

Country Summary: Ghana

Contents

1	Intro	1
2	National Survey Data	18
3	Admin 2 Figures	20
4	National Figures and Results	90
5	Admin 1 Figures	93

1 Intro

These estimates are created using the BB8 model with Admin 2 estimates using a RW1xICAR interaction model with area-specific random slopes.

Ghana has 10 Admin 1 areas and 137 Admin 2 areas.

All uncertainty intervals displayed in subsequent figures are 95% intervals.

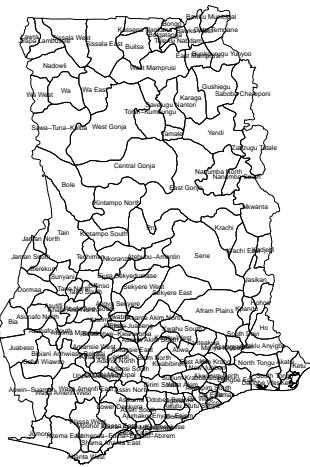
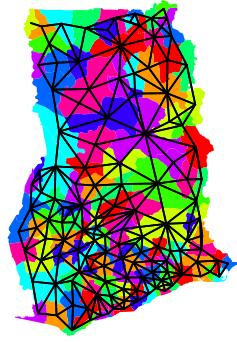


Figure 1: Top: The neighborhood structure of Admin 2 areas. Bottom: The names of Admin 2 areas.

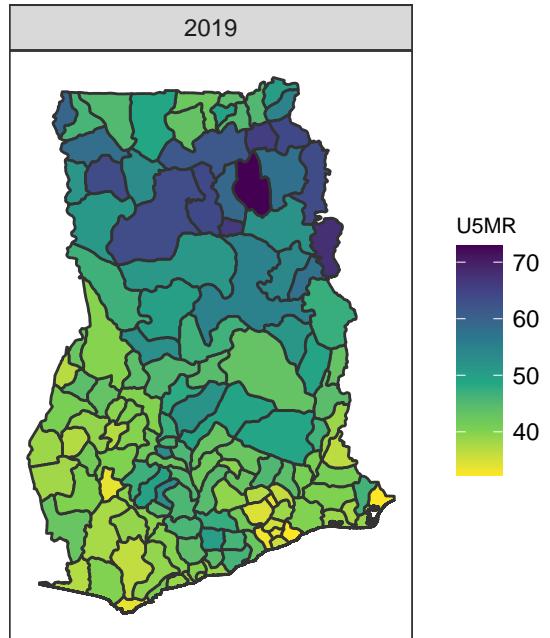


Figure 2: Median estimates of U5MR (deaths per 1000 children) in 2019.

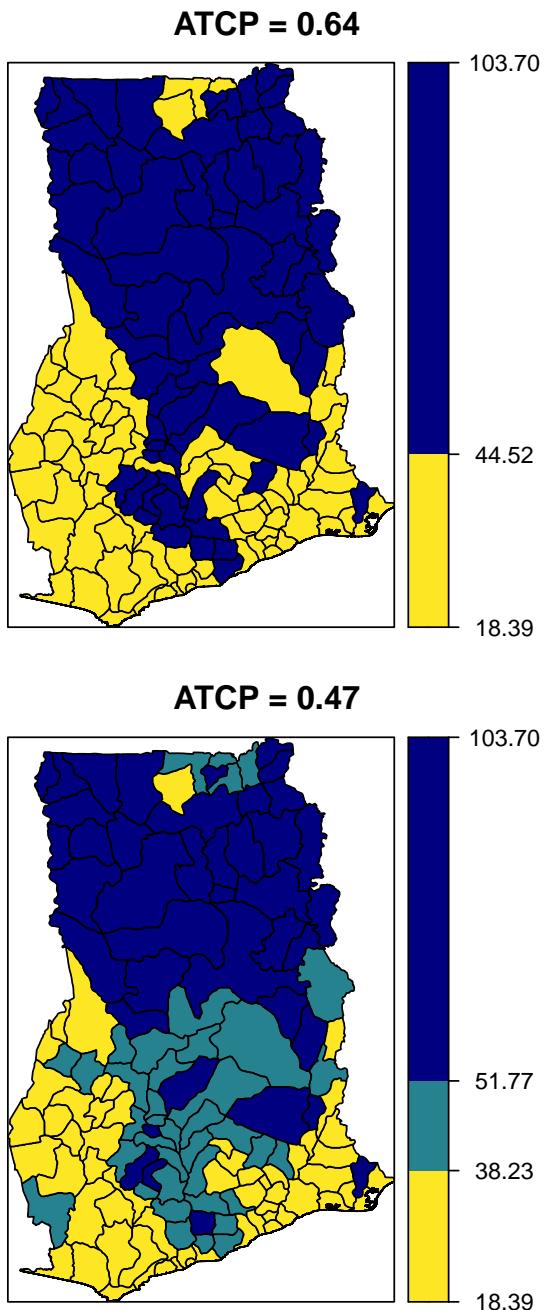


Figure 3: Expression of uncertainty of U5MR (deaths per 1000 children) based on the average true classification probability (ATCP) in 2019.

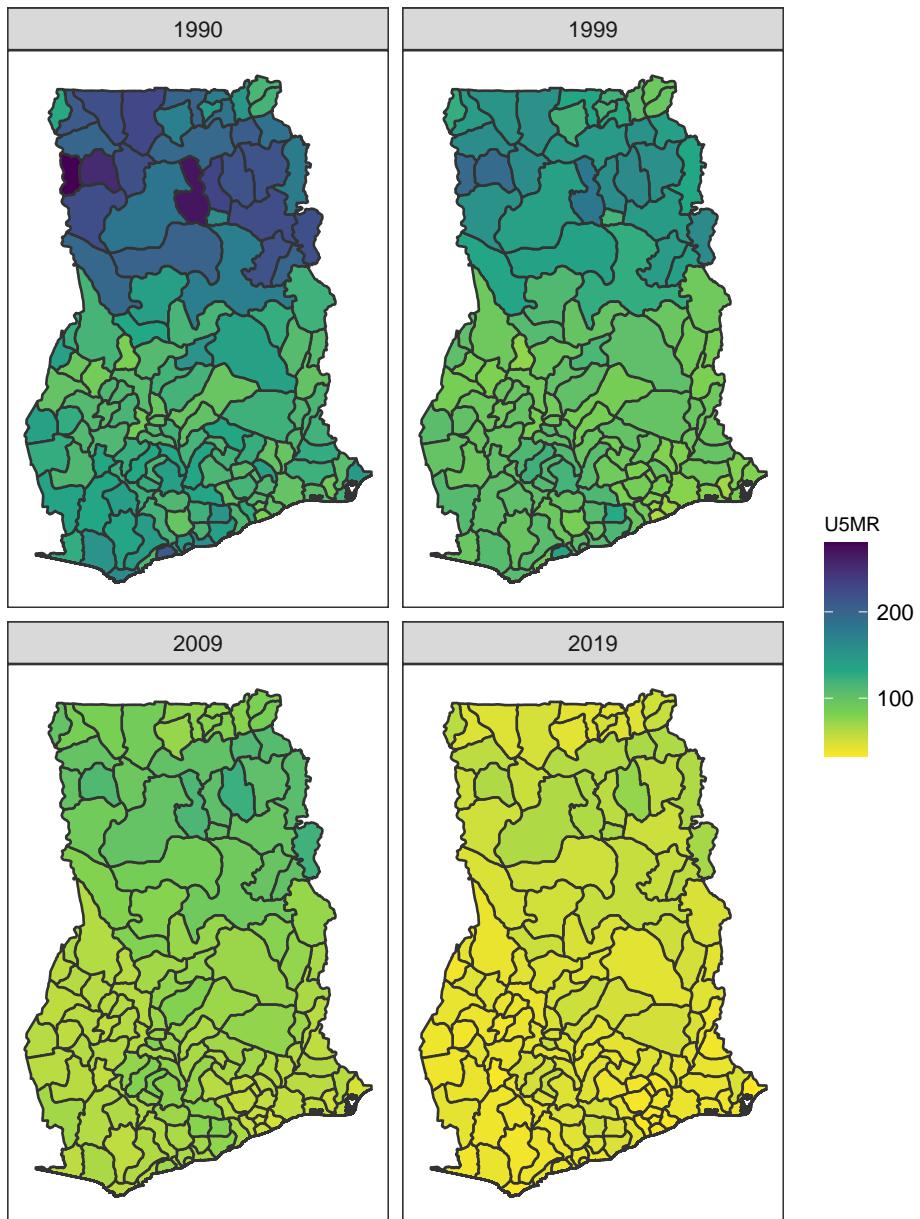
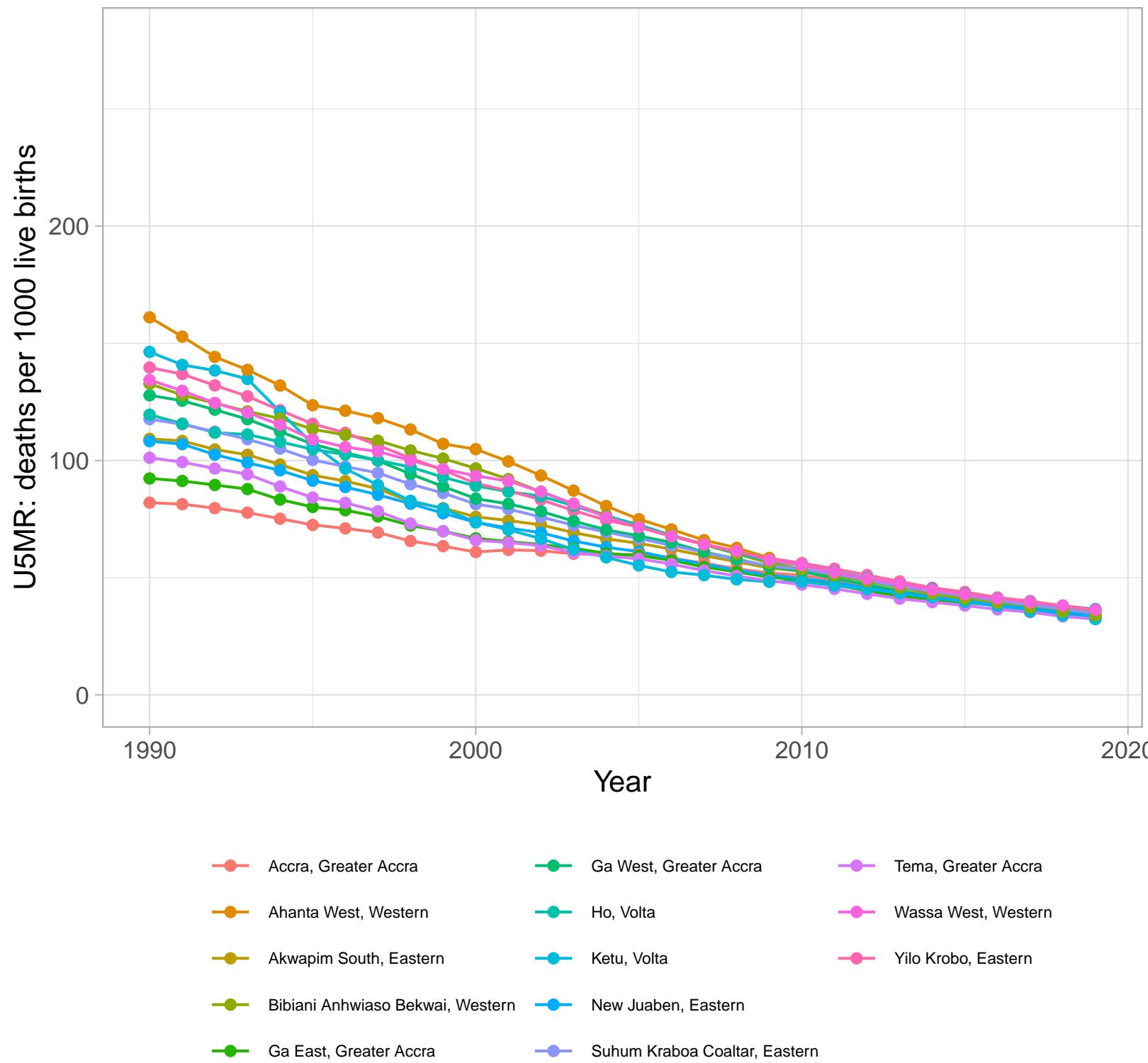
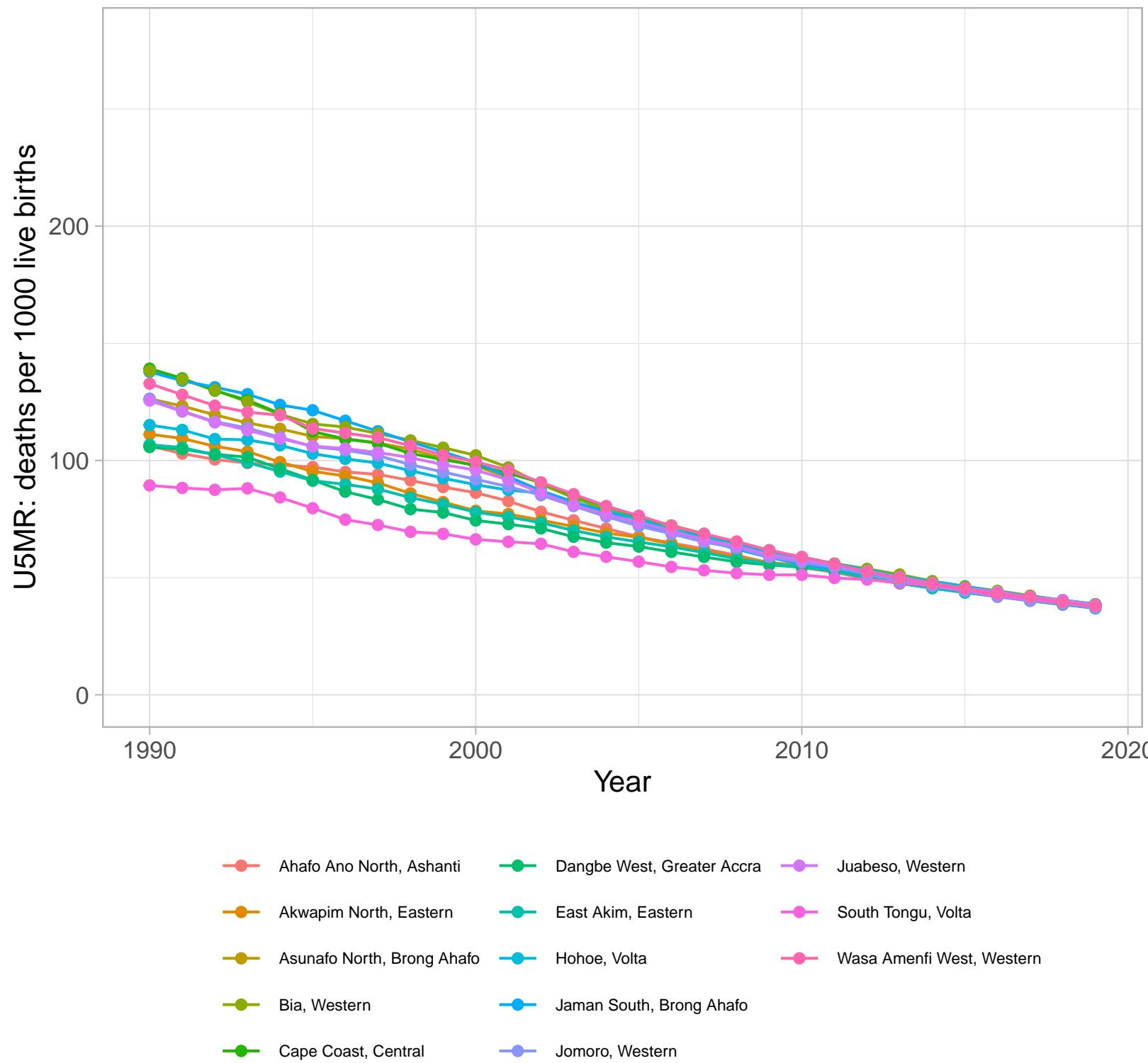


Figure 4: Median estimates for selected years.

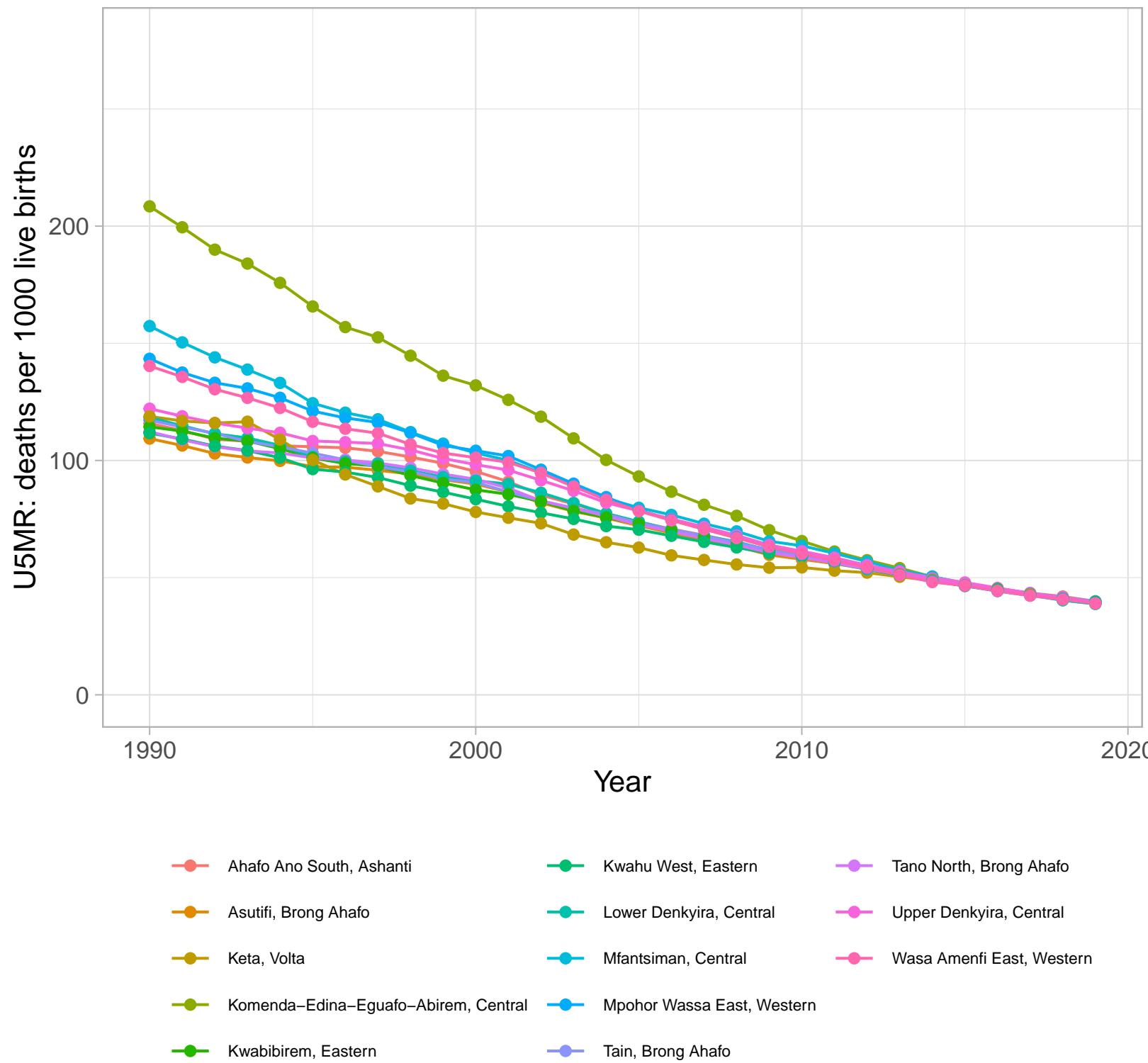
Ghana



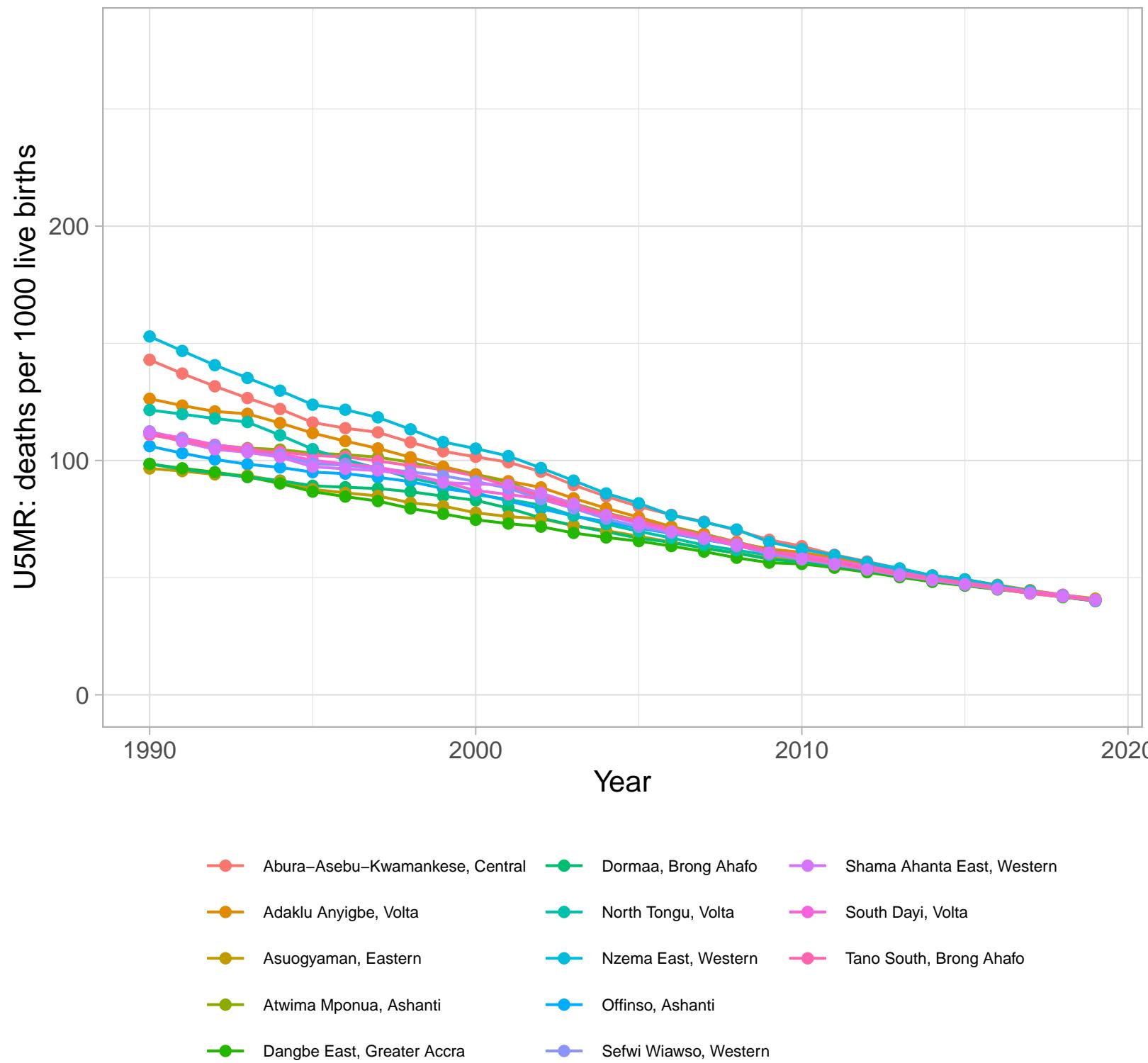
Ghana



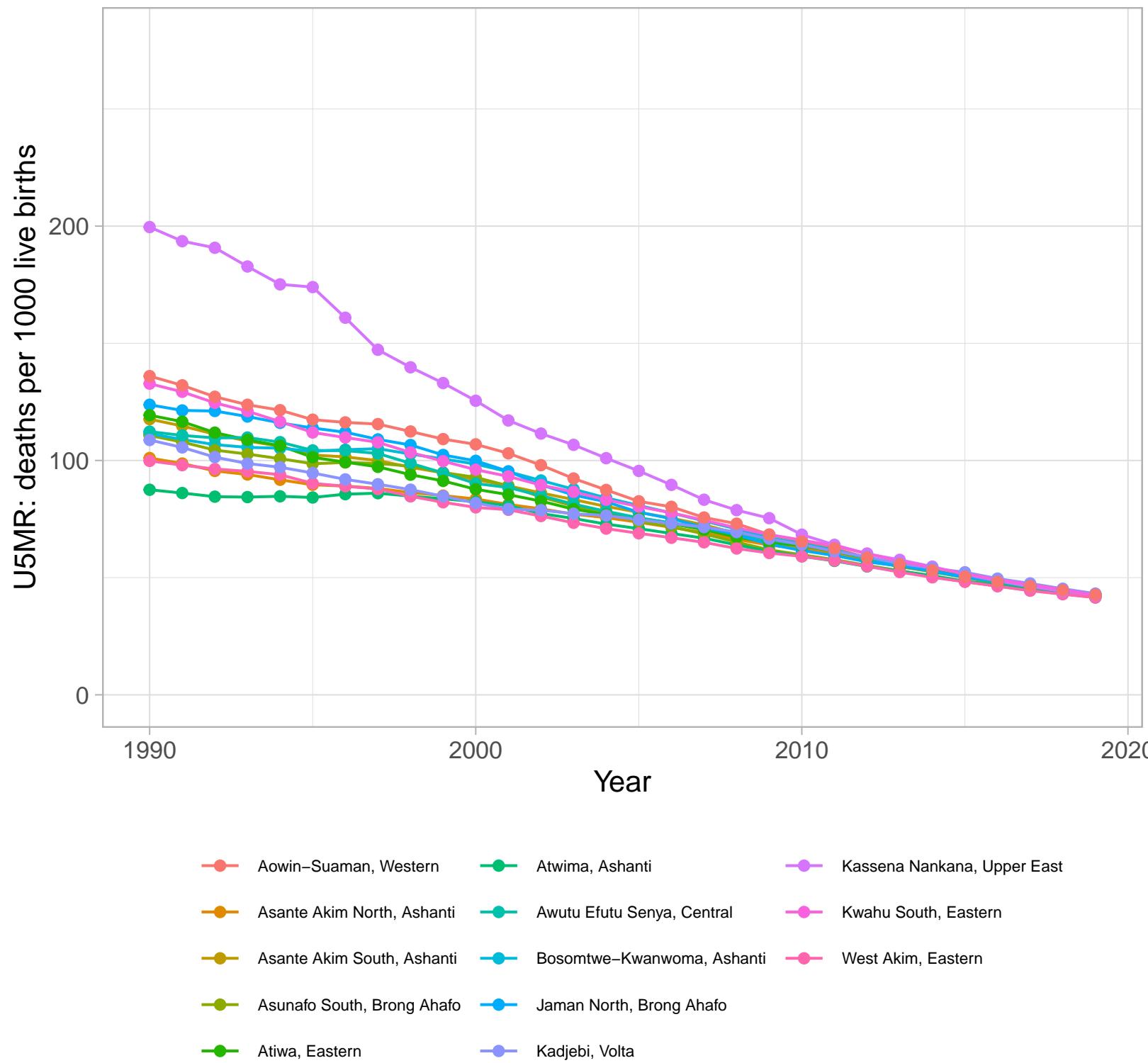
Ghana



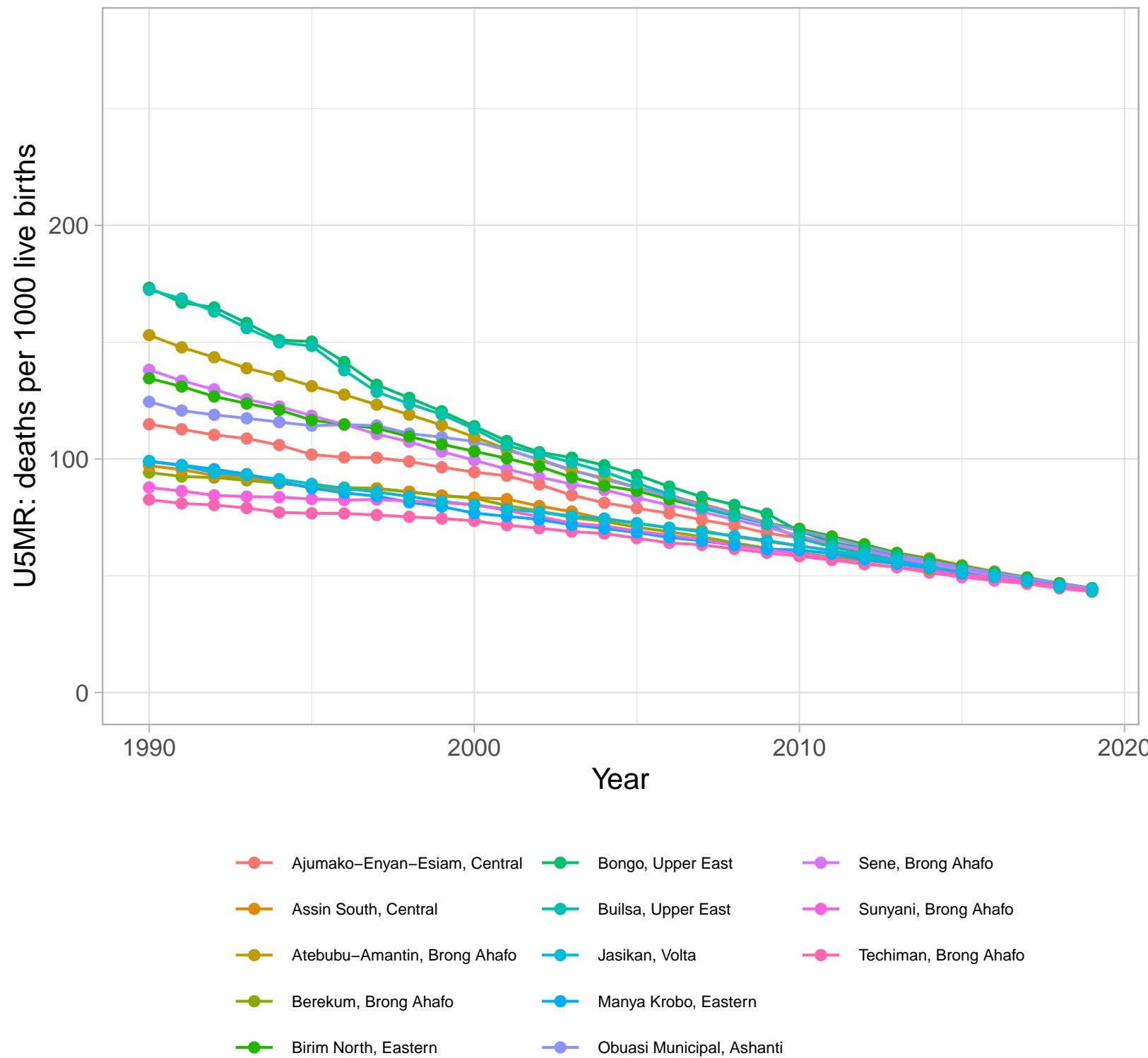
Ghana



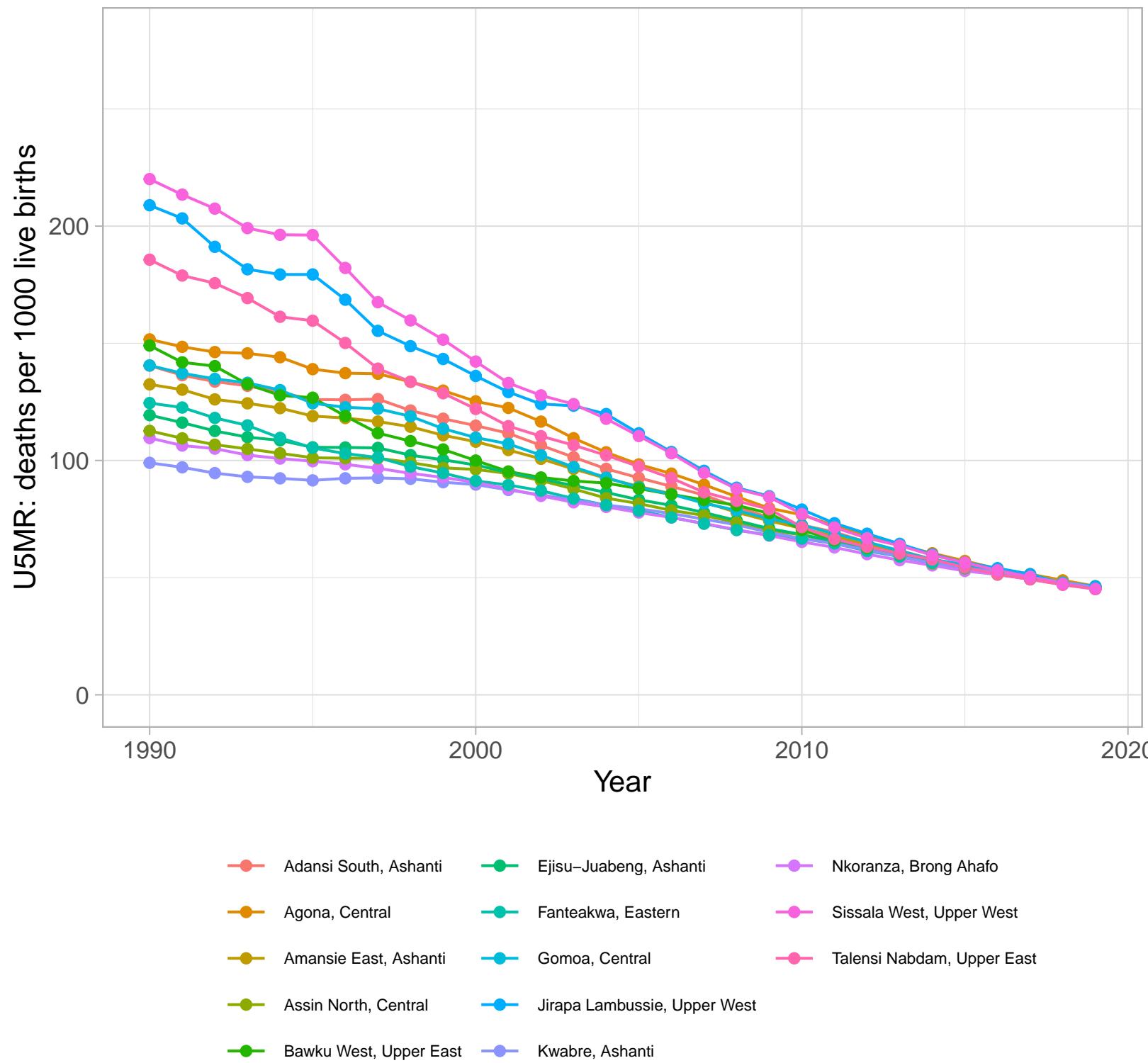
Ghana



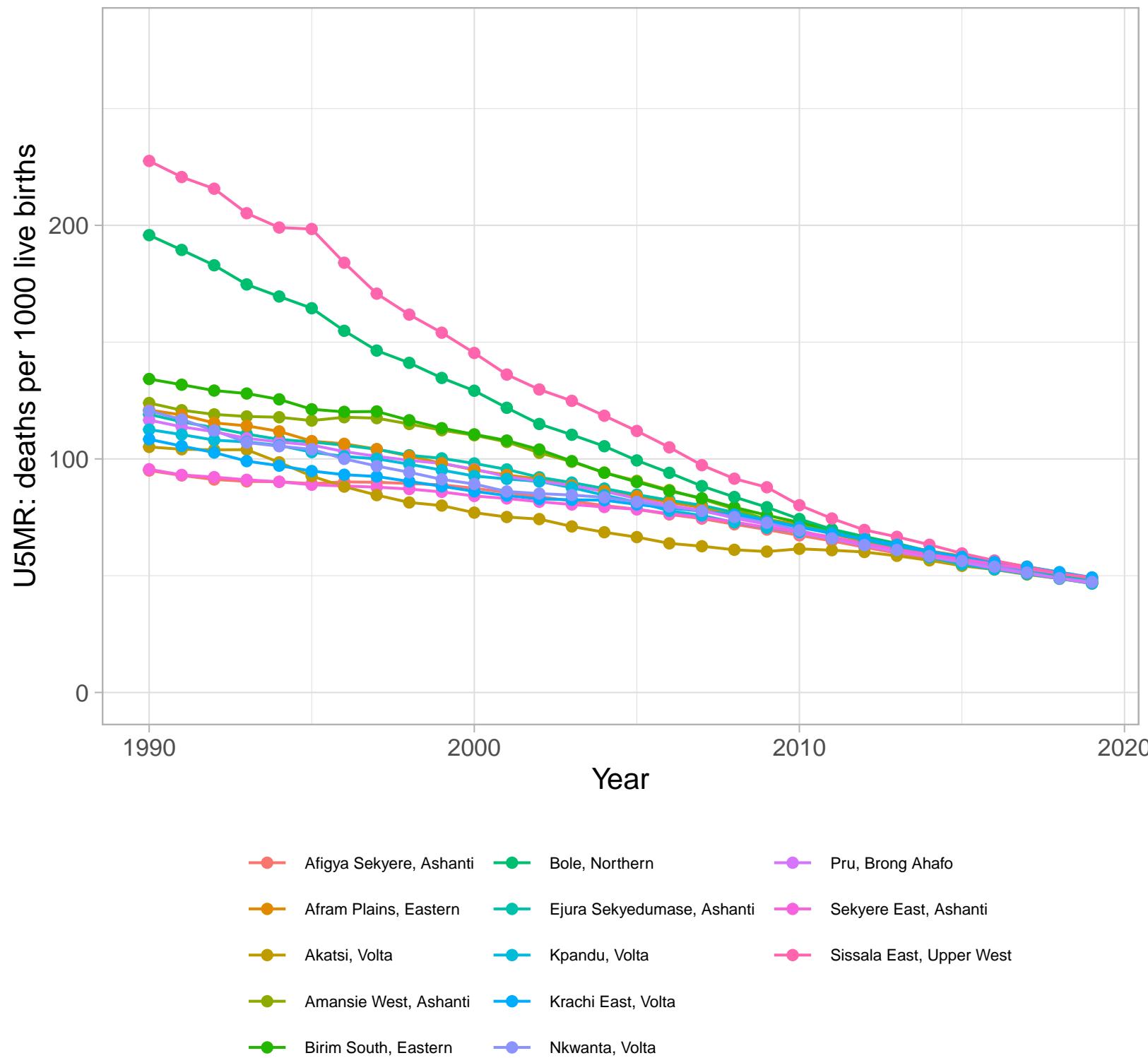
Ghana



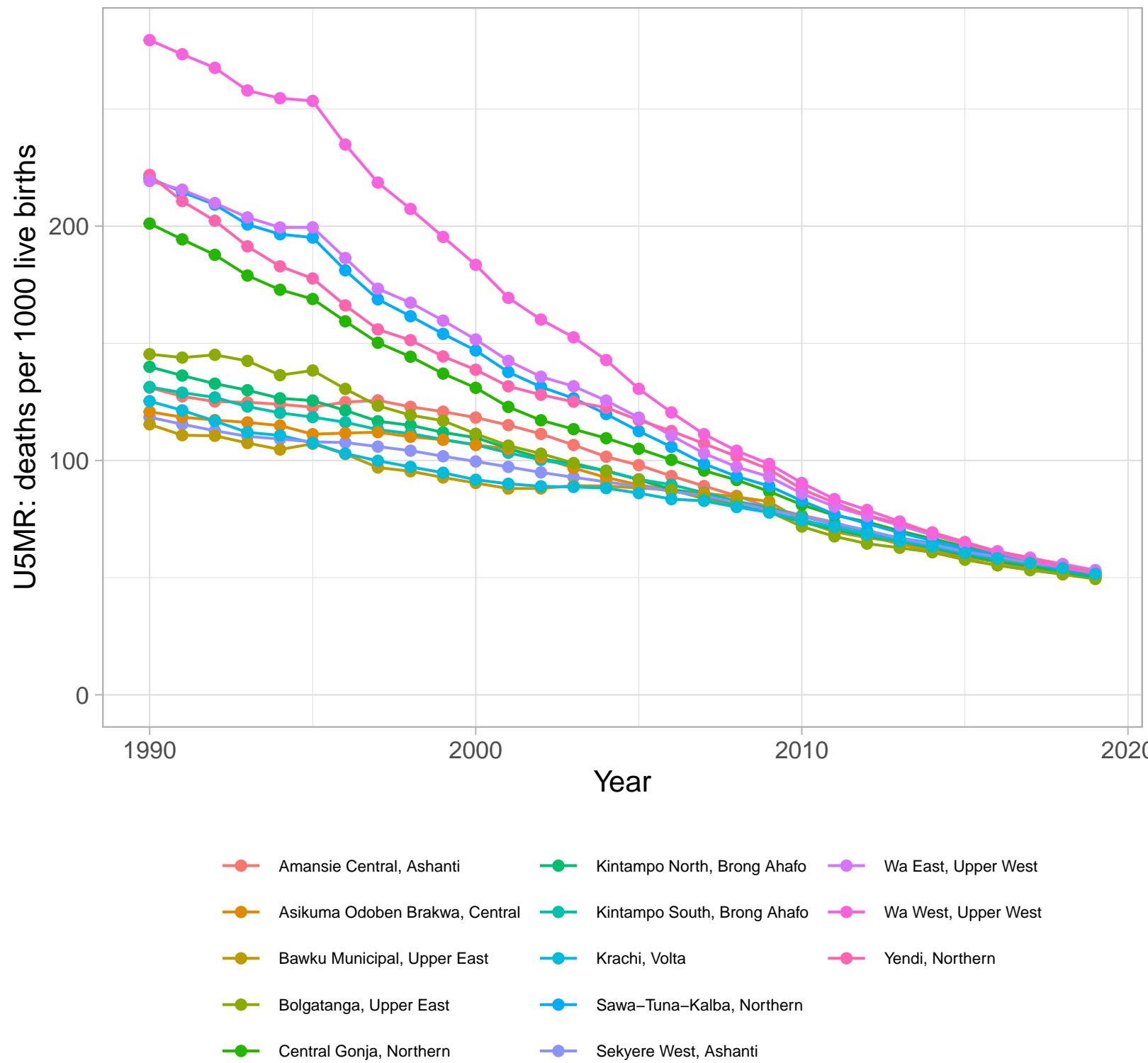
Ghana



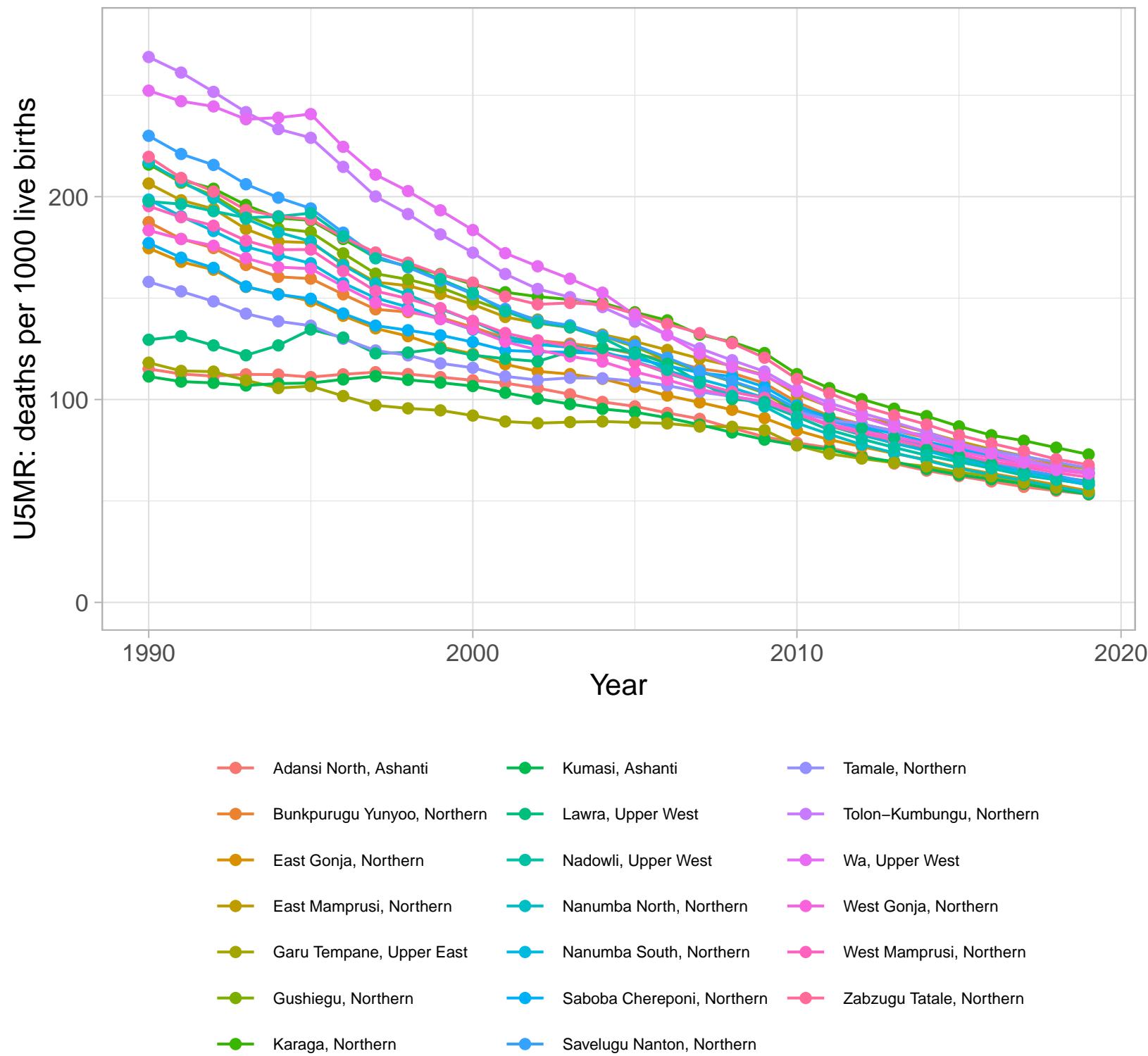
Ghana



Ghana



Ghana



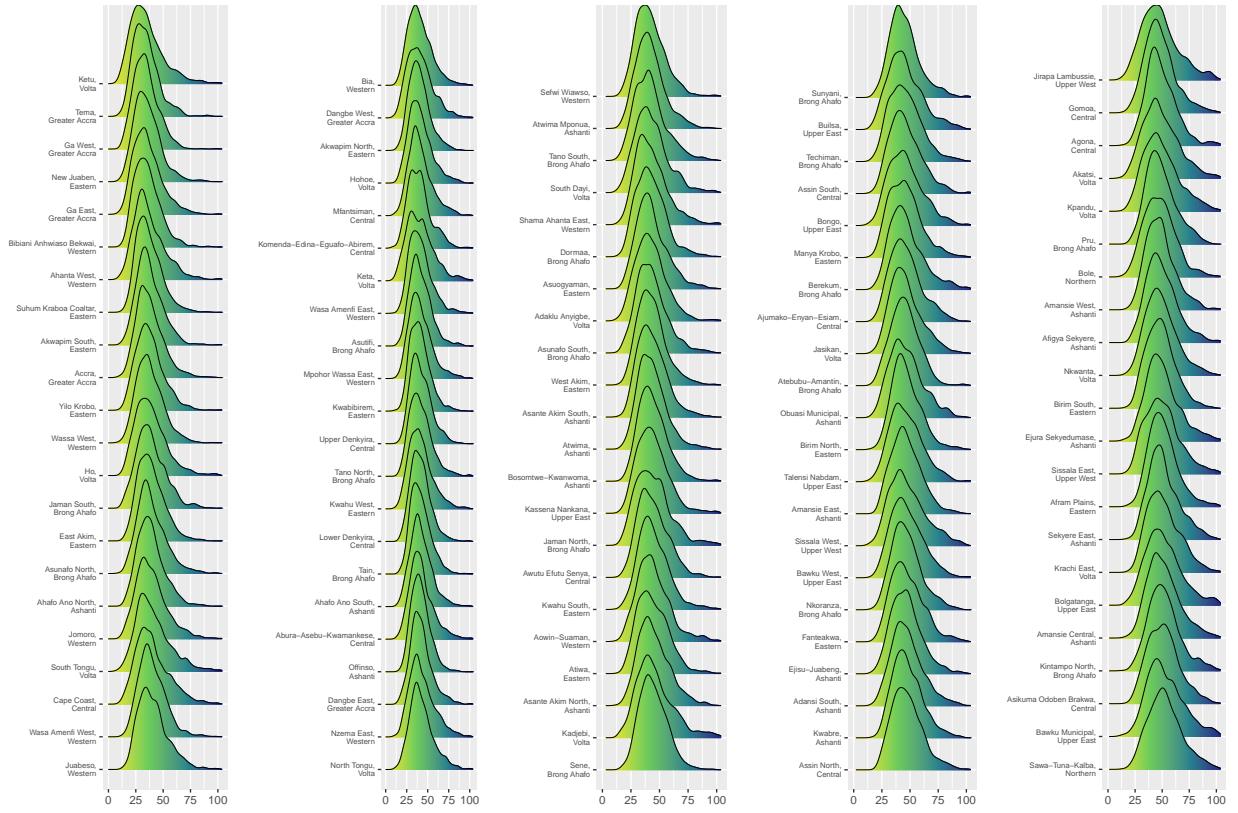


Figure 5: Posterior distributions of U5MR (deaths per 1000 children) in 2019. Areas are ordered by median estimated U5MR in 2019.

