

Table S1. Livestock number (in million head) by provinces in Red River Delta from 2000 to 2030

Hanoi	2000	2005	2010	2015	2020	2025	2030
Dairy Cattle	0.00941	0.01390	0.01367	0.02710	0.02000	0.02659	0.02975
Other cattle	0.11769	0.17390	0.17097	0.11477	0.15500	0.13094	0.12295
Poultry	10.68100	14.15700	17.25400	21.79400	15.00000	15.76200	14.63500
Horses	0.00060	0.00060	0.00056	0.00029	0.00025	0.00025	0.00025
Goat	0.01050	0.01050	0.01017	0.00643	0.00643	0.00394	0.00394
Buffalo	0.04980	0.03430	0.02690	0.02306	0.01600	0.01109	0.00564
Pigs	1.20470	1.69230	1.62520	1.49830	1.50000	1.41597	1.35337
Bac Ninh	2000	2005	2010	2015	2020	2025	2030
Dairy Cattle	0.00056	0.00078	0.00055	0.00103	0.00070	0.00080	0.00100
Other cattle	0.04204	0.05902	0.04170	0.03300	0.03247	0.03062	0.03149
Poultry	3.03800	3.67600	4.22900	4.68000	4.48000	4.47100	4.45700
Horses	0.00094	0.00068	0.00031	0.00013	0.00009	0.00009	0.00009
Goat	0.00000	0.00000	0.00030	0.00096	0.00209	0.00209	0.00209
Buffalo	0.01710	0.00800	0.00290	0.00240	0.00456	0.00673	0.00673
Pigs	0.41970	0.46270	0.38930	0.40510	0.39660	0.38810	0.37960
Hung Yen	2000	2005	2010	2015	2020	2025	2030
Dairy Cattle	0.00088	0.00130	0.00131	0.00316	0.00178	0.00255	0.00278
Other cattle	0.02832	0.04190	0.04246	0.03481	0.03847	0.03459	0.03259
Poultry	5.54300	6.49600	7.59400	8.29675	3.72201	2.66560	2.66560
Horses	0.00000	0.00000	0.00004	0.00006	0.00006	0.00008	0.00009
Goat	0.00000	0.00000	0.00231	0.00457	0.00484	0.00644	0.00771
Buffalo	0.00600	0.00330	0.00238	0.00223	0.00237	0.00232	0.00231
Pigs	0.40020	0.59960	0.63010	0.59440	0.63009	0.61819	0.61818
Vinh Phuc	2000	2005	2010	2015	2020	2025	2030
Dairy Cattle	0.00215	0.00324	0.00300	0.01579	0.02125	0.03160	0.04072
Other cattle	0.09725	0.14636	0.13569	0.08616	0.13875	0.12326	0.12478
Poultry	5.01800	0.54100	7.33100	8.38501	12.50000	14.57434	17.15884
Horses	0.00000	0.00000	0.00017	0.00003	0.00008	0.00008	0.00008
Goat	0.00000	0.00000	0.00270	0.00125	0.00375	0.00362	0.00362
Buffalo	0.03720	0.03160	0.02696	0.02016	0.01900	0.01408	0.01010
Pigs	0.46180	0.54900	0.54870	0.53570	0.82000	0.90610	1.04175
Quang Ninh	2000	2005	2010	2015	2020	2025	2030
Dairy Cattle	0.00016	0.00027	0.00028	0.00069	0.00133	0.00182	0.00285
Other cattle	0.01444	0.02383	0.02465	0.01743	0.06867	0.08094	0.14715
Poultry	2.16500	2.10500	2.35100	2.72740	8.00000	10.00847	18.00000
Horses	0.00000	0.00000	0.00011	0.00009	0.00008	0.00006	0.00006
Goat	0.00000	0.00000	0.00740	0.01048	0.02000	0.02523	0.03500
Buffalo	0.06440	0.06320	0.06378	0.04394	0.05000	0.03879	0.05000
Pigs	0.28920	0.37490	0.35450	0.35690	1.20000	1.48263	1.48263
Hai Duong	2000	2005	2010	2015	2020	2025	2030
Dairy Cattle	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Other cattle	0.03750	0.04740	0.02840	0.02132	0.02200	0.02200	0.02200
