati, Mali atmospheric particles (n=8)
d
0 2 4 6 8 10 12 14 16 18 20
Li Be P Sc Ti V Cr Mn Fe Co Ni Cu Zn Ga As Rb Sr Y Nb Mo Cd Sb Cs Ba La Ce Pb Th U


Cape Verde atmospheric particles (n=2)
e
20 18 16 14 12 10 8 6 4 2 0
Li Be P Sc Ti V Cr Fe Co Ni Cu Zn Ga As Rb Sr Y Nb Cd Sb Cs Ba La Ce Pb Th U
Tobago soil (n=1)
f
20 18 16 14 12 10 8 6 4 2 0
Li Be P Sc Ti V Cr Fe Co Ni Cu Zn Ga As Rb Sr Y Nb Cd Sb Cs Ba La Ce Pb Th U
Tobago atmospheric particles (n=5)
g
20 18 16 14 12 10 8 6 4 2 0
Li Be P Sc Ti V Cr Mn Fe Co Ni Cu Zn Ga As Rb Sr Y Nb Mo Cd Sb Cs Ba La Ce Pb Th U
Virgin Islands soil (n=1)
h
20 18 16 14 12 10 8 6 4 2 0
Li Be P Sc Ti V Cr Mn Fe Co Ni Cu Zn Ga As Rb Sr Y Nb Mo Cd Sb Cs Ba La Ce Pb Th U



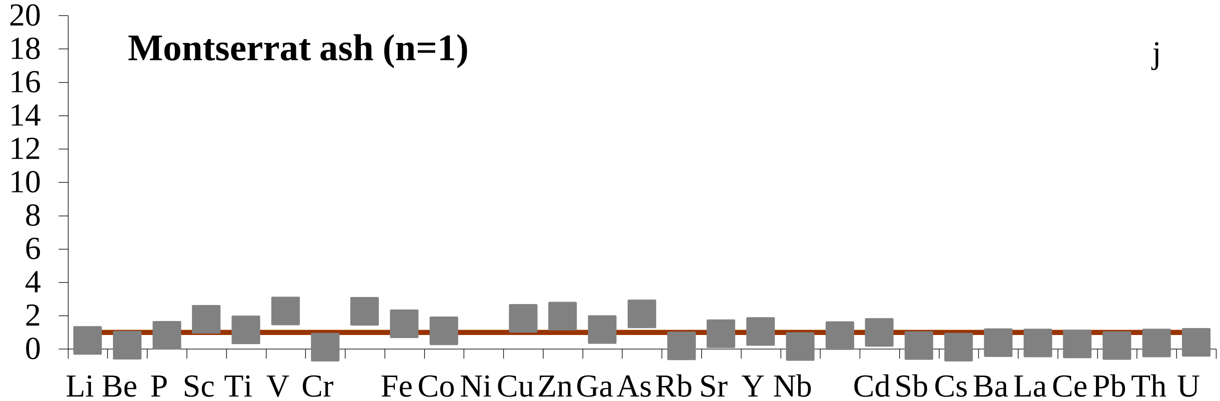


Figure S.2 Elemental Enrichment Factors of a) Mauritanian soil, b) Bamako (Mali) dry deposition, c) Kati (Mali) soil, d) Kati atmospheric particles, e) Cape Verde atmospheric particles, f) Tobago soil, g) Tobago atmospheric particles, h) Virgin Islands soil, i) Virgin Islands atmospheric particles, j) Montserrat ash collected in the Virgin Islands compared to average continental crust concentrations (Wedepohl, 1985). “n” indicates number of samples.

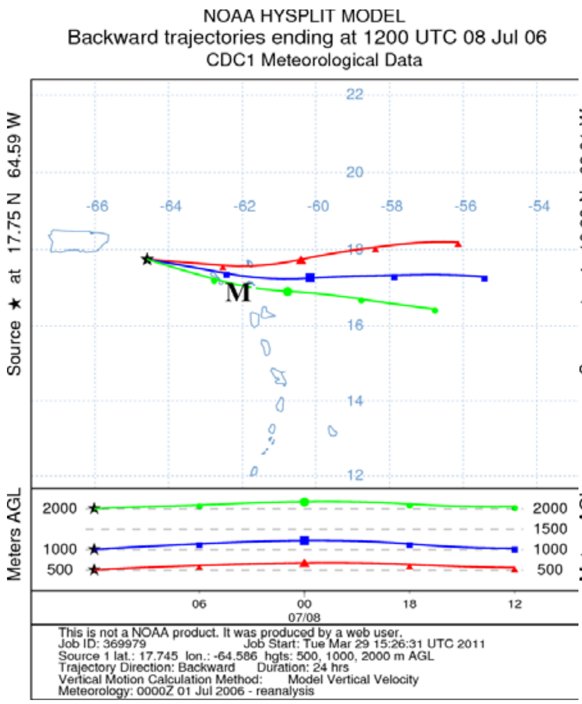


Fig. S.3 HYSPLIT back trajectory from VI 8 July 2006. M indicates approximate location of Montserrat volcano.