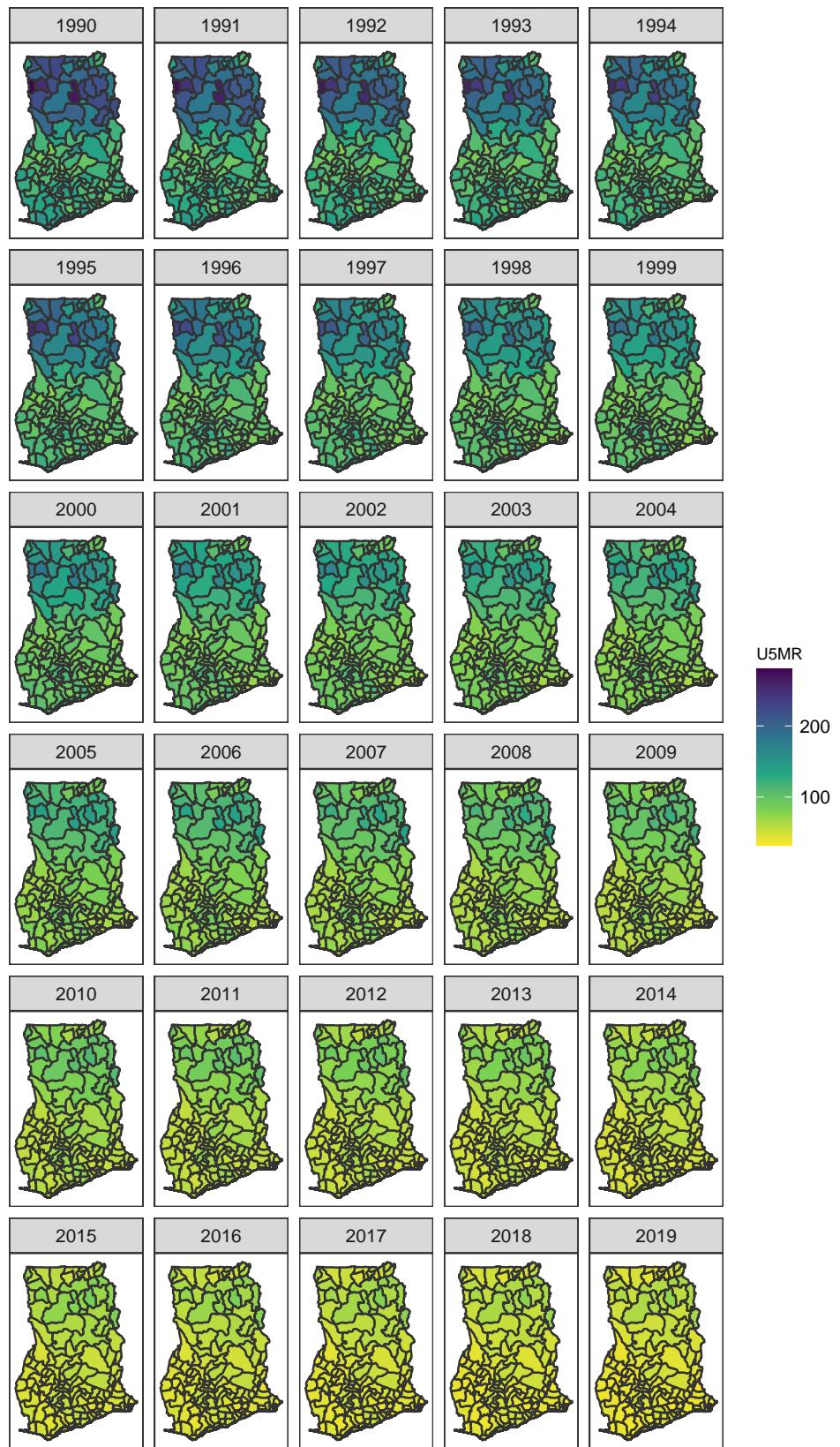


Figure 6: Posterior medians of U5MR (deaths per 1000 births) by Admin 2 area and year.

2 National Survey Data

Survey	Urban	Rural	Total
1993	149	250	399
1998	138	262	400
2003	174	236	410
2008	179	225	404
2014	216	207	423

Table 1: Number of clusters by urban/rural designation by survey for Ghana.

Age	No. Deaths	No. Agemonths
0	682	21356
1-11	446	220006
12-23	221	225205
24-35	198	212521
36-47	119	199122
48-59	92	187052

Table 2: Numbers of agemonths and deaths by age for DHS 2014.

Age	No. Deaths	No. Agemonths
0	349	9483
1-11	237	97115
12-23	132	99176
24-35	98	95117
36-47	72	90677
48-59	41	85908

Table 3: Numbers of agemonths and deaths by age for DHS 2008.

Age	No. Deaths	No. Agemonths
0	413	9858
1-11	240	101351
12-23	158	104532
24-35	134	100552
36-47	95	95684
48-59	53	91075

Table 4: Numbers of agemonths and deaths by age for DHS 2003.

Age	No. Deaths	No. Agemonths
0	190	5953
1-11	187	61637
12-23	103	64648
24-35	96	62826
36-47	70	61026
48-59	35	59181

Table 5: Numbers of agemonths and deaths by age for DHS 1998.

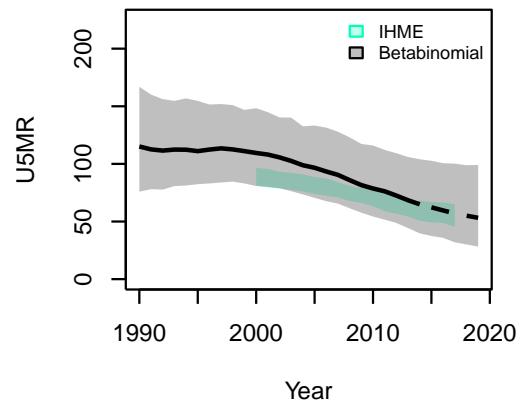
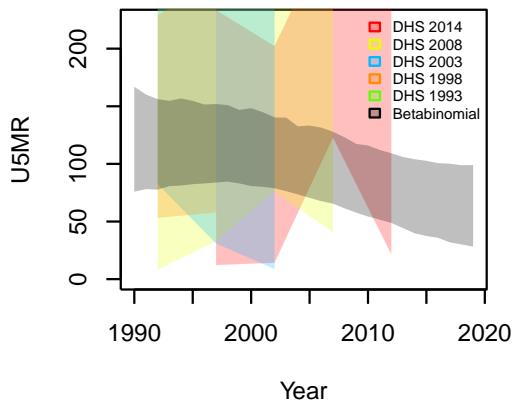
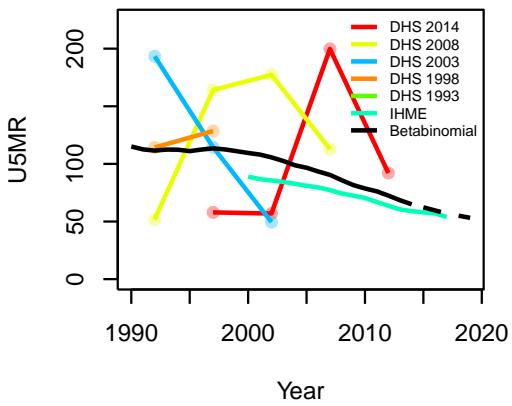
Age	No. Deaths	No. Agemonths
0	114	2749
1-11	70	29622
12-23	45	32200
24-35	35	31348
36-47	33	31326
48-59	19	29596

Table 6: Numbers of agemonths and deaths by age for DHS 1993.

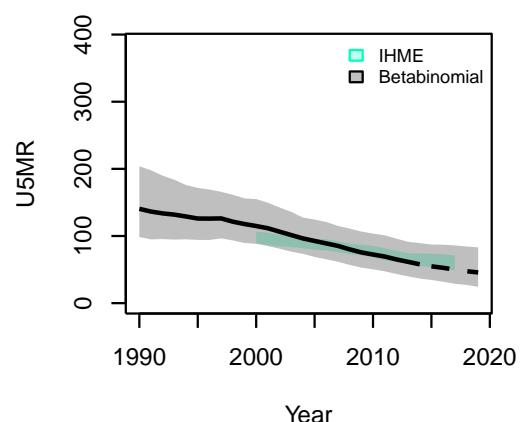
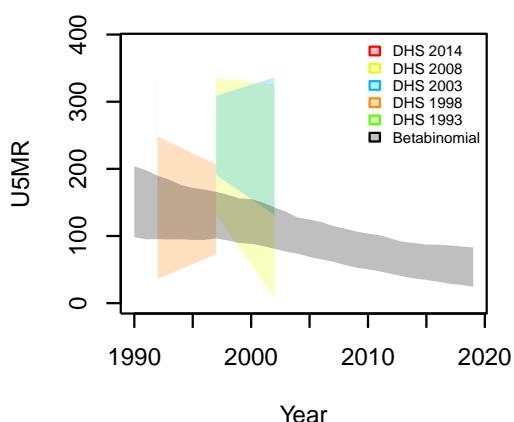
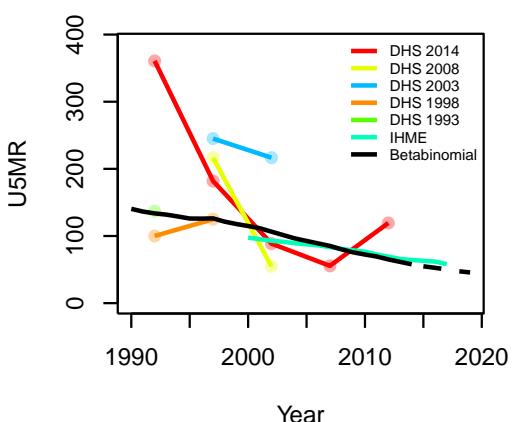
3 Admin 2 Figures

The following few pages have estimates by area across time with underlying data included. There are six admin areas per page. Colored lines with circular points and light grey uncertainty bands are 5-year survey-weighted estimates of U5MR for years 1990–1994 up to 2015–2019 depending on survey timing. For a survey that ends in the middle of a 5-year period, we plot the estimates at the mid-point of the years in that interval for which the survey provides data. Black lines and corresponding intervals represent posterior medians and 95% uncertainty intervals respectively for the betabinomial model.

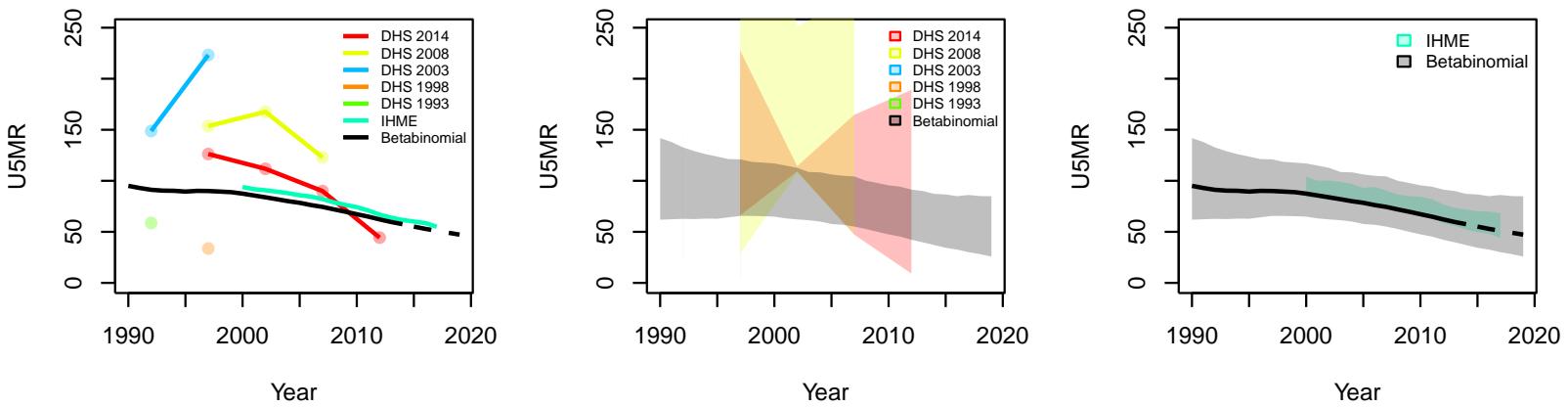
Adansi North, Ashanti



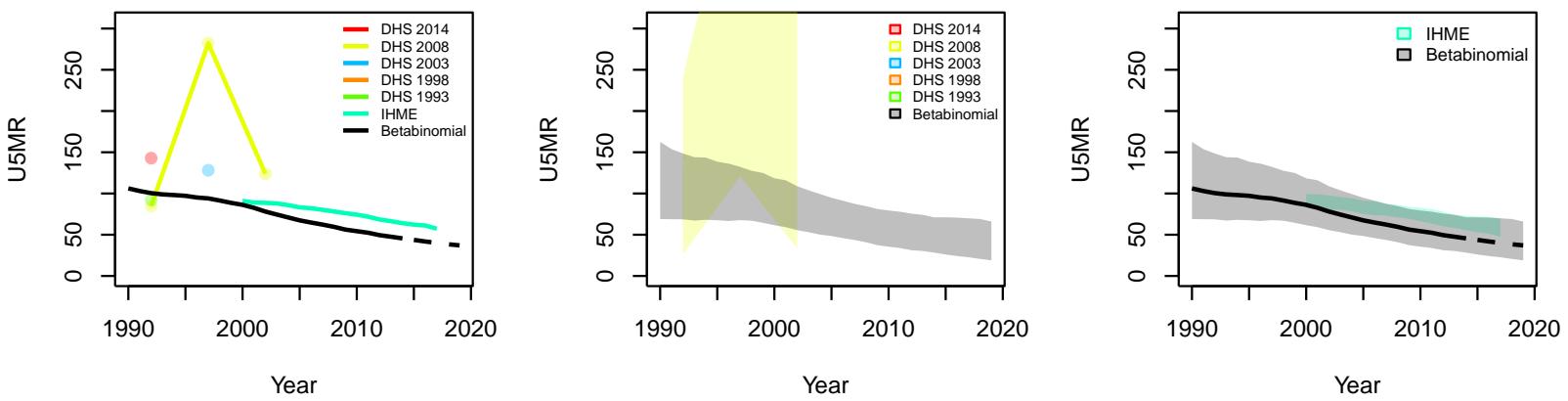
Adansi South, Ashanti



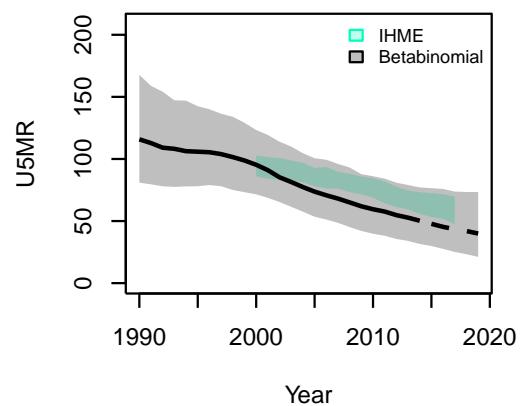
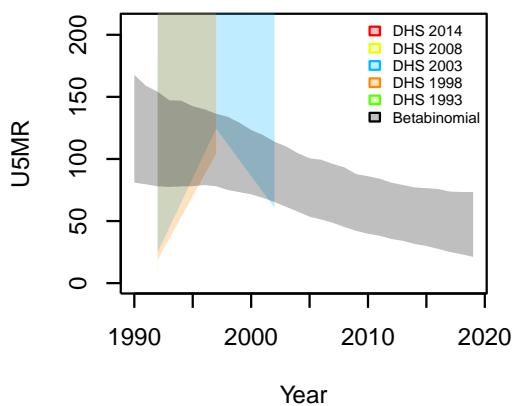
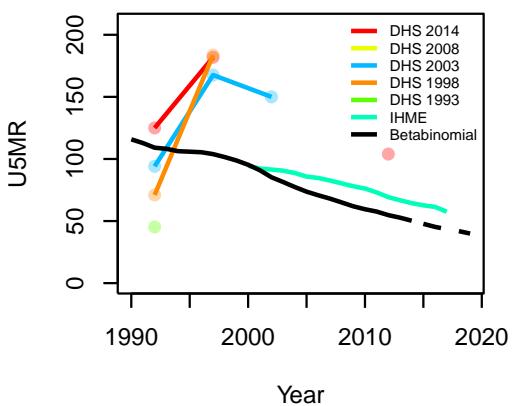
Afigya Sekyere, Ashanti



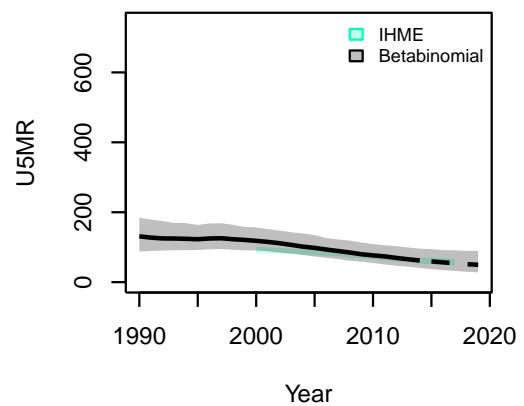
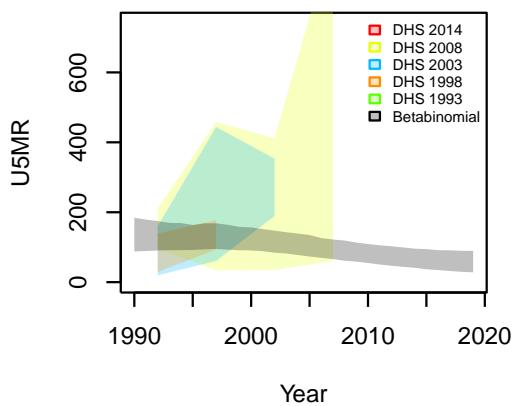
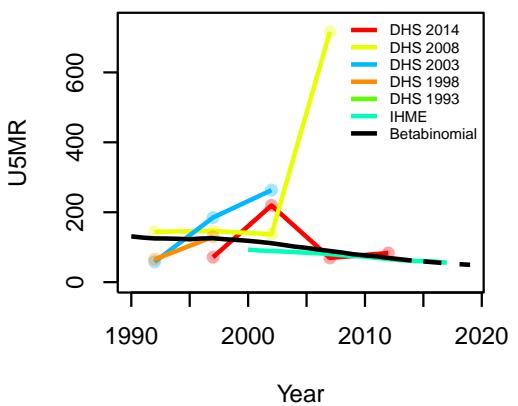
Ahafo Ano North, Ashanti



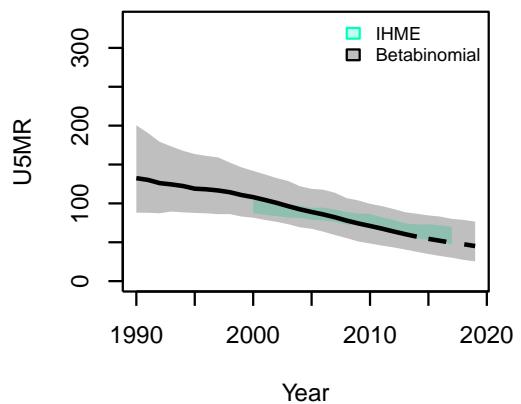
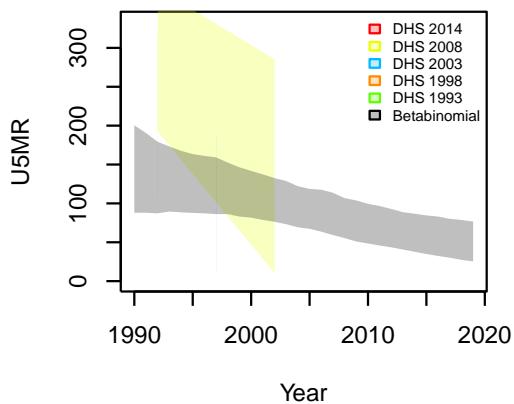
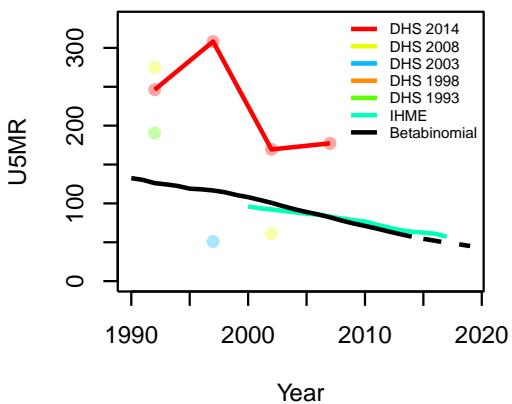
Ahafo Ano South, Ashanti



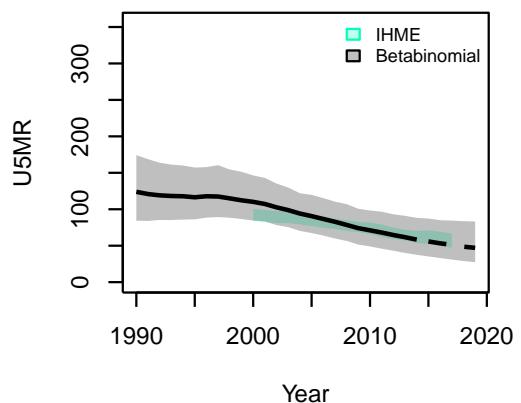
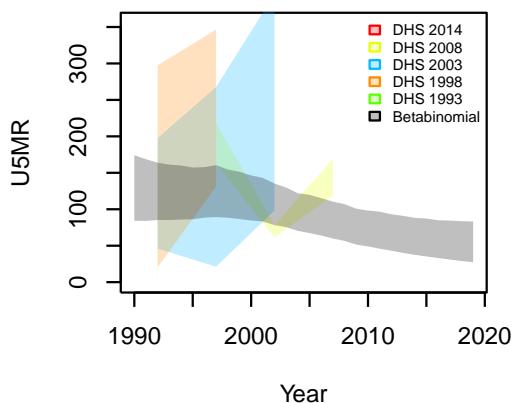
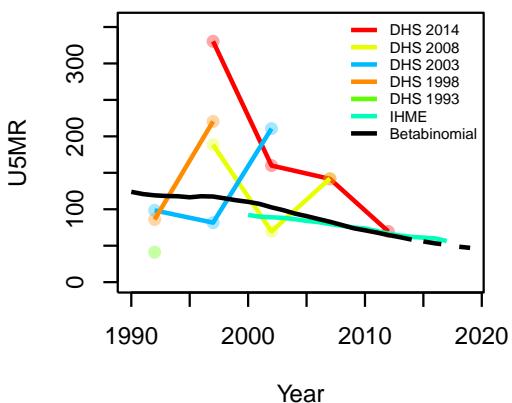
Amansie Central, Ashanti



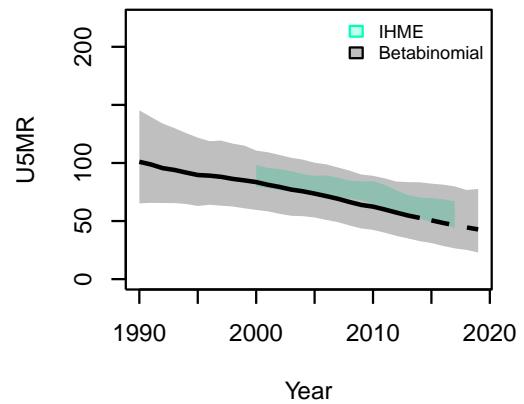
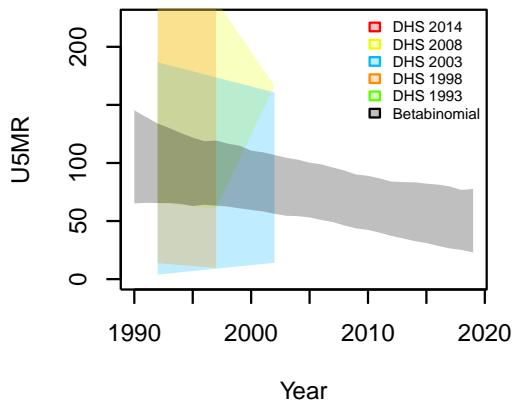
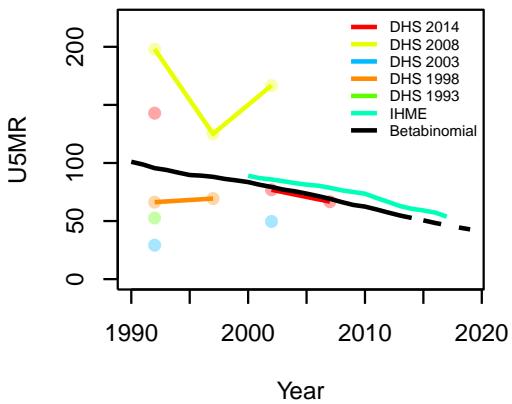
Amansie East, Ashanti



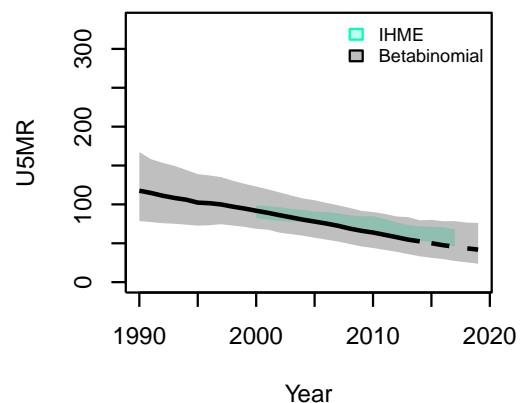
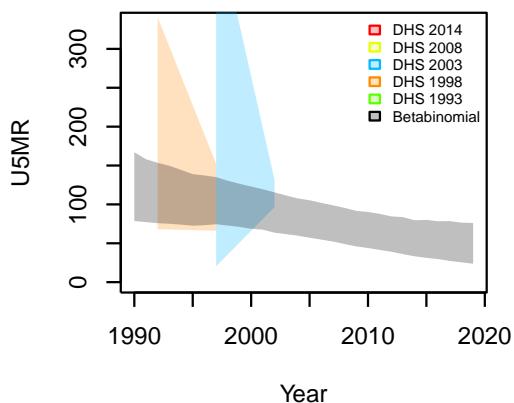
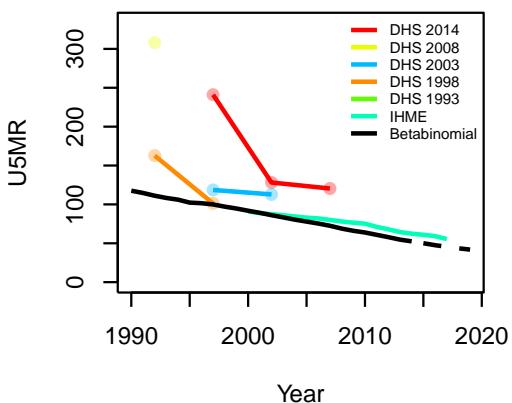
Amansie West, Ashanti



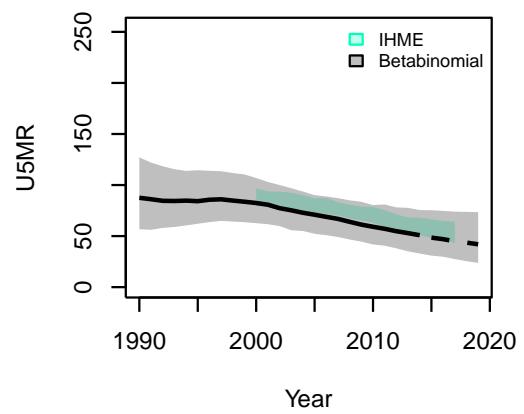
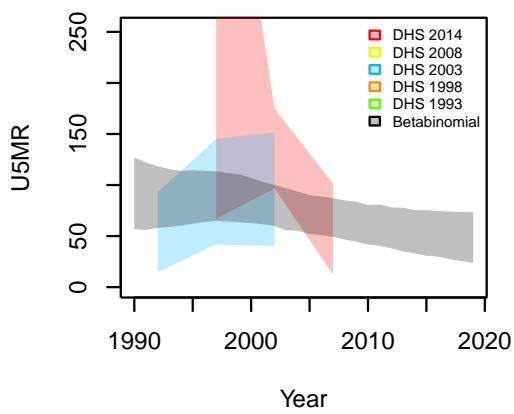
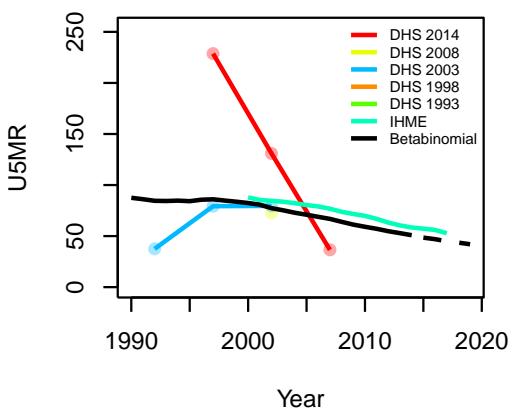
Asante Akim North, Ashanti



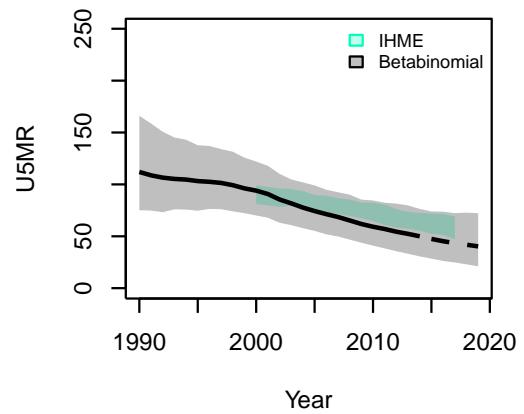
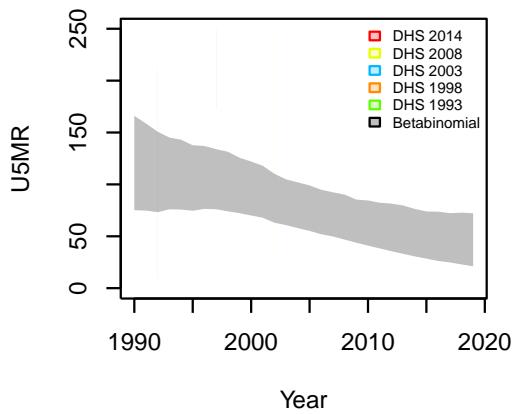
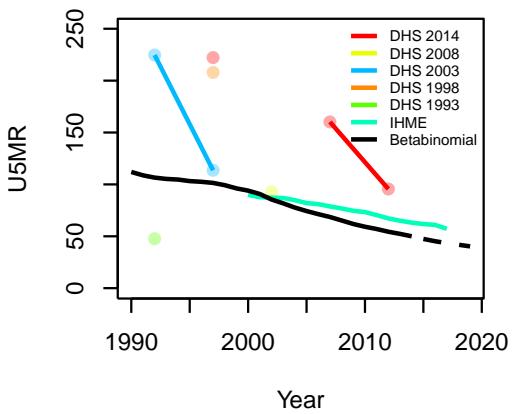
Asante Akim South, Ashanti



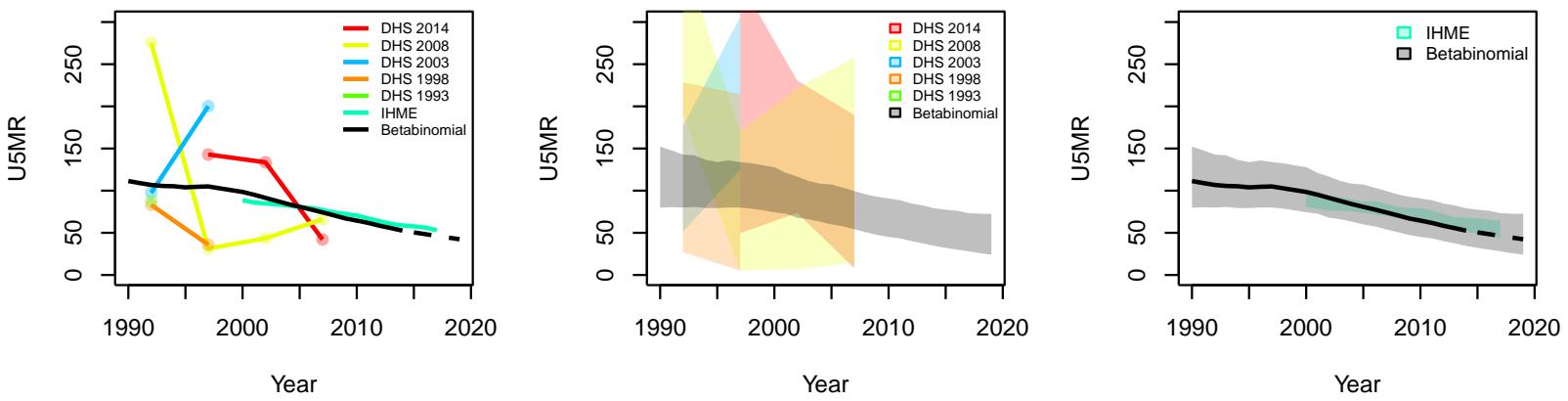
Atwima, Ashanti



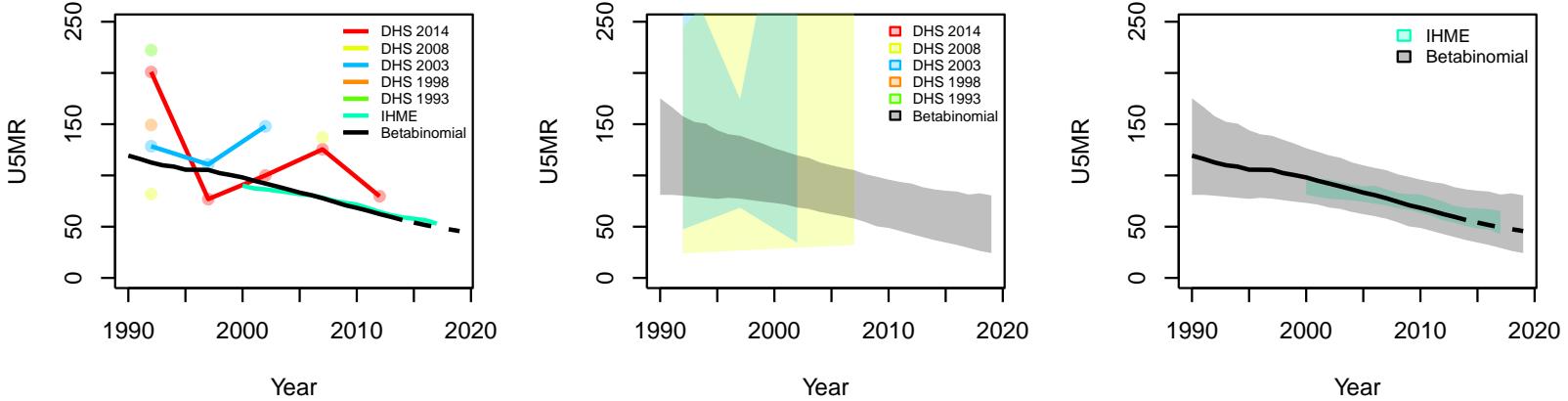
Atwima Mponua, Ashanti



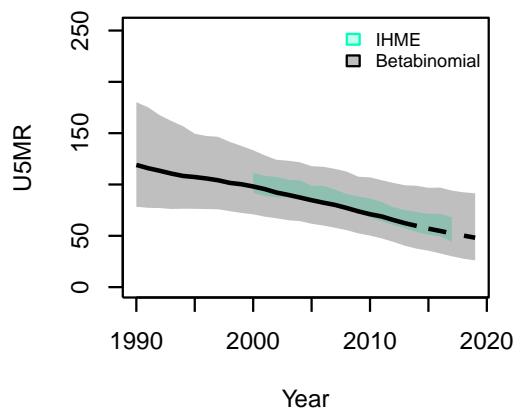
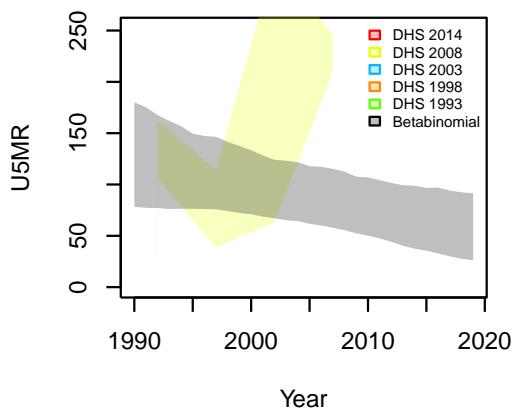
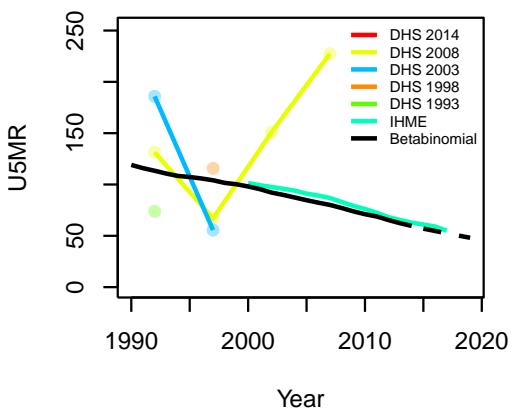
Bosomtwe-Kwanwoma, Ashanti



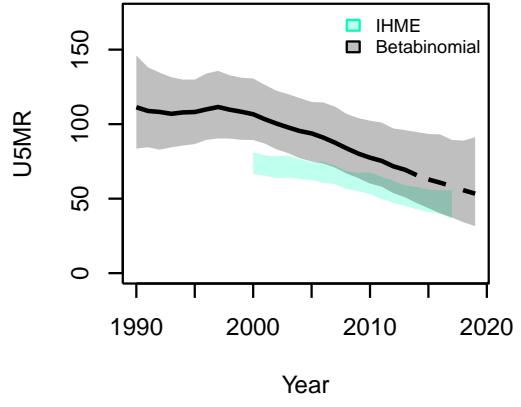
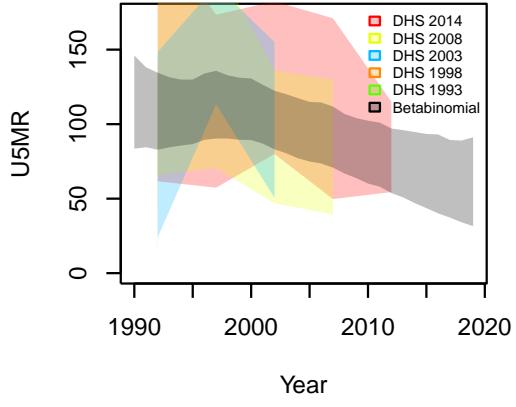
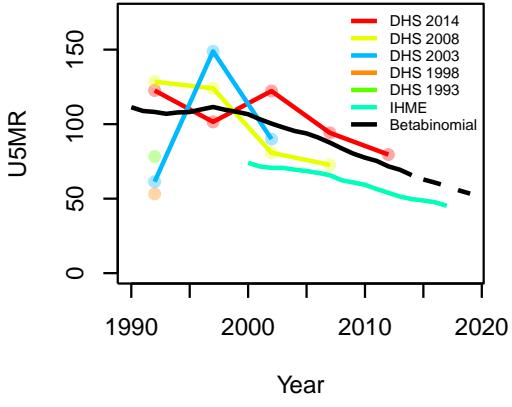
Ejisu-Juabeng, Ashanti



