

Table S1 Population density (in ha), frequency, abundance, and distribution of *Z. armatum* and its major associates at Dhanwang (1,000–1,200 m)

SN	Name of the plant	Density	RD (%)	Frequency (%)	RF (%)	Abundance	RA (%)	IVI	Distribution (A/F ratio)
1	<i>Albizzia procera</i>	300	3.21	60	4.40	1.25	3.21	10.82	0.02
2	<i>Bauhinia variegata</i>	280	3.00	50	3.66	1.40	2.99	9.65	0.03
3	<i>Berberis aristata</i>	640	6.85	70	5.13	2.29	6.84	18.82	0.03
4	<i>Bombax ceiba</i>	320	3.43	75	5.49	1.00	2.14	11.06	0.01
5	<i>Castanopsis hystrix</i>	500	5.35	75	5.49	1.14	3.42	14.26	0.02
6	<i>Colebrookea oppositifolia</i>	300	3.21	55	4.03	1.67	5.34	12.58	0.03
7	<i>Ficus semicordata</i>	200	2.14	45	3.30	1.36	3.21	8.65	0.03
8	<i>Ligustrum confusum</i>	600	6.42	80	5.86	1.11	2.14	14.42	0.01
9	<i>Maesa chisia</i>	400	4.28	45	3.30	1.88	6.41	13.99	0.04
10	<i>Mallotus philippinensis</i>	1140	12.21	85	6.23	2.22	4.27	22.71	0.03
11	<i>Murraya koenigii</i>	240	2.57	50	3.66	3.35	12.18	18.41	0.07
12	<i>Myrica esculenta</i>	1000	10.71	80	5.86	1.20	2.56	19.13	0.02
13	<i>Pinus roxburghii</i>	280	3.00	50	3.66	3.13	10.68	17.34	0.06
14	<i>Pyrus pashia</i>	380	4.07	60	4.40	1.40	2.99	11.46	0.02
15	<i>Salix</i> sp.	260	2.78	60	4.40	1.58	4.06	11.24	0.03
16	<i>Sapindus mukorossi</i>	240	2.57	55	4.03	1.08	2.78	9.38	0.02
17	<i>Sapium insigne</i>	380	4.07	60	4.40	1.09	2.56	11.03	0.02
18	<i>Schima wallichii</i>	320	3.43	60	4.40	1.58	4.06	11.89	0.03
19	<i>Smilax</i> sp.	280	3.00	65	4.76	1.33	3.42	11.18	0.02
20	<i>Stephania</i> sp.	200	2.14	50	3.66	1.08	2.99	8.79	0.02
21	<i>Toona ciliata</i>	240	2.57	65	4.76	1.00	2.78	10.11	0.02
22	<i>Zanthoxylum armatum</i>	840	8.99	70	5.13	3.00	8.97	23.09	0.04

Table S2 Population density (in ha), frequency, abundance, and distribution of *Z. armatum* and its major associates at Kapurkot (1,200–1,400 m asl)

SN	Name of the plant	Density	RD (%)	Frequency (%)	RF (%)	Abundance	RA (%)	IVI	Distribution (A/F ratio)
1	<i>Albizzia procera</i>	300	2.65	55	3.81	1.36	2.65	9.12	0.02
2	<i>Alnus nepalensis</i>	500	4.42	65	4.50	1.92	4.42	13.35	0.03
3	<i>Benincasa hispida</i>	380	3.36	65	4.50	1.46	3.36	11.22	0.02
4	<i>Berberis aristata</i>	980	8.67	80	5.54	3.06	8.67	22.88	0.04
5	<i>Castanopsis indica</i>	480	4.25	70	4.84	1.71	4.25	13.34	0.02
6	<i>Clematis</i> sp.	300	2.65	70	4.84	1.07	2.65	10.15	0.02
7	<i>Daphne bholua</i>	840	7.43	75	5.19	2.80	7.43	20.06	0.04
8	<i>Ficus neriifolia</i>	560	4.96	75	5.19	1.87	4.96	15.10	0.02
9	<i>Ficus semicordata</i>	260	2.30	60	4.15	1.08	2.30	8.75	0.02
10	<i>Lyonia ovalifolia</i>	820	7.26	75	5.19	2.27	6.02	18.46	0.03
11	<i>Maesa chisia</i>	680	6.02	70	4.84	2.93	7.26	18.12	0.04
12	<i>Myrica esculenta</i>	360	3.19	70	4.84	2.43	6.02	14.05	0.03
13	<i>Persea odoratissima</i>	300	2.65	65	4.50	1.38	3.19	10.34	0.02
14	<i>Pinus roxburghii</i>	600	5.31	60	4.15	1.25	2.65	12.12	0.02
15	<i>Prunus cerasoides</i>	300	2.65	75	5.19	2.14	5.31	13.15	0.03
16	<i>Prunus persica</i>	360	3.19	65	4.50	1.15	2.65	10.34	0.02
17	<i>Pyracantha crenulata</i>	500	4.42	65	4.50	1.38	3.19	12.11	0.02
18	<i>Quercus leucotricophora</i>	400	3.54	75	5.19	1.67	4.42	13.15	0.02
19	<i>Quercus semecarpifolia</i>	680	6.02	65	4.50	1.54	3.54	14.06	0.02
20	<i>Rhododendron arboreum</i>	700	6.19	70	4.84	2.50	6.19	17.23	0.04
21	<i>Zanthoxylum armatum</i>	780	6.67	75	5.19	3.00	6.67	18.53	0.04