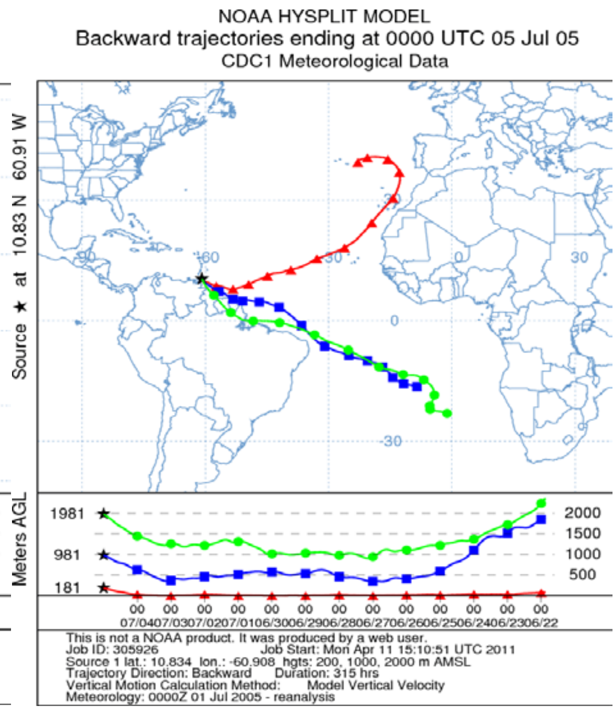


Fig. S.4 HYSPLIT back trajectory from TRIN 5 July 2005, showing 1000m and 2000 m air masses transiting South America.

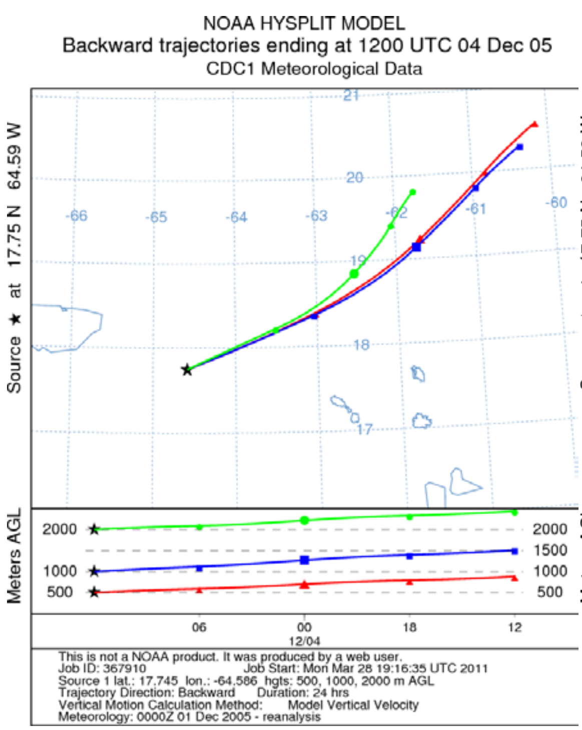


Fig. S.5 HYSPLIT back trajectory from VI 1 Dec 2005; air masses transied British VI.

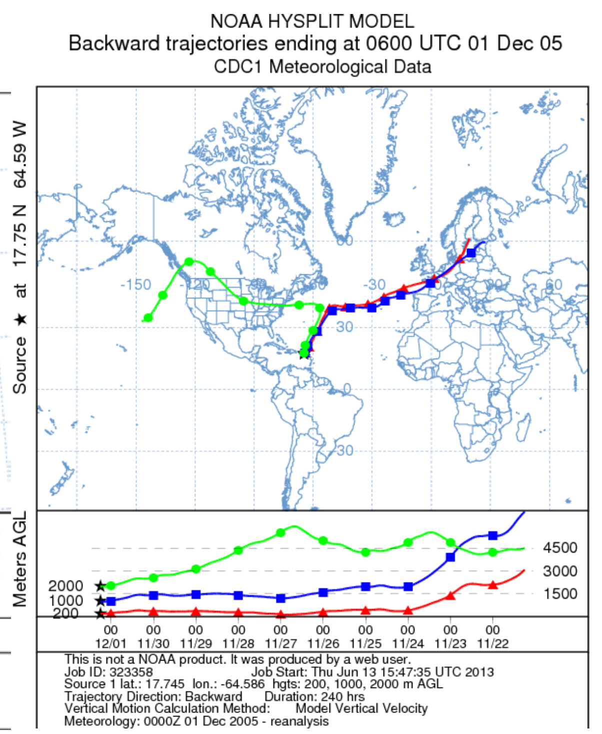


Fig. S.6 HYSPLIT back trajectory from VI Boundary layer air masses (500 and 1000 m) transit direct from Europe to the VI.