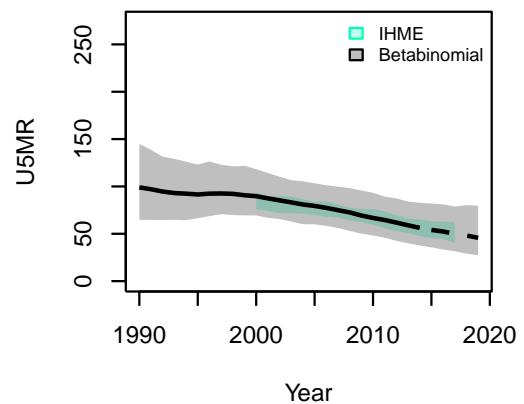
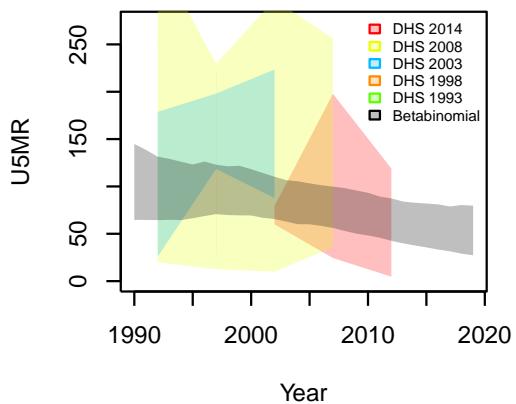
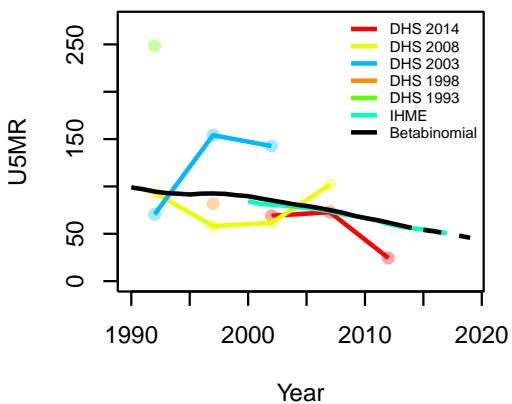
Ejura Sekyedumase, Ashanti



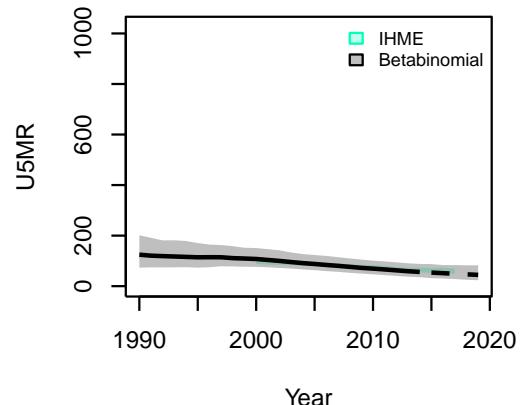
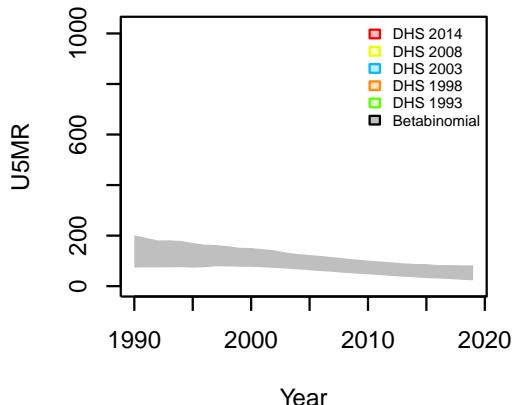
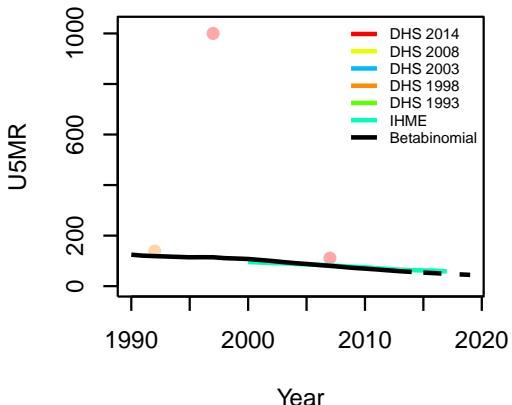
Kumasi, Ashanti



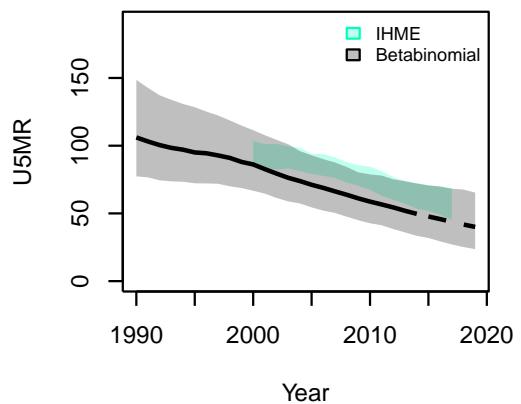
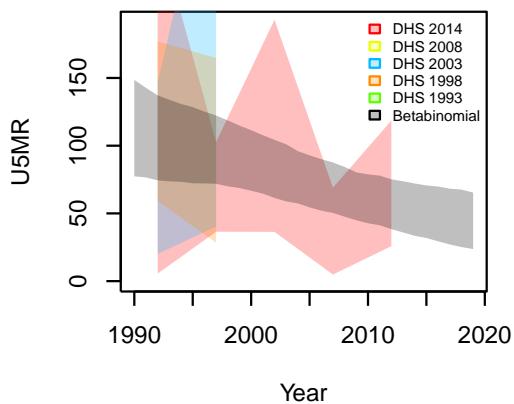
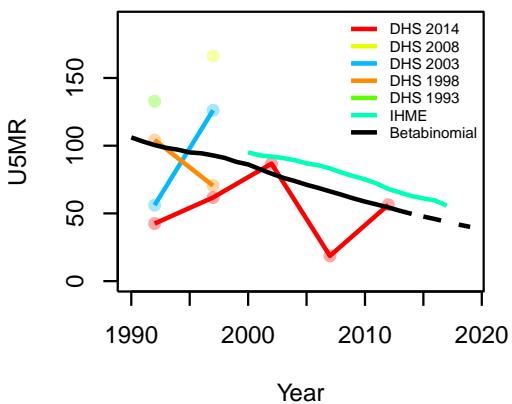
Kwabre, Ashanti



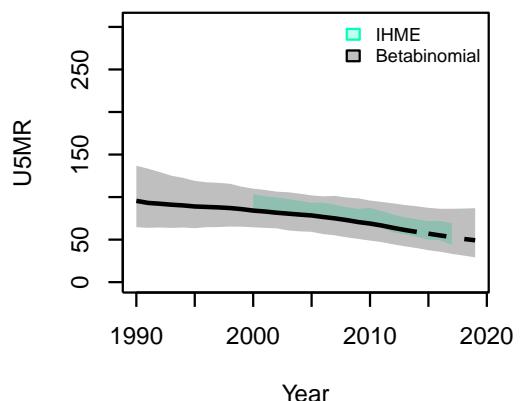
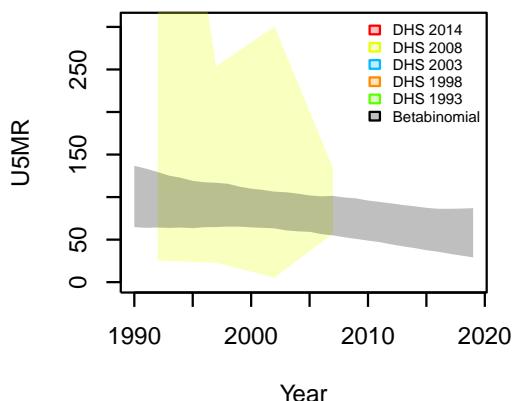
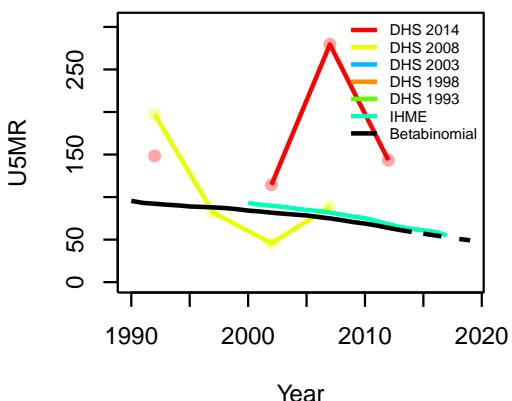
Obuasi Municipal, Ashanti



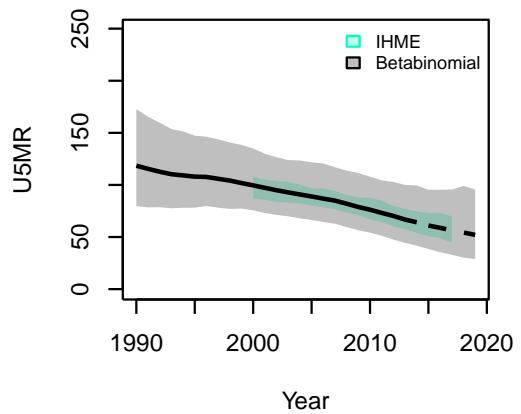
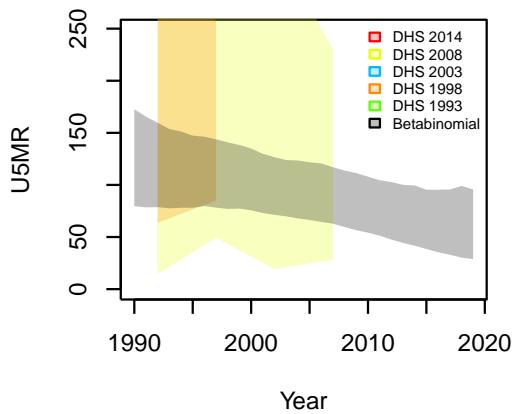
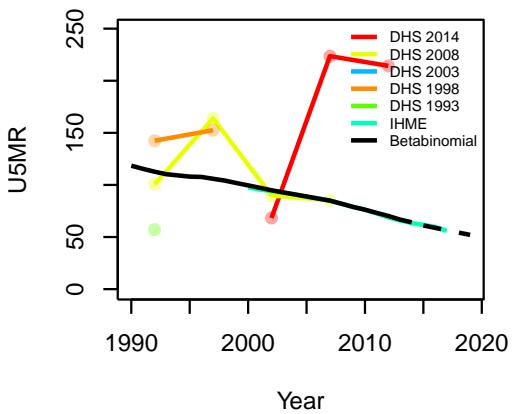
Offinso, Ashanti



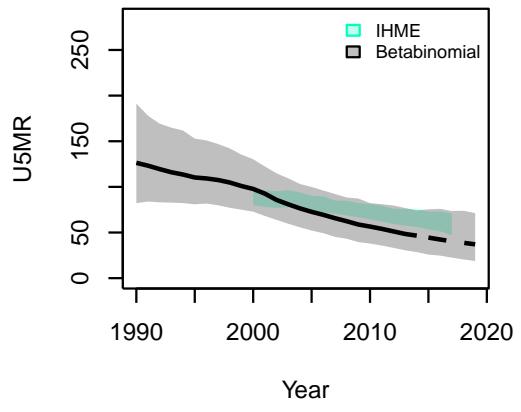
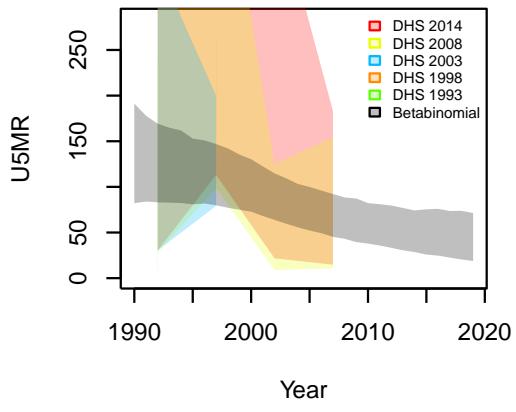
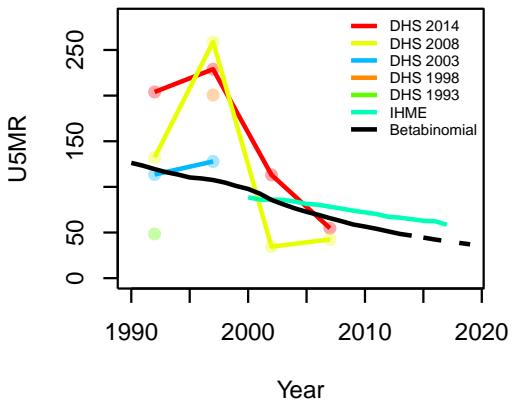
Sekyere East, Ashanti



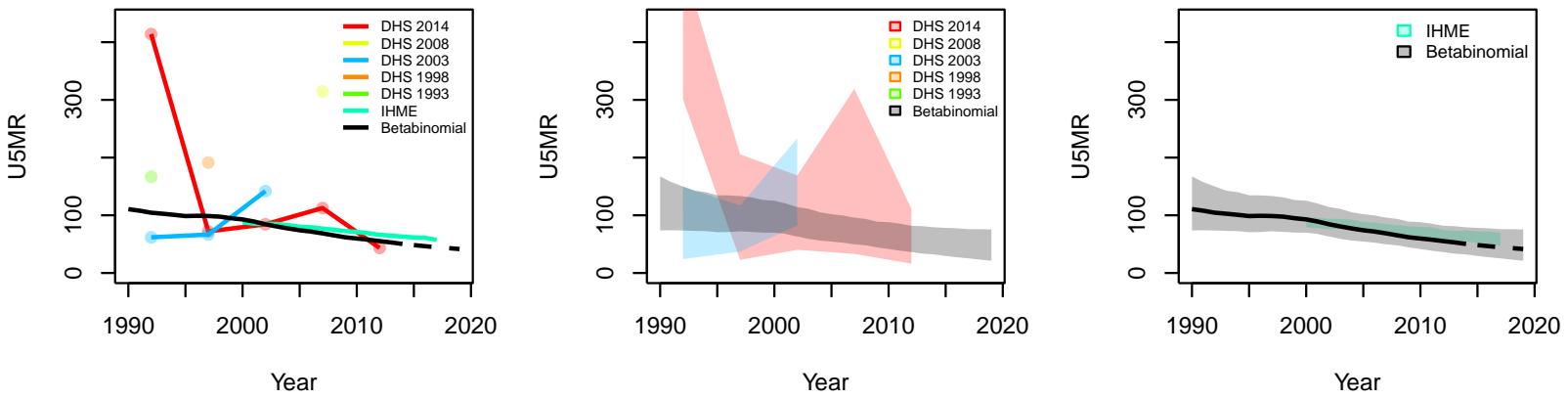
Sekyere West, Ashanti



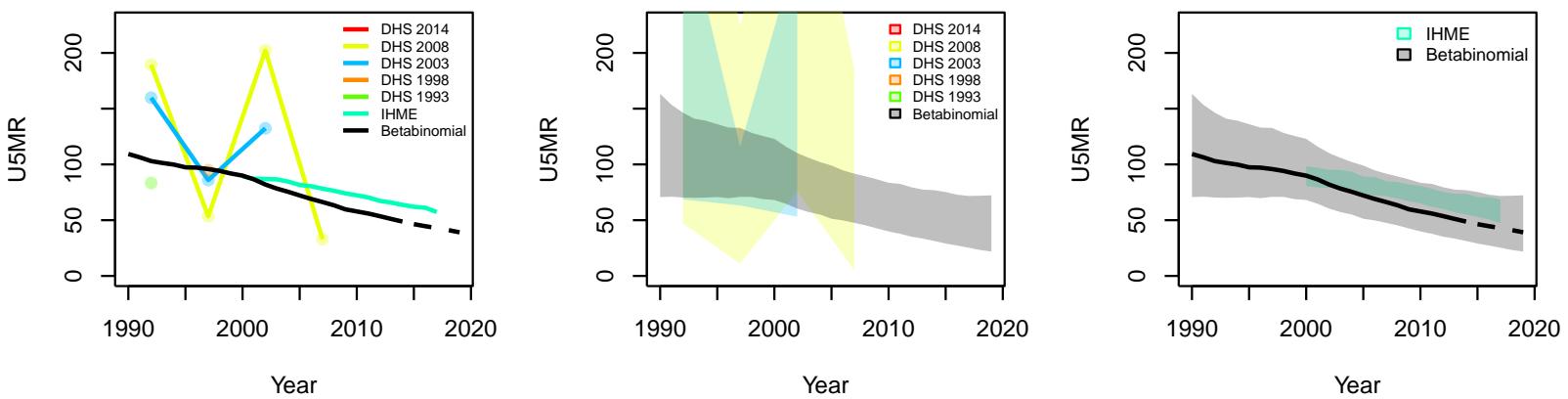
Asunafo North, Brong Ahafo



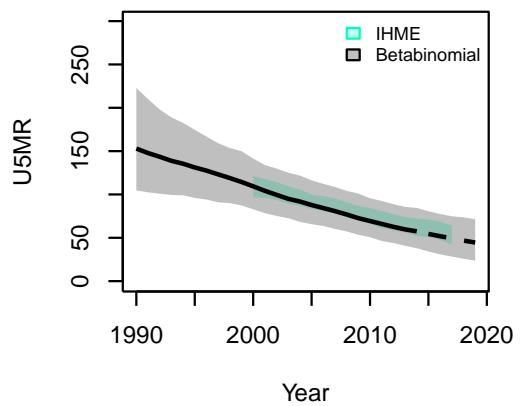
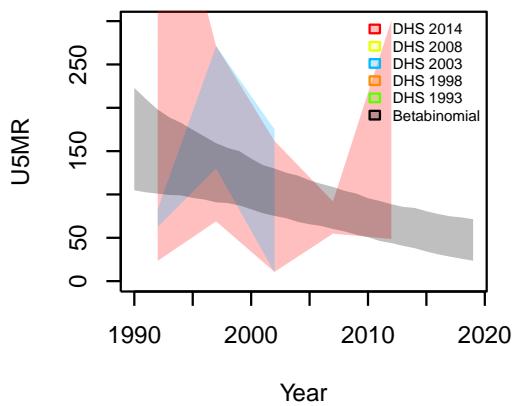
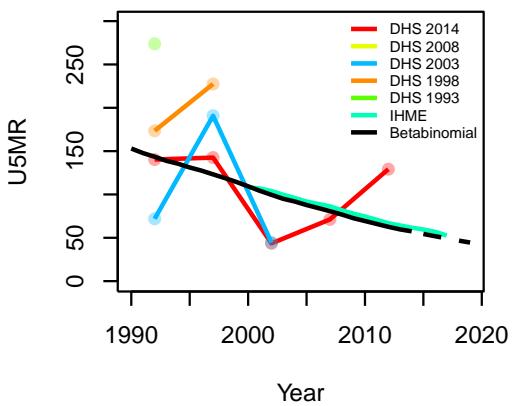
Asunafu South, Brong Ahafo



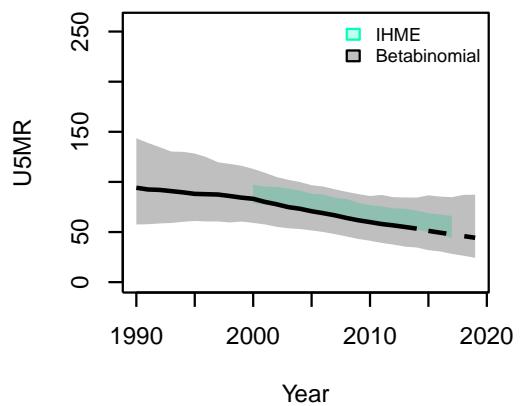
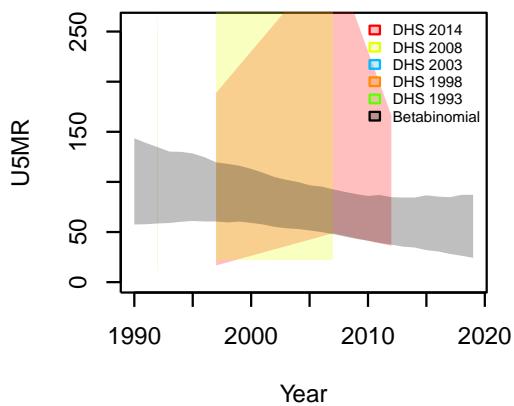
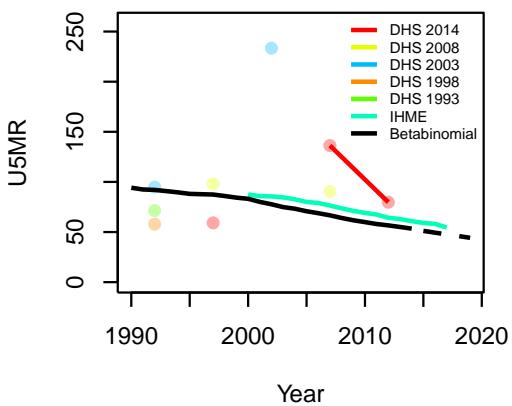
Asutifi, Brong Ahafo



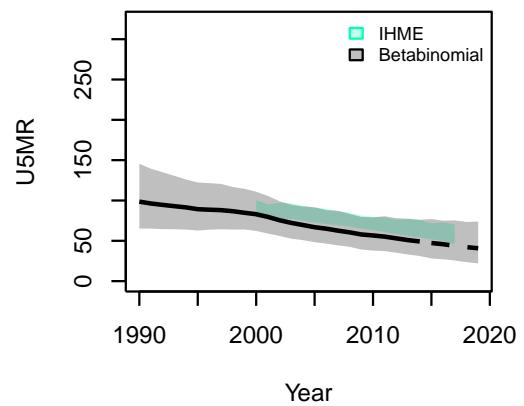
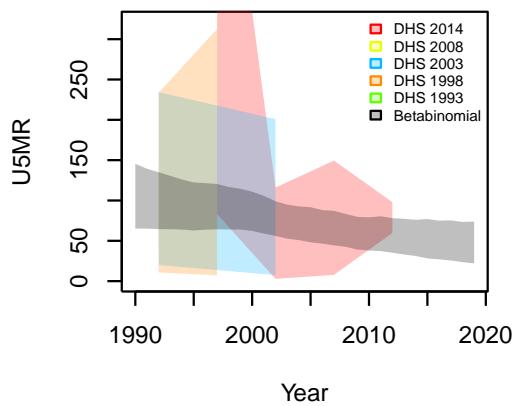
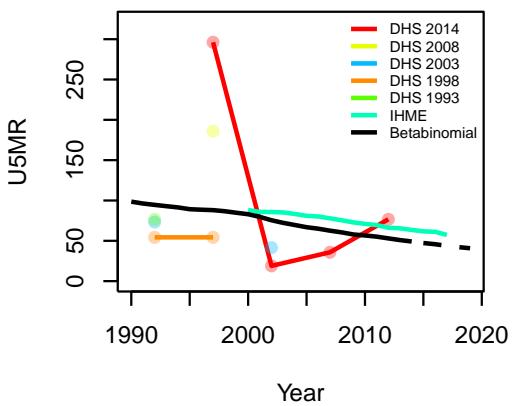
Atebubu-Amantin, Brong Ahafo



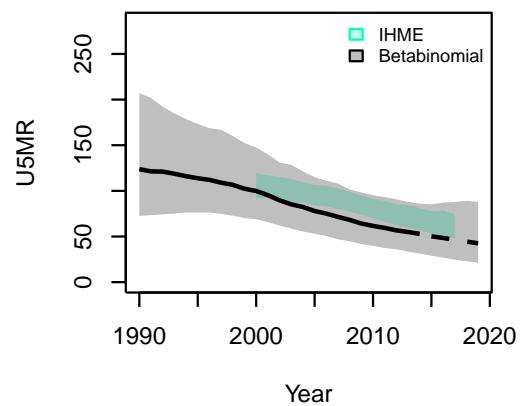
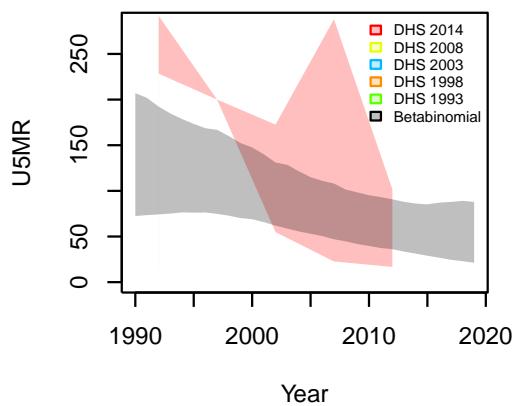
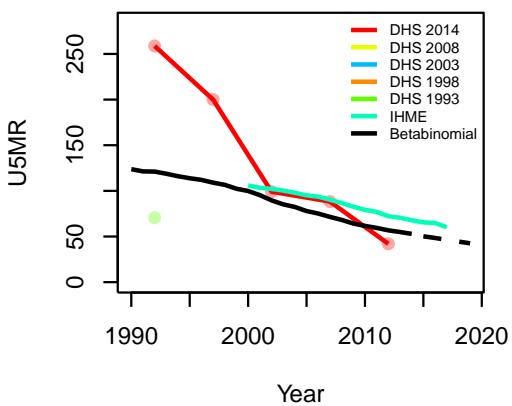
Berekum, Brong Ahafo



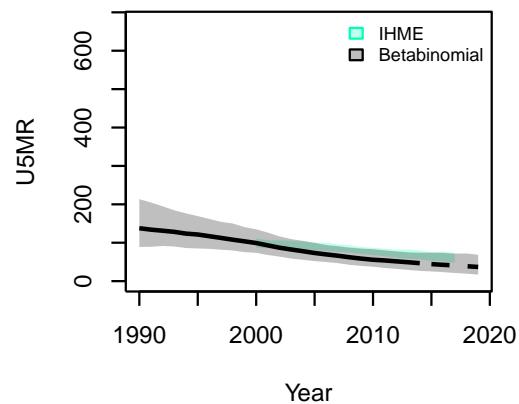
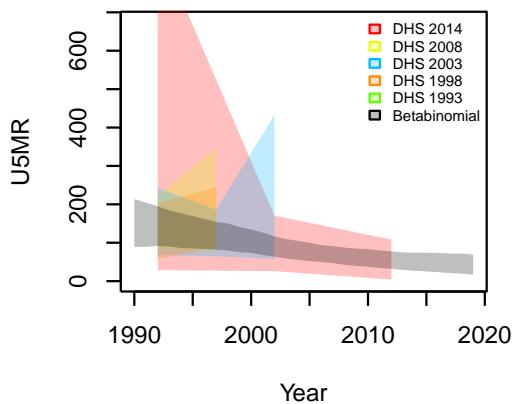
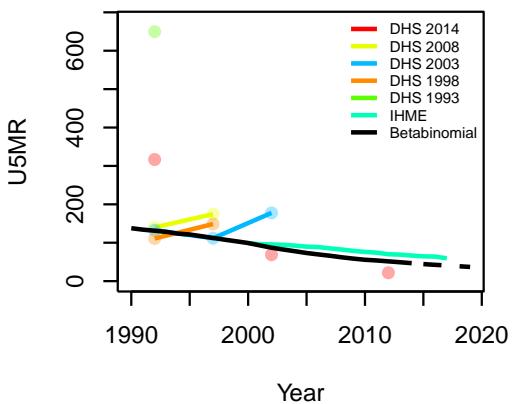
Dormaa, Brong Ahafo



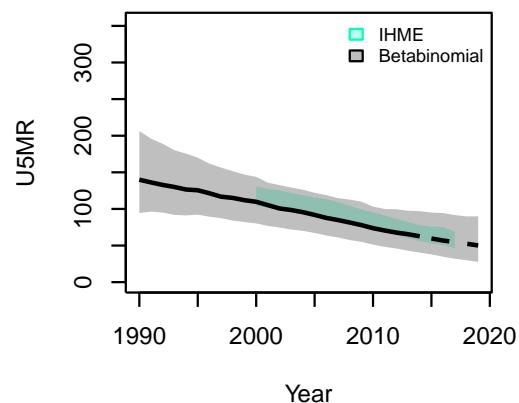
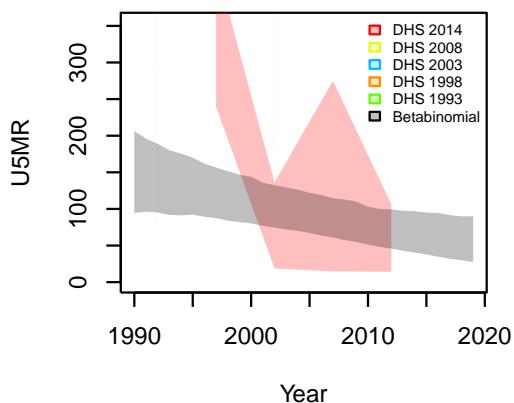
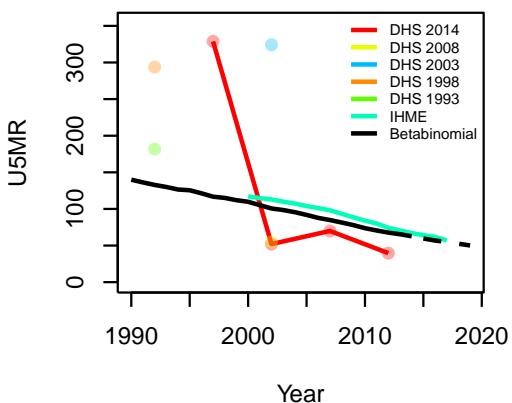
Jaman North, Brong Ahafo



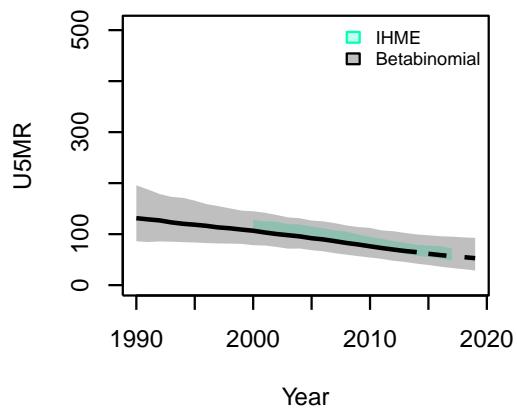
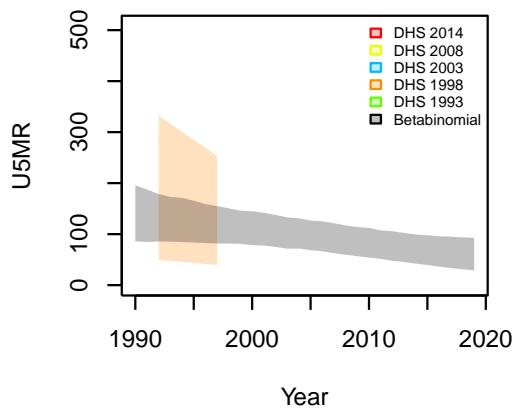
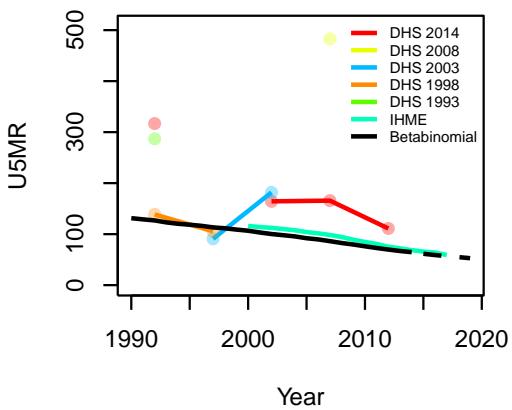
Jaman South, Brong Ahafo



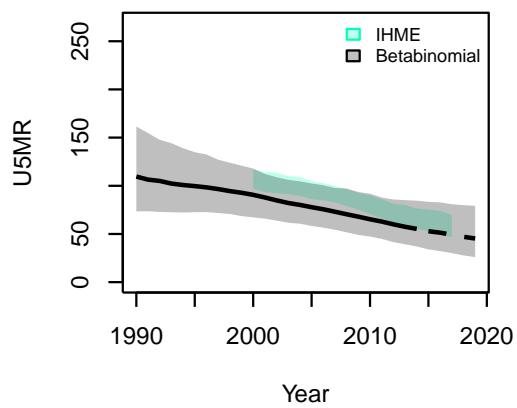
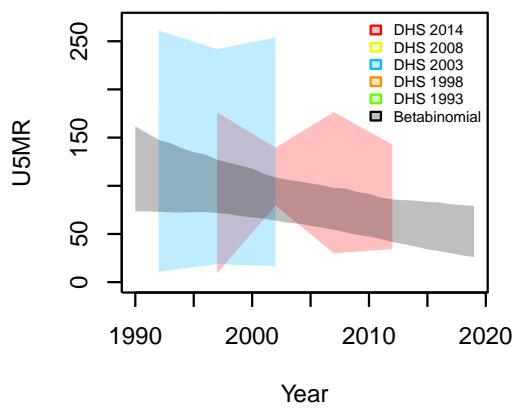
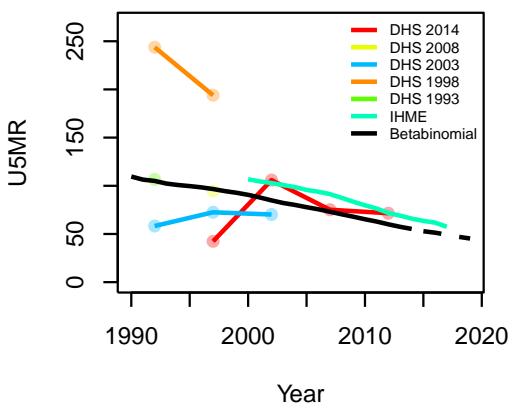
Kintampo North, Brong Ahafo



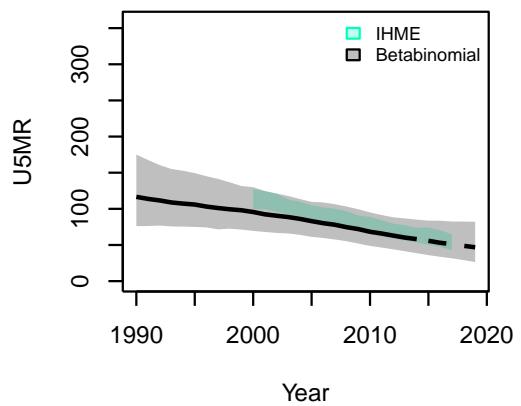
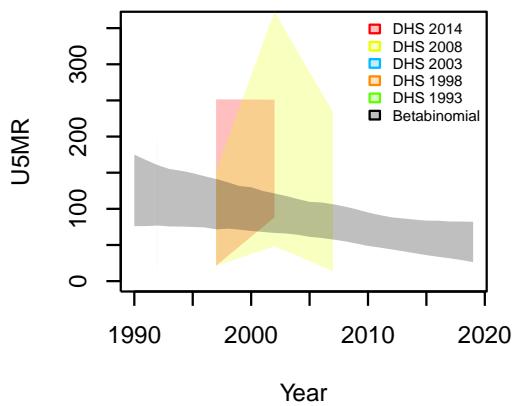
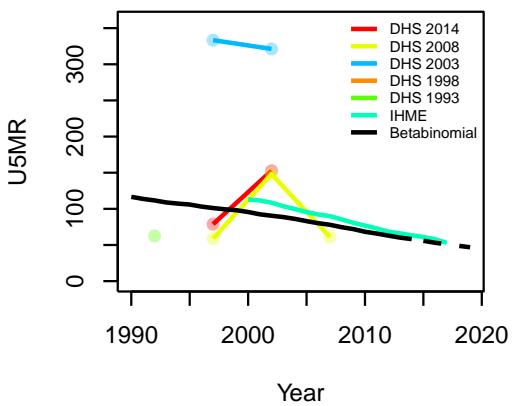
Kintampo South, Brong Ahafo



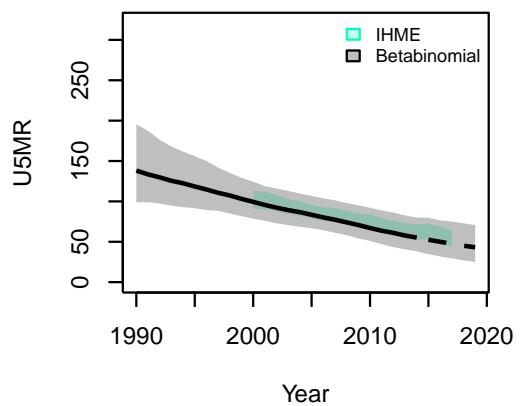
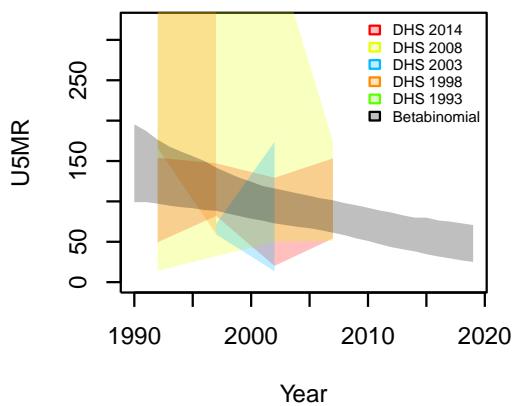
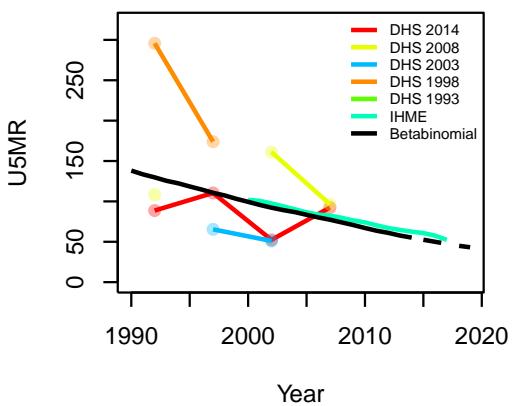
Nkoranza, Brong Ahafo



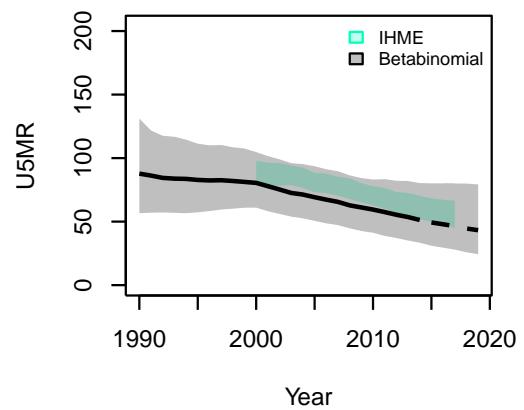
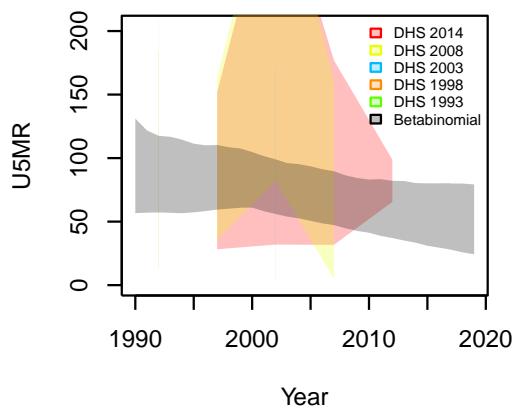
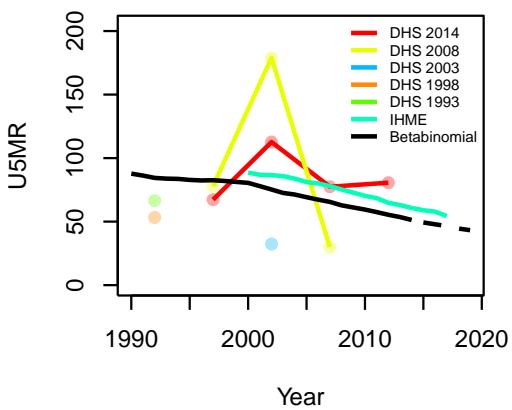
Pru, Brong Ahafo



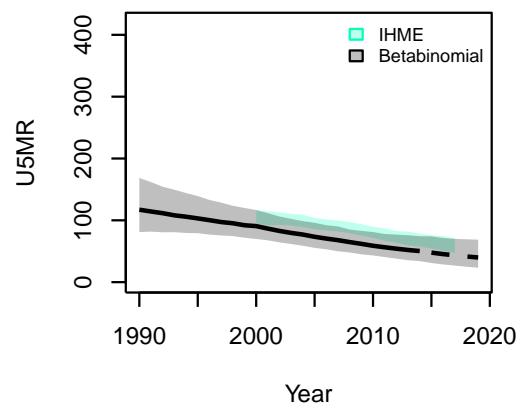
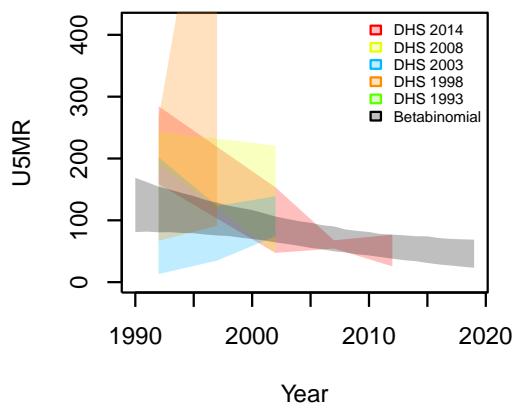
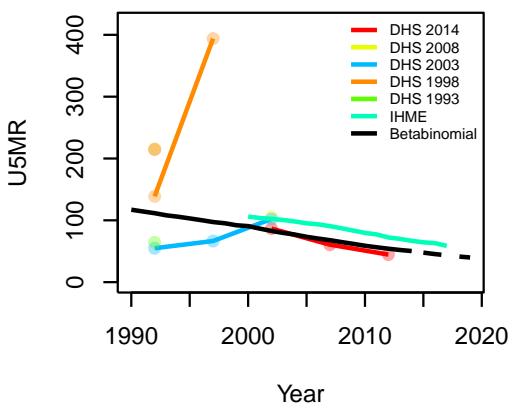
Sene, Brong Ahafo