Poultry	7.00300	8.03400	8.07300	10.18280	13.00000	15.34560	15.00000
Horses	0.00000	0.00000	0.00012	0.00009	0.00009	0.00007	0.00007
Goat	0.00000	0.00000	0.00193	0.00209	0.00209	0.00220	0.00220
Buffalo	0.03560	0.01870	0.00719	0.00456	0.00255	0.00255	0.00255
Pigs	0.61350	0.85550	0.58620	0.59210	0.60000	0.60657	0.60657
Hai Phong	2000	2005	2010	2015	2020	2025	2030
Dairy Cattle	0.00000	0.00000	0.00000	0.00010	0.00004	0.00008	0.00010
Other cattle	0.01030	0.01380	0.01714	0.01361	0.03057	0.03386	0.04057
Poultry	4.24700	4.59100	6.20400	7.57409	7.26700	8.07803	8.60953
Horses	0.00000	0.00000	0.00020	0.00008	0.00008	0.00008	0.00008
Goat	0.00000	0.00000	0.01236	0.01136	0.00627	0.00390	0.00390
Buffalo	0.01720	0.01050	0.00889	0.00677	0.00609	0.00445	0.00305
Pigs	0.48300	0.61280	0.52600	0.48470	0.80229	0.88062	1.01877
Thai Binh	2000	2005	2010	2015	2020	2025	2030
Dairy Cattle	0.00000	0.00000	0.00000	0.00005	0.00000	0.00002	0.00002
Other cattle	0.05740	0.05400	0.06444	0.03997	0.13770	0.15396	0.19059
Poultry	6.61500	8.15000	8.86400	10.44110	14.14273	16.42801	19.06738
Horses	0.00000	0.00000	0.00021	0.00009	0.00009	0.00009	0.00009
Goat	0.00000	0.00000	0.00238	0.00310	0.00318	0.00369	0.00409
Buffalo	0.01260	0.00910	0.00550	0.00434	0.00445	0.00372	0.00320
Pigs	0.69080	1.13380	1.13120	1.04130	1.27650	1.29497	1.36761
Ha Nam	2000	2005	2010	2015	2020	2025	2030
Dairy Cattle	0.00032	0.00050	0.00045	0.00033	0.00015	0.00020	0.00020
Other cattle	0.02718	0.04180	0.03424	0.02437	0.03600	0.05000	0.05088
Poultry	2.57300	3.41200	4.49800	5.52620	7.34900	8.64207	10.06757
Horses	0.00000	0.00000	0.00001	0.00000	0.00002	0.00002	0.00002
Goat	0.00000	0.00000	0.01175	0.00965	0.02000	0.03000	0.03413
Buffalo	0.01110	0.00670	0.00279	0.00255	0.00358	0.00335	0.00375
Pigs	0.27840	0.36980	0.36780	0.39040	0.72000	0.84493	1.02103
Nam Định	2000	2005	2010	2015	2020	2025	2030
Dairy Cattle	0.00003	0.00004	0.00004	0.00004	0.00005	0.00005	0.00006
Other cattle	0.02837	0.03896	0.03816	0.03057	0.04500	0.04475	0.04817
Poultry	4.84600	5.39900	6.38200	7.26700	7.50000	8.16767	8.72667
Horses	0.00000	0.00000	0.00005	0.00001	0.00014	0.00016	0.00016
Goat	0.00000	0.00000	0.00191	0.00627	0.00457	0.00691	0.00824
Buffalo	0.00520	0.00330	0.00664	0.00609	0.00700	0.00693	0.00711
Pigs	0.56270	0.77500	0.74270	0.80230	0.85000	0.90563	0.95928
Ninh Bình	2000	2005	2010	2015	2020	2025	2030
Dairy Cattle	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Other cattle	0.02889	0.04889	0.03454	0.02943	0.04949	0.05277	0.06024
Poultry	3.01300	3.03600	3.61400	3.95467	4.72550	5.20956	5.76531
Horses	0.00000	0.00000	0.00000	0.00002	0.00002	0.00003	0.00003
Goat	0.00000	0.00000	0.02240	0.02296	0.02355	0.02412	0.02469
Buffalo	0.02190	0.02040	0.01479	0.01425	0.01462	0.01438	0.01430
Pigs	0.28370	0.37010	0.39930	0.36000	0.53100	0.56180	0.62765