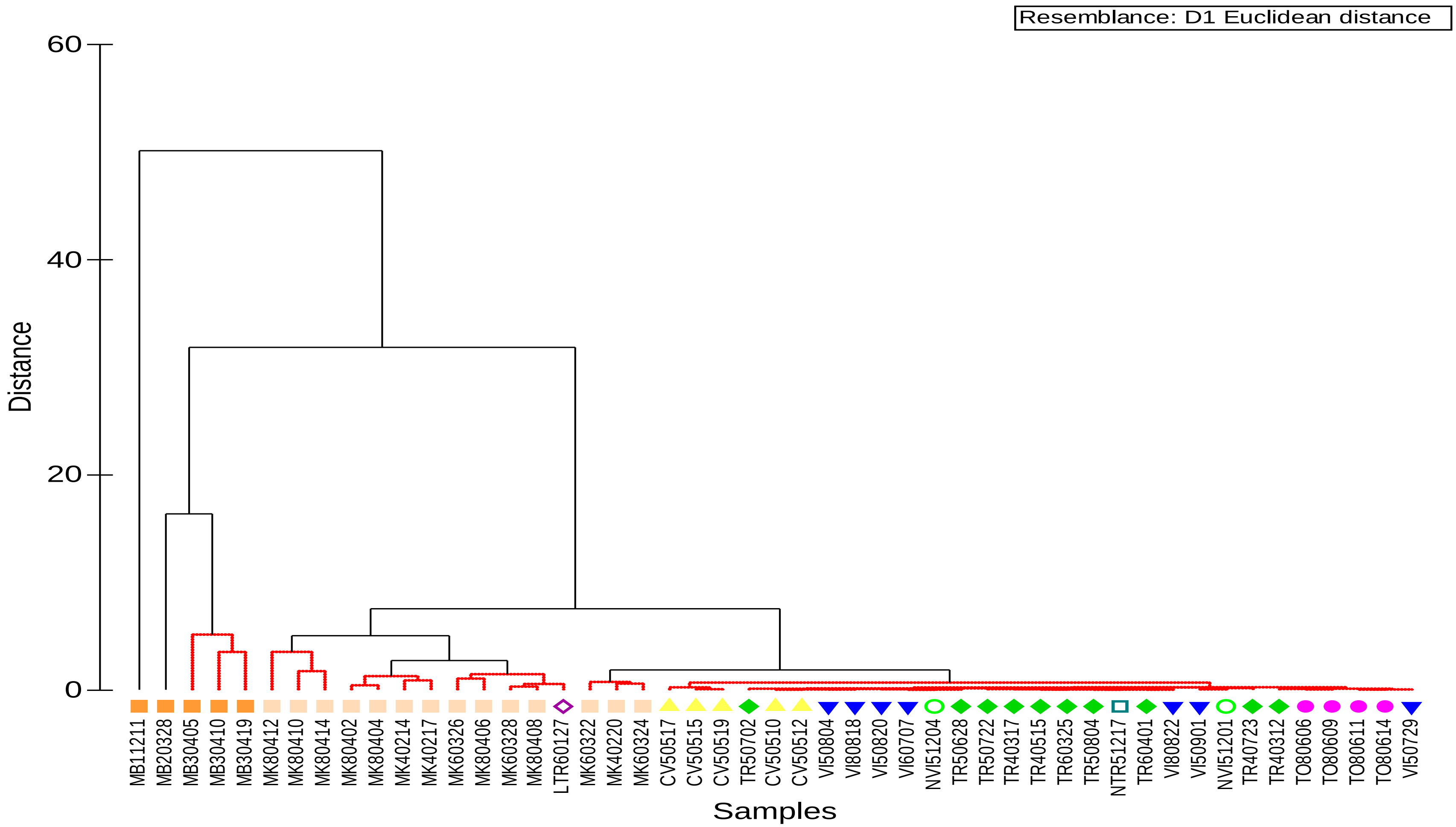


Fig. S.7 Cluster diagram of all samples, all SOCs, using resemblance Euclidean distance. Red-dotted line indicates no discernible difference among samples. MB (Bamako, Mali), MK (KATI), CV (Cape Verde), TR (Trinidad), LTR (local contamination Trinidad), NTR (non-dust Trinidad), TO (Tobago), VI (virgin Islands), NVI (non-dust VI).

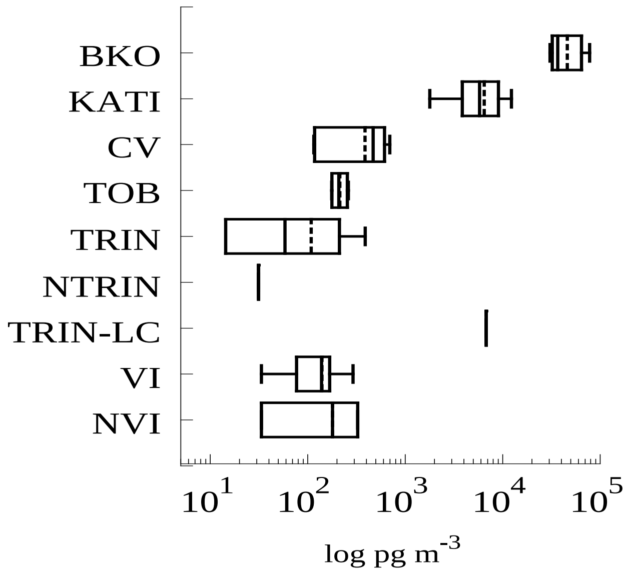


Figure S.8 Box plot showing minimum, maximum, 75% and 25% percentile, arithmetic mean (dashed line) and median sum of PAHs (log pg/m^3) by site. Random number between zero and estimated detection limit substituted for no detection.

Table S.1 Literature values of percent total suspended particles (TSP) composed of particles <2.5 µm aerodynamic diameter ($PM_{2.5}$) and particles <10 µm aerodynamic diameter (PM_{10}).

	$PM_{2.5}$	PM_{10}	Location
Li-Jones and Prospero 1998	43% TSP		Caribbean
D'Almeida and Schutz 1983	5-60% TSP		Sahara
Gillies, Nickling and McTainsh 1996	16% TSP	60% TSP	background Mali
	50% TSP	95% TSP	Intense dust, Mali
Ozer et al., 2007		68% TSP	Nouakchott, Mautitania
Weinzierl et al. 2009 (SAMUM) (airplane)	10-15% TSP 9% TSP		Ouarzazate and Zago Casablanca
Garrison et al., unpublished	20% TSP	68% TSP	Bamako, Mali

Table S.2 Sampling sites, latitude and longitude, elevation, and sampling periods (number and dates).