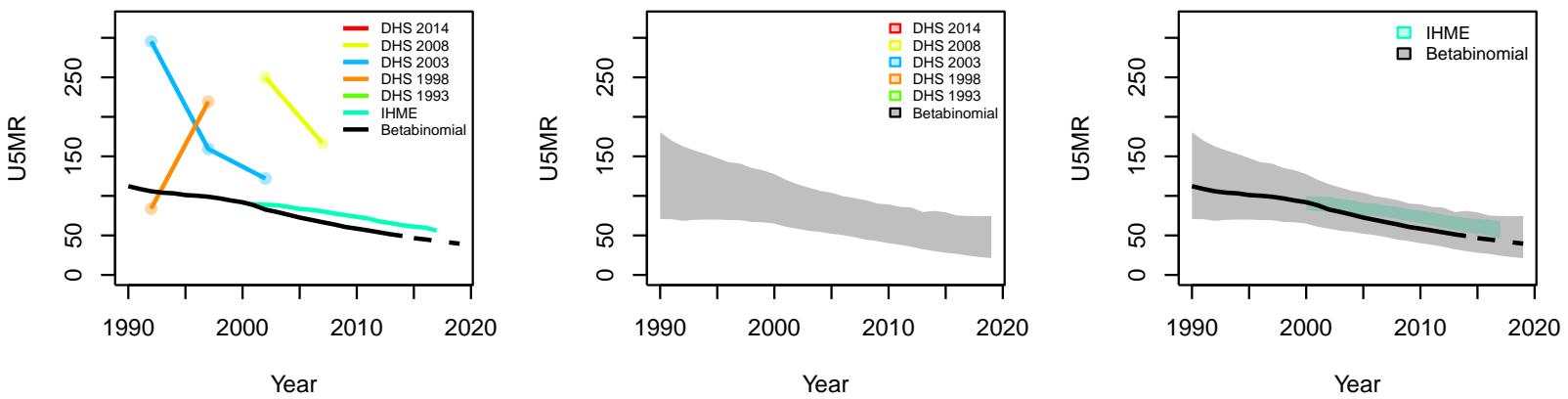
Sunyani, Brong Ahafo



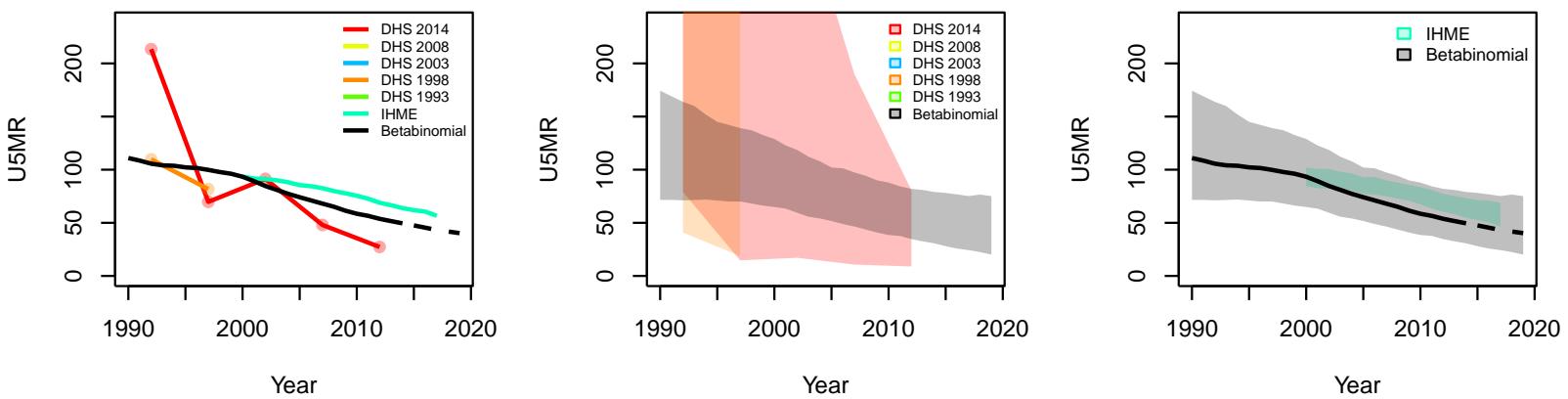
Tain, Brong Ahafo



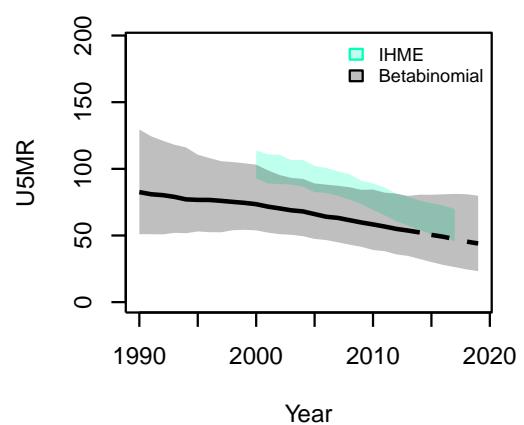
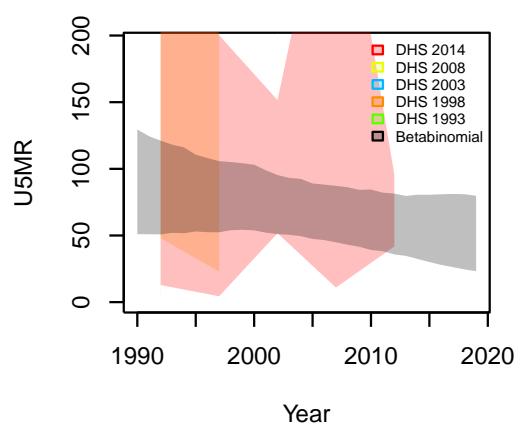
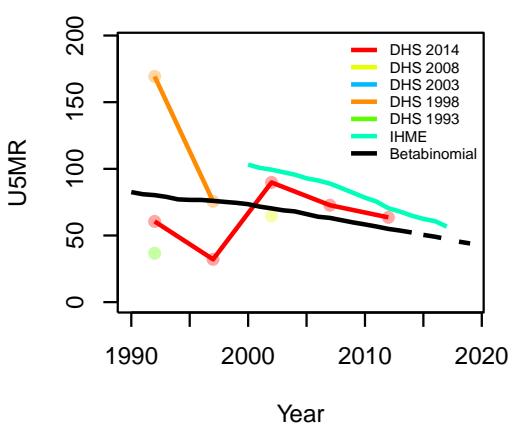
Tano North, Brong Ahafo



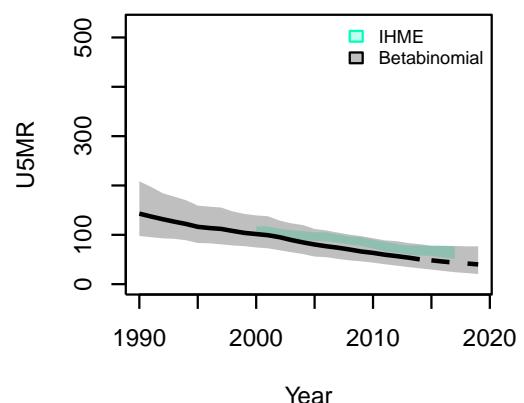
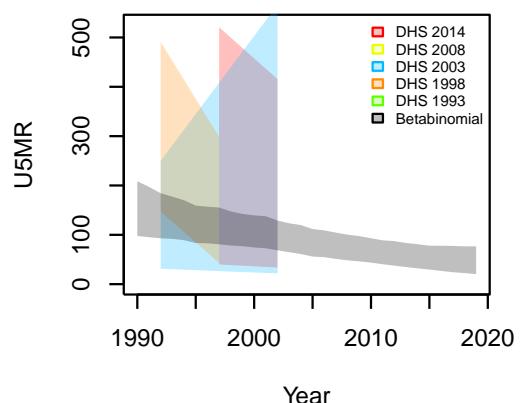
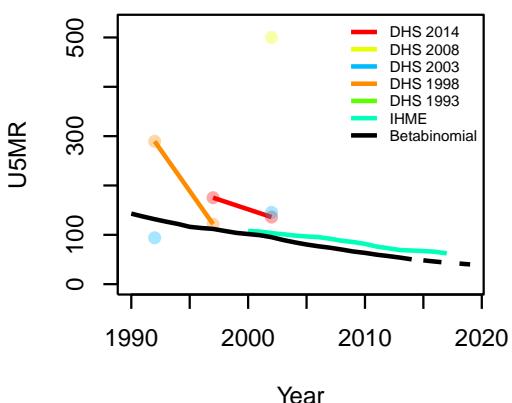
Tano South, Brong Ahafo



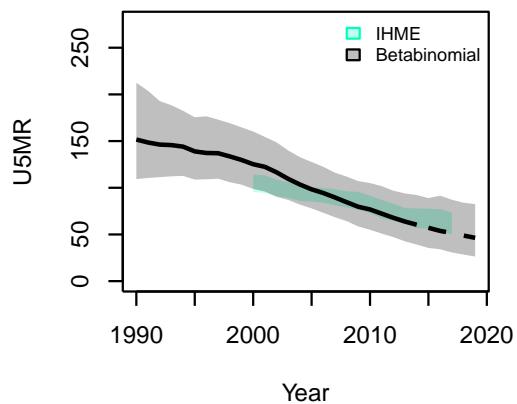
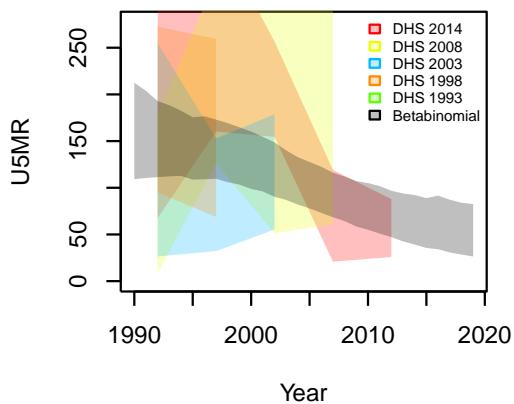
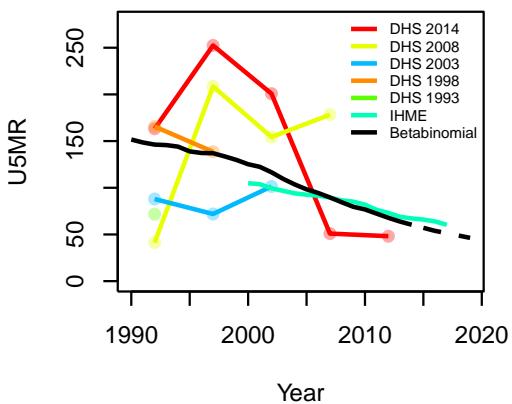
Techiman, Brong Ahafo



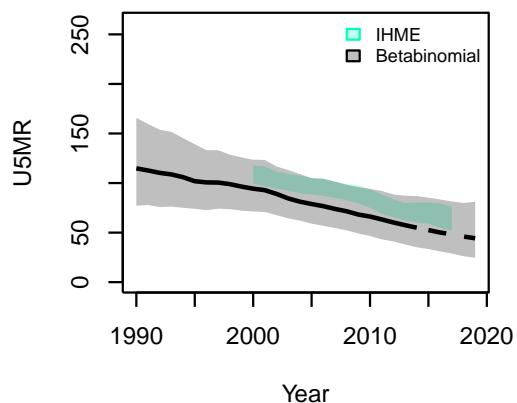
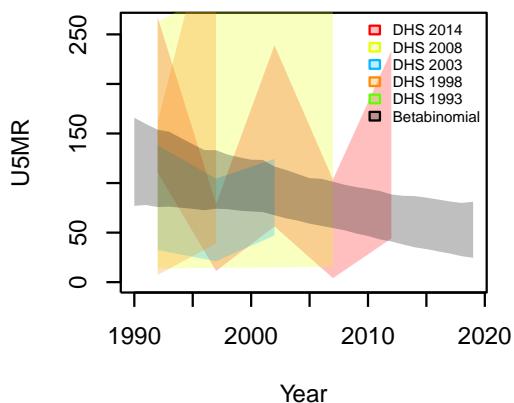
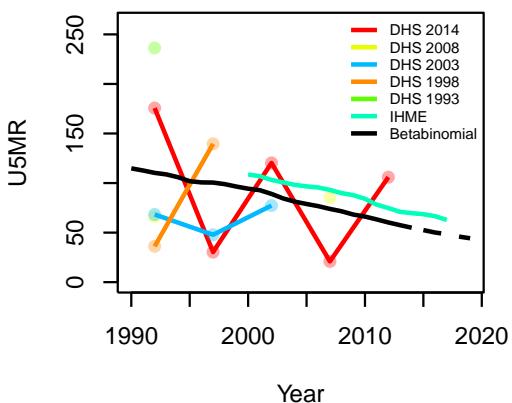
Abura-Asebu-Kwamankese, Central



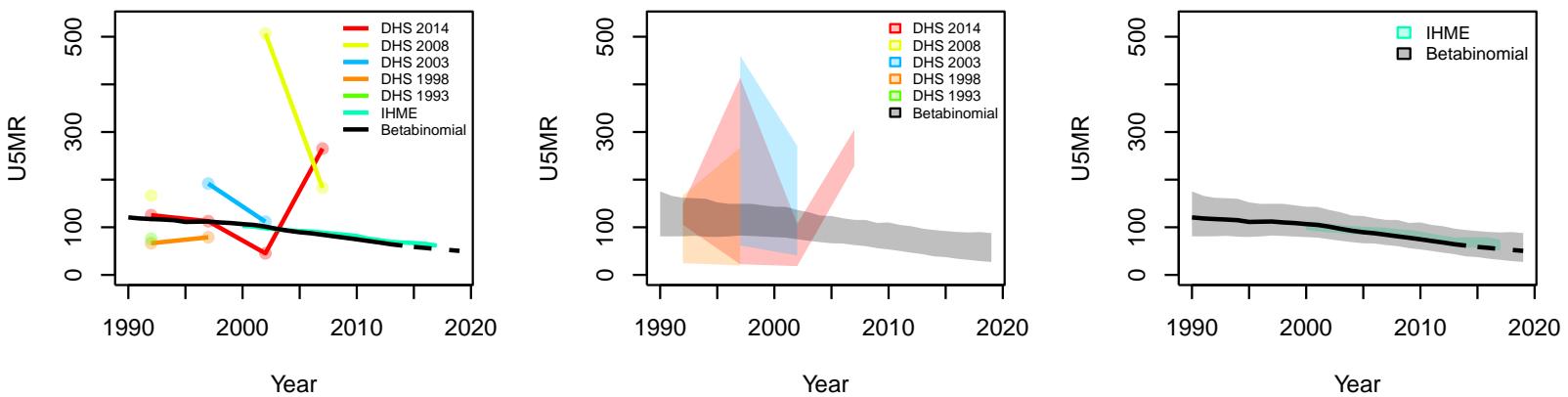
Agona, Central



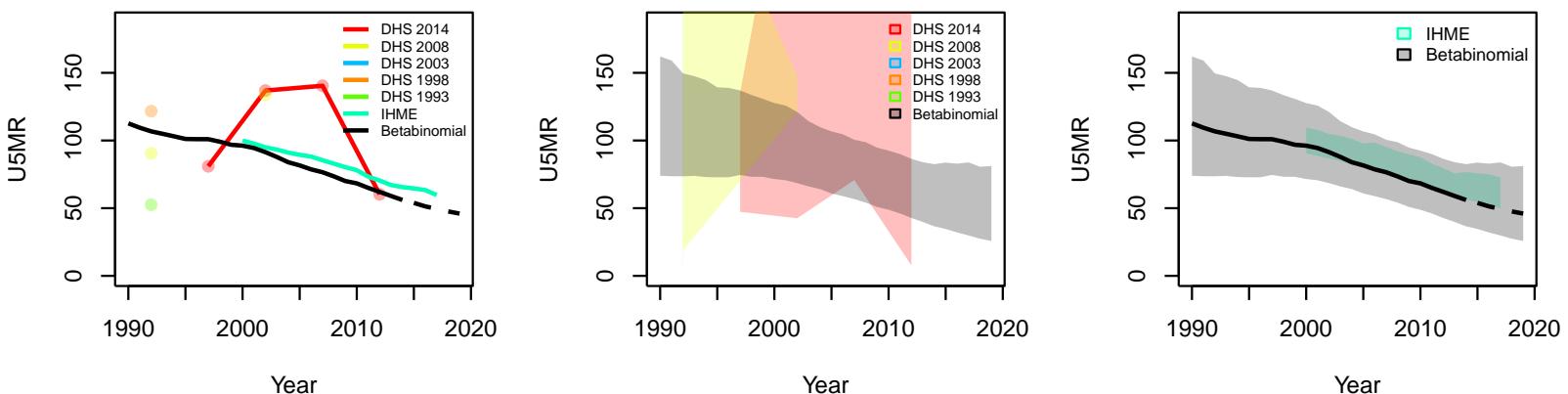
Ajumako-Enyan-Esiam, Central



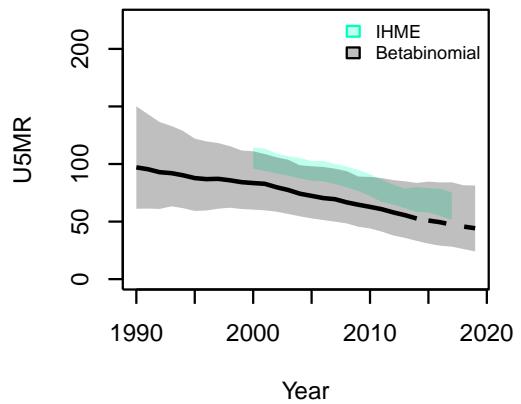
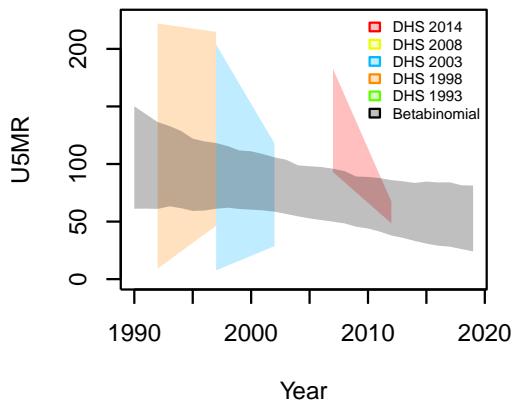
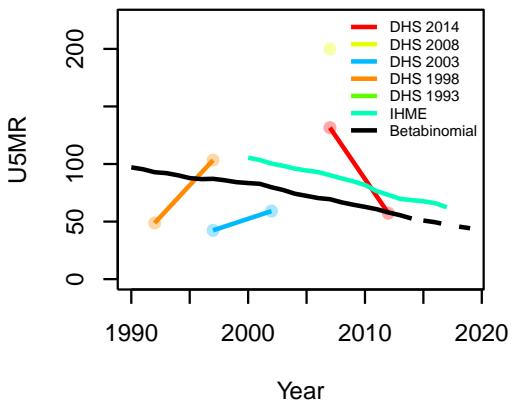
Asikuma Odoben Brakwa, Central



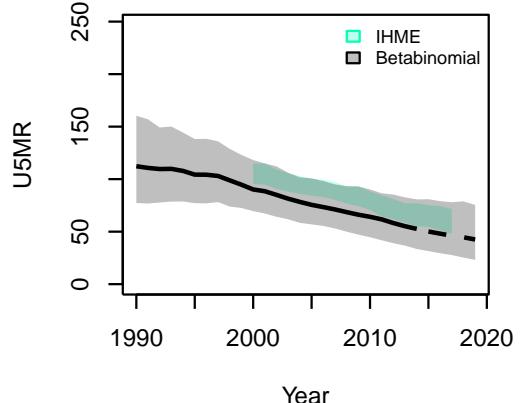
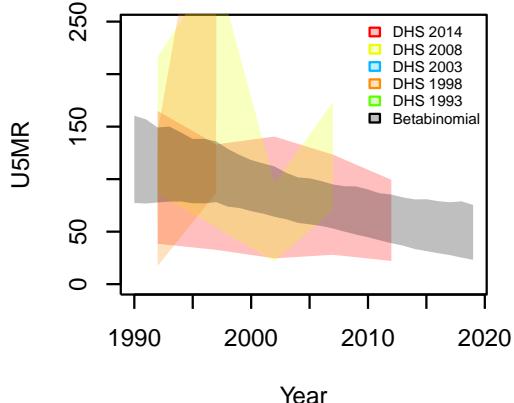
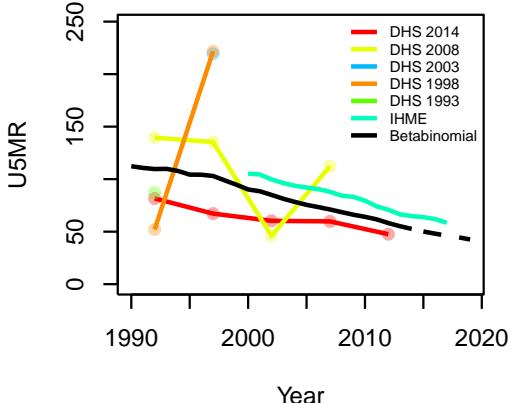
Assin North, Central



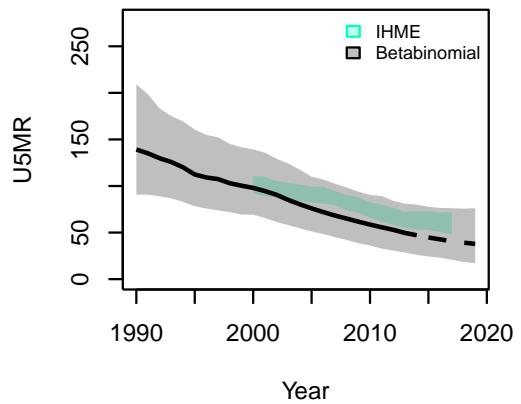
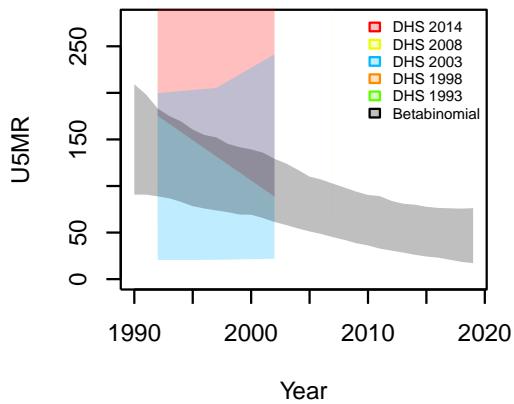
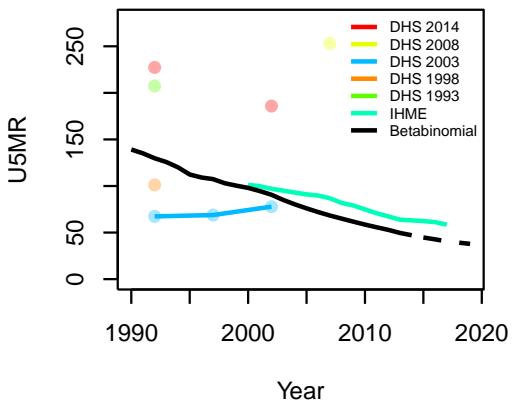
Assin South, Central



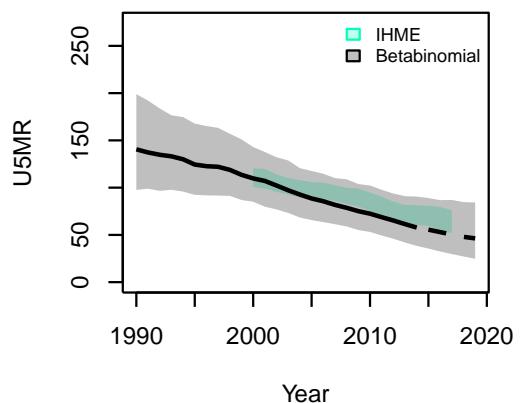
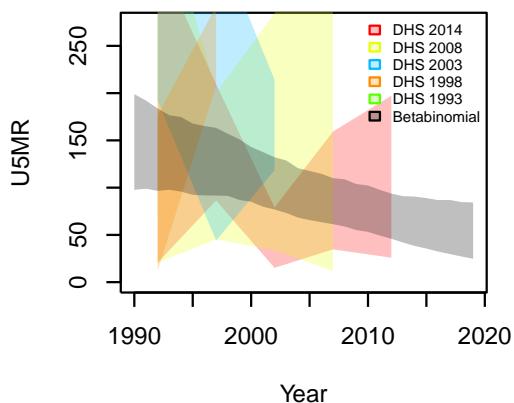
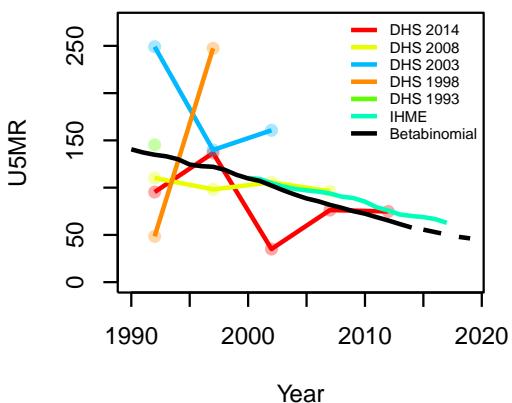
Awutu Efutu Senya, Central



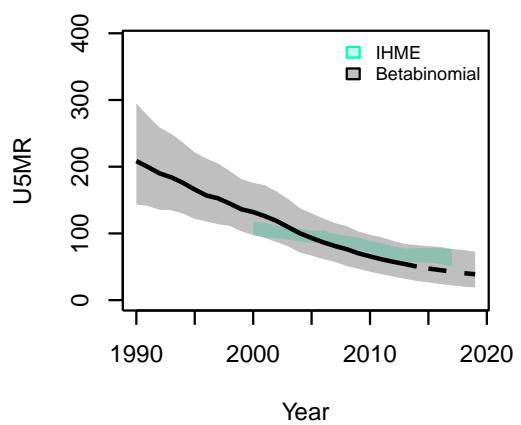
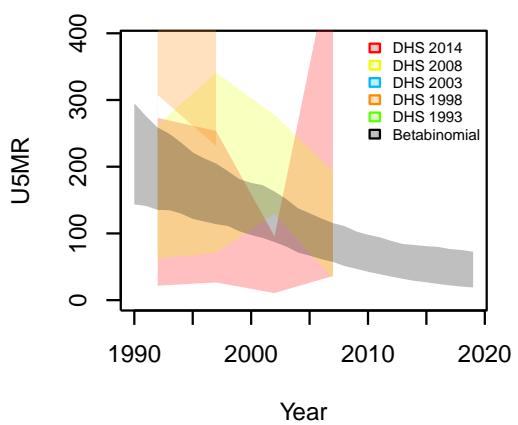
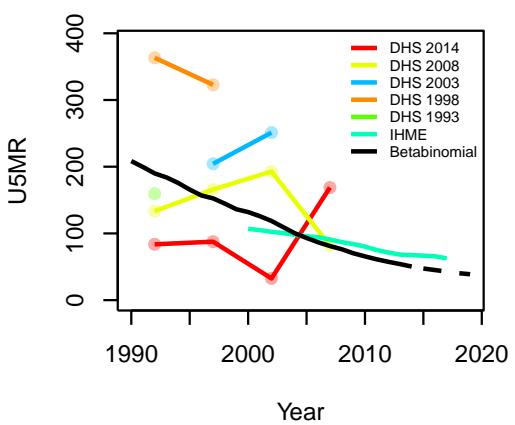
Cape Coast, Central



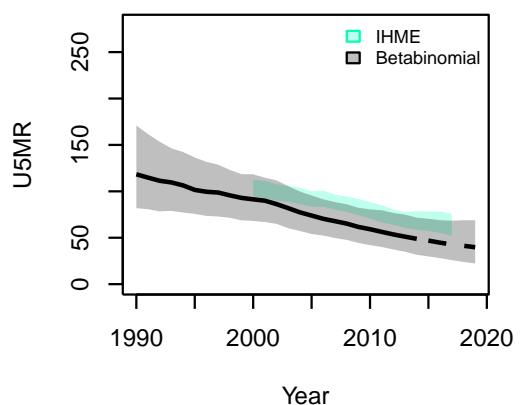
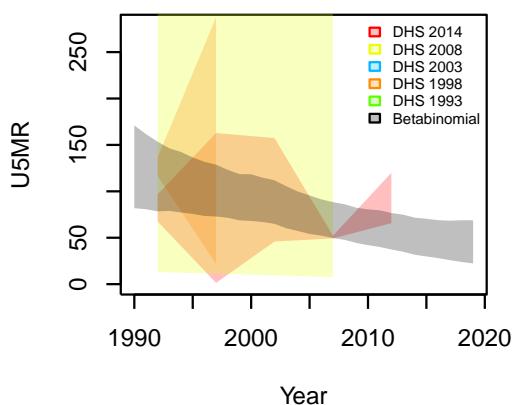
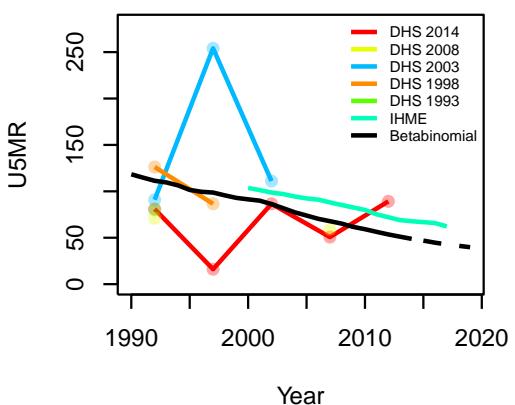
Gomoa, Central



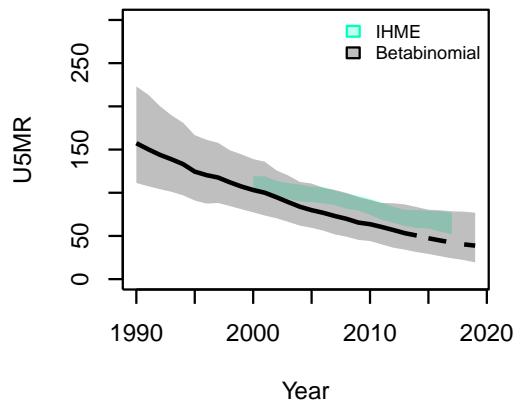
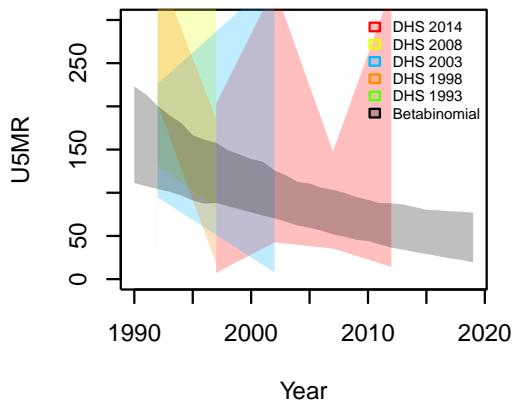
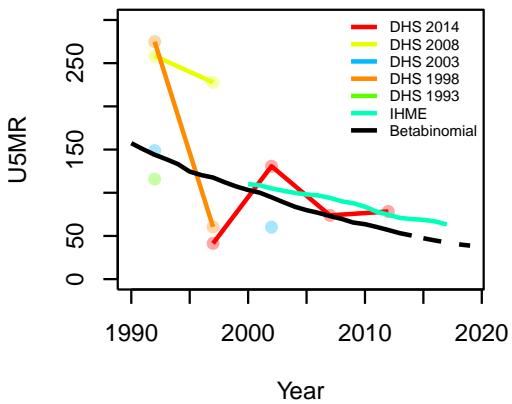
Komenda-Edina-Eguafu-Abirem, Central



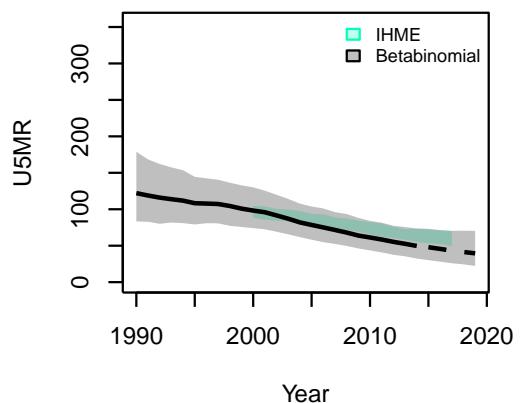
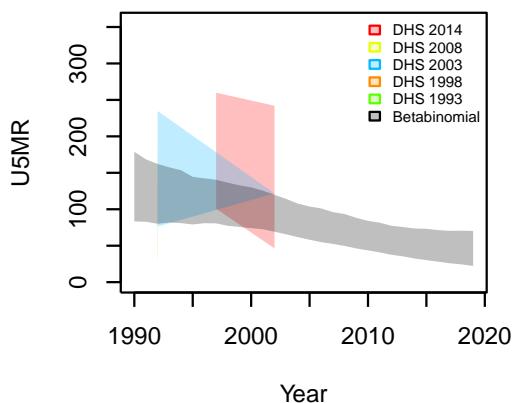
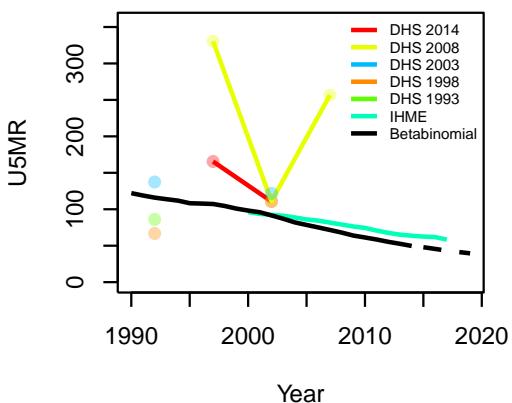
Lower Denkyira, Central



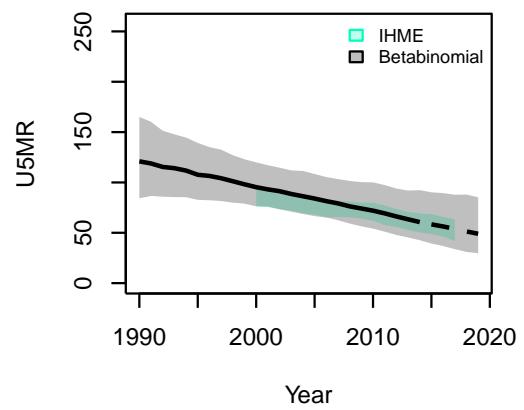
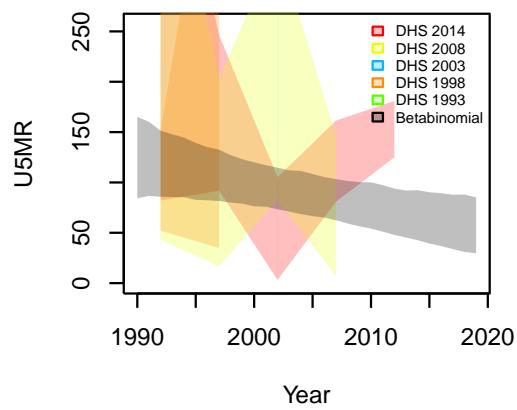
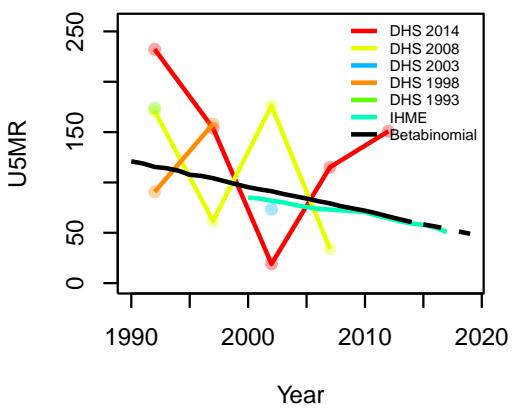
Mfantsiman, Central



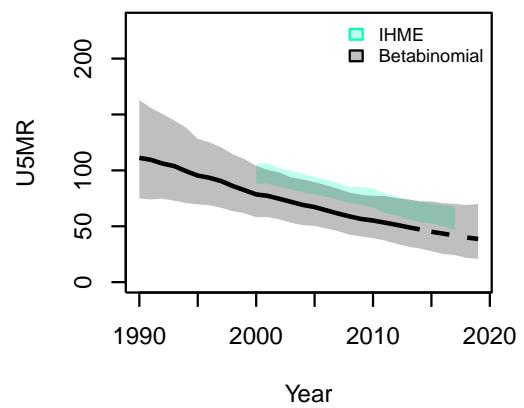
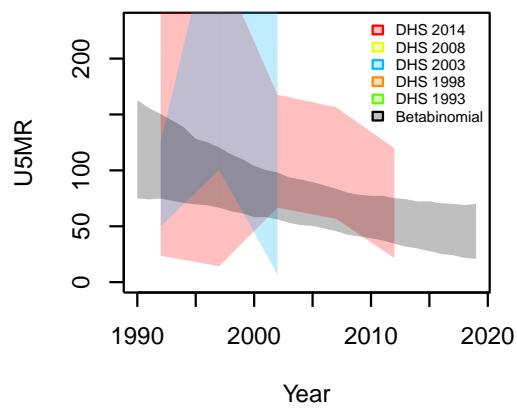
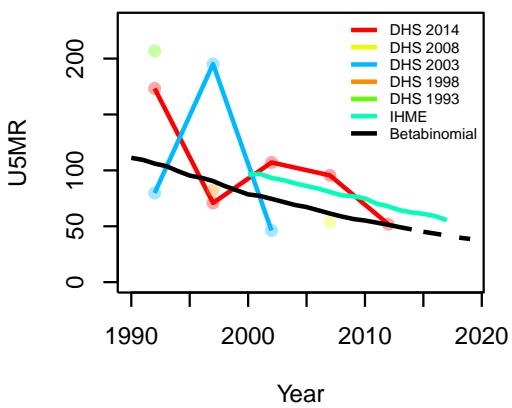
Upper Denkyira, Central



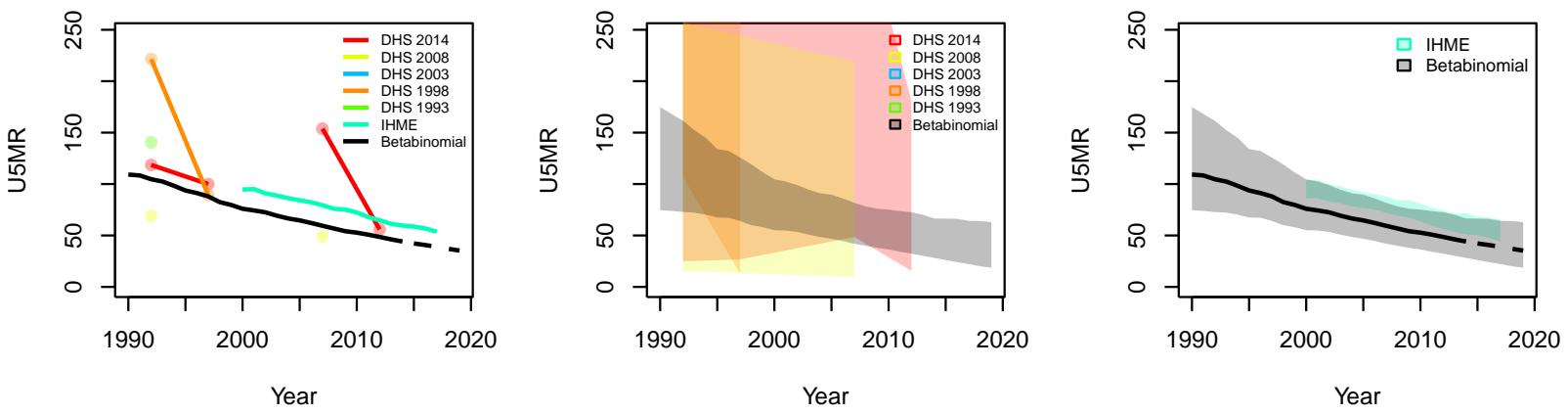
Afram Plains, Eastern



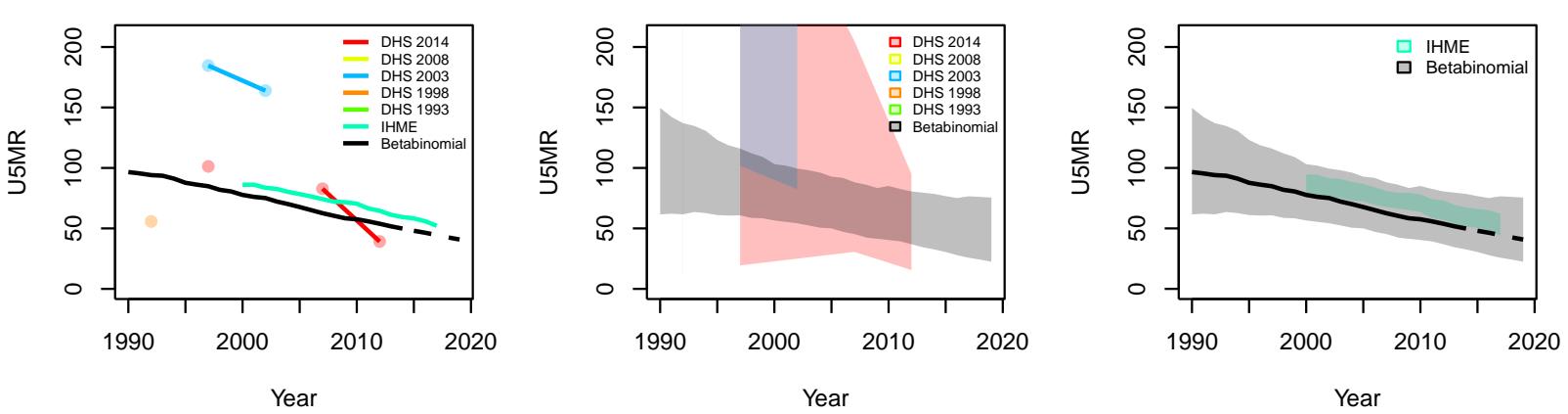
Akwapim North, Eastern



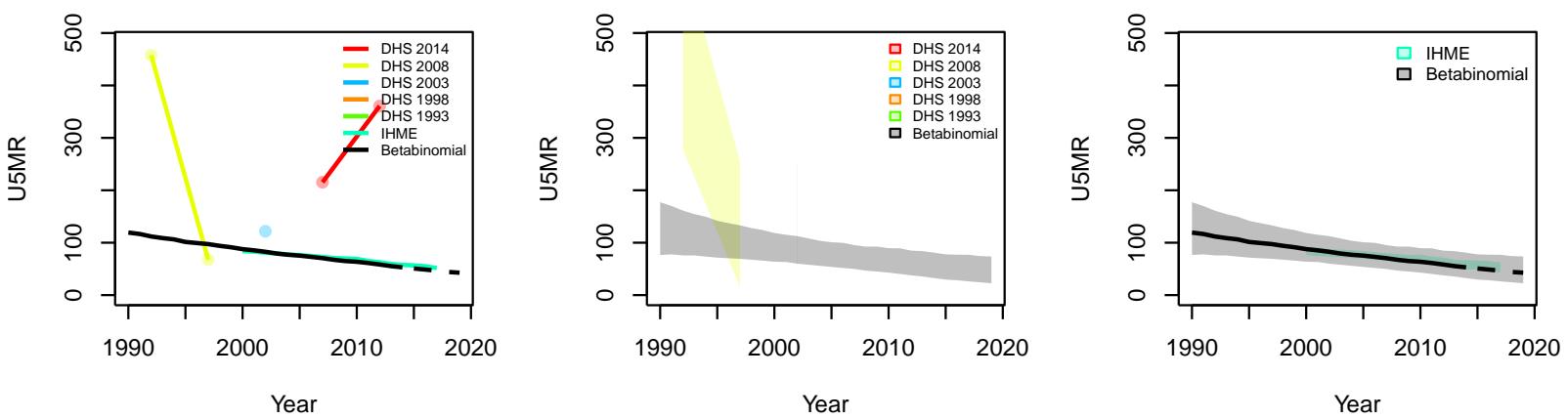
Akwapim South, Eastern



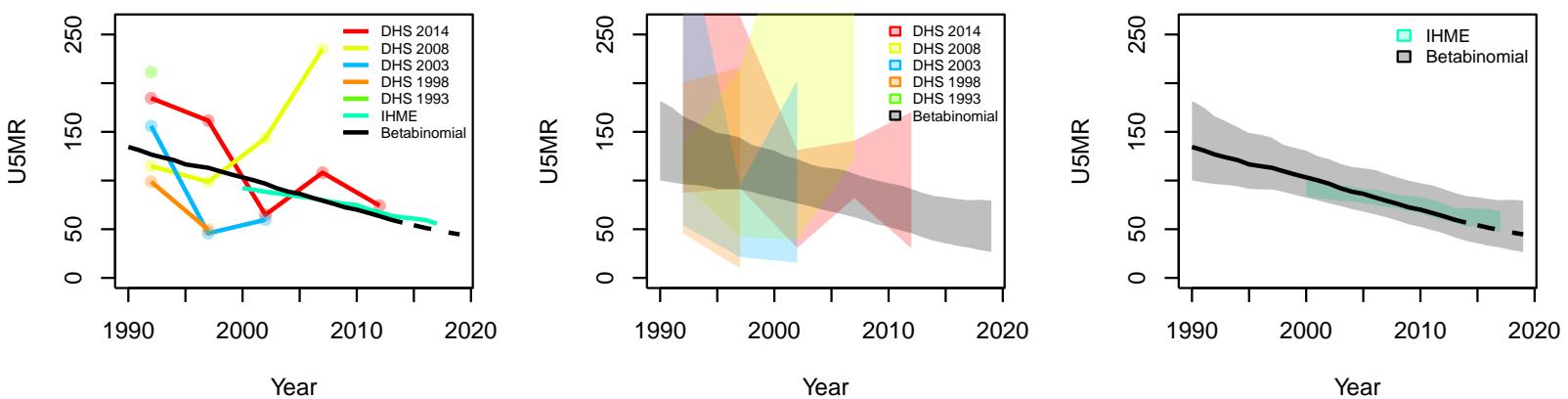
Asuogyaman, Eastern



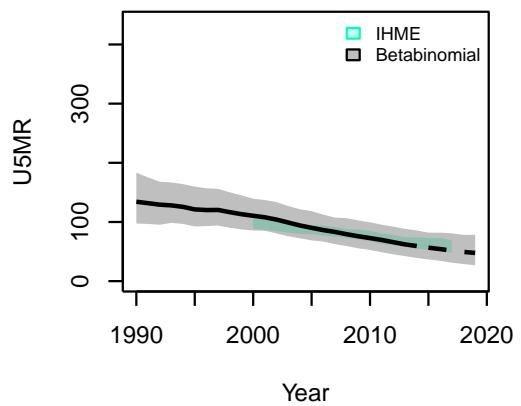
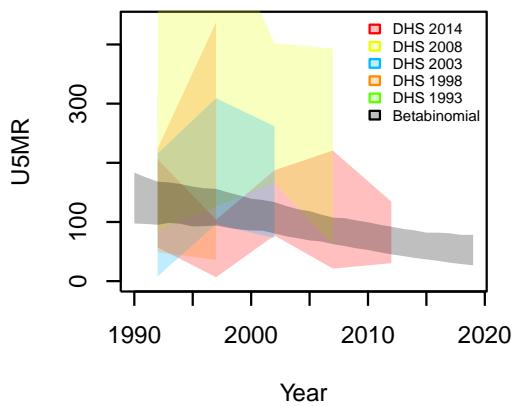
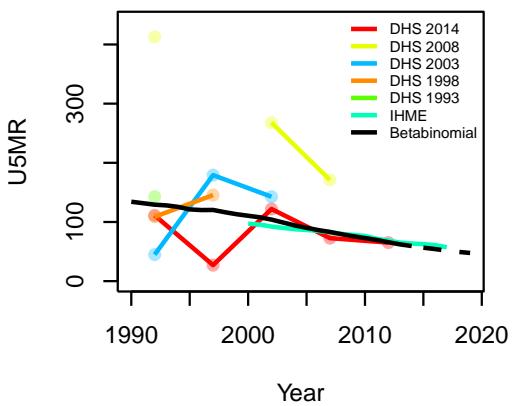
Atiwa, Eastern