Table S3 Population density (in ha), frequency, abundance, and distribution of *Z. armatum* and its major associates at Rim (1,400–1,700 m asl)

SN	Name of the plant	Density	RD (%)	Frequency (%)	RF (%)	Abundance	RA (%)	IVI	Distribution (A/F ratio)
1	<i>Alnus nepalensis</i>	420	3.59	65	4.10	1.62	3.59	11.28	0.02
2	<i>Berberis aristata</i>	960	8.21	80	5.05	3.00	8.21	21.46	0.04
3	<i>Castanopsis indica</i>	340	2.91	65	4.10	1.31	2.91	9.91	0.02
4	<i>Clematis</i> sp.	200	1.71	50	3.15	1.00	1.71	6.57	0.02
5	<i>Cotoneaster microphyllus</i>	440	3.76	60	3.79	1.83	3.76	11.31	0.03
6	<i>Daphne bholua</i>	540	4.62	75	4.73	1.80	4.62	13.96	0.02
7	<i>Ficus neriifolia</i>	280	2.39	60	3.79	1.17	2.39	8.57	0.02
8	<i>Fraxinus floribundus</i>	400	3.42	70	4.42	1.43	3.42	11.25	0.02
9	<i>Lyonia ovalifolia</i>	740	6.32	75	4.73	2.47	6.32	17.38	0.03
10	<i>Maesa chisia</i>	320	2.74	65	4.10	1.23	2.74	9.57	0.02
11	<i>Myrica esculenta</i>	780	6.67	65	4.10	3.00	6.67	17.43	0.05
12	<i>Persea odoratissima</i>	440	3.76	65	4.10	1.69	3.76	11.62	0.03
13	<i>Pinus roxburghii</i>	860	7.35	75	4.73	2.87	7.35	19.43	0.04
14	<i>Prunus cerasoides</i>	400	3.42	70	4.42	1.43	3.42	11.25	0.02
15	<i>Pyrecantha crenulata</i>	360	3.08	70	4.42	1.29	3.08	10.57	0.02
16	<i>Pyrus pashia</i>	560	4.79	80	5.05	1.75	4.79	14.62	0.02
17	<i>Quercus leucotricophora</i>	560	4.79	75	4.73	1.87	4.79	14.30	0.02
18	<i>Reinwardtia indica</i>	300	2.56	70	4.42	1.07	2.56	9.54	0.02
19	<i>Rhododendron arboreum</i>	760	6.50	75	4.73	2.53	6.50	17.72	0.03
20	<i>Rubus ellipticus</i>	400	3.42	75	4.73	1.33	3.42	11.57	0.02
21	<i>Smilax</i> sp.	520	4.44	65	4.10	2.00	4.44	12.99	0.03
22	<i>Viburnum erubescens</i>	340	2.91	70	4.42	1.21	2.91	10.23	0.02
23	<i>Zanthoxylum armatum</i>	1000	8.85	65	4.10	3.33	8.85	21.80	0.05

Table S4 Population density (in ha), frequency, abundance, and distribution of *Z. armatum* and its major associates at Baghchaur (1,400–1,600 m asl)

SN	Name of the plant	Density	RD (%)	Frequency (%)	RF (%)	Abundance	RA (%)	IVI	Distribution (A/F ratio)
1	<i>Alnus nepalensis</i>	820	7.98	75	6.64	2.73	7.98	22.59	0.04
2	<i>Bauhinia variegata</i>	520	5.06	80	7.08	1.63	5.06	17.20	0.02
3	<i>Berberis aristata</i>	760	7.39	85	7.52	2.24	7.39	22.31	0.03
4	<i>Fraxinus floribunda</i>	660	6.42	85	7.52	1.94	6.42	20.36	0.02
5	<i>Grewia optiva</i>	500	4.86	80	7.08	1.56	4.86	16.81	0.02
6	<i>Lyonia ovalifolia</i>	1060	10.31	80	7.08	3.31	10.31	27.70	0.04
7	<i>Persea odoratissima</i>	440	4.28	75	6.64	1.47	4.28	15.20	0.02
8	<i>Pinus roxburghii</i>	680	6.61	90	7.96	1.89	6.61	21.19	0.02
9	<i>Prunus cerasoides</i>	740	7.20	80	7.08	2.31	7.20	21.48	0.03
10	<i>Pyreantha crenulata</i>	460	4.47	75	6.64	1.53	4.47	15.59	0.02
11	<i>Pyrus pashia</i>	780	7.59	85	7.52	2.29	7.59	22.70	0.03
12	<i>Rhododendron arboreum</i>	1180	11.48	85	7.52	3.47	11.48	30.48	0.04
13	<i>Sapium insigne</i>	580	5.64	75	6.64	1.93	5.64	17.92	0.03
14	<i>Zanthoxylum armatum</i>	1020	15.45	80	7.45	3.4	15.45	38.35	0.04