	Bamako, Mali	Escarpment Kati, Mali	Sal Island Cape Verde	Galera Point Trinidad	Flagstaff Hill Tobago	St. Croix USVI
Latitude	012°37.33'N	012° 41.28'N	016° 43.32'N	010° 50.04'N	011° 19.67'N	017°44.73'N
Longitude	007° 59.81'W	008° 01.65'W	022° 53.62'W	060° 54.48'W	060° 32.50'W	064° 35.15'W
Elevation	385 m	555 m	8 m	36 m	329 m	27 m
Sampling periods	5	14	5	12	4	9
	Dec 2001 Mar-May 2002 Apr, May 2003	Feb 2004 Mar 2006 Apr 2008	May 2005	Mar, May, Jul 2004 Jul, Aug, Dec 2005 Jan, Mar, Apr 2006	Jun 2008	Jul-Sep, Dec 2005 Jul 2006 Aug 2008

Table S.3 Descriptive statistics of detected pesticide concentrations (pg/m^3) by site; "nd" indicates analyte not detected, "na" indicates not applicable, and "sd" represents standard deviation. NVI (non-dust Virgin Islands), VI (Virgin Islands), NTRIN (non-dust Trinidad), TRIN-LC (local contamination Trinidad), TOB (Tobago), CV (Cape Verde), KATI (Kati, Mali), and BKO (Bamako, Mali).

Site	analytes	samples	detects	min	max	mean	median	sd
NVI	*trans* - chlordane	2	2	0.8	1.6	1.2	1.2	0.6
VI	*trans* - chlordane	7	7	0.7	1.8	1.1	1.0	0.4
NTRIN	*trans* - chlordane	1	1	2.2	na	na	na	na
TRIN-LC	*trans* - chlordane	1	1	4.9	na	na	na	na
TRIN	*trans* - chlordane	10	6	nd	25.9	3.6	0.7	8.0
TOB	*trans* - chlordane	4	4	0.9	2.0	1.4	1.3	0.5
CV	*trans* - chlordane	5	3	nd	0.2	0.1	0.1	0.1
KATI	*trans* - chlordane	14	12	nd	3.6	1.3	1.0	1.2
BKO	*trans* - chlordane	5	5	19	80	44	46	24
NVI	*cis* – nonachlor	2	0	0.0	0.1	0.1	0.1	0.1
VI	*cis* - nonachlor	7	4	0.0	0.2	0.1	0.0	0.1
NTRIN	*cis* - nonachlor	1	0	0.0	0.0	0.0	0.0	0.0
TRIN-LC	*cis* - nonachlor	1	0	nd	nd	nd	nd	na
TRIN	*cis* - nonachlor	10	0	nd	nd	nd	nd	na
TOB	*cis* - nonachlor	4	0	0.0	0.0	0.0	0.0	0.0
CV	*cis* - nonachlor	5	0	0.0	0.0	0.0	0.0	0.0
KATI	*cis* - nonachlor	14	0	0.0	0.0	0.0	0.0	0.0
BKO	*cis* - nonachlor	5	0	0.0	0.0	0.0	0.0	0.0
NVI	*trans* - nonachlor	2	2	0.6	1.1	0.9	0.9	0.4
VI	*trans* - nonachlor	7	7	0.4	1.7	0.9	0.8	0.4
NTRIN	*trans* - nonachlor	1	1	0.1	na	na	na	na
TRIN-LC	*trans* - nonachlor	1	1	0.7	na	na	na	na
TRIN	*trans* - nonachlor	10	4	0.0	1.8	0.3	0.0	0.6
TOB	*trans* - nonachlor	4	4	0.2	0.4	0.3	0.3	0.1
CV	*trans* - nonachlor	5	3	0.0	0.3	0.1	0.2	0.1
KATI	*trans* - nonachlor	14	5	0.0	0.9	0.2	0.0	0.3
BKO	*trans* - nonachlor	5	3	0.0	9.3	3.8	3.1	4.1
NVI	sum chlordanes	2	2	1.4	2.8	2.1	2.1	1.0
VI	sum chlordanes	7	7	1.1	2.9	2.1	1.9	0.7

NTRIN	sum chlordanes	1	1	5.6	na	na	na	na
TRIN-LC	sum chlordanes	1	1	2.3	na	na	na	na
TRIN	sum chlordanes	10	6	0.0	26.7	3.9	0.8	8.3
TOB	sum chlordanes	4	4	1.2	2.5	1.7	1.6	0.6
CV	sum chlordanes	5	3	0.1	0.4	0.2	0.3	0.2
KATI	sum chlordanes	14	12	0.1	4.1	1.5	1.2	1.3
BKO	sum chlordanes	5	5	19	86	48	54	28
NVI	Chlorpyrifos	2	1	0.2	1.6	0.9	0.9	0.9
VI	Chlorpyrifos	7	5	0.4	4.9	2.4	2.2	1.5
NTRIN	Chlorpyrifos	1	1	1.1	na	na	na	na
TRIN-LC	Chlorpyrifos	1	1	19.8	na	na	na	na
TRIN	Chlorpyrifos	10	10	2.1	8.3	3.3	2.4	2.0
TOB	Chlorpyrifos	4	0	0.0	0.1	0.0	0.0	0.0
CV	Chlorpyrifos	5	3	0.1	2.3	1.0	0.9	1.0
KATI	Chlorpyrifos	14	10	0	219	44	22	63
BKO	Chlorpyrifos	5	5	3,100	28,600	9,960	3,500	11,000
NVI	Dacthal	2	1	0.1	0.3	0.2	0.2	0.2
VI	Dacthal	7	3	0.1	0.3	0.2	0.1	0.1
NTRIN	Dacthal	1	1	0.1	na	na	na	na
TRIN-LC	Dacthal	1	0	nd	nd	nd	nd	na
TRIN	Dacthal	10	2	0.0	0.4	0.1	0.1	0.1
TOB	Dacthal	4	1	0.0	0.5	0.2	0.1	0.2
CV	Dacthal	5	1	0.0	0.2	0.1	0.1	0.1
KATI	Dacthal	14	1	0.0	0.2	0.1	0.1	0.1
BKO	Dacthal	5	1	0.0	4.0	1.1	0.4	1.7
NVI	DDX	2	0	3.1	3.5	3.2	3.2	0.4
VI	DDX	7	0	2.5	4.8	3.6	3.5	0.7
NTRIN	DDX	1	0	nd	nd	nd	nd	na
TRIN-LC	DDX	1	0	nd	nd	nd	nd	na
TRIN	DDX	10	1	1.4	3.1	2.4	2.4	0.5
TOB	DDX	4	0	2.3	3.7	3.0	3.1	0.8
CV	DDX	5	0	2.7	3.7	3.1	2.8	0.5
KATI	DDX	14	10	1.6	1,010	110	42	260
BKO	DDX	5	5	2,450	3,800	2,900	2,600	590
NVI	*o,p'*-DDD	2	0	0.0	0.9	0.6	0.6	0.5
VI	*o,p'*-DDD	7	0	0.2	0.8	0.6	0.7	0.3