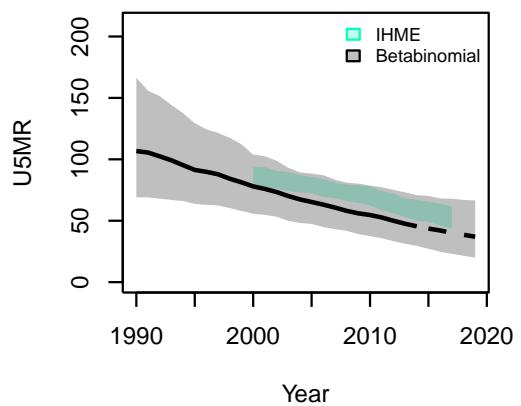
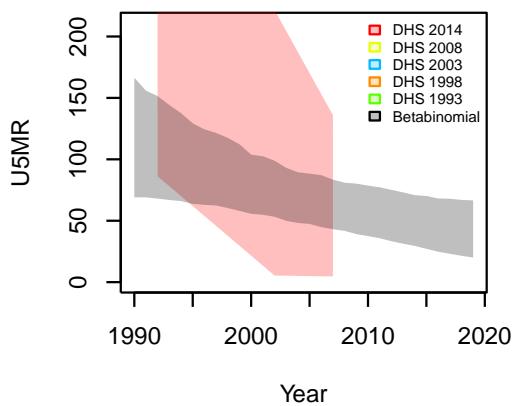
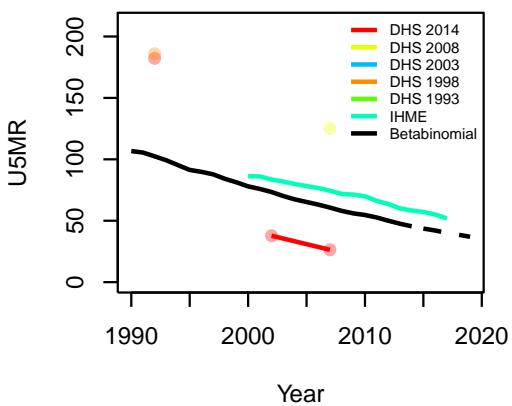
Birim North, Eastern



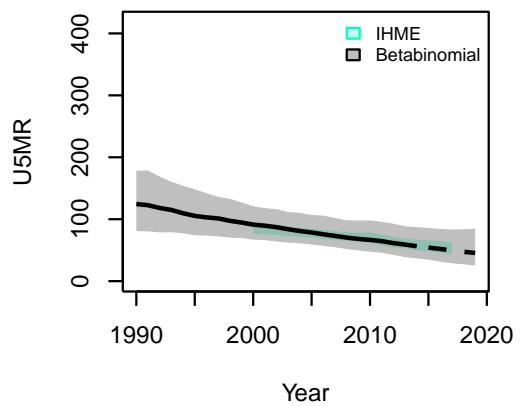
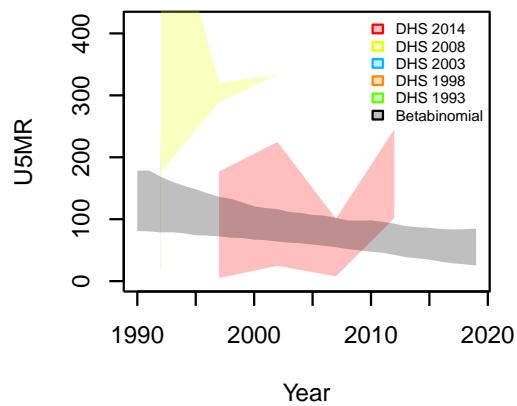
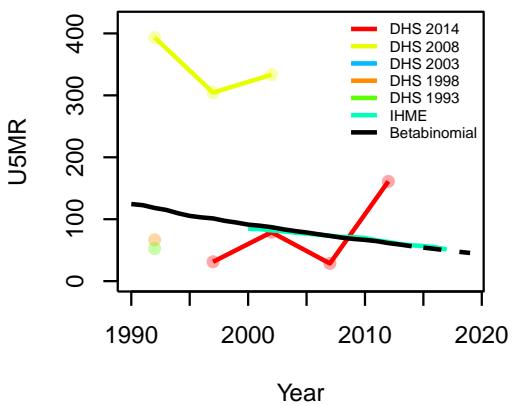
Birim South, Eastern



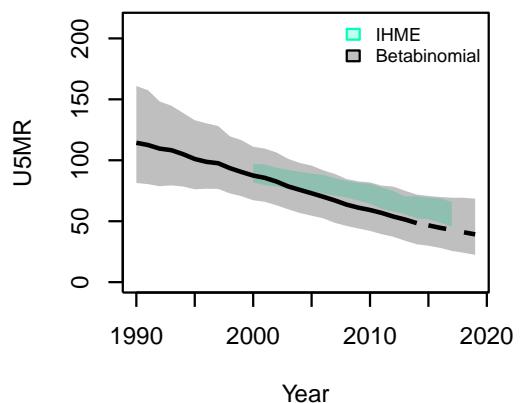
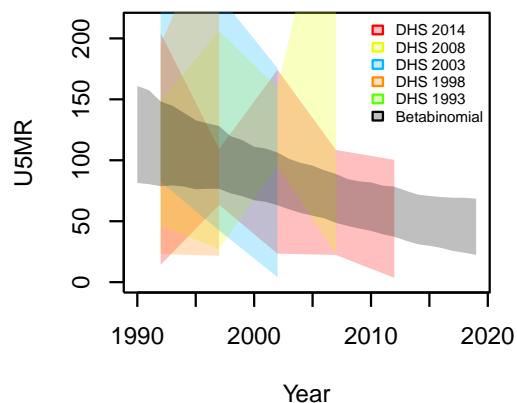
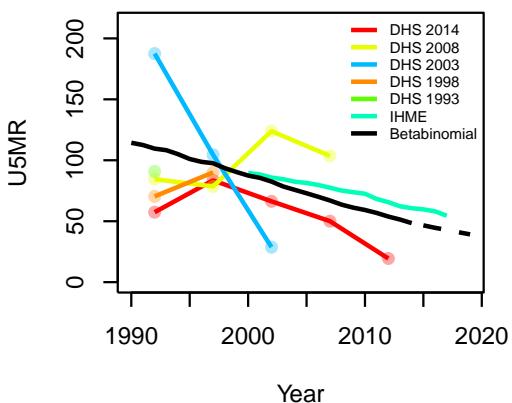
East Akim, Eastern



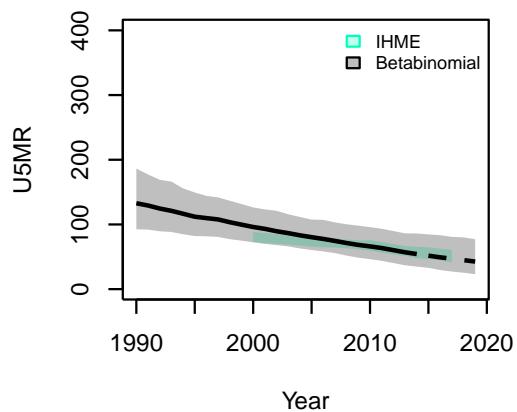
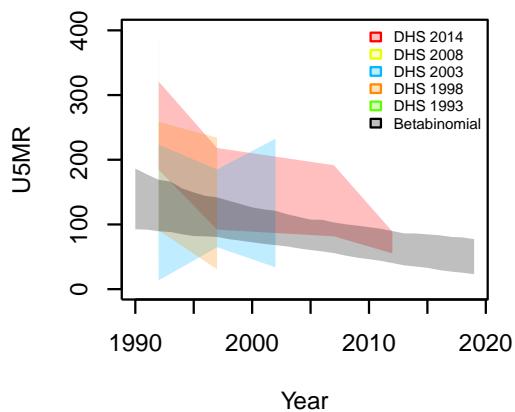
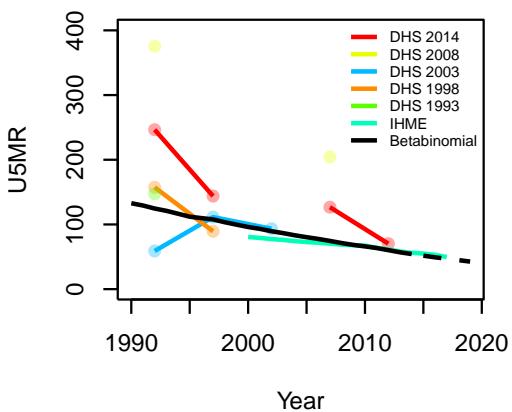
Fanteakwa, Eastern



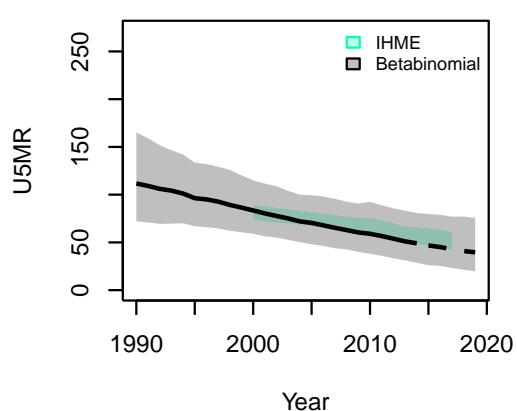
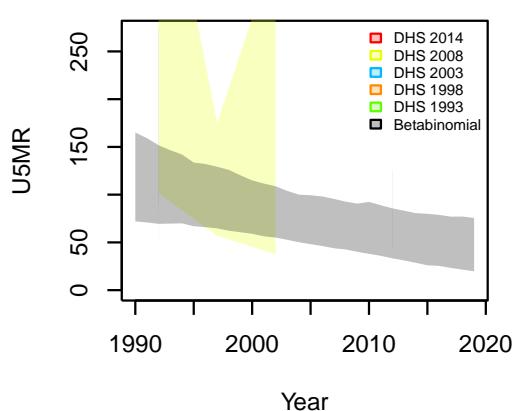
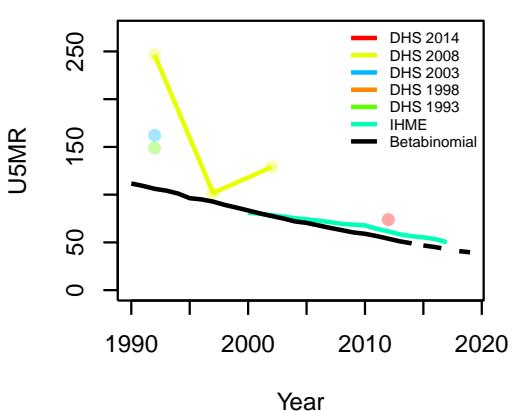
Kwabibirem, Eastern



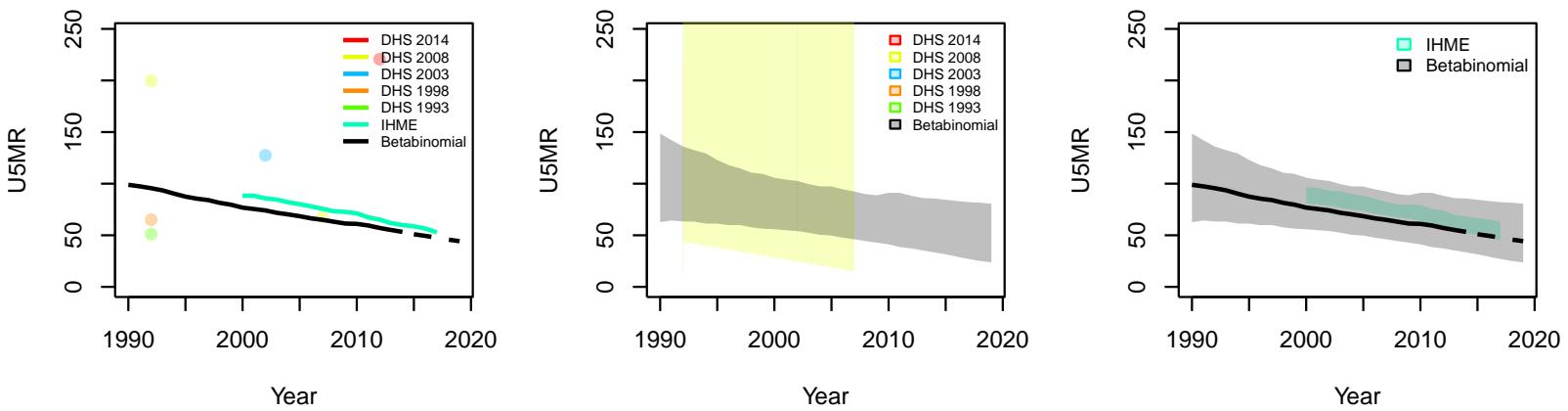
Kwahu South, Eastern



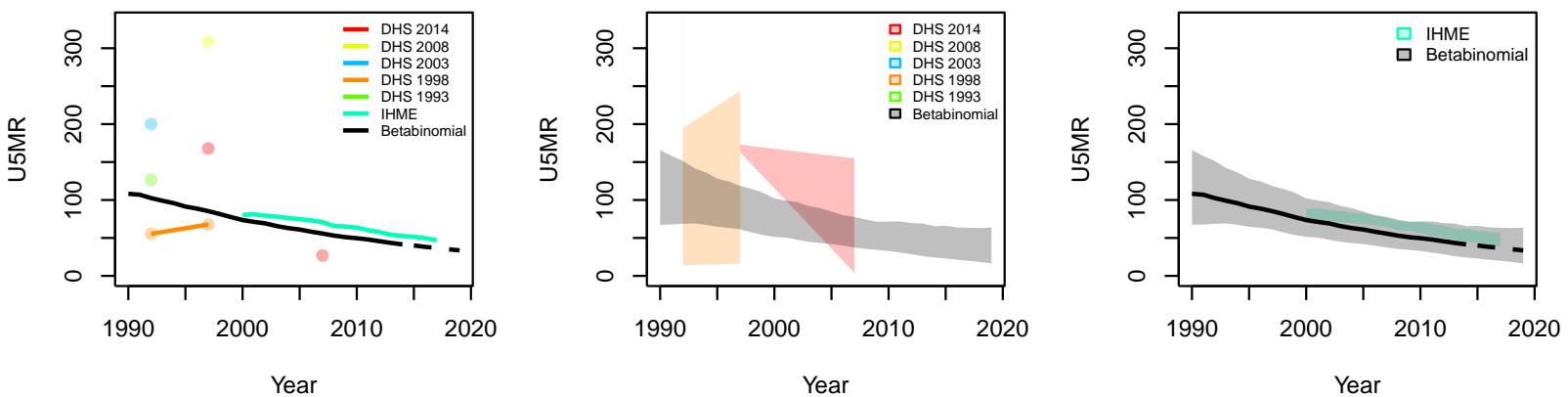
Kwahu West, Eastern



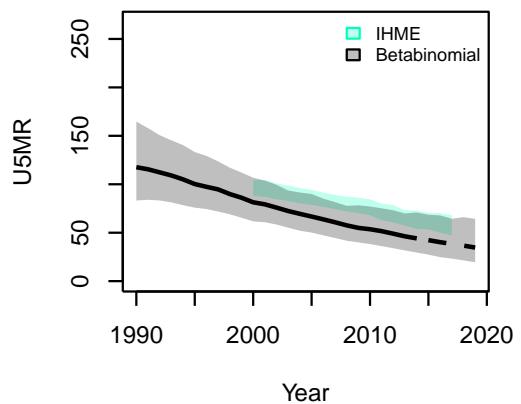
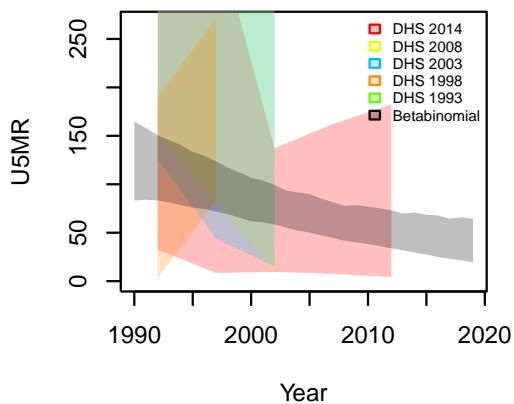
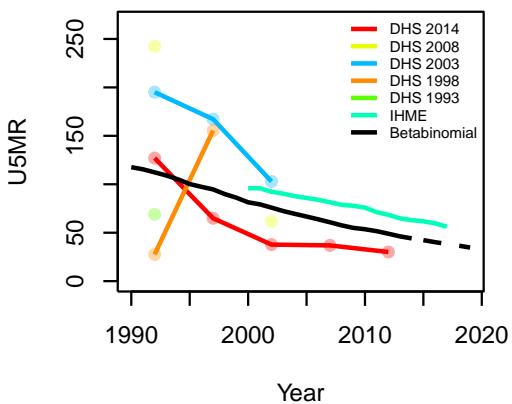
Manya Krobo, Eastern



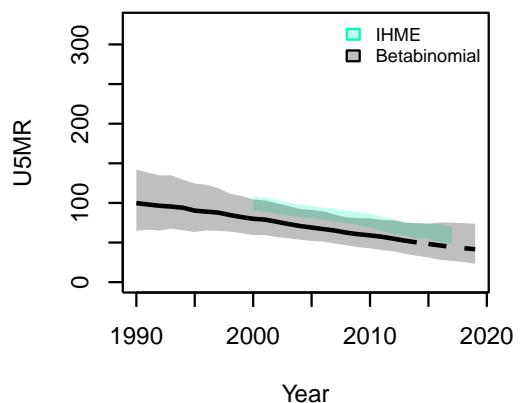
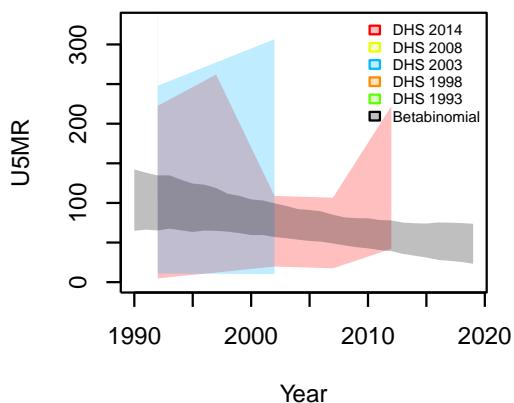
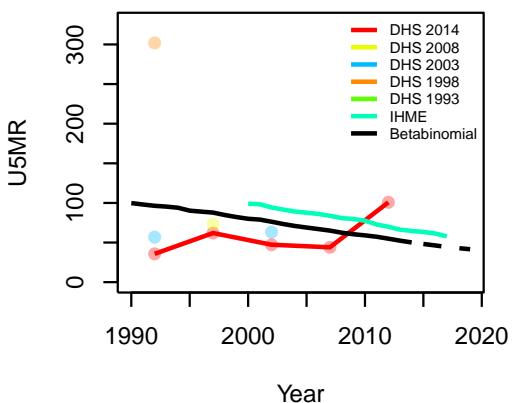
New Juaben, Eastern



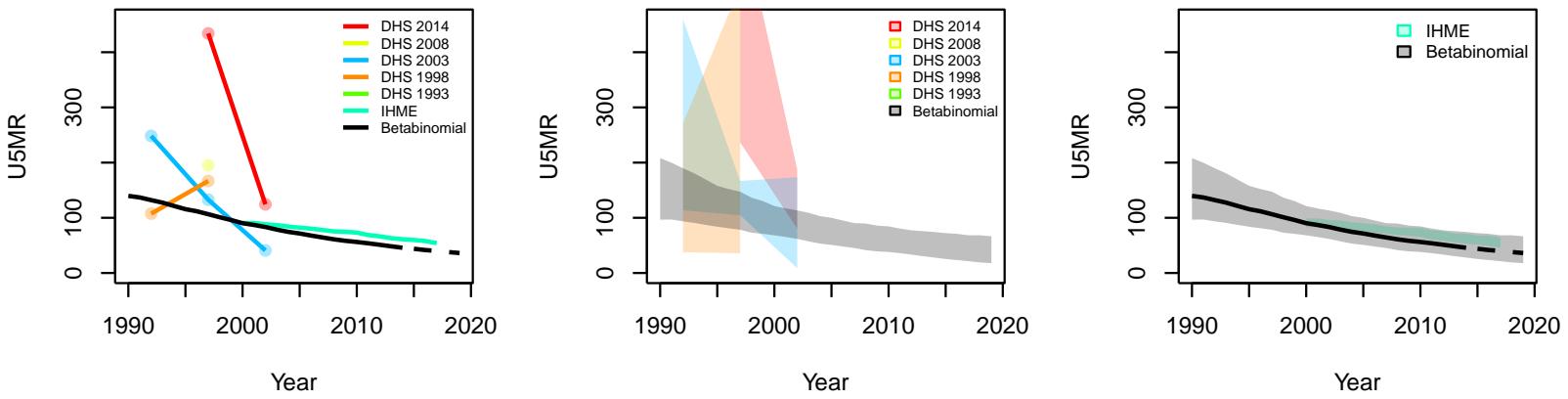
Suhum Kraboa Coalbar, Eastern



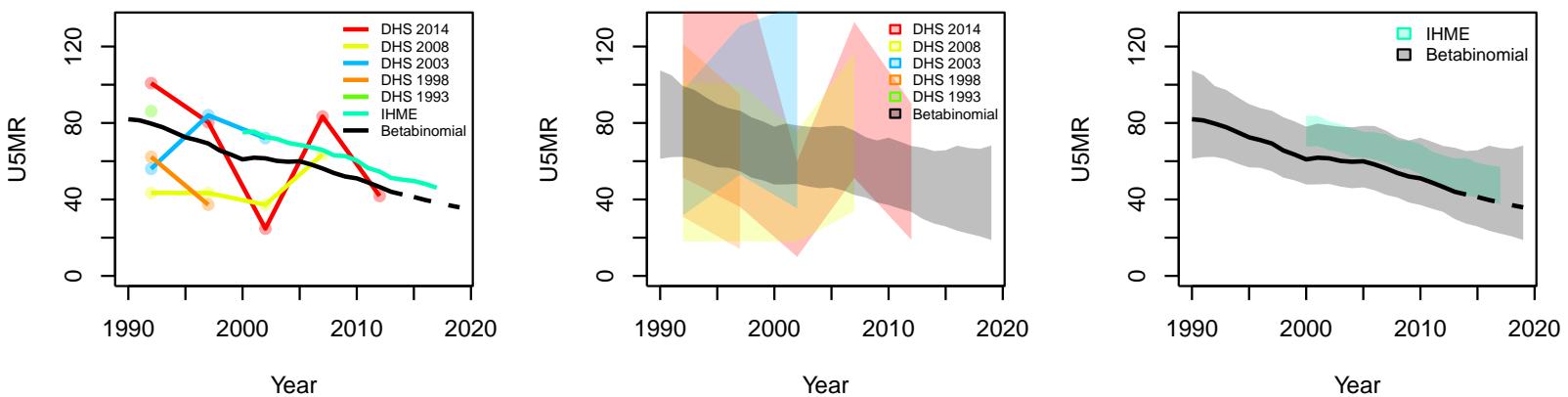
West Akim, Eastern



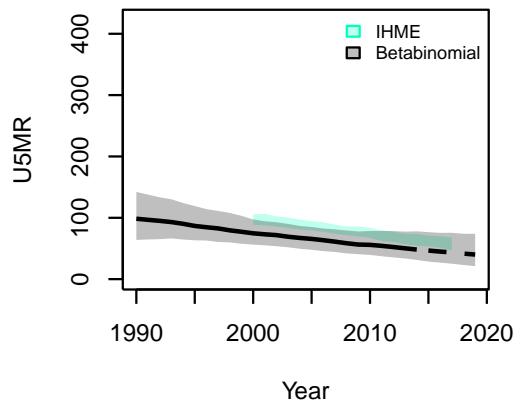
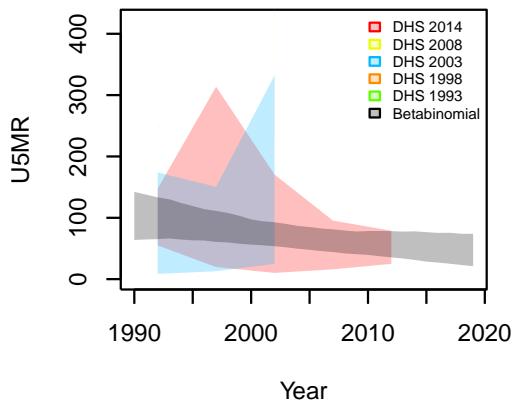
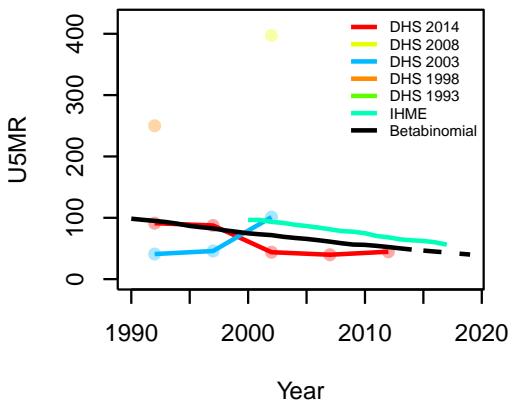
Yilo Krobo, Eastern



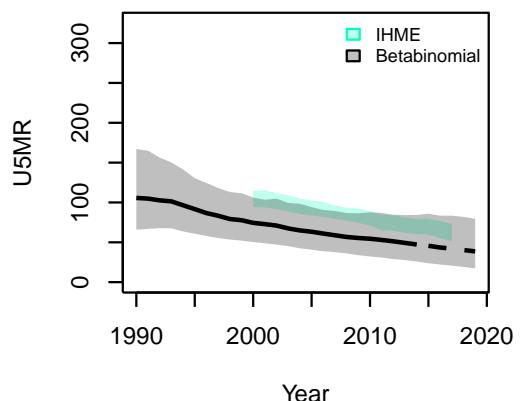
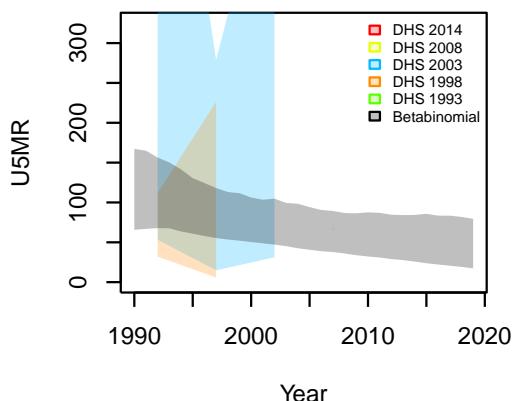
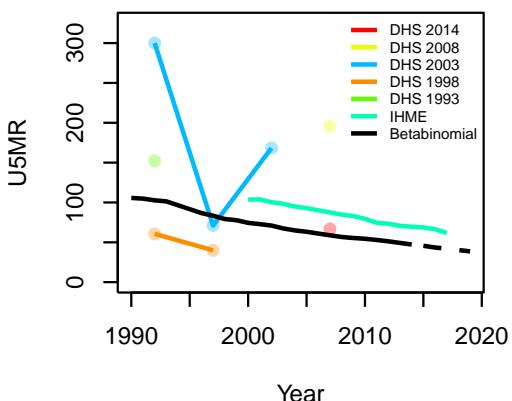
Accra, Greater Accra



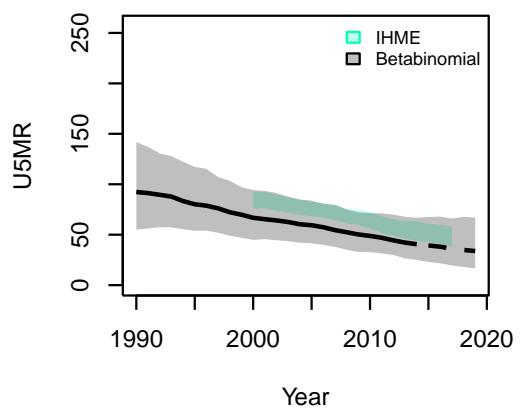
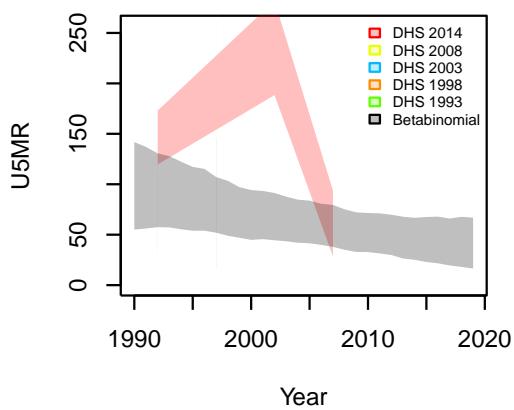
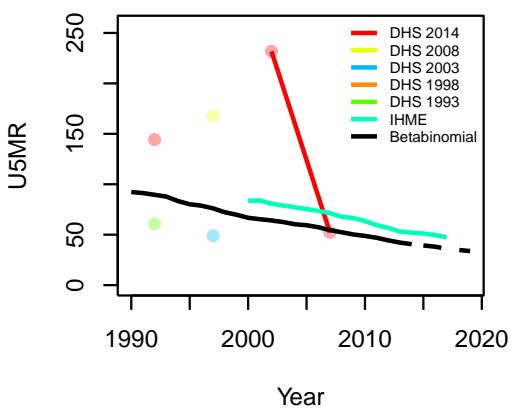
Dangbe East, Greater Accra



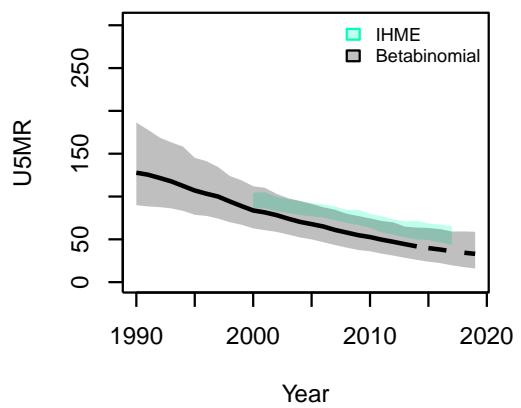
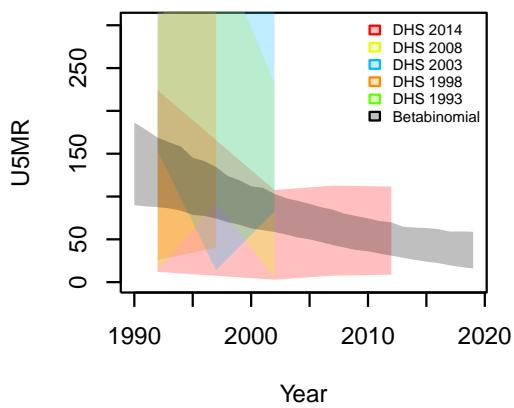
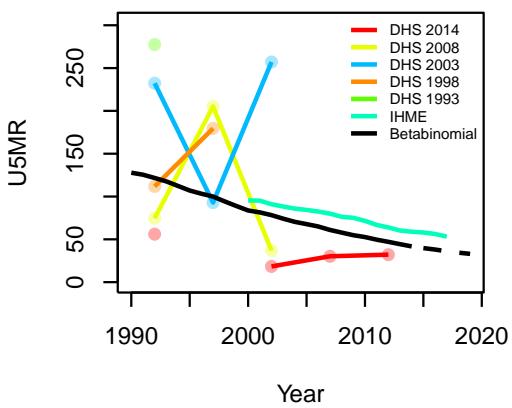
Dangbe West, Greater Accra



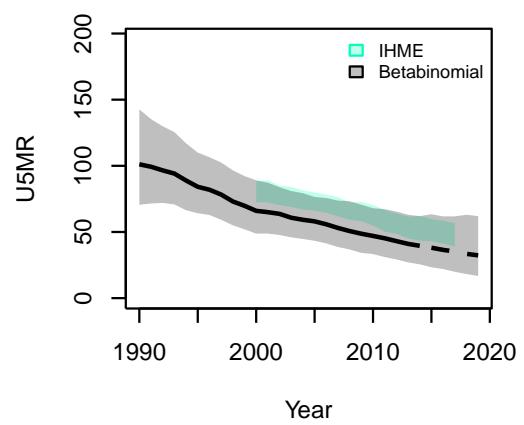
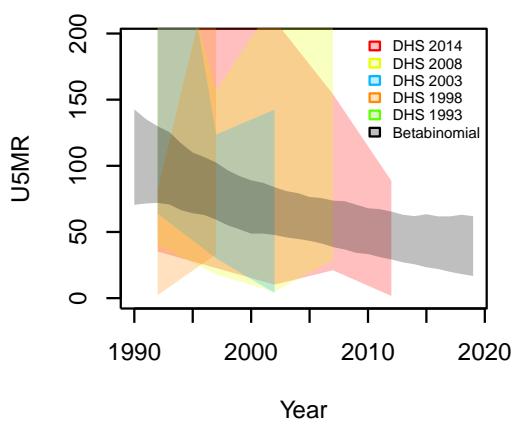
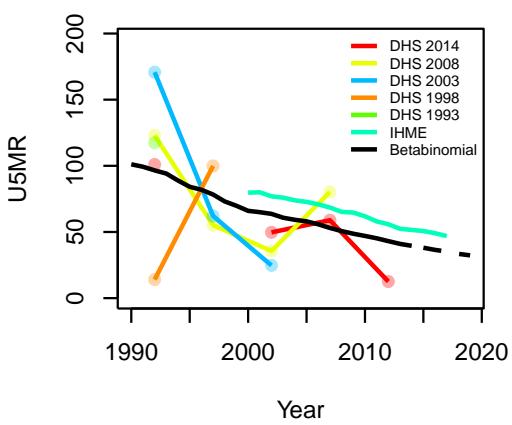
Ga East, Greater Accra



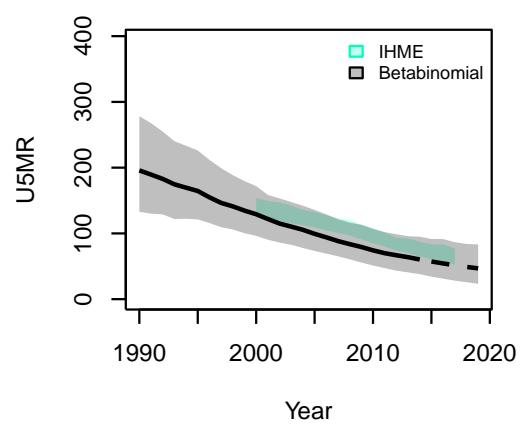
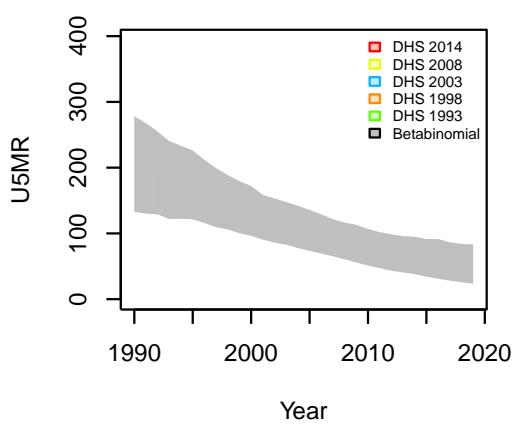
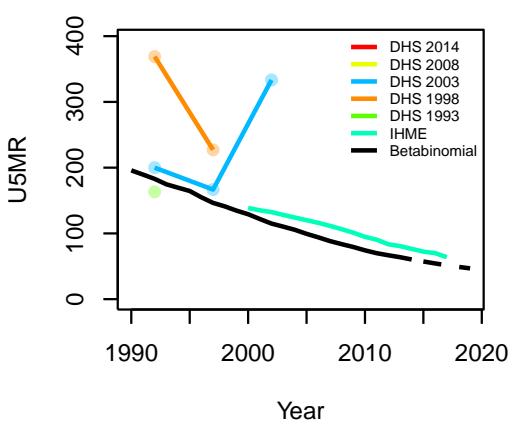
Ga West, Greater Accra



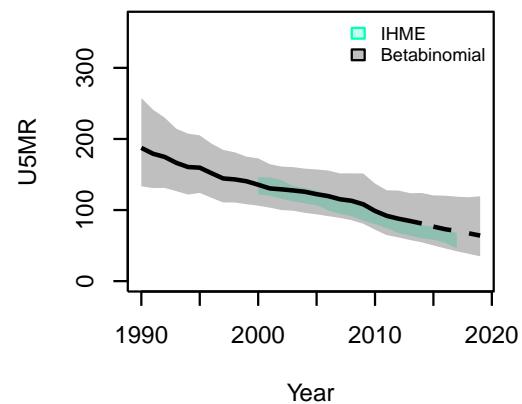
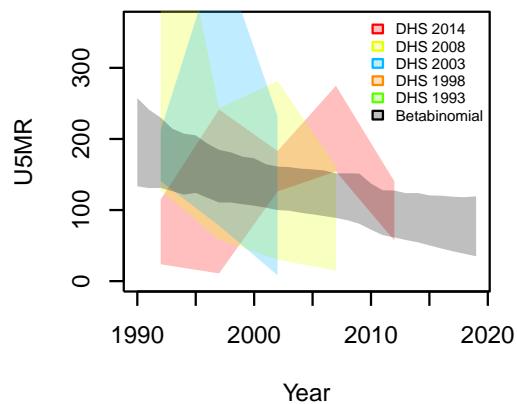
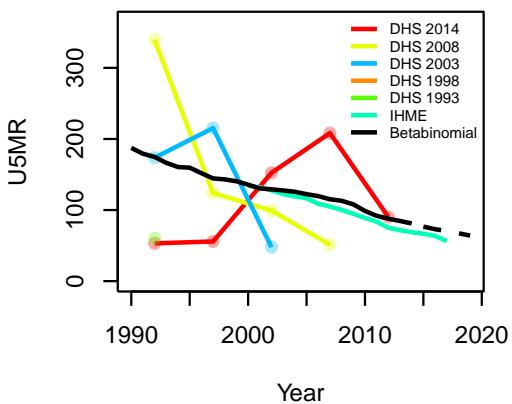
Tema, Greater Accra



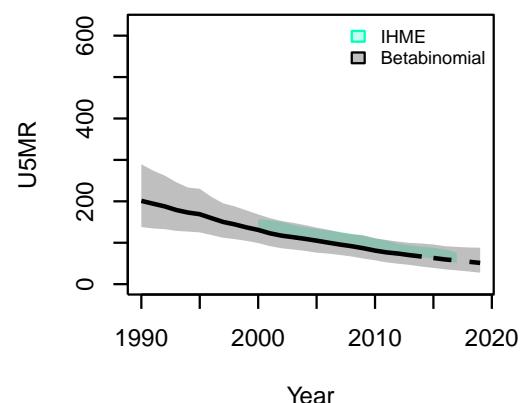
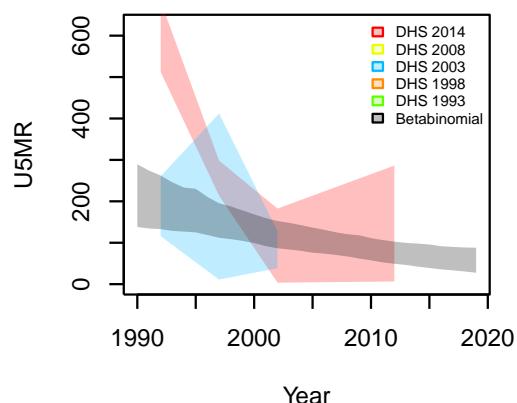
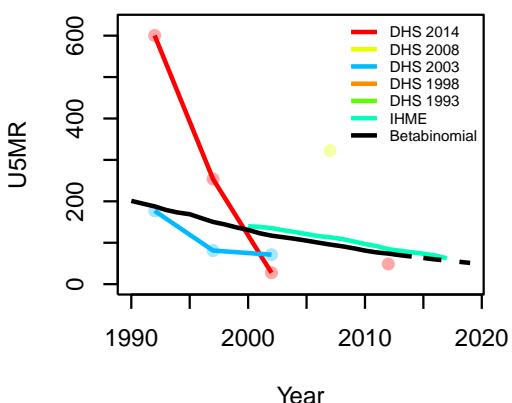
Bole, Northern



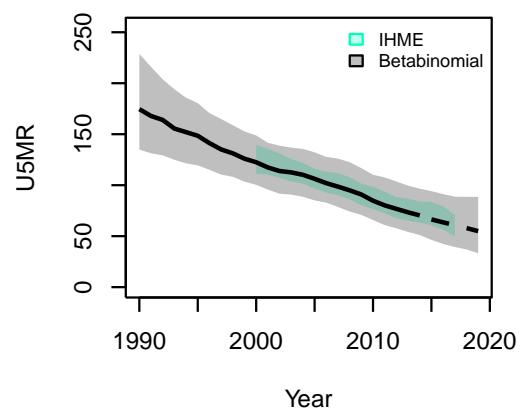
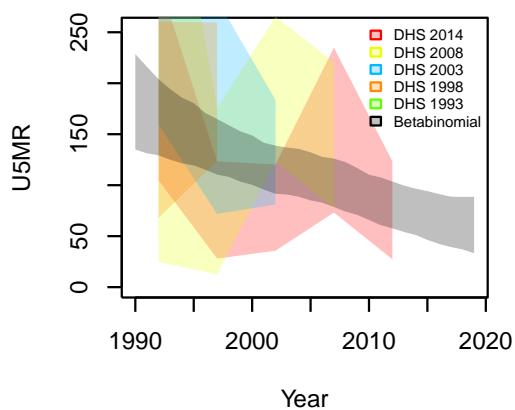
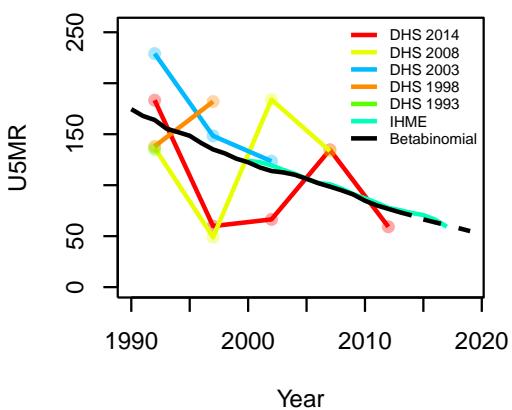
Bunkpurugu Yunyoo, Northern