Table S5 Population density (in ha), frequency, abundance, and distribution of *Z. armatum* and its major associates at Kupinde (1,600–1,800 m asl)

SN	Name of the plant	Density	RD (%)	Frequency (%)	RF (%)	Abundance	RA (%)	IVI	Distribution (A/F ratio)
1	<i>Berberis aristata</i>	640	9.70	75	7.94	2.13	9.70	27.33	0.03
2	<i>Castnanopsis hystrix</i>	580	8.79	85	8.99	1.71	8.79	26.57	0.02
3	<i>Daphne bholua</i>	480	7.27	85	8.99	1.41	7.27	23.54	0.02
4	<i>Ficus semicordata</i>	300	4.55	65	6.88	1.15	4.55	15.97	0.02
5	<i>Lyonia ovaefolia</i>	440	6.67	80	8.47	1.38	6.67	21.80	0.02
6	<i>Myrica esculenta</i>	580	8.79	65	6.88	2.23	8.79	24.45	0.03
7	<i>Pinus roxburghii</i>	420	6.36	70	7.41	1.50	6.36	20.13	0.02
8	<i>Princepia utilis</i>	280	4.24	60	6.35	1.17	4.24	14.83	0.02
9	<i>Pyrus pashia</i>	400	6.06	75	7.94	1.33	6.06	20.06	0.02
10	<i>Quercus incana</i>	380	5.76	65	6.88	1.54	6.06	18.70	0.02
11	<i>Rhododendron arboreum</i>	400	6.06	75	7.94	2.27	10.30	24.30	0.03
12	<i>Rhus javanica</i>	680	10.30	70	7.41	1.36	5.76	23.47	0.02
13	<i>Zanthoxylum armatum</i>	1100	10.70	75	8.02	3.44	10.70	29.42	0.05

Table S6 Population density (in ha), frequency, abundance, and distribution of *Z. armatum* and its major associates at Chhatreshwori (1,800–2,000 m asl)

SN	Name of the plant	Density	RD (%)	Frequency (%)	RF (%)	Abundance	RA (%)	IVI	Distribution (A/F ratio)
1	<i>Adhatoda vesica</i>	440	3.18	65	4.13	1.69	3.18	10.49	0.03
2	<i>Aesculus indica</i>	700	5.07	75	4.76	2.33	5.07	14.90	0.03
3	<i>Berberis aristata</i>	520	3.76	60	3.81	2.17	3.76	11.33	0.04
4	<i>Daphne bholua</i>	1100	7.96	75	4.76	3.67	7.96	20.68	0.05
5	<i>Fraxinus floribundus</i>	500	3.62	70	4.44	1.79	3.62	11.68	0.03
6	<i>Juglans regia</i>	520	3.76	80	5.08	1.63	3.76	12.60	0.02
7	<i>Ficus nerifolia</i>	420	3.04	60	3.81	1.75	3.04	9.89	0.03
8	<i>Lyonia ovalifolia</i>	680	4.92	70	4.44	2.43	4.92	14.28	0.03
9	<i>Maesa chisia</i>	940	6.8	80	5.08	2.94	6.80	18.68	0.04
10	<i>Myrica esculenta</i>	640	4.63	75	4.76	2.13	4.63	14.02	0.03
11	<i>Persea odoratissima</i>	500	3.62	60	3.81	2.08	3.62	11.05	0.03
12	<i>Princepia utilis</i>	700	5.07	75	4.76	2.33	5.07	14.90	0.03
13	<i>Prunus cerasoides</i>	320	2.32	65	4.13	1.23	2.32	8.76	0.02
14	<i>Pyrecantha crenulata</i>	480	3.47	60	3.81	2.00	3.47	10.75	0.03
15	<i>Pyrus pashia</i>	360	2.6	60	3.81	1.50	2.60	9.01	0.03
16	<i>Quercus glauca</i>	900	6.51	85	5.40	2.65	6.51	18.42	0.03
17	<i>Quercus incana</i>	460	3.33	75	4.76	1.53	3.33	11.42	0.02
18	<i>Quercus semecarpifolia</i>	340	2.46	60	3.81	1.42	2.46	8.73	0.02
19	<i>Rhododendron arboreum</i>	780	5.64	75	4.76	2.60	5.64	16.05	0.03
20	<i>Rhus javanica</i>	660	4.78	65	4.13	2.54	4.78	13.68	0.04
21	<i>Salix</i> sp.	640	4.63	75	4.76	2.13	4.63	14.02	0.03
22	<i>Sapium insigne</i>	480	3.47	50	3.17	2.40	3.47	10.12	0.05
23	<i>Zanthoxylum armatum</i>	740	5.35	60	3.82	3.08	5.35	14.53	0.05