NTRIN	*o,p'*-DDD	1	0	nd	nd	nd	nd	na
TRIN-LC	*o,p'*-DDD	1	0	nd	nd	nd	nd	na
TRIN	*o,p'*-DDD	10	0	0.0	0.7	0.4	0.3	0.2
TOB	*o,p'*-DDD	4	0	0.0	0.5	0.3	0.3	0.2
CV	*o,p'*-DDD	5	0	0.1	0.7	0.4	0.3	0.2
KATI	*o,p'*-DDD	14	1	0.0	4.9	0.7	0.4	1.3
BKO	*o,p'*-DDD	5	5	102	224	152	154	51
NVI	*p,p'*-DDD	2	0	0.1	1.3	0.7	0.7	0.8
VI	*p,p'*-DDD	7	0	0.1	2.1	1.2	1.1	0.6
NTRIN	*p,p'*-DDD	1	0	nd	nd	nd	nd	na
TRIN-LC	*p,p'*-DDD	1	0	nd	nd	nd	nd	na
TRIN	*p,p'*-DDD	10	0	0.2	1.7	0.7	0.8	0.5
TOB	*p,p'*-DDD	4	0	0.2	2.0	1.0	0.9	0.8
CV	*p,p'*-DDD	5	0	0.5	1.3	0.8	0.7	0.4
KATI	*p,p'*-DDD	14	3	0.0	8.0	1.8	0.6	2.5
BKO	*p,p'*-DDD	5	5	173	445	314	354	122
NVI	*o,p'*-DDE	2	0	0.0	0.8	0.5	0.5	0.5
VI	*o,p'*-DDE	7	0	0.1	1.4	0.5	0.3	0.5
NTRIN	*o,p'*-DDE	1	0	nd	nd	nd	nd	na
TRIN-LC	*o,p'*-DDE	1	0	nd	nd	nd	nd	na
TRIN	*o,p'*-DDE	10	0	0.2	0.7	0.4	0.3	0.2
TOB	*o,p'*-DDE	4	0	0.2	0.6	0.4	0.4	0.2
CV	*o,p'*-DDE	5	0	0.0	0.6	0.3	0.2	0.2
KATI	*o,p'*-DDE	14	4	0.0	12	2.5	0.7	3.9
BKO	*o,p'*-DDE	5	5	68	103	81	71	16
NVI	*p,p'*-DDE	2	0	0.0	0.1	0.1	0.1	0.0
VI	*p,p'*-DDE	7	0	0.3	0.7	0.5	0.4	0.1
NTRIN	*p,p'*-DDE	1	0	nd	nd	nd	nd	na
TRIN-LC	*p,p'*-DDE	1	0	nd	nd	nd	nd	na
TRIN	*p,p'*-DDE	10	1	0.0	0.7	0.2	0.1	0.2
TOB	*p,p'*-DDE	4	0	0.1	0.5	0.4	0.4	0.2
CV	*p,p'*-DDE	5	0	0.0	0.3	0.2	0.2	0.1
KATI	*p,p'*-DDE	14	10	0.1	73	25	19	24
BKO	*p,p'*-DDE	5	5	803	1,300	990	920	190
NVI	*o,p'*-DDT	2	0	0.0	0.5	0.4	0.4	0.1
VI	*o,p'*-DDT	7	0	0.2	0.9	0.5	0.7	0.2

NTRIN	*o,p'*-DDT	1	0	nd	nd	nd	nd	na
TRIN-LC	*o,p'*-DDT	1	0	nd	nd	nd	nd	na
TRIN	*o,p'*-DDT	10	0	0.1	1.1	0.5	0.5	0.3
TOB	*o,p'*-DDT	4	0	0.1	0.8	0.4	0.4	0.3
CV	*o,p'*-DDT	5	0	0.1	0.9	0.6	0.6	0.3
KATI	*o,p'*-DDT	14	2	0.0	33	3.9	0.8	9.1
BKO	*o,p'*-DDT	5	5	357	817	537	483	194
NVI	*p,p'*-DDT	2	0	0.0	0.5	0.5	0.5	0.0
VI	*p,p'*-DDT	7	0	0.3	1.5	0.8	0.7	0.5
NTRIN	*p,p'*-DDT	1	0	nd	nd	nd	nd	na
TRIN-LC	*p,p'*-DDT	1	0	nd	nd	nd	nd	na
TRIN	*p,p'*-DDT	10	0	0.0	0.9	0.5	0.5	0.3
TOB	*p,p'*-DDT	4	0	0.1	1.3	0.5	0.4	0.5
CV	*p,p'*-DDT	5	0	0.1	1.0	0.5	0.5	0.4
KATI	*p,p'*-DDT	14	4	0.2	21.8	4.7	1.0	7.4
BKO	*p,p'*-DDT	5	5	590	960	810	810	150
NVI	Diazinon	2	0	0.2	1.1	0.6	0.6	0.6
VI	Diazinon	7	0	0.1	1.5	0.7	0.5	0.5
NTRIN	Diazinon	1	0	nd	nd	nd	nd	na
TRIN-LC	Diazinon	1	0	nd	nd	nd	nd	na
TRIN	Diazinon	10	0	0.3	6.6	1.7	0.8	2.2
TOB	Diazinon	4	0	0.9	1.5	1.1	1.1	0.3
CV	Diazinon	5	0	0.2	1.1	0.7	0.7	0.4
KATI	Diazinon	14	0	0.2	11.5	1.7	1.0	2.9
BKO	Diazinon	5	4	6.0	2,600	810	240	1100
NVI	Dieldrin	2	0	0.2	0.8	0.5	0.5	0.5
VI	Dieldrin	7	1	0.1	5.2	1.1	0.5	1.8
NTRIN	Dieldrin	1	1	na	1.1	na	na	na
TRIN-LC	Dieldrin	1	0	nd	nd	nd	nd	na
TRIN	Dieldrin	10	3	0.1	21.0	5.1	2.8	6.5
TOB	Dieldrin	4	3	0.1	9.8	4.7	4.5	4.0
CV	Dieldrin	5	1	0.1	2.7	0.8	0.3	1.1
KATI	Dieldrin	14	4	0.1	47	11	3.0	16
BKO	Dieldrin	5	5	91	1,760	1,100	1,750	840
NVI	Endosulfan I	2	2	5.8	8.4	7.1	7.1	1.9
VI	Endosulfan I	7	7	2.4	22	11	12	7.8