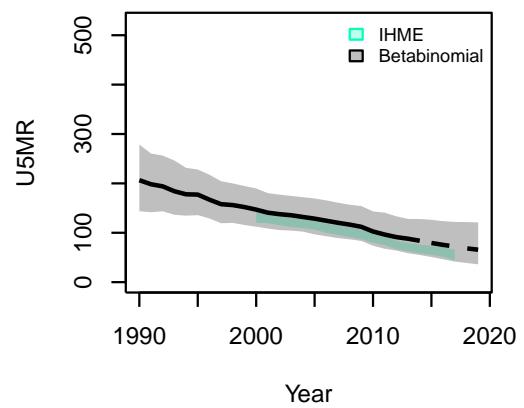
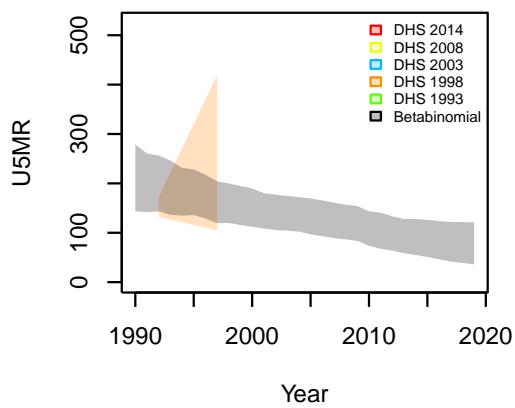
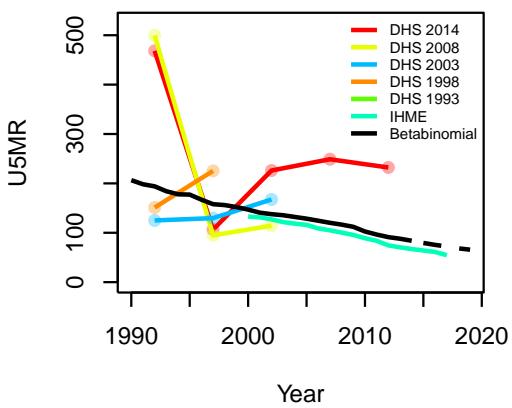
Central Gonja, Northern



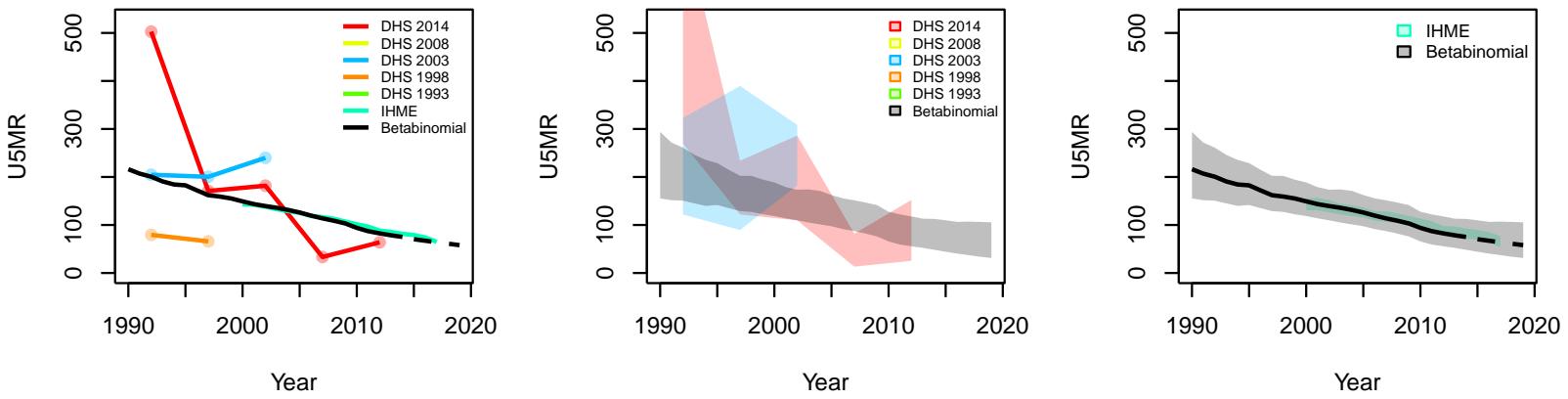
East Gonja, Northern



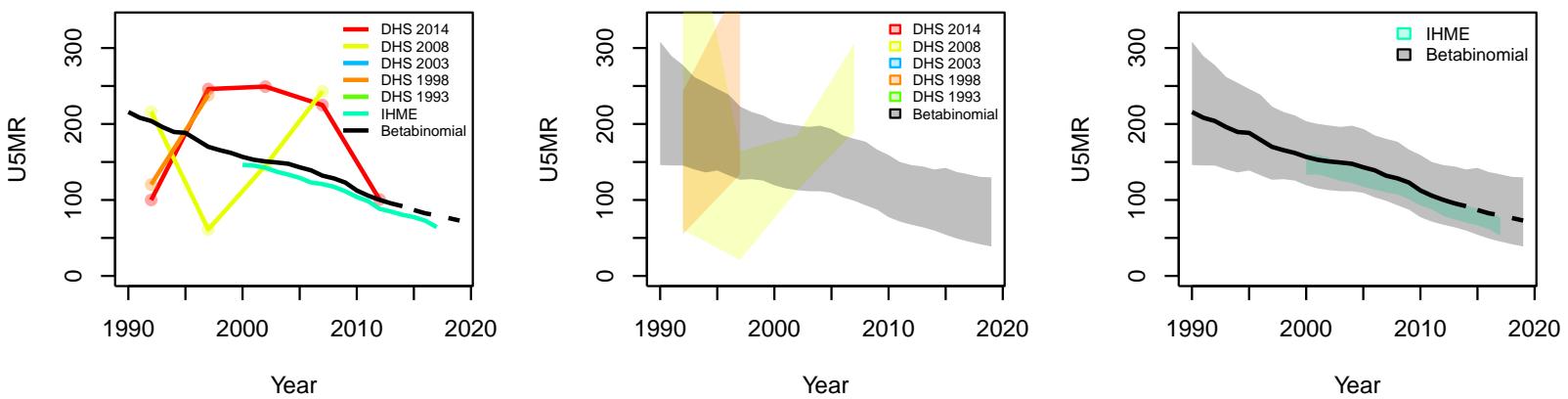
East Mamprusi, Northern



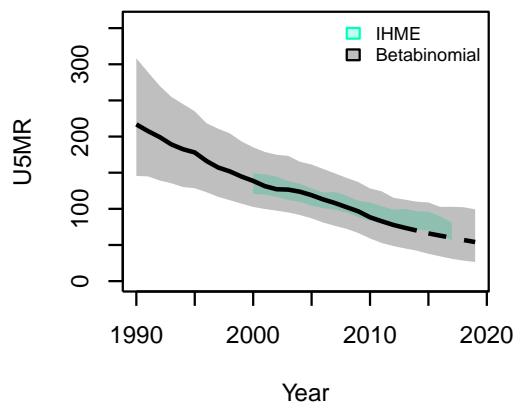
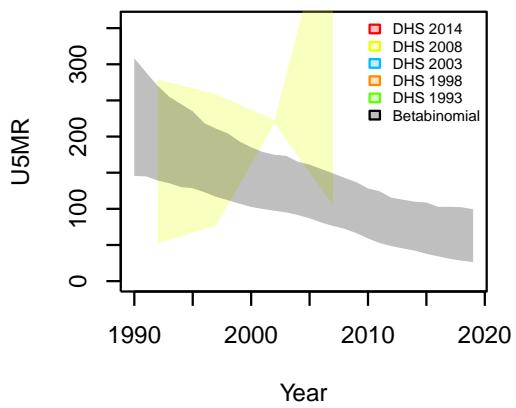
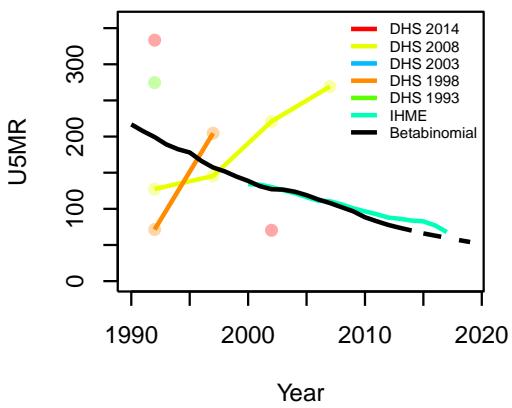
Gushiegu, Northern



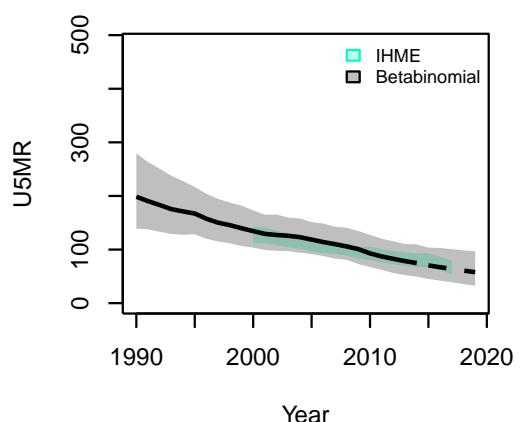
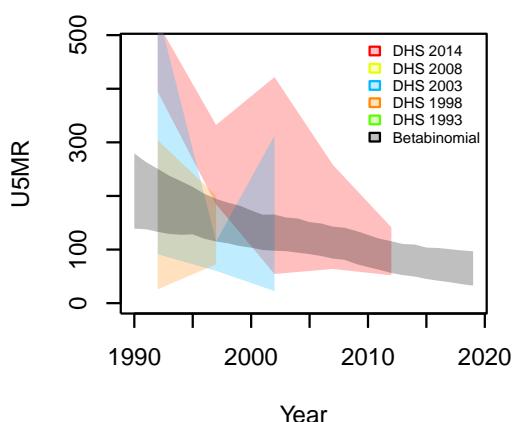
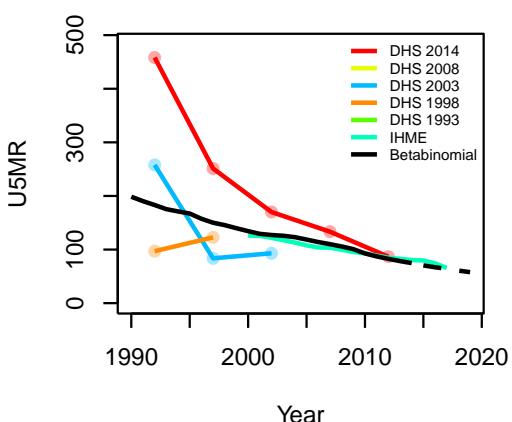
Karaga, Northern



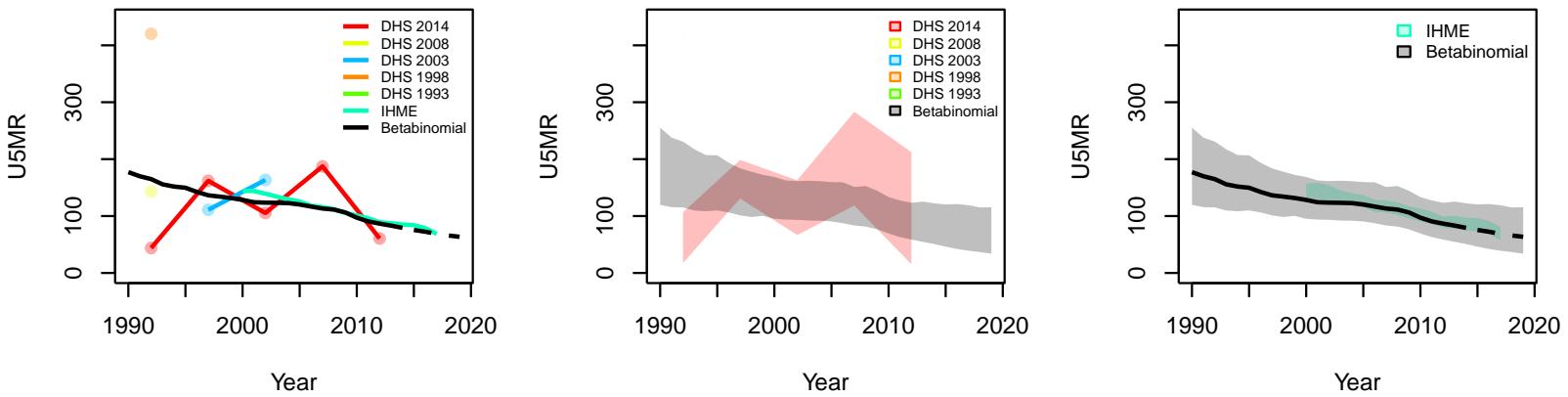
Nanumba North, Northern



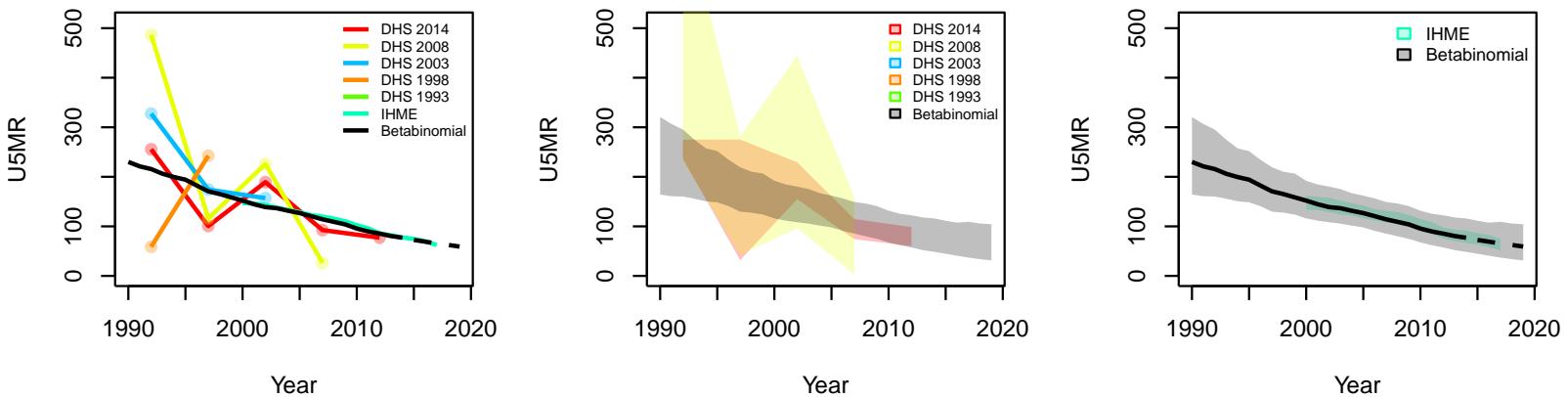
Nanumba South, Northern



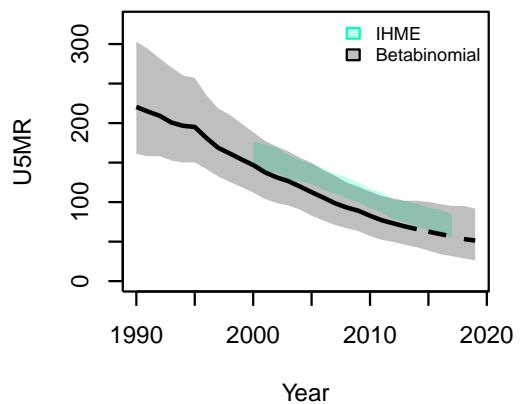
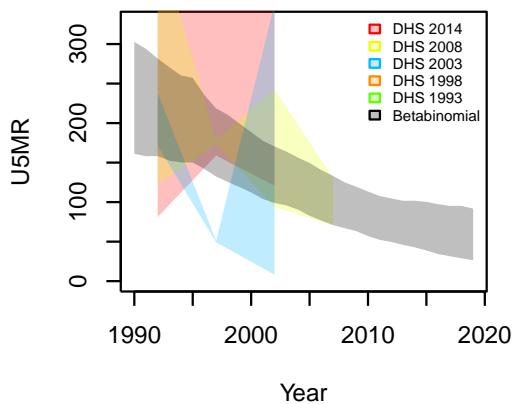
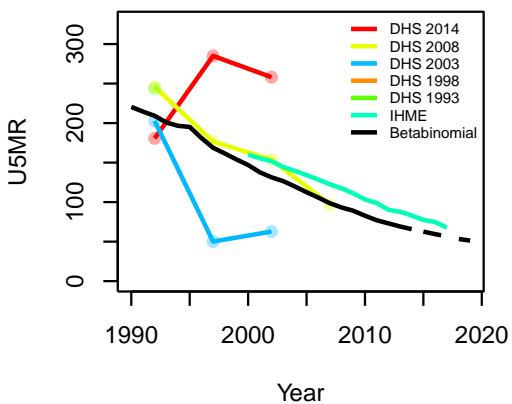
Saboba Chereponi, Northern



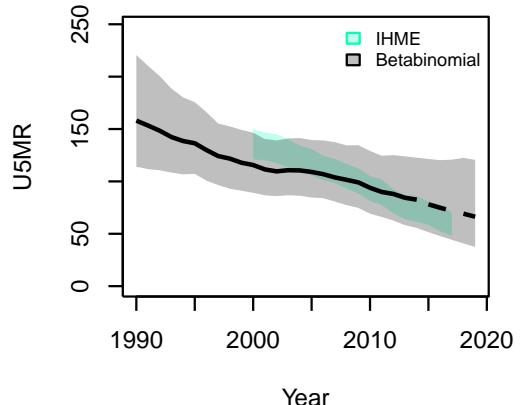
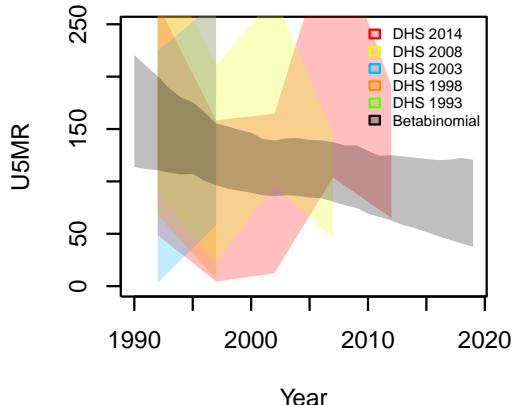
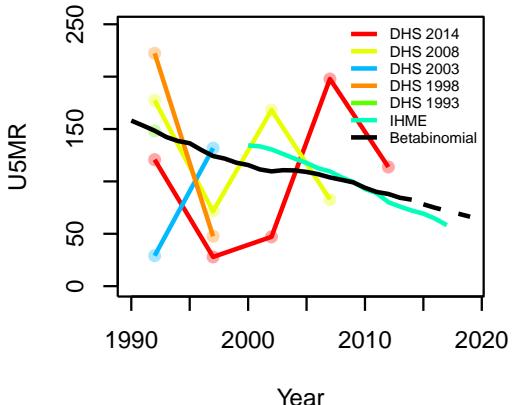
Savelugu Nanton, Northern



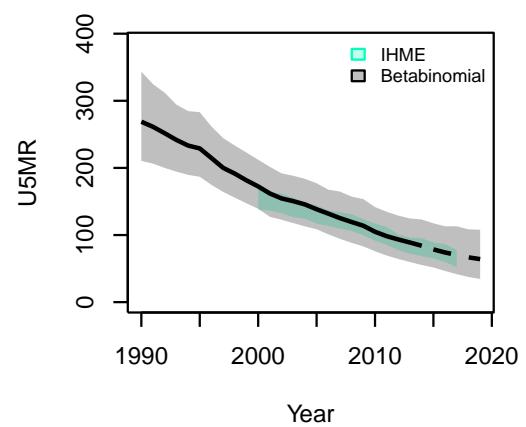
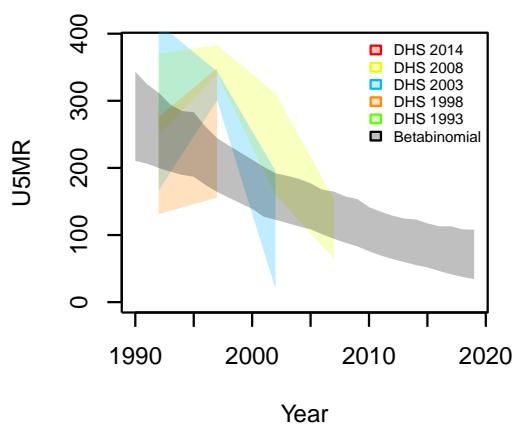
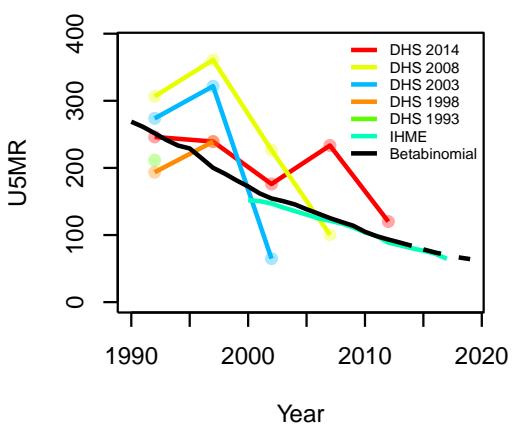
Sawa-Tuna-Kalba, Northern



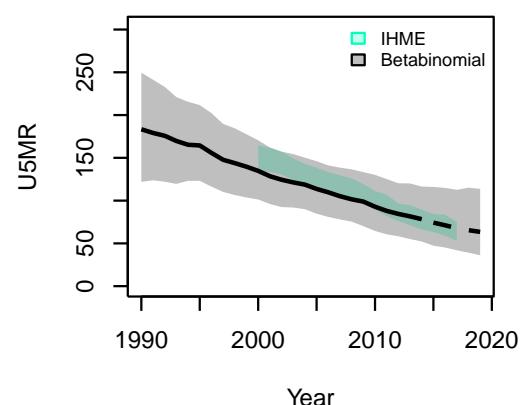
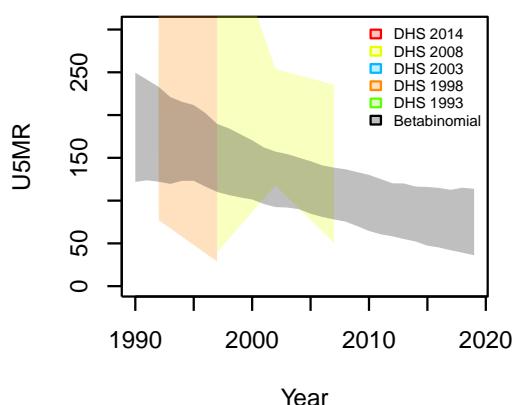
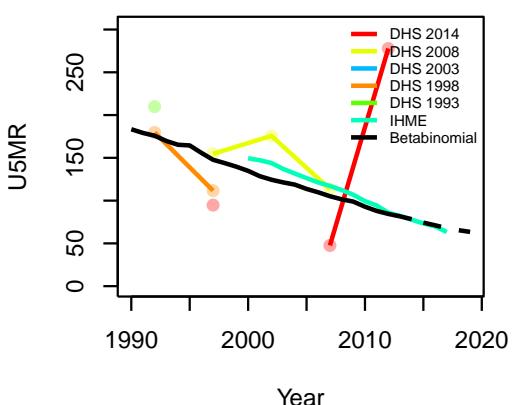
Tamale, Northern



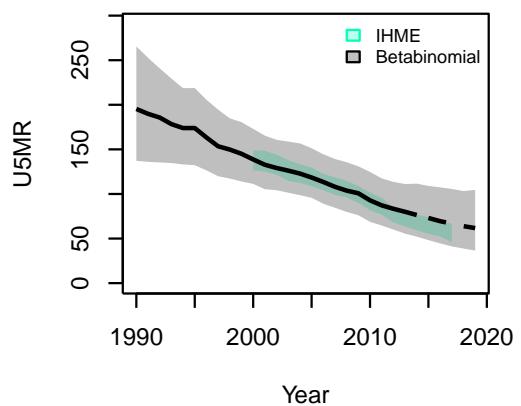
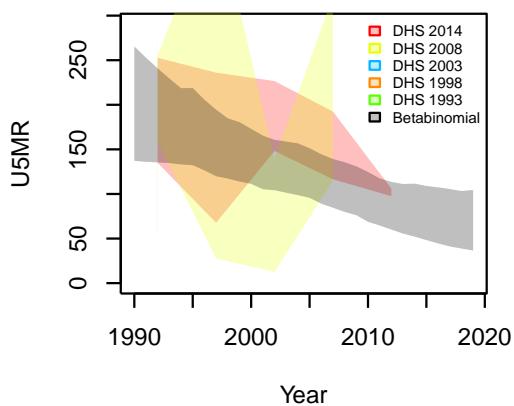
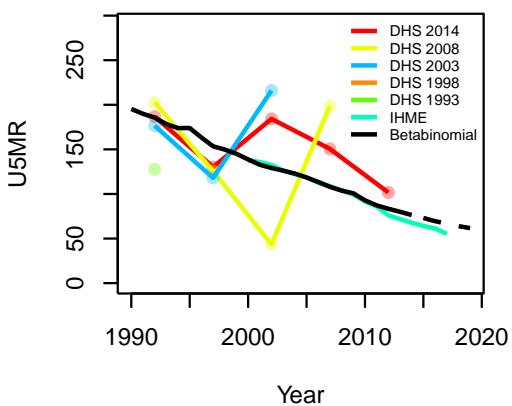
Tolon-Kumbungu, Northern



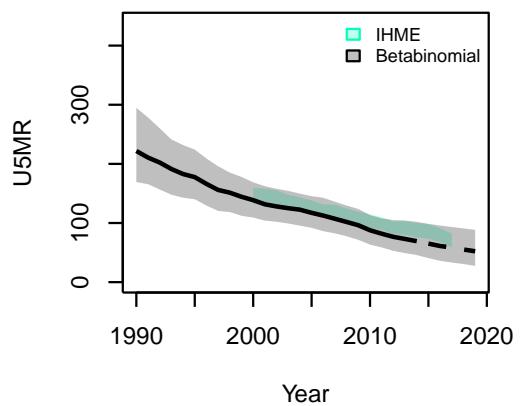
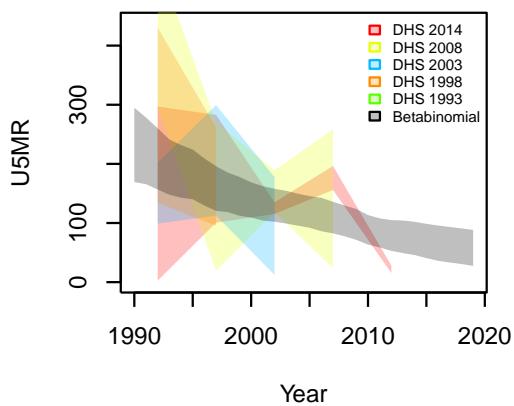
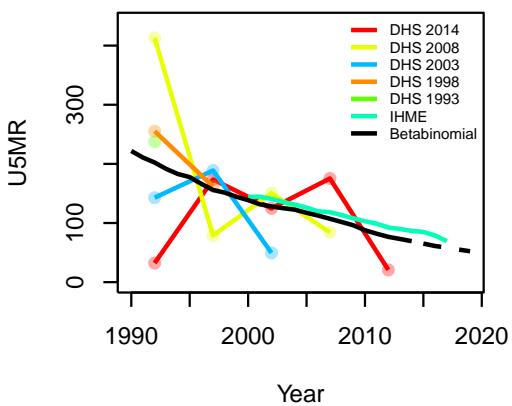
West Gonja, Northern



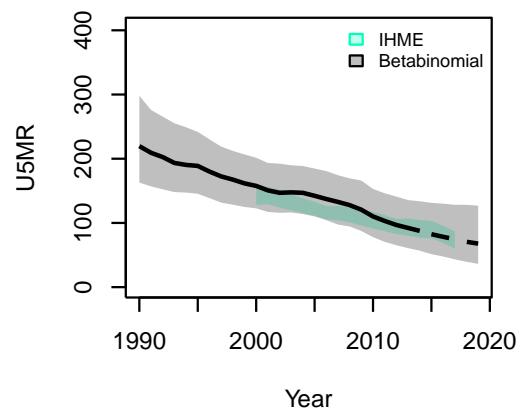
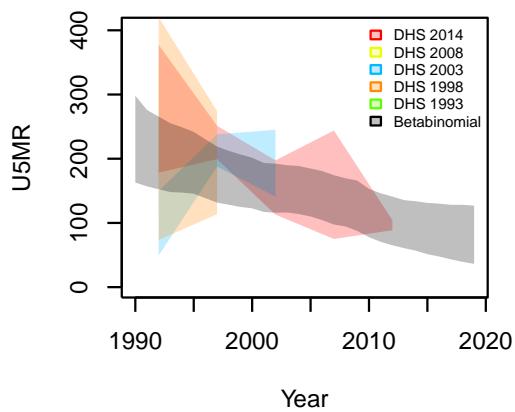
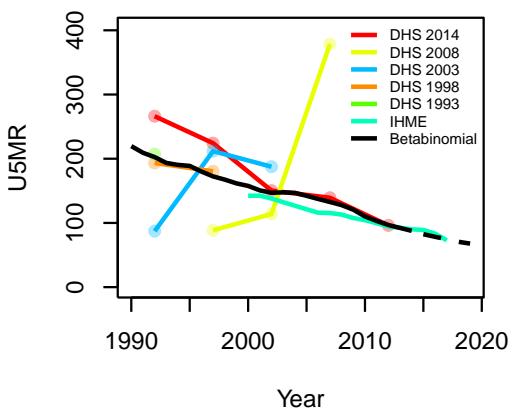
West Mamprusi, Northern



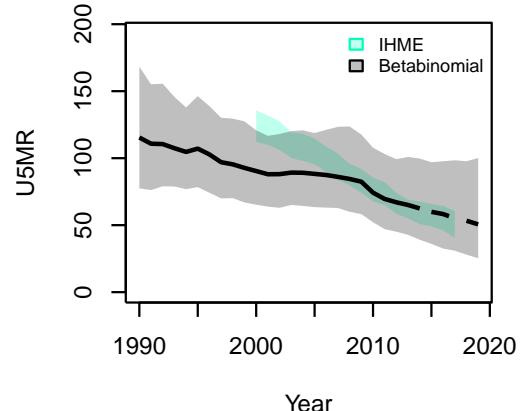
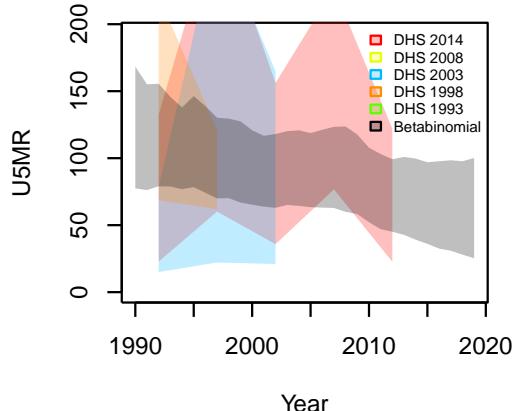
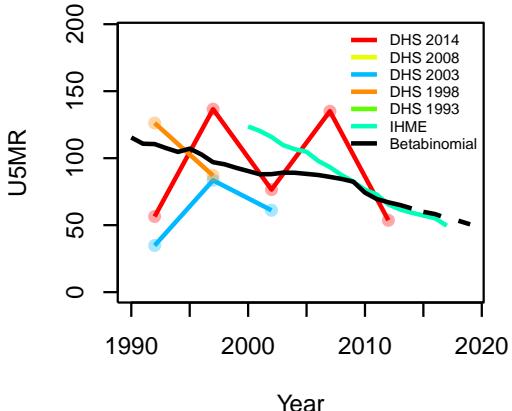
Yendi, Northern



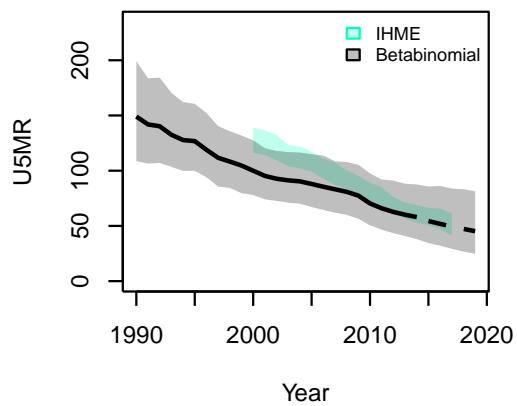
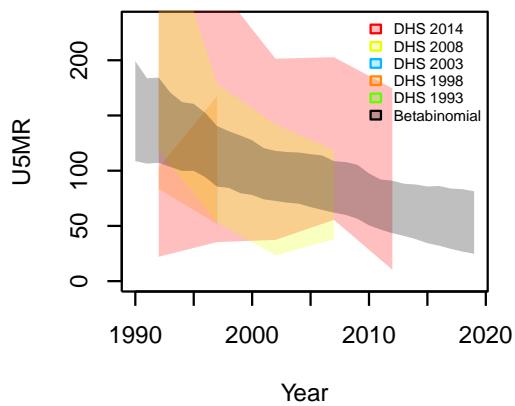
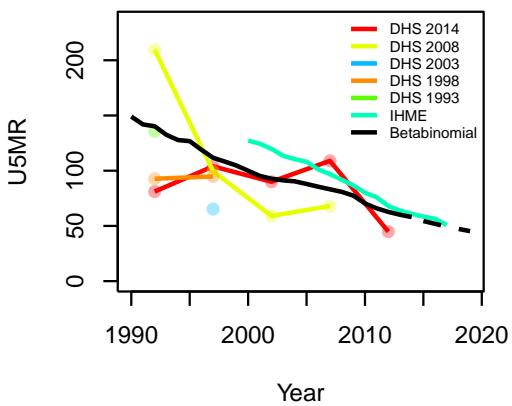
Zabzugu Tatale, Northern



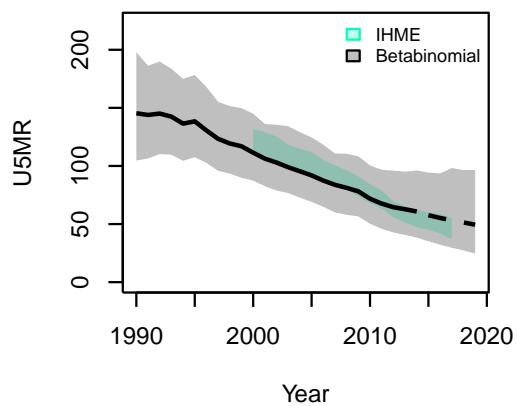
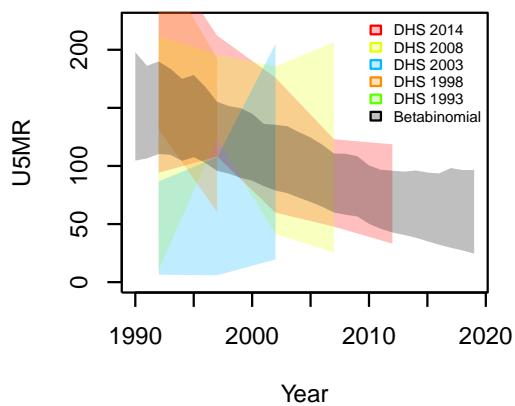
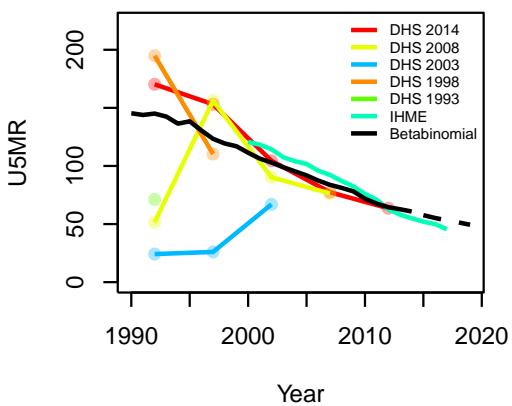
Bawku Municipal, Upper East



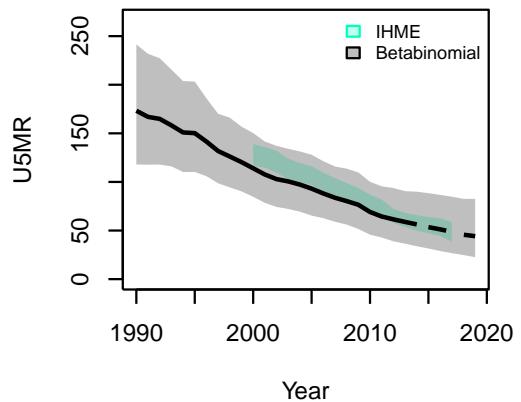
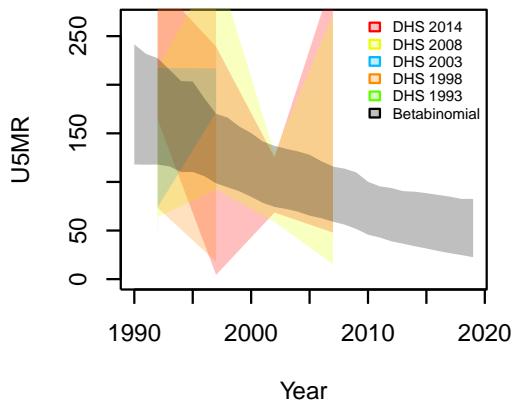
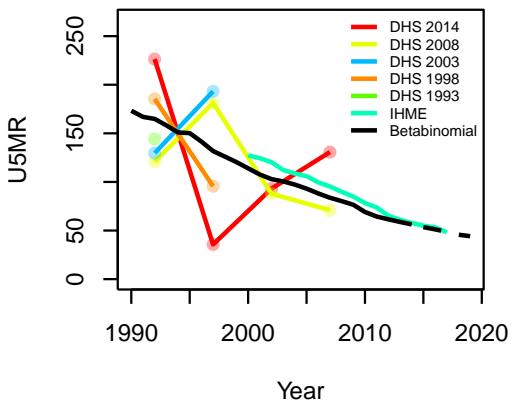
Bawku West, Upper East



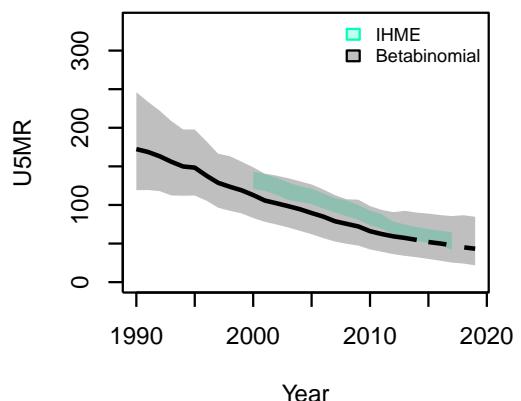
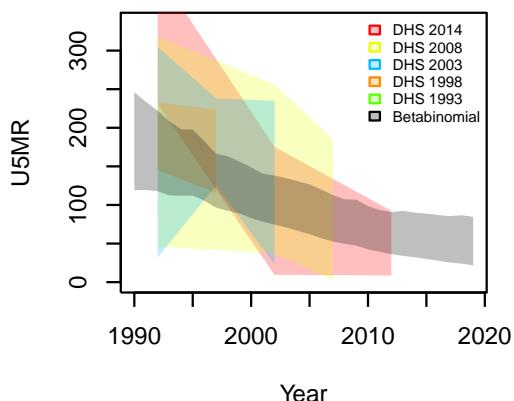
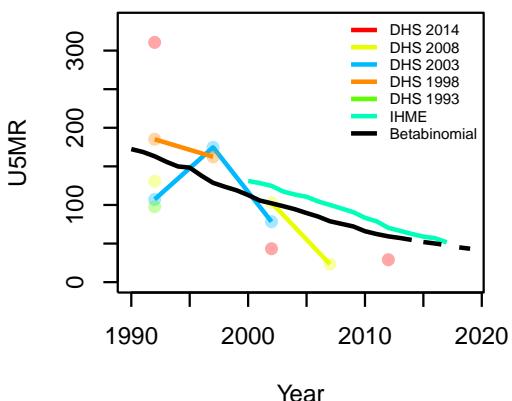
Bolgatanga, Upper East



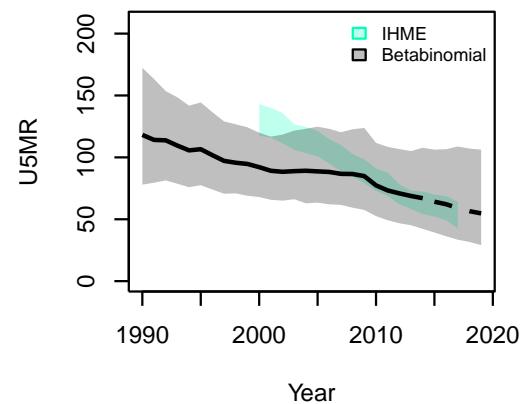
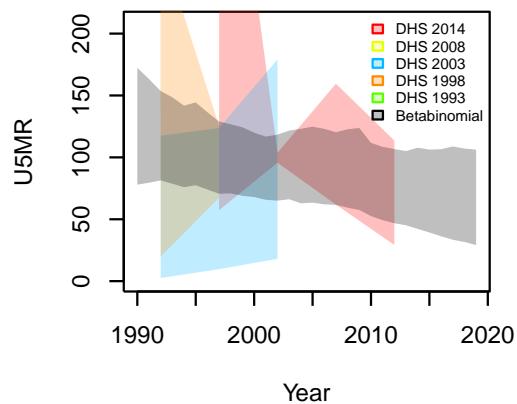
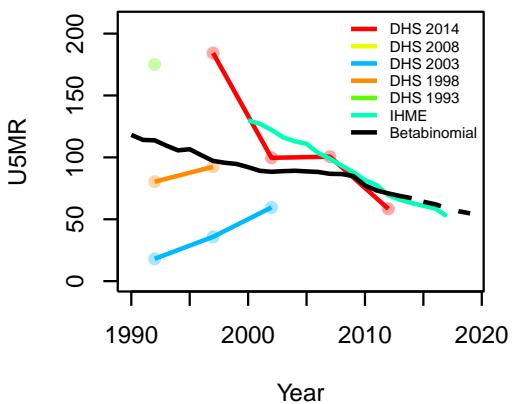
Bongo, Upper East



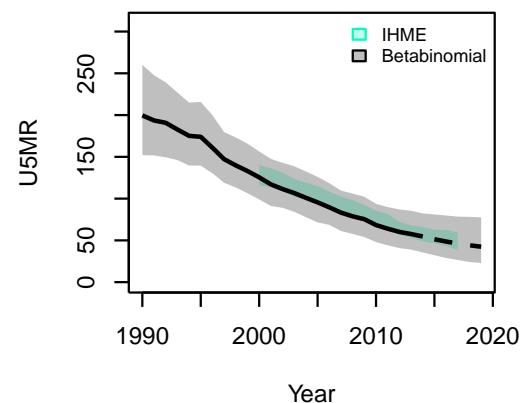
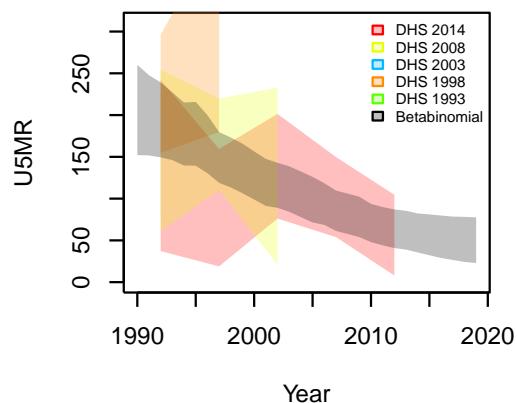
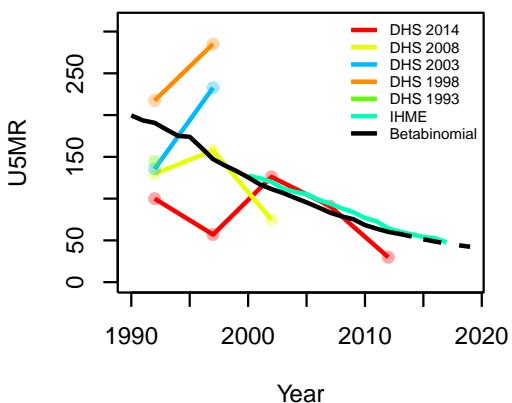
Builsa, Upper East