NTRIN	Endosulfan I	1	0	nd	nd	nd	nd	na
TRIN-LC	Endosulfan I	1	1	3.5	na	na	na	na
TRIN	Endosulfan I	10	8	0.1	11.7	5.6	6.3	4.0
TOB	Endosulfan I	4	4	1.6	4.0	2.6	2.5	1.1
CV	Endosulfan I	5	3	0.4	9.4	4.4	3.5	3.5
KATI	Endosulfan I	14	14	8.7	280	110	110	80
BKO	Endosulfan I	5	5	9,100	13,400	10,500	10,200	1,700
NVI	Endosulfan II	2	0	0.7	0.7	0.7	0.7	0.1
VI	Endosulfan II	7	2	0.1	0.6	0.4	0.4	0.1
NTRIN	Endosulfan II	1	0	nd	nd	nd	nd	na
TRIN-LC	Endosulfan II	1	0	nd	nd	nd	nd	na
TRIN	Endosulfan II	10	1	0.1	33.4	4.0	0.5	10.4
TOB	Endosulfan II	4	2	0.3	0.6	0.4	0.4	0.1
CV	Endosulfan II	5	0	0.0	0.6	0.4	0.5	0.2
KATI	Endosulfan II	14	14	7.0	203	60	47	55
BKO	Endosulfan II	5	5	1,960	3,150	2,510	2,390	500
NVI	Endosulfan sulfate	2	0	0.1	0.1	0.1	0.1	0.0
VI	Endosulfan sulfate	7	2	0.0	1.4	0.4	0.1	0.6
NTRIN	Endosulfan sulfate	1	0	nd	nd	nd	nd	na
TRIN-LC	Endosulfan sulfate	1	0	nd	nd	nd	nd	na
TRIN	Endosulfan sulfate	10	1	0.0	3.4	0.7	0.1	1.3
TOB	Endosulfan sulfate	4	2	0.1	0.3	0.2	0.2	0.1
CV	Endosulfan sulfate	5	0	0.0	0.1	0.0	0.1	0.0
KATI	Endosulfan sulfate	14	14	1.6	23.5	7.4	4.5	7.1
BKO	Endosulfan sulfate	5	5	83	140	100	89	25
NVI	α-HCH	2	0	0.2	0.5	0.4	0.4	0.2
VI	α-HCH	7	0	0.1	0.7	0.4	0.2	0.3
NTRIN	α-HCH	1	0	nd	nd	nd	nd	na
TRIN-LC	α-HCH	1	0	nd	nd	nd	nd	na
TRIN	α-HCH	10	0	0.0	2.9	0.7	0.3	0.9
TOB	α-HCH	4	2	0.3	1.4	0.9	0.8	0.6
CV	α-HCH	5	0	0.0	0.4	0.2	0.2	0.1
KATI	α-HCH	14	0	0.0	3.2	0.5	0.3	0.8
BKO	α-HCH	5	0	0.3	3.2	1.7	2.2	1.2
NVI	γ-HCH	2	1	0.2	4.5	2.3	2.3	3.0
VI	γ-HCH	7	5	0.2	15.7	7.0	9.0	5.6