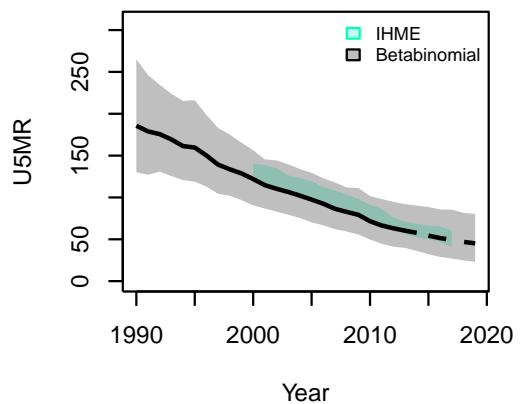
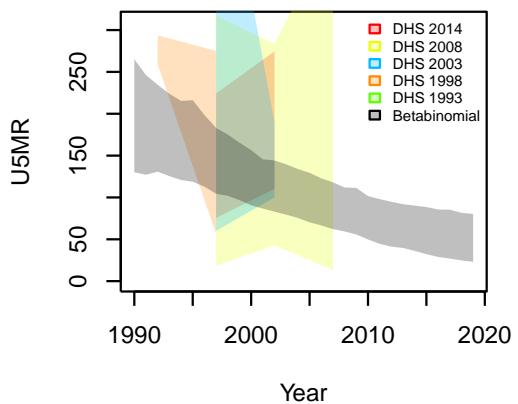
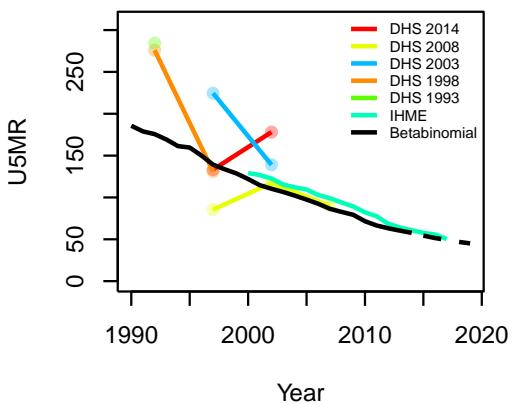
Garu Tempane, Upper East



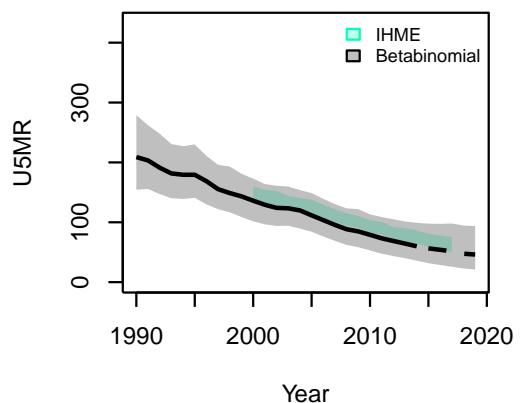
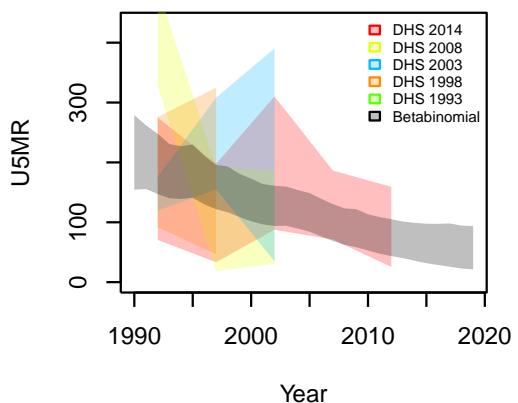
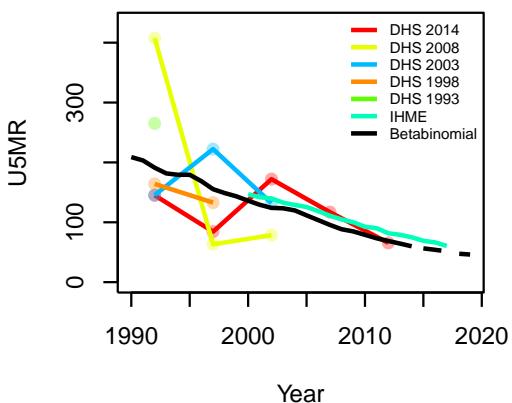
Kassena Nankana, Upper East



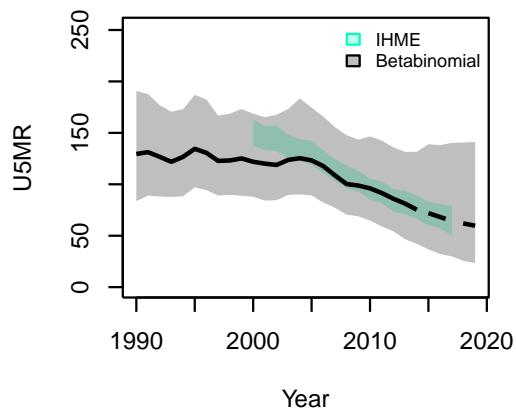
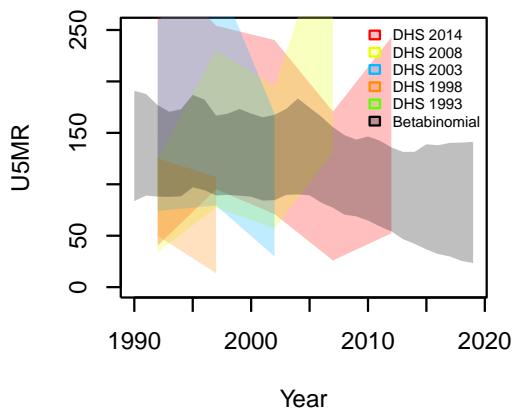
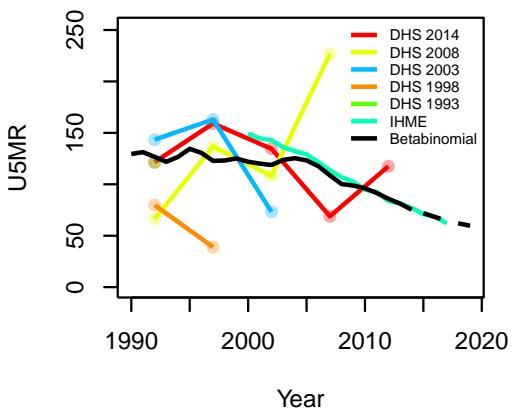
Talensi Nabdam, Upper East



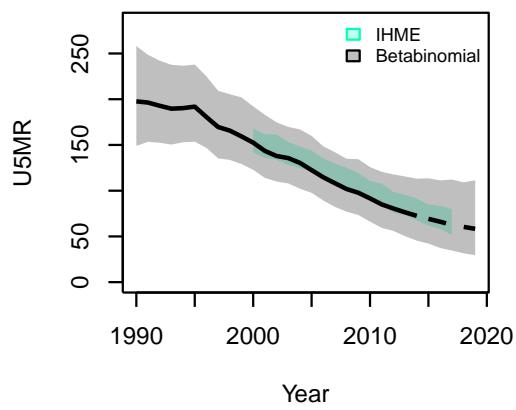
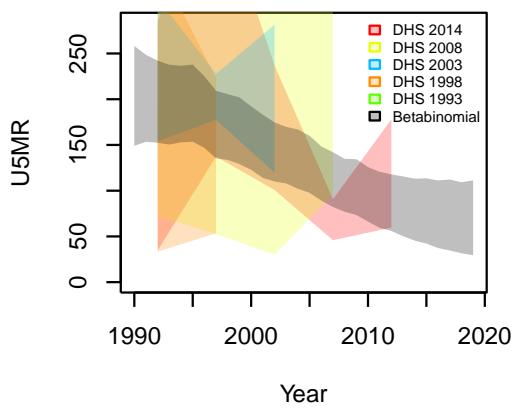
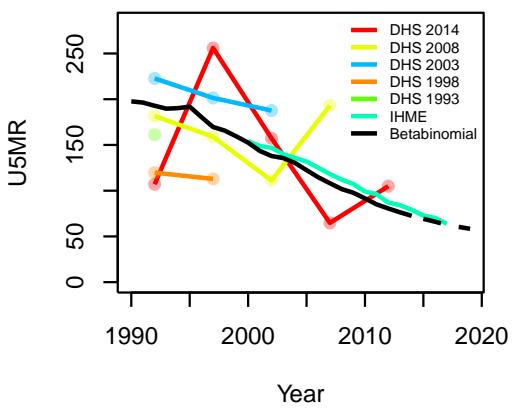
Jirapa Lambussie, Upper West



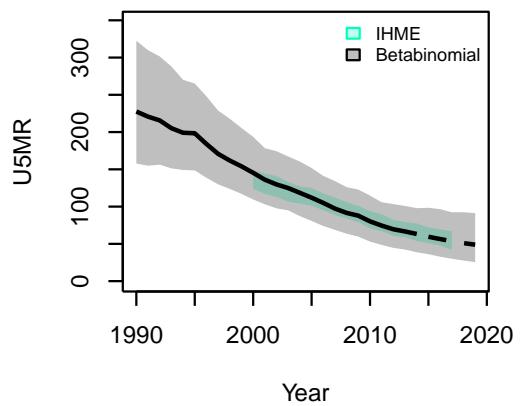
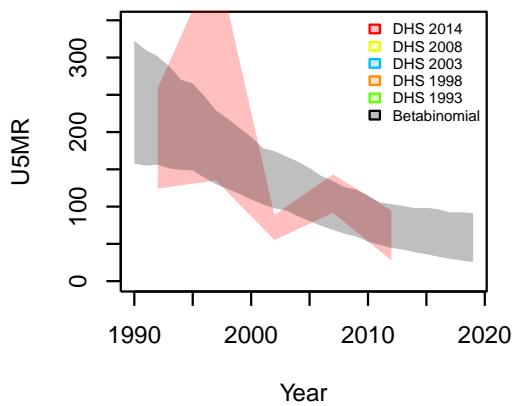
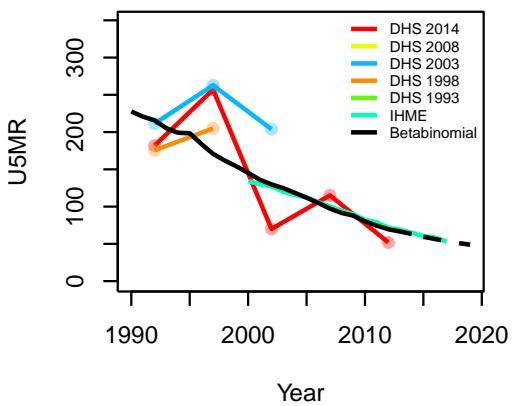
Lawra, Upper West



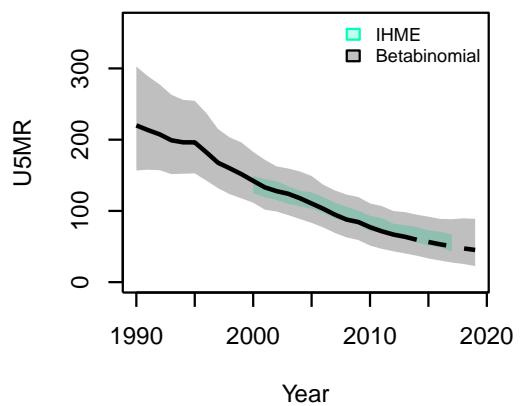
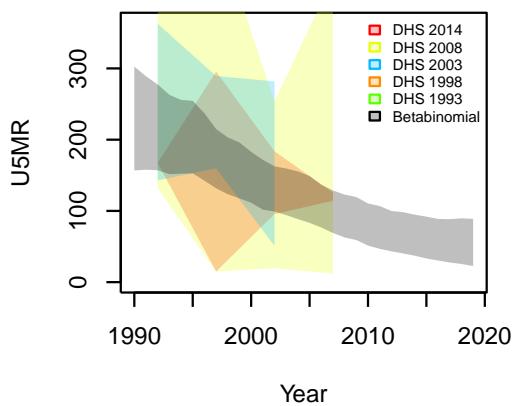
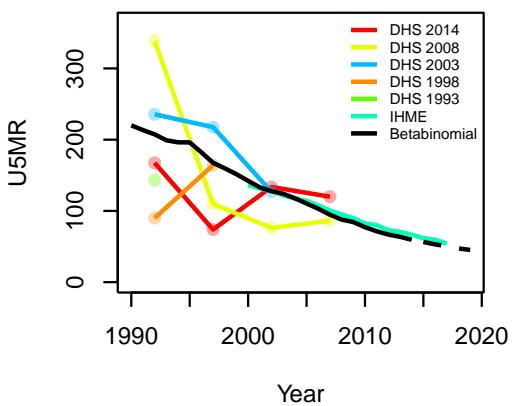
Nadowli, Upper West



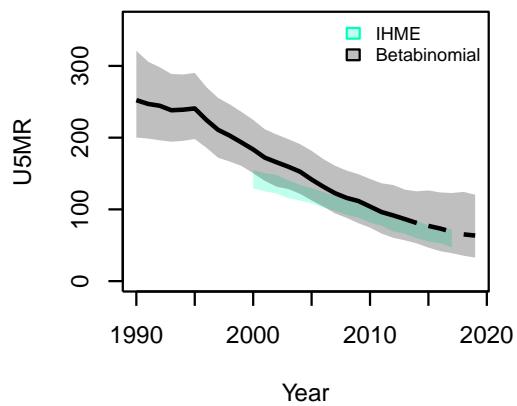
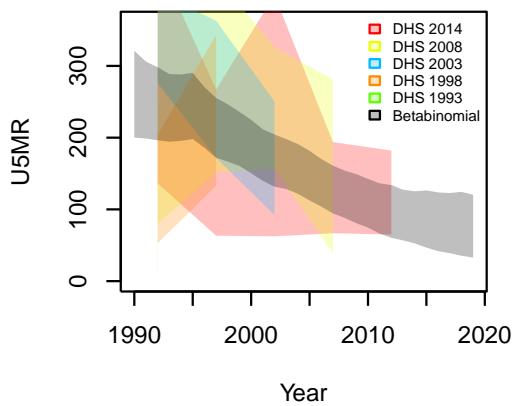
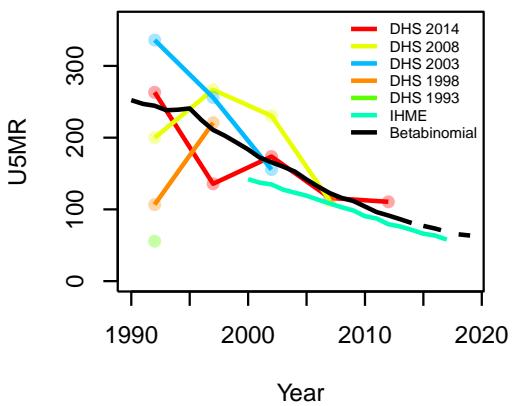
Sissala East, Upper West



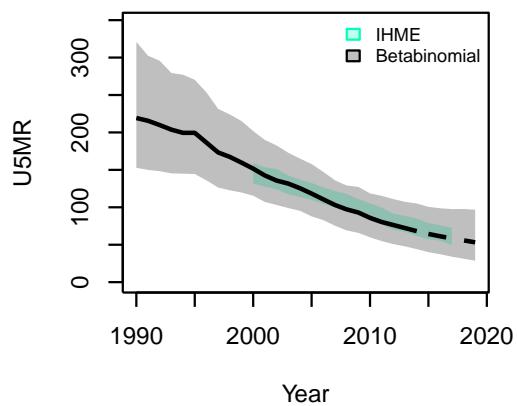
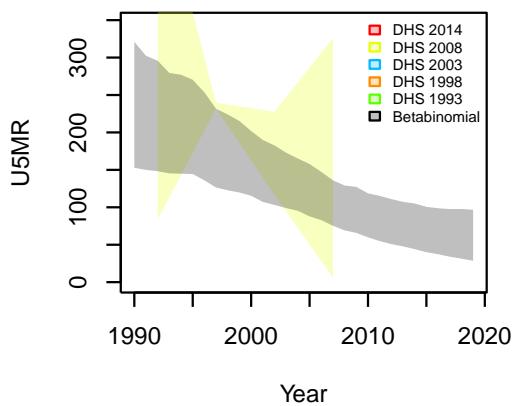
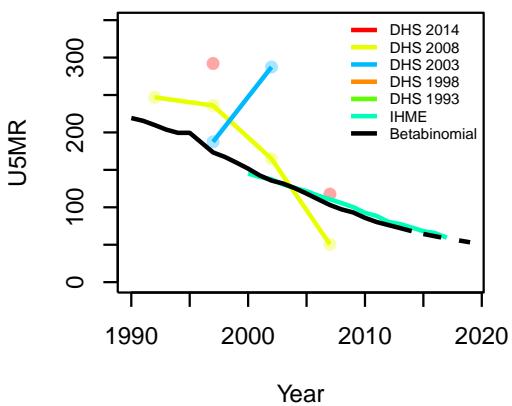
Sissala West, Upper West



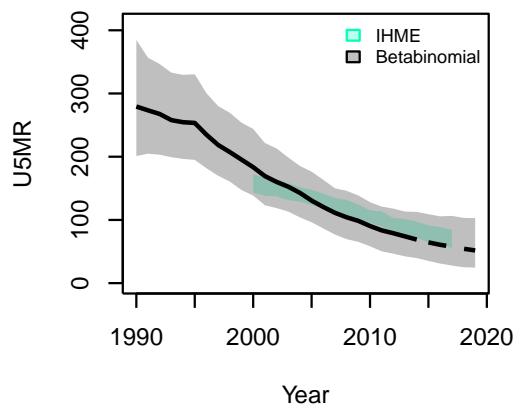
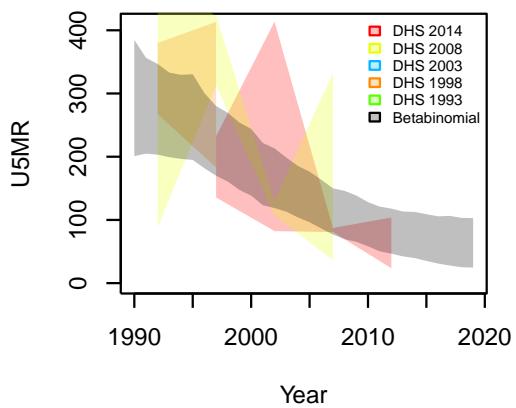
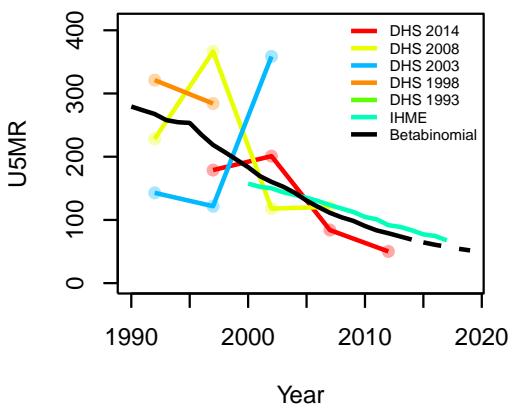
Wa, Upper West



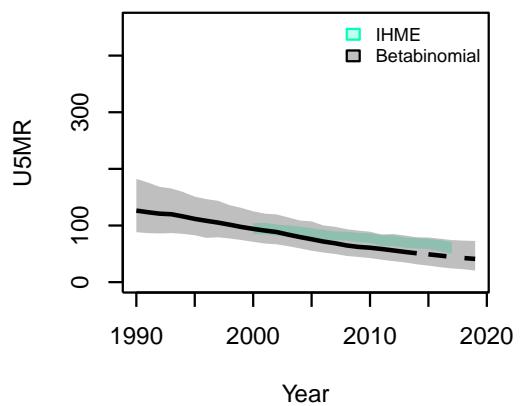
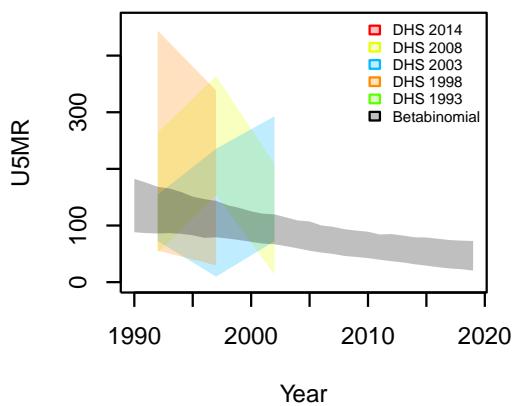
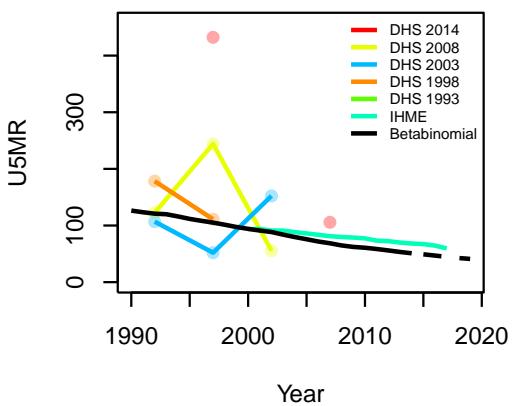
Wa East, Upper West



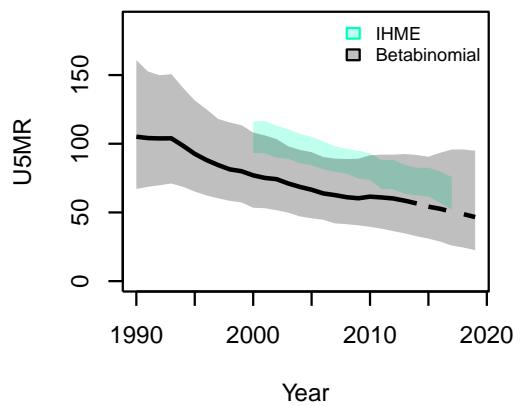
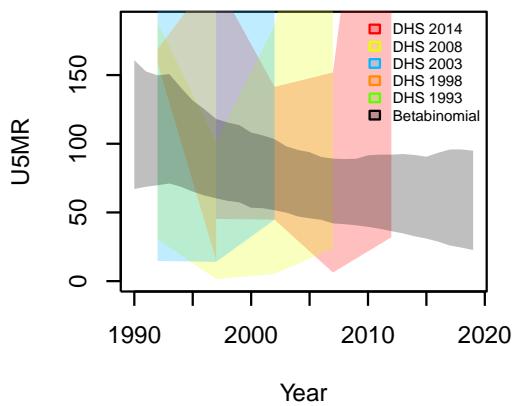
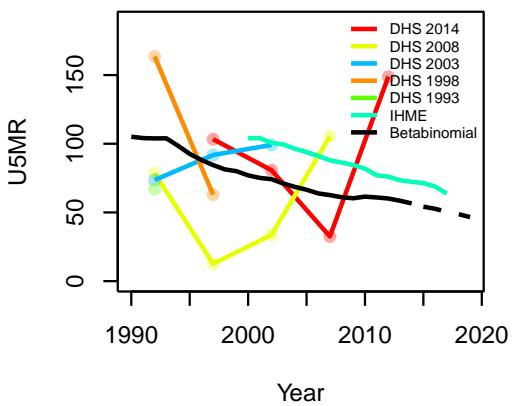
Wa West, Upper West



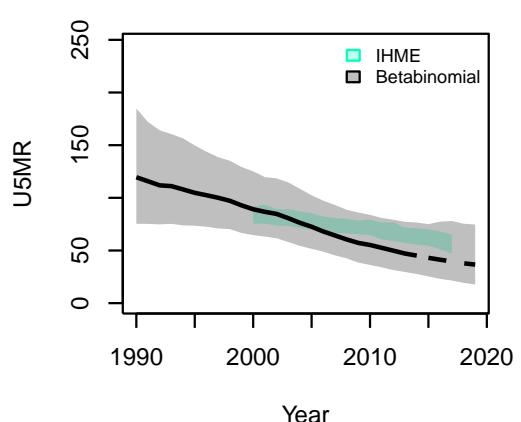
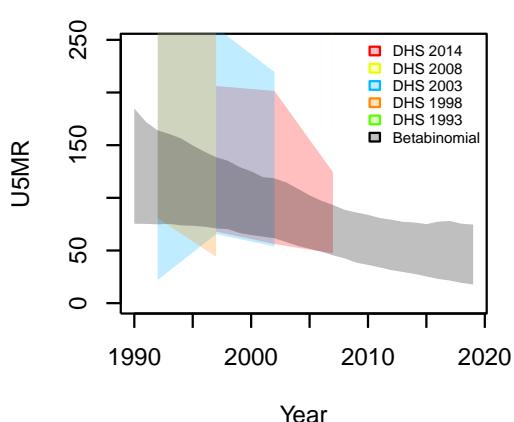
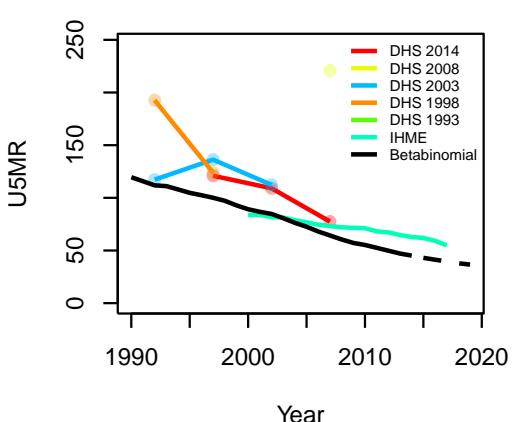
Adaklu Anyigbe, Volta



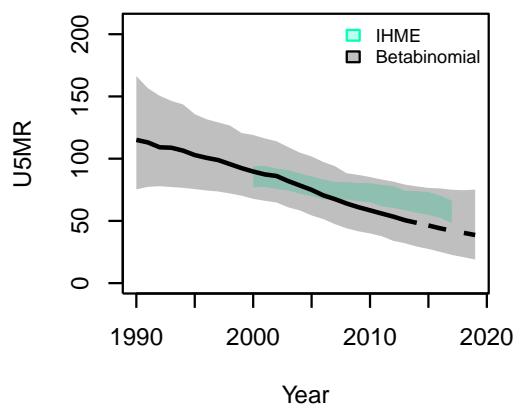
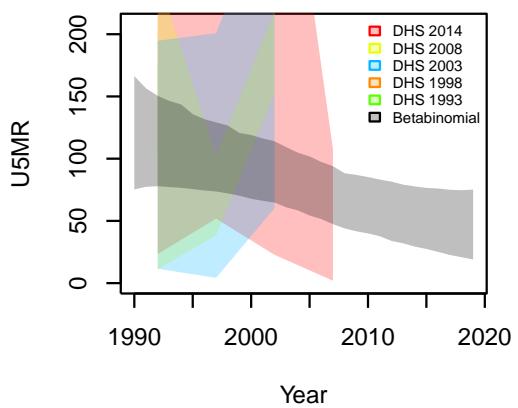
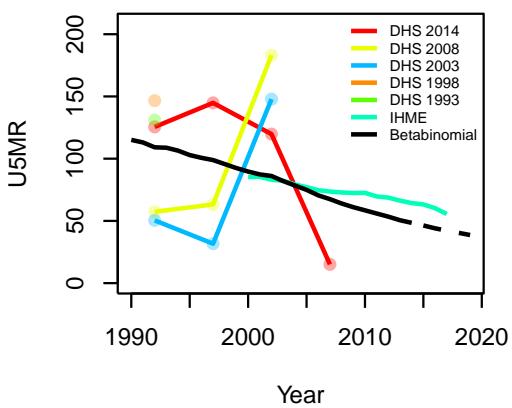
Akatsi, Volta



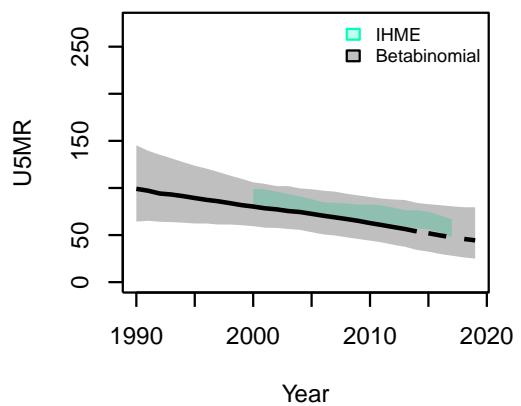
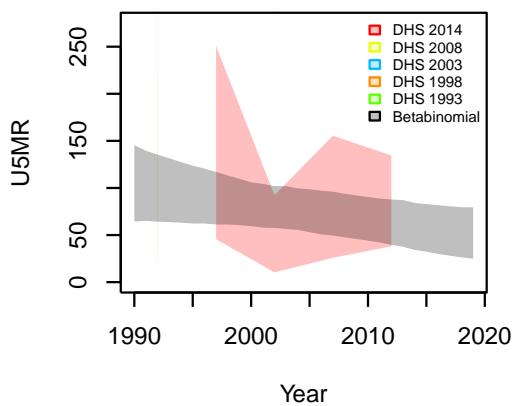
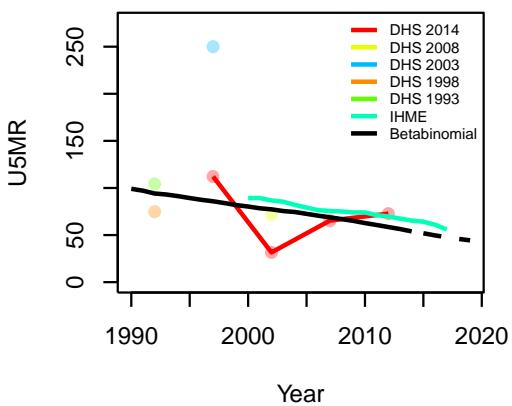
Ho, Volta



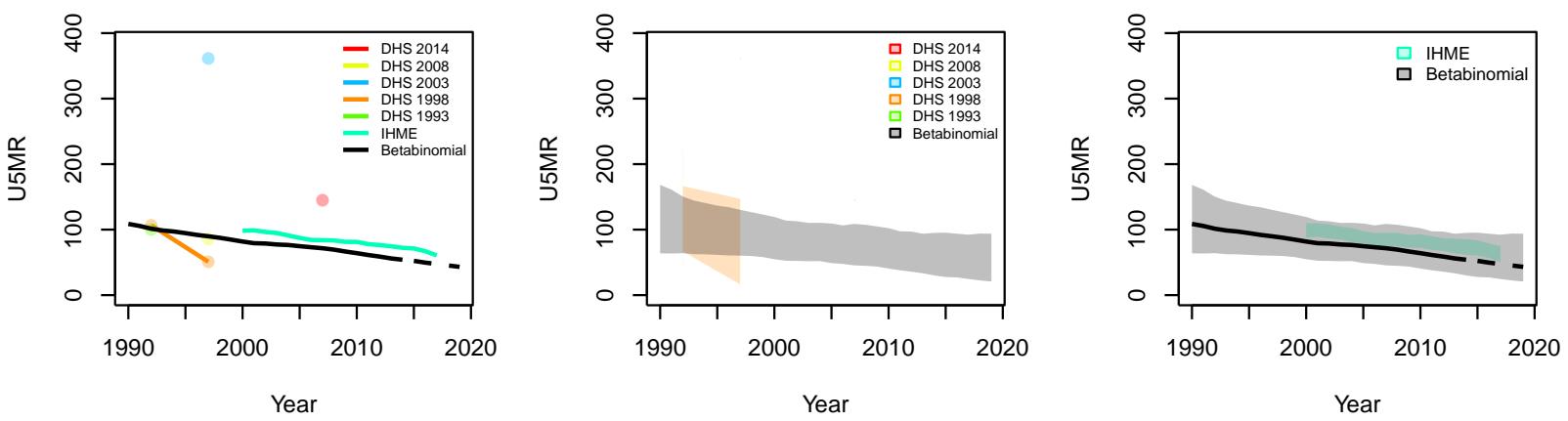
Hohoe, Volta



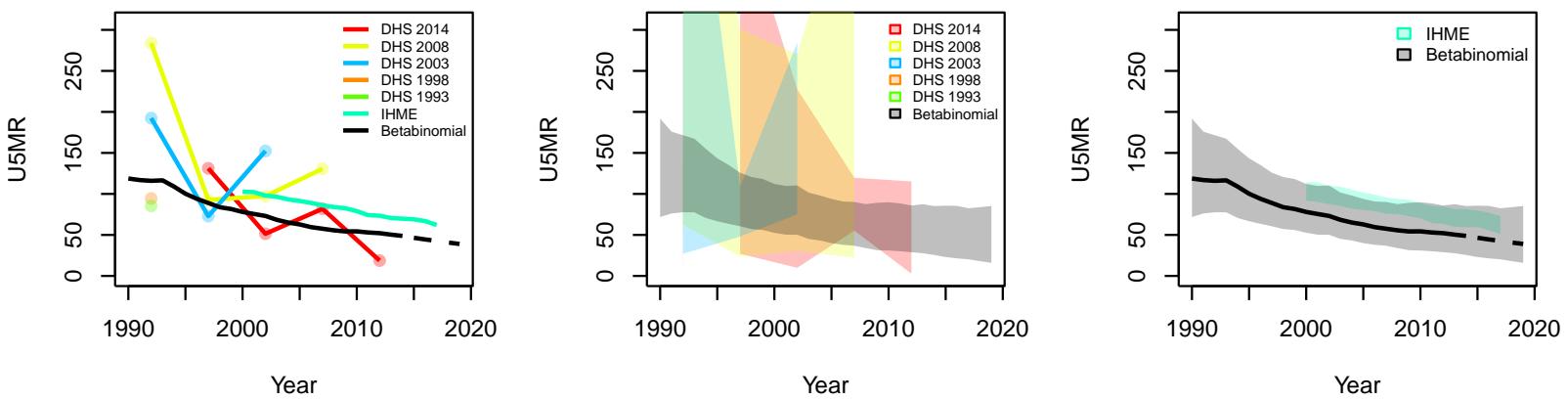
Jasikan, Volta



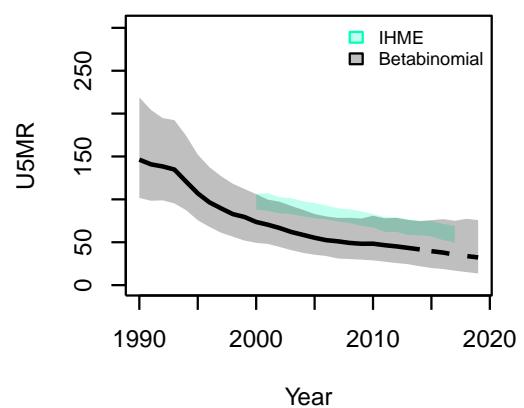
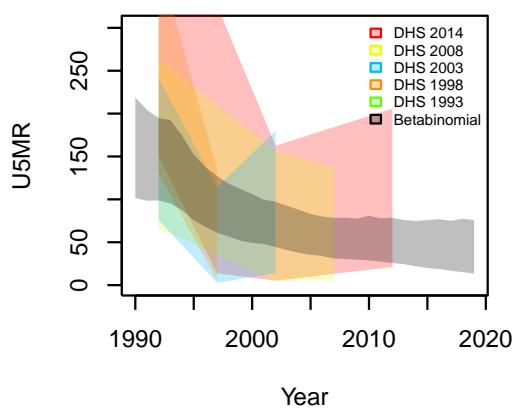
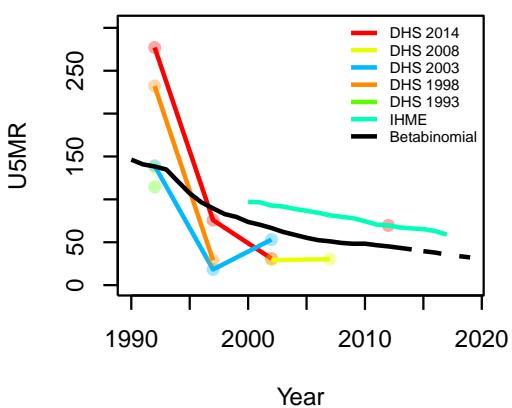
Kadjebi, Volta



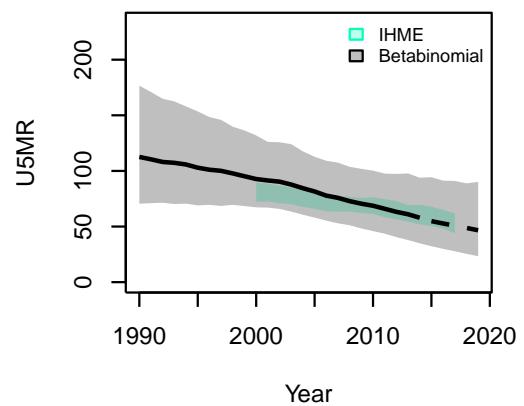
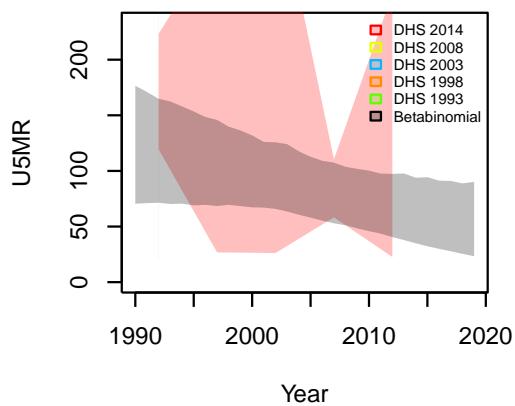
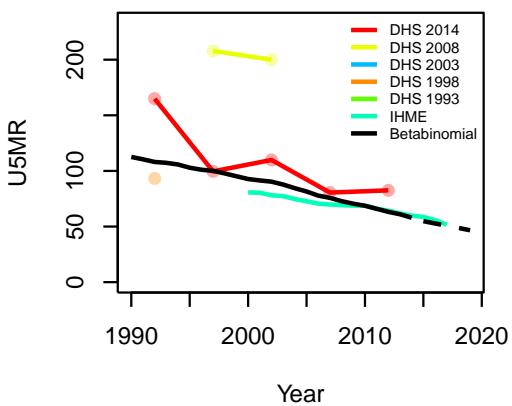
Keta, Volta



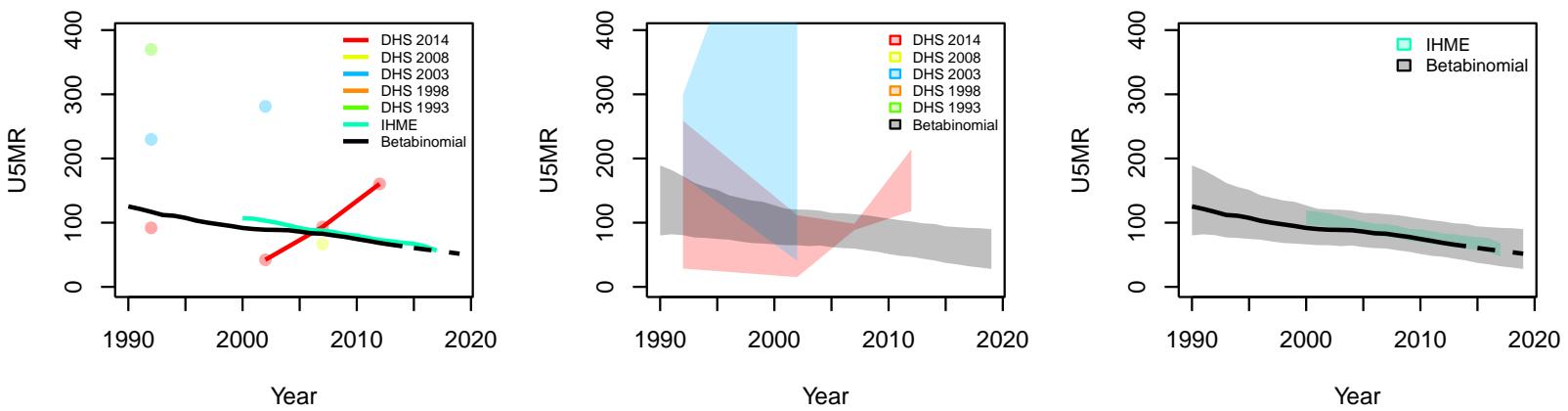
Ketu, Volta



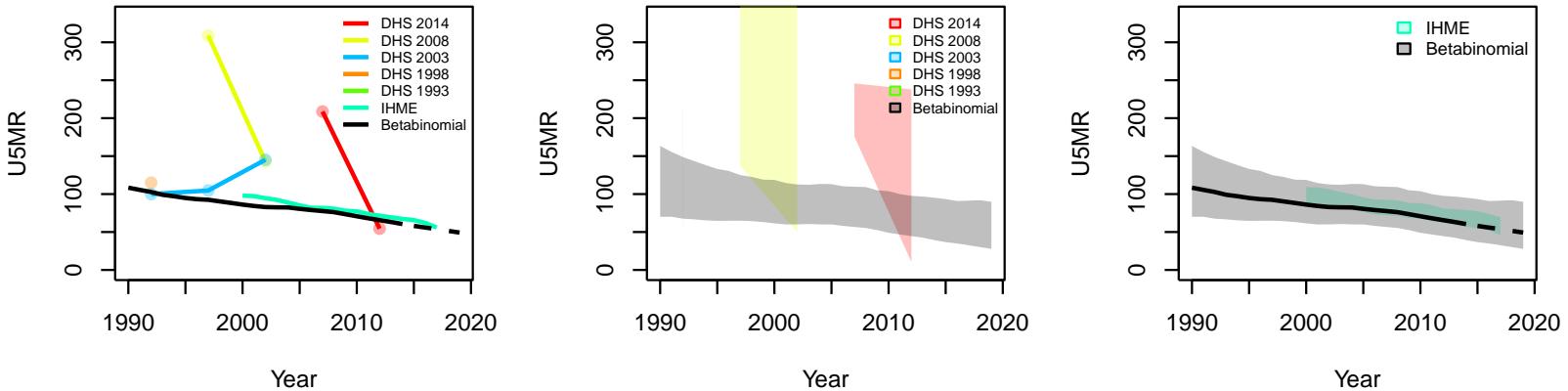
Kpandu, Volta



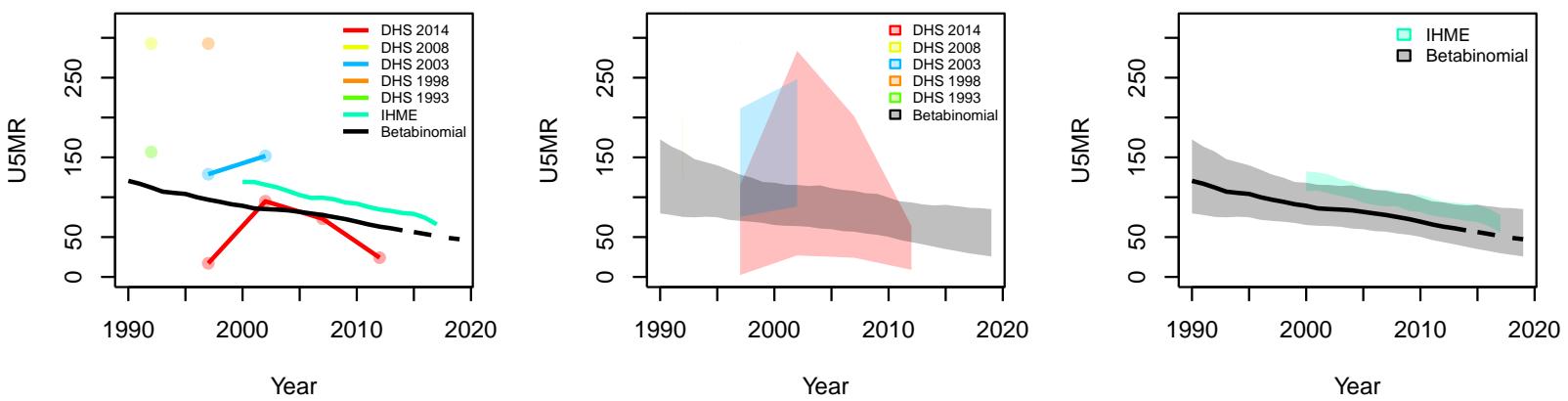
Krachi, Volta



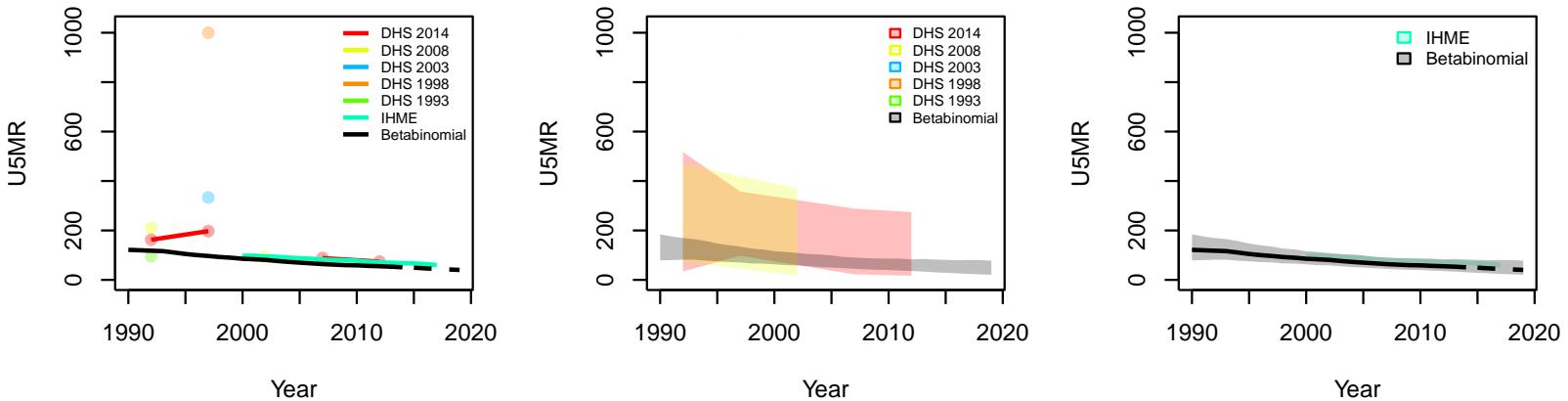
Krachi East, Volta



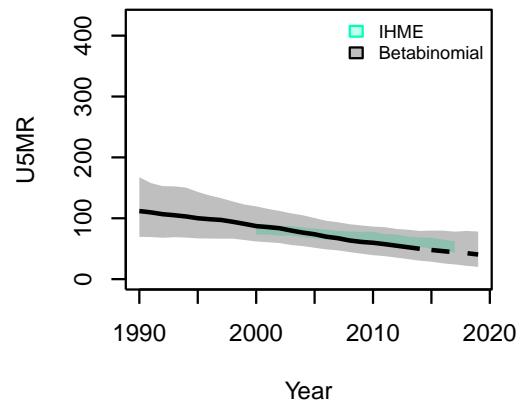
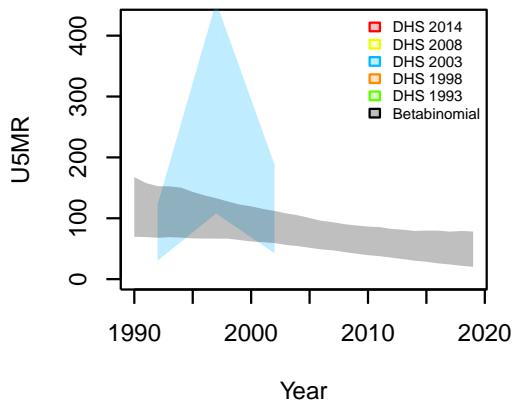
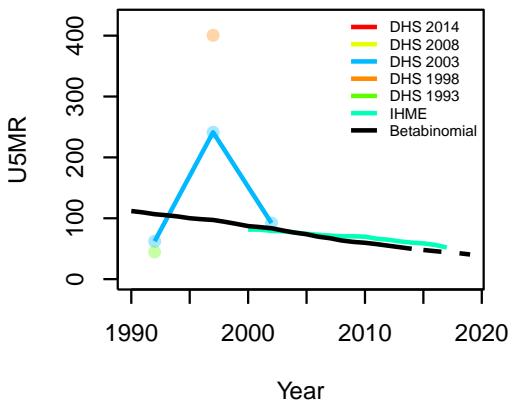
Nkwanta, Volta



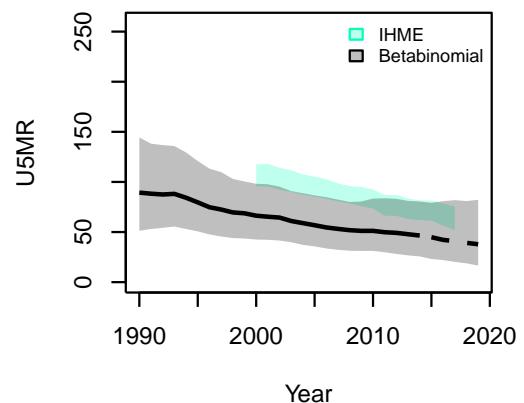
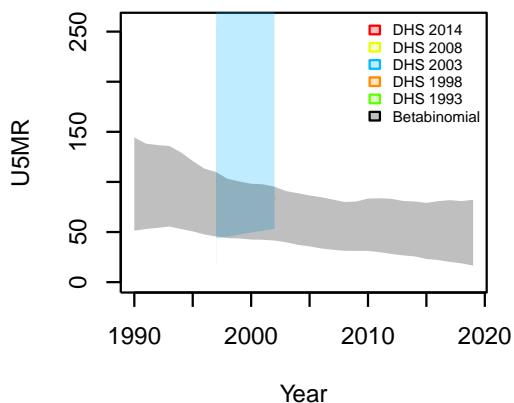
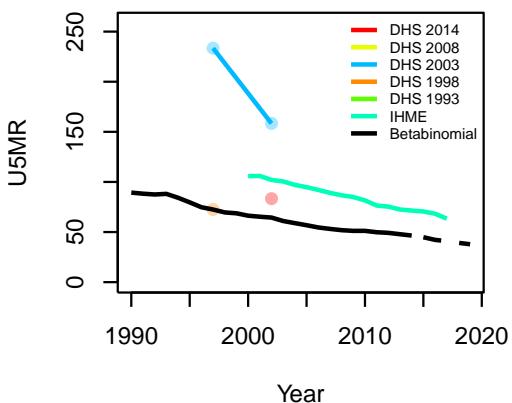
North Tongu, Volta



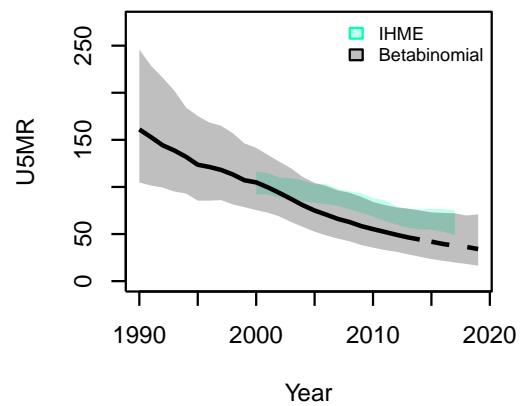
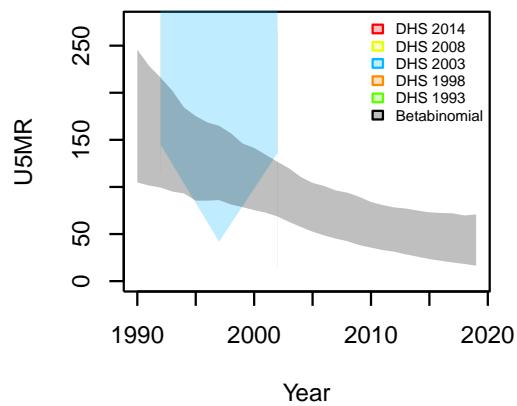
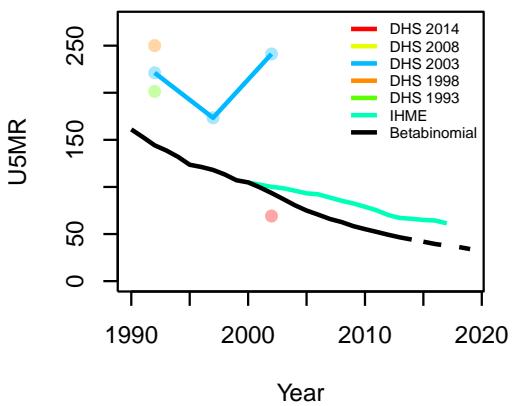
South Dayi, Volta



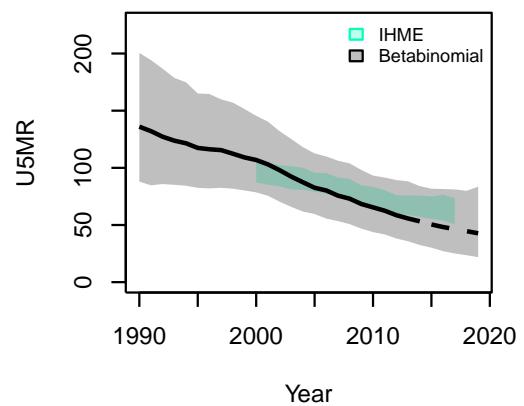
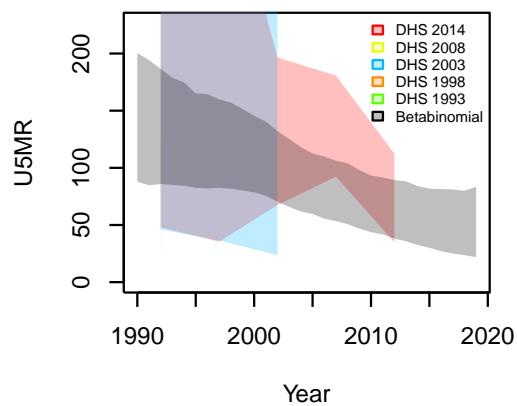
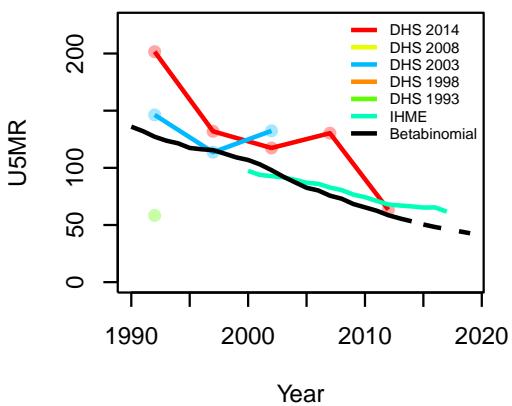
South Tongu, Volta



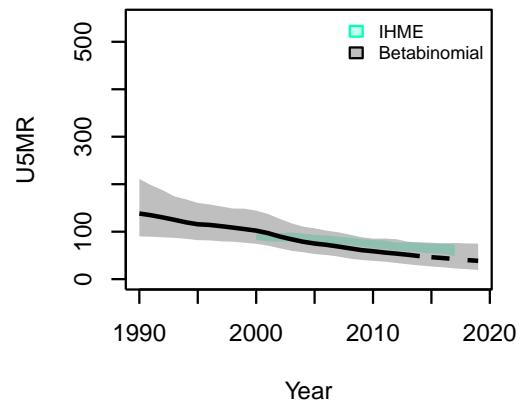
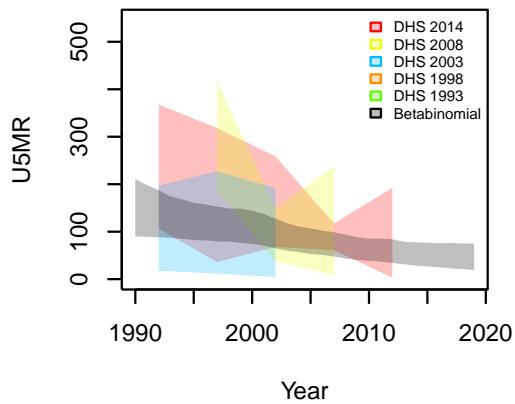
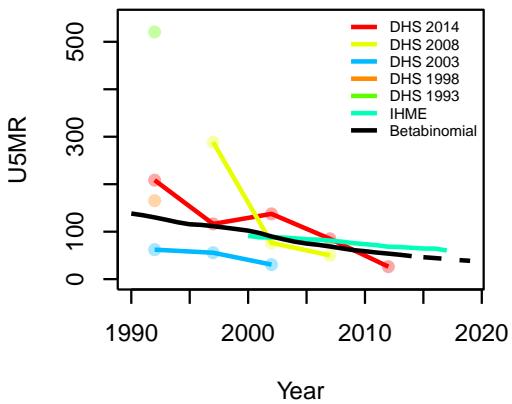
Ahanta West, Western



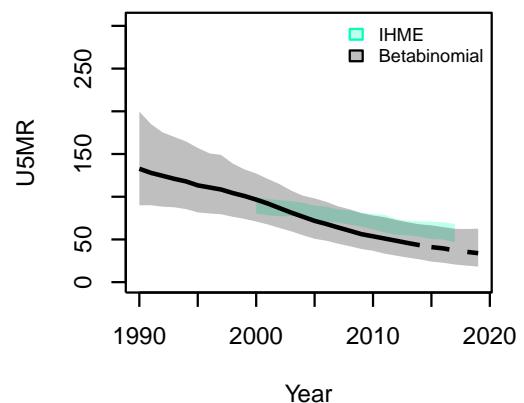
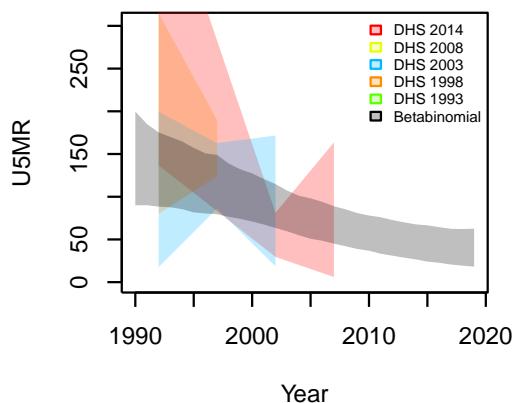
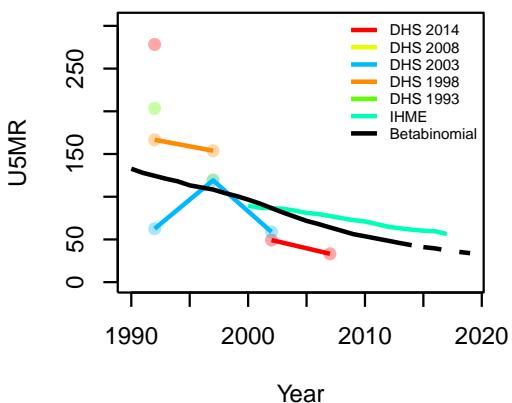
Aowin-Suaman, Western



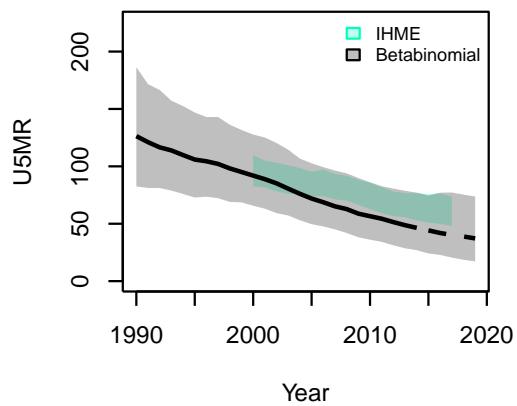
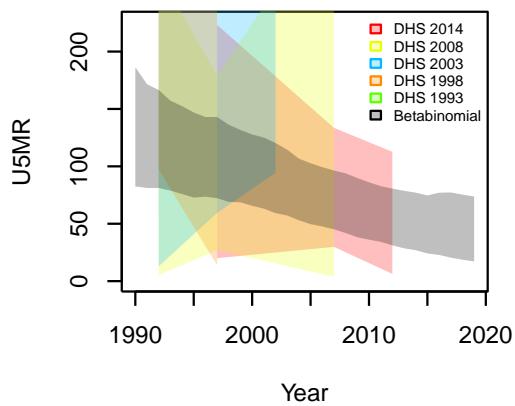
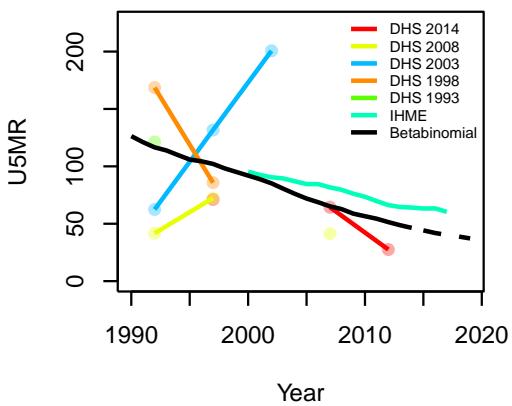
Bia, Western



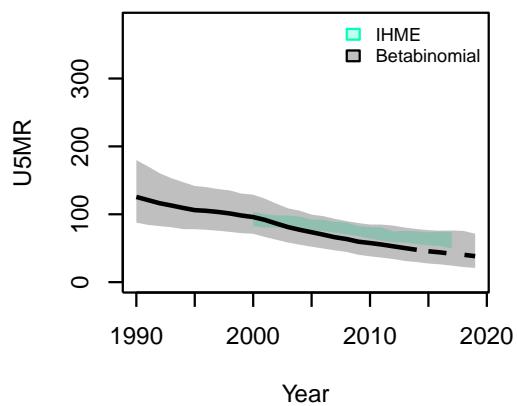
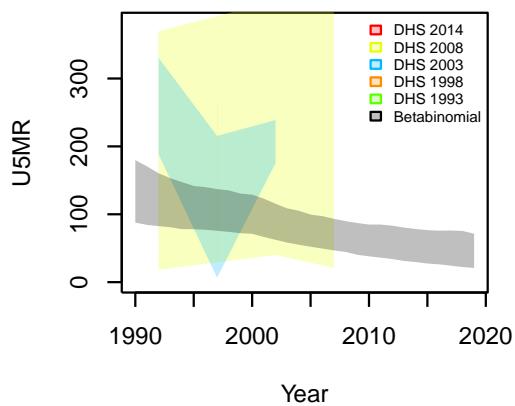
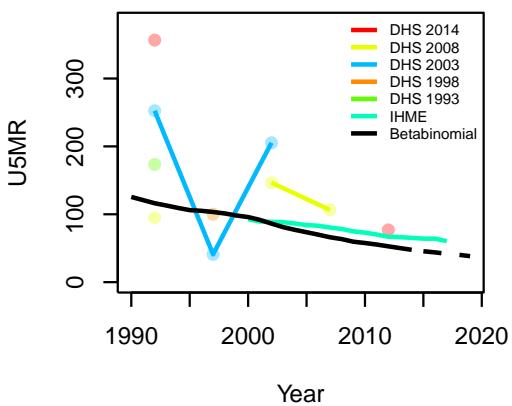
Bibiani Anhwiaso Bekwai, Western



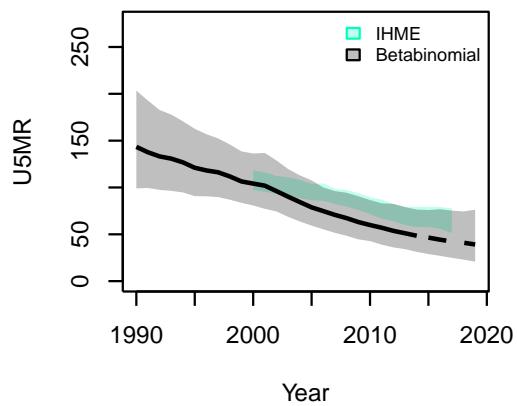
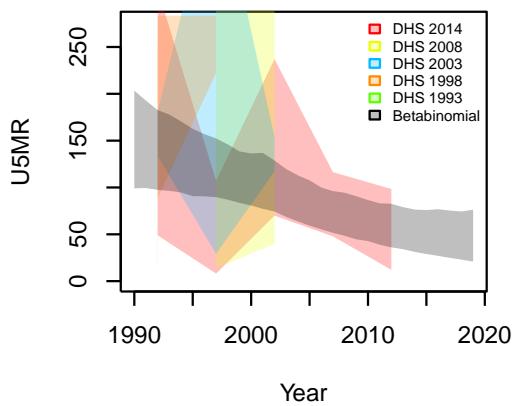
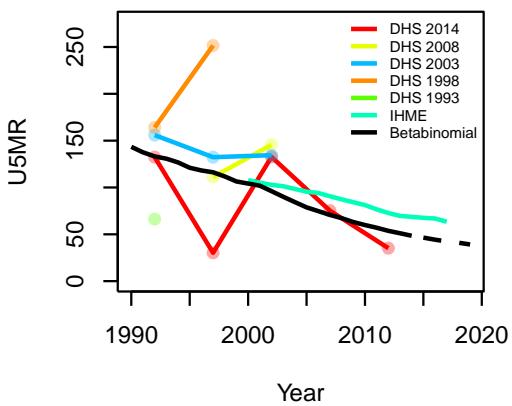
Jomoro, Western



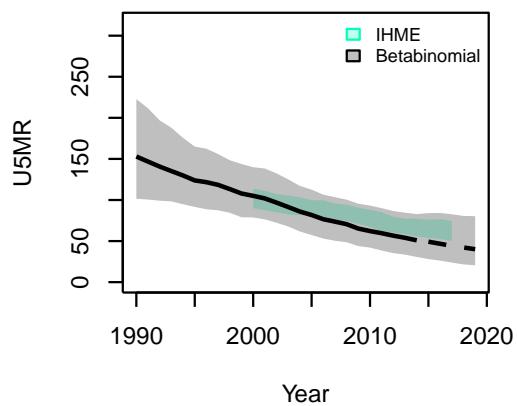
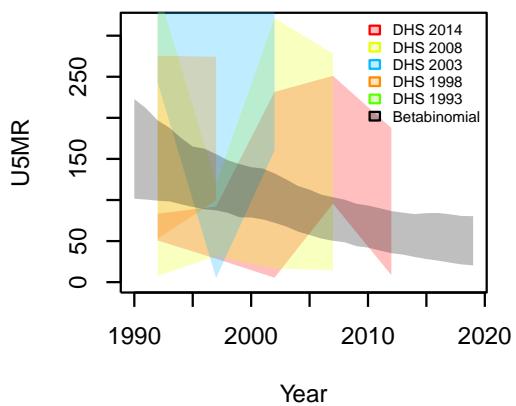
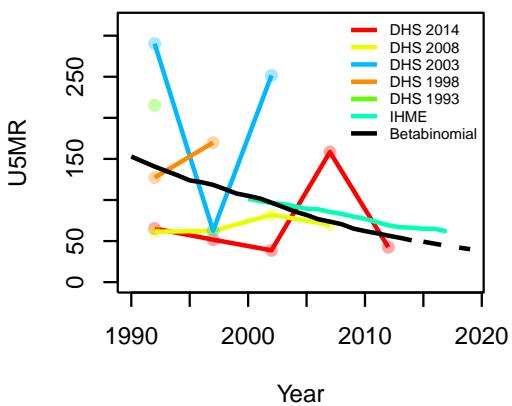
Juabeso, Western



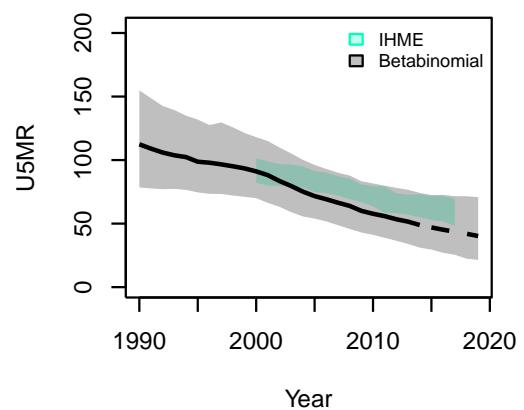
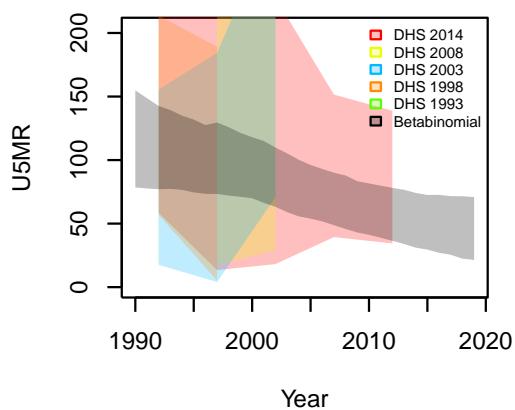
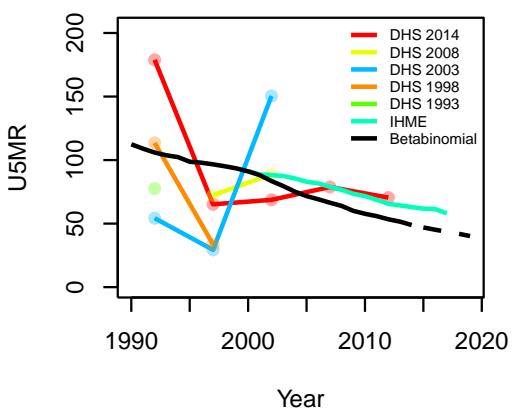
Mpohor Wassa East, Western



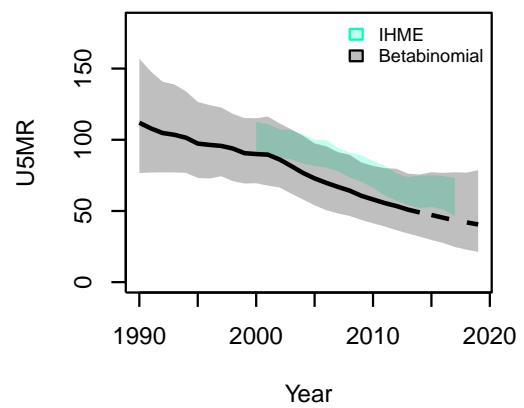
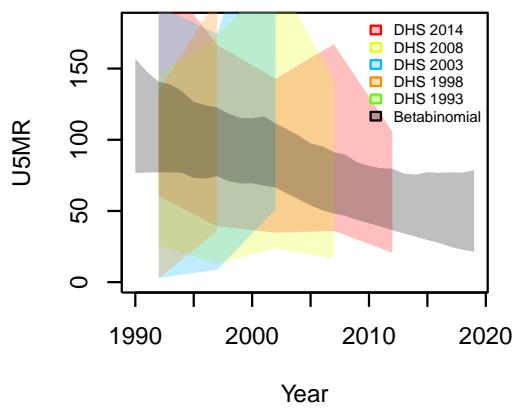
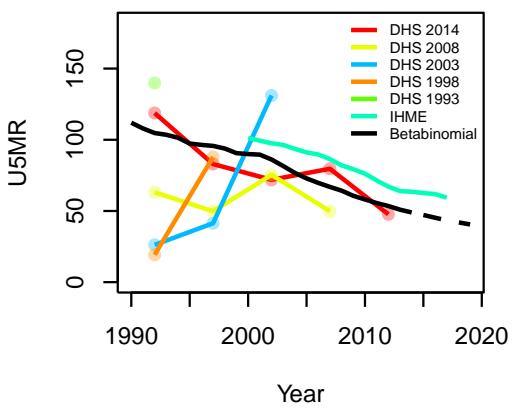
Nzema East, Western



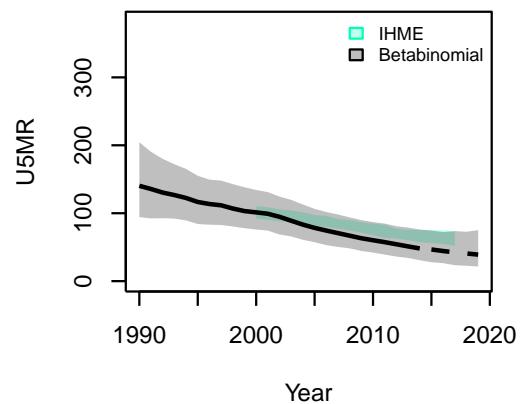
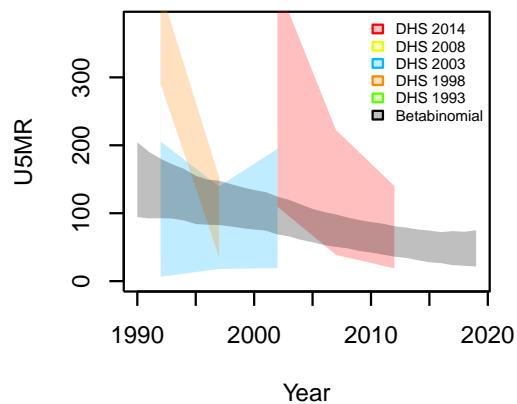
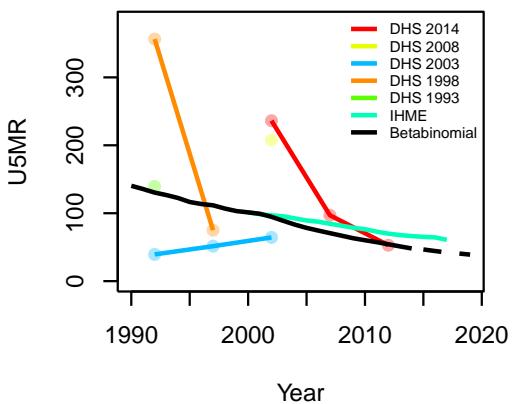
Sefwi Wiawso, Western



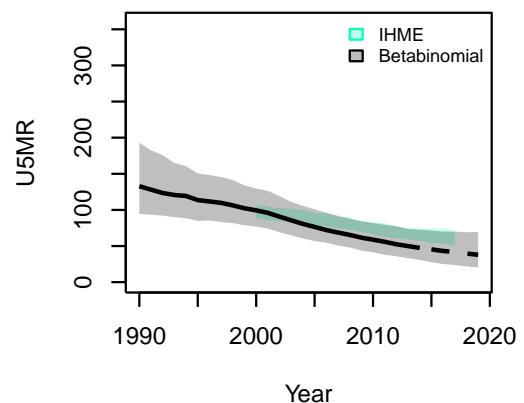
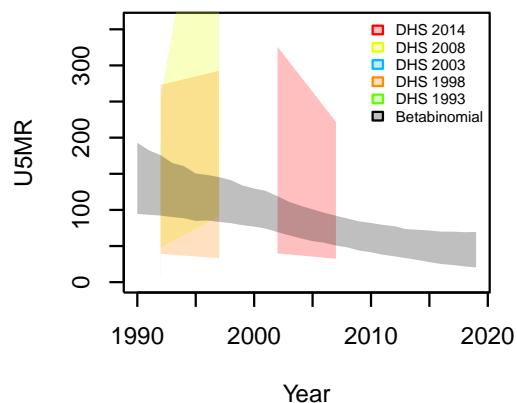
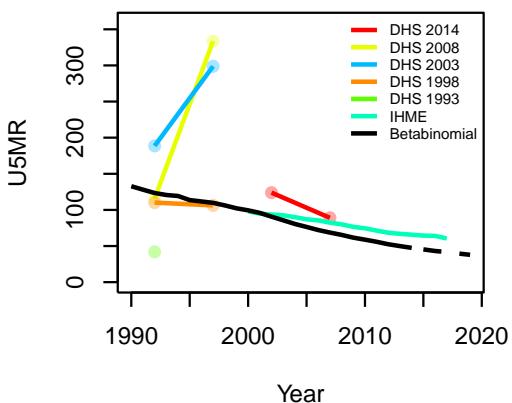
Shama Ahanta East, Western



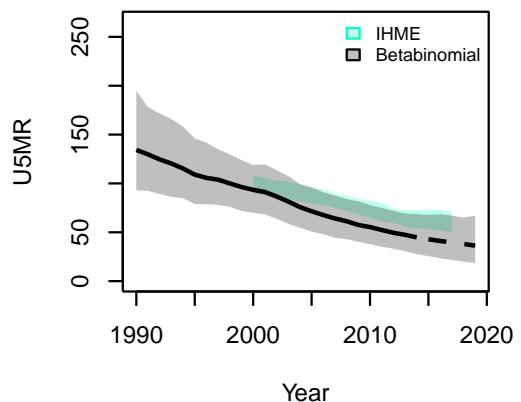
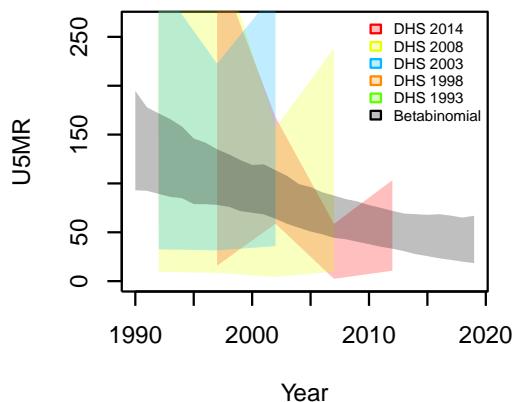
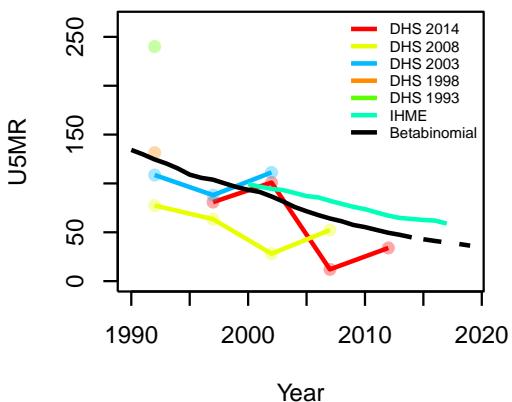
Wasa Amenfi East, Western



Wasa Amenfi West, Western



Wassa West, Western



4 National Figures and Results

	Median	Interval	Median-	Bench	Interval
0	31.70	(28.9,34.6)	31.20		(28.5,34.1)
1-11	1.90	(1.7,2.1)	1.90		(1.7,2.1)
12-23	0.90	(0.8,1)	0.90		(0.8,1)
24-35	0.80	(0.7,0.9)	0.80		(0.7,0.9)
36-47	0.60	(0.5,0.7)	0.60		(0.5,0.7)
48-59	0.40	(0.3,0.5)	0.40		(0.3,0.4)

Table 7: Monthly hazards in terms of 1000 children by age band for national, unstratified model for Ghana.

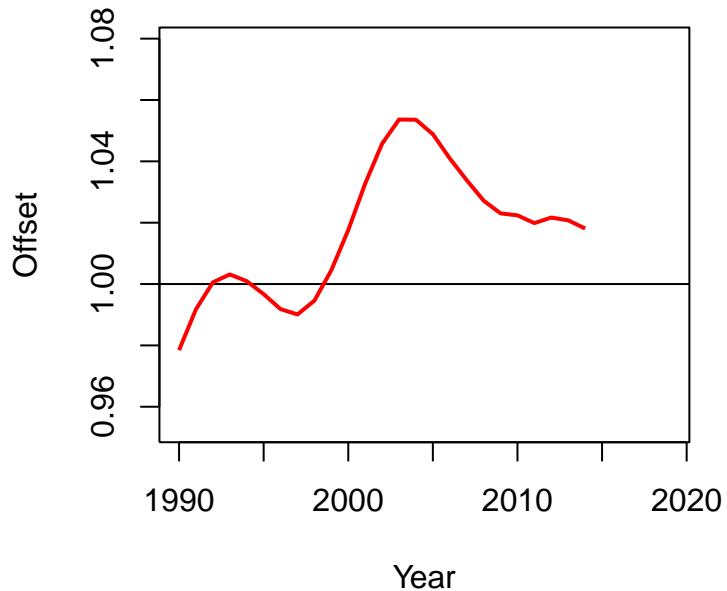


Figure 7: Benchmark offsets: $\text{BENCH}(t) = \text{U5MR}^*(t)/\text{U5MR}(t)$ where $\text{U5MR}^*(t)$ is modeled estimate and $\text{U5MR}(t)$ is UN-IGME estimate.

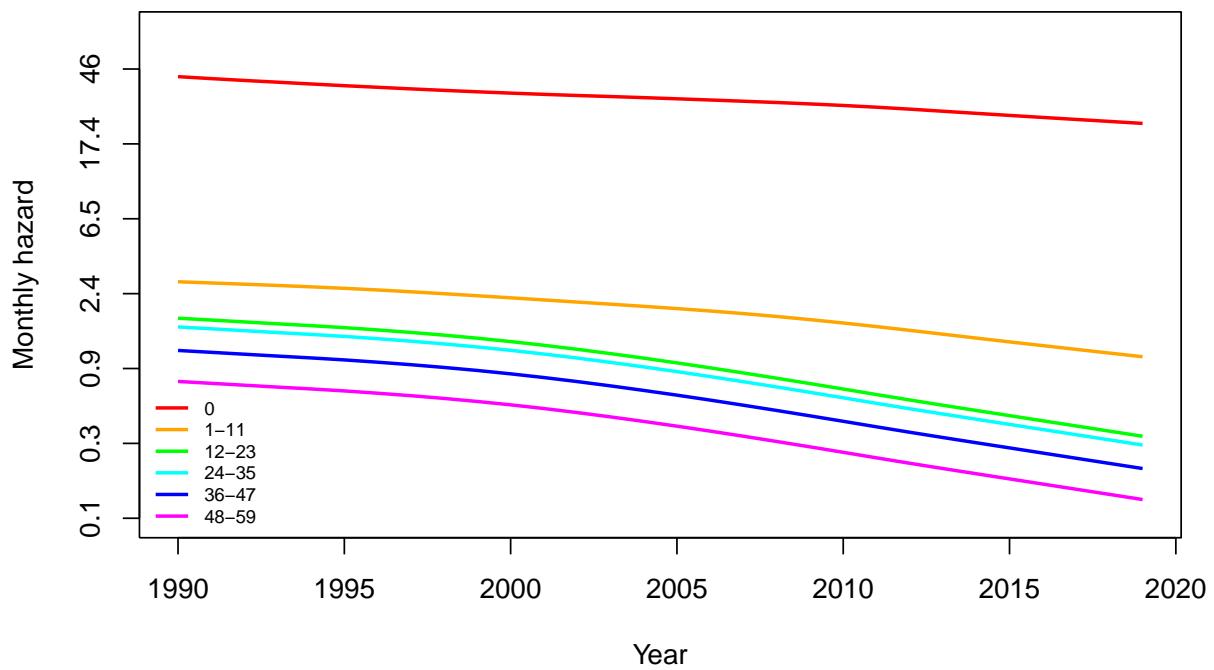


Figure 8: Monthly hazards of death in terms of U5MR (number deaths per 1000 children) by agebands.

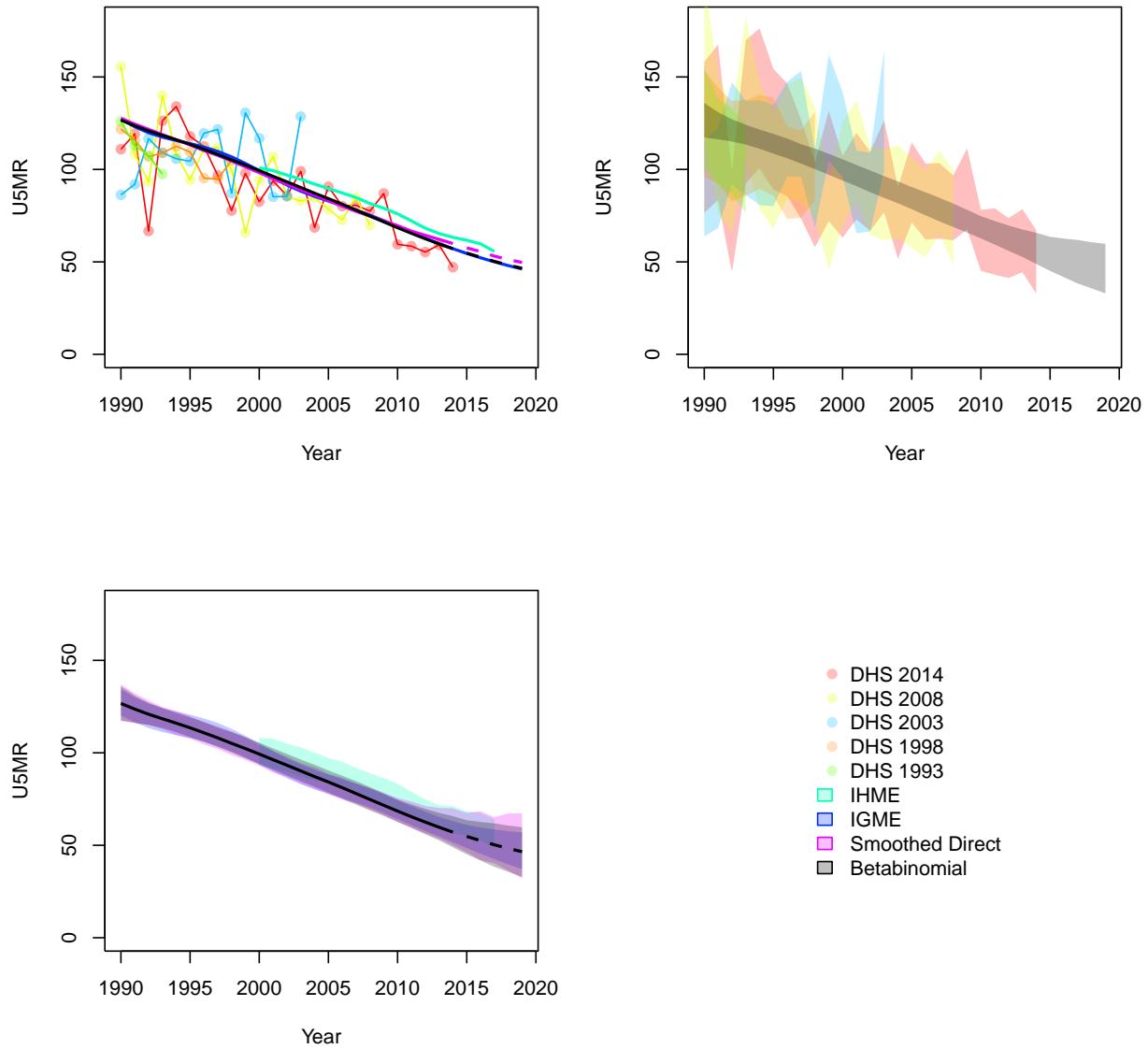
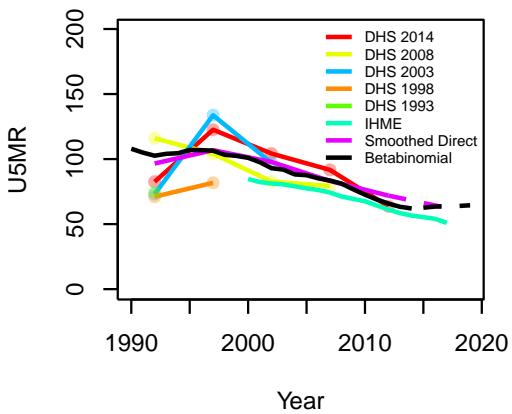
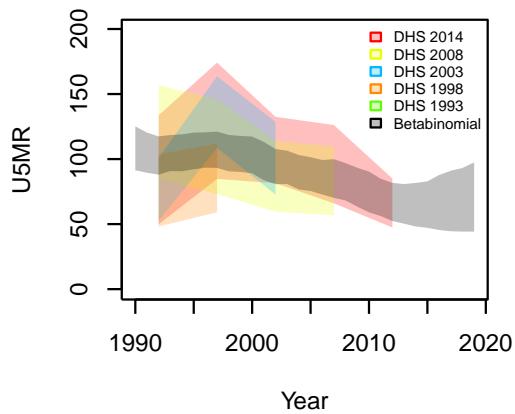
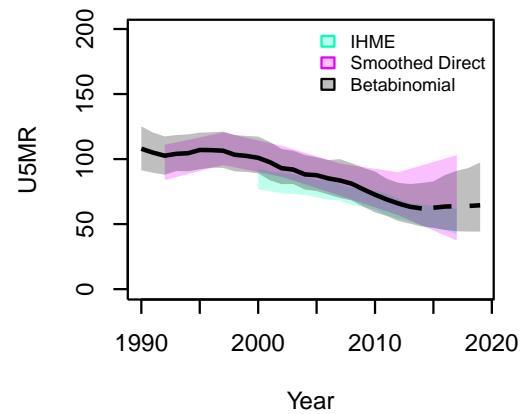
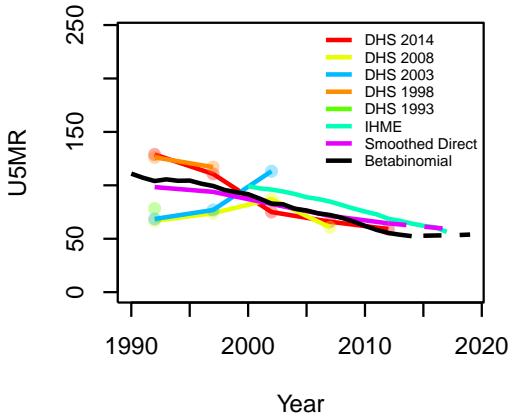