NTRIN	γ-HCH	1	0		nd	nd	nd	nd	na
TRIN-LC	γ-HCH	1	0		nd	nd	nd	nd	na
TRIN	γ-HCH	10	5		0.2	18	5.9	4.2	5.9
TOB	γ-HCH	4	4		30	52	41	42	9.1
CV	γ-HCH	5	0		0.0	0.5	0.2	0.1	0.2
KATI	γ-HCH	14	1		0.1	25	2.9	0.7	6.6
BKO	γ-HCH	5	0		0.1	2.5	1.3	1.9	1.1
NVI	Heptachlor	2	1		0.8	4.0	2.4	2.4	2.2
VI	Heptachlor	7	0		0.0	0.7	0.4	0.3	0.3
NTRIN	Heptachlor	1	1		2.5	na	na	na	na
TRIN-LC	Heptachlor	1	0		nd	nd	nd	nd	na
TRIN	Heptachlor	10	5		0.2	54	14	7.1	17
TOB	Heptachlor	4	3		0.3	22	13	15	9.3
CV	Heptachlor	5	0		0.1	0.9	0.6	0.7	0.3
KATI	Heptachlor	14	0		0.2	35	5.9	0.8	11
BKO	Heptachlor	5	0		5.4	17	13	17	5.5
NVI	Hexachlorobenzene	2	2		6.1	7.7	6.9	6.9	1.2
VI	Hexachlorobenzene	7	7		4.2	7.4	5.5	5.5	1.0
NTRIN	Hexachlorobenzene	1	1		3.4	na	na	na	na
TRIN-LC	Hexachlorobenzene	1	1		6.8	na	na	na	na
TRIN	Hexachlorobenzene	10	10		1.8	41.4	7.4	4.0	12.0
TOB	Hexachlorobenzene	4	4		5.1	7.1	6.0	6.0	0.8
CV	Hexachlorobenzene	5	5		5.6	7.5	6.9	7.1	0.8
KATI	Hexachlorobenzene	14	14		2.3	110	17	8.5	29
BKO	Hexachlorobenzene	5	3		1.1	6.8	6.0	6.0	0.8
BKO	Profenofos	5	3		nd	1,700	920	1,290	840
NVI	Trifluralin	2	1		0.1	0.2	0.2	0.2	0.1
VI	Trifluralin	7	0		0.0	0.3	0.2	0.2	0.1
NTRIN	Trifluralin	1	0		nd	nd	nd	nd	na
TRIN-LC	Trifluralin	1	0		nd	nd	nd	nd	na
TRIN	Trifluralin	10	3		0.0	2.9	0.4	0.1	0.3
TOB	Trifluralin	4	1		0.0	0.7	0.2	0.1	0.3
CV	Trifluralin	5	1		0.0	0.2	0.1	0.1	0.1
KATI	Trifluralin	14	3		0.0	1.1	0.3	0.1	0.3
BKO	Trifluralin	5	1		0.3	2.4	1.4	1.7	0.9

Table S.4 Descriptive statistics of detected PAH concentrations (pg/m^3) by site; "nd" indicates analyte not detected, "na" indicates not applicable, and "sd" represents standard deviation. NVI (non-dust Virgin Islands), VI (Virgin Islands), NTRIN (non-dust Trinidad), TRIN-LC (local contamination Trinidad), TOB (Tobago), CV (Cape Verde), KATI (Kati, Mali), and BKO (Bamako, Mali).

Site	analytes	samples	detects	min	max	mean	median	sd
NVI	anthracene	2	0	0.02	0.06	0.04	0.04	0.02
VI	anthracene	7	0	0.01	0.05	0.03	0.03	0.02
NTRIN	anthracene	1	0	nd	nd	nd	nd	na
TRIN-LC	anthracene	1	0	nd	nd	nd	nd	na
TRIN	anthracene	10	1	0	12	1.2	0.02	3.8
TOB	anthracene	4	0	0.01	0.05	0.03	0.04	0.02
CV	anthracene	5	0	0	0.04	0.02	0.01	0.02
KATI	anthracene	14	5	0.02	79	13	0.05	25
BKO	anthracene	5	5	700	7,230	2,600	1,920	2,670
NVI	anthraquinone	2	0	nd	nd	nd	nd	na
VI	anthraquinone	7	0	nd	nd	nd	nd	na
NTRIN	anthraquinone	1	0	nd	nd	nd	nd	na
TRIN-LC	anthraquinone	1	1	0	nd	nd	nd	na
TRIN	anthraquinone	10	0	nd	nd	nd	nd	na
TOB	anthraquinone	4	0	nd	nd	nd	nd	na
CV	anthraquinone	5	0	nd	nd	nd	nd	na
KATI	anthraquinone	14	5	0.1	256	19	0.6	68
BKO	anthraquinone	5	1	4,120	7,920	6,310	6,270	1,420
NVI	benzo(a)pyrene	2	0	1.3	1.6	1.5	1.5	0.3
VI	benzo(a)pyrene	7	0	0.4	1.5	0.8	0.7	0.4
NTRIN	benzo(a)pyrene	1	0	nd	nd	nd	nd	na
TRIN-LC	benzo(a)pyrene	1	1	255	na	na	na	na
TRIN	benzo(a)pyrene	10	2	0.2	30	3.6	0.7	9.4
TOB	benzo(a)pyrene	4	1	0.3	1.2	0.8	0.8	0.4
CV	benzo(a)pyrene	5	0	0.37	1.6	1.0	1.1	0.5
KATI	benzo(a)pyrene	14	12	0.3	670	230	200	195
BKO	benzo(a)pyrene	5	3	0.2	1,260	400	280	520
non-dust VI	fluoranthene	2	2	4.7	7.2	6.0	6.0	1.7
VI	fluoranthene	7	7	2.6	24	10	7.9	8.6
NTRIN	fluoranthene	1	1	5.2	na	na	na	na

TRIN-LC	fluoranthene	1	1	1600	na	na	na	na
TRIN	fluoranthene	10	9	0.3	143	26	8.5	44
TOB	fluoranthene	4	4	9.7	20	17	18	4.6
CV	fluoranthene	5	5	8.4	19	13	1	4.0
KATI	fluoranthene	14	14	420	4,570	1,810	1,430	1,250
BKO	fluoranthene	5	5	9,570	18,090	12,960	11,360	3,360
NVI	phenanthrene	2	2	67	126	97	97	42
VI	phenanthrene	7	7	9.9	147	89	89	49
NTRIN	phenanthrene	1	1	17	na	na	na	na
TRIN-LC	phenanthrene	1	1	3800	na	na	na	na
TRIN	phenanthrene	10	6	0.1	234	49	16	73
TOB	phenanthrene	4	4	148	215	175	170	32
CV	phenanthrene	5	5	91	667	356	433	252
KATI	phenanthrene	14	14	1,000	6,470	3,200	3,310	1,550
BKO	phenanthrene	5	5	5,420	29,600	13,450	8,240	10,370
NVI	pyrene	2	2	9.9	142	76	76	93
VI	pyrene	7	7	5.9	119	40	30	38
NTRIN	pyrene	1	1	7.2	na	na	na	na
TRIN-LC	pyrene	1	1	1,130	na	na	na	na
TRIN	pyrene	10	10	0.6	125	29	12	39
TOB	pyrene	4	4	13	28	21	22	7.7
CV	pyrene	5	5	6.9	25	16	15	7.6
KATI	pyrene	14	14	267	2,940	1,200	928	826
BKO	pyrene	5	5	7,000	15,600	10,200	8,430	3,420

Table S.5 Descriptive statistics of detected PCBs concentrations (pg/m^3) by site; “nd” indicates analyte not detected, “na” indicates not applicable, and “sd” represents standard deviation. NVI (non-dust Virgin Islands), VI (Virgin Islands), NTRIN (non-dust Trinidad), TRIN-LC (local contamination Trinidad), TOB (Tobago), CV (Cape Verde), KATI (Kati, Mali), and BKO (Bamako, Mali).

Site	analytes	samples	detects	min	max	mean	median	sd
NVI	PCB 101	2	0	0.17	0.88	0.52	0.52	0.5
VI	PCB 101	7	2	0	1.56	0.71	0.57	0.53
NTRIN	PCB 101	1	1	0.72	na	na	na	na
TRIN-LC	PCB 101	1	1	4.97	na	na	na	na
TRIN-LC	PCB 101	10	2	0.09	8.29	2.72	0.94	3.31
TOB	PCB 101	4	0	0.01	0.84	0.42	0.41	0.34
CV	PCB 101	5	1	0.12	0.92	0.46	0.43	0.35
KATI	PCB 101	14	1	0.06	17.92	3.08	0.64	5.63
BKO	PCB 101	5	0	1.4	10.3	5.81	5.79	3.91
NVI	PCB 118	2	0	0.02	0.04	0.03	0.03	0.01
VI	PCB 118	7	1	0	0.08	0.03	0.02	0.03
NTRIN	PCB 118	1	1	0.23	na	na	na	na
TRIN-LC	PCB 118	1	1	0.68	na	na	na	na
TRIN-LC	PCB 118	10	8	0	0.03	0.02	0.02	0.01
TOB	PCB 118	4	1	0.01	0.54	0.24	0.2	0.23
CV	PCB 118	5	0	0	0.03	0.01	0.01	0.01
KATI	PCB 118	14	12	0.12	3.55	0.84	0.48	0.95
BKO	PCB 118	5	1	0.07	10.33	2.58	0.78	4.36
NVI	PCB 138	2	0	0	0.07	0.04	0.04	0.05
VI	PCB 138	7	0	0.04	0.36	0.16	0.11	0.11
NTRIN	PCB 138	1	0	nd	nd	nd	nd	na
TRIN-LC	PCB 138	1	0	nd	nd	nd	nd	na
TRIN-LC	PCB 138	10	8	0.01	2.77	0.56	0.12	0.91
TOB	PCB 138	4	1	0.11	1.81	0.73	0.5	0.76
CV	PCB 138	5	0	0.03	0.18	0.12	0.12	0.06
KATI	PCB 138	14	11	0.01	12.73	2.41	0.67	3.7
BKO	PCB 138	5	3	0.78	11.88	7.44	10.28	5.18
NVI	PCB 153	2	0	0.11	0.13	0.12	0.12	0.02
VI	PCB 153	7	0	0.01	0.16	0.06	0.05	0.06
NTRIN	PCB 153	1	1	0.15	na	na	na	na

TRIN-LC	PCB 153	1	0	nd	nd	nd	nd	na
TRIN-LC	PCB 153	10	4	0.01	0.54	0.2	0.1	0.18
TOB	PCB 153	4	2	0.01	0.13	0.07	0.08	0.03
CV	PCB 153	5	0	0.06	0.09	0.08	0.08	0.01
KATI	PCB 153	14	12	0.06	12.53	2.45	1.41	3.33
BKO	PCB 153	5	1	0.01	10.33	2.09	0.04	4.6
NVI	PCB 183	2	0	0.04	0.07	0.05	0.05	0.02
VI	PCB 183	7	0	0.01	0.08	0.03	0.03	0.02
NTRIN	PCB 183	1	0	nd	nd	nd	nd	na
TRIN-LC	PCB 183	1	0	nd	nd	nd	nd	na
TRIN-LC	PCB 183	10	0	0.01	0.06	0.04	0.04	0.02
TOB	PCB 183	4	0	0	0.04	0.02	0.01	0.02
CV	PCB 183	5	0	0.01	0.07	0.04	0.05	0.02
KATI	PCB 183	14	10	0.01	4.02	1.12	0.31	1.46
BKO	PCB 183	5	1	59	8.26	2.58	1.43	3.21
NVI	PCB 187	2	0	0.02	0.04	0.03	0.03	0.01
VI	PCB 187	7	0	0	0.08	0.03	0.02	0.03
NTRIN	PCB 187	1	0	nd	nd	nd	nd	na
TRIN-LC	PCB 187	1	0	nd	nd	nd	nd	na
TRIN-LC	PCB 187	10	0	0	0.03	0.02	0.02	0.01
TOB	PCB 187	4	3	0.01	0.54	0.24	0.2	0.23
CV	PCB 187	5	0	0	0.03	0.01	0.01	0.01
KATI	PCB 187	14	12	0.12	3.55	0.84	0.48	0.95
BKO	PCB 187	5	1	0.07	10.33	2.58	0.78	4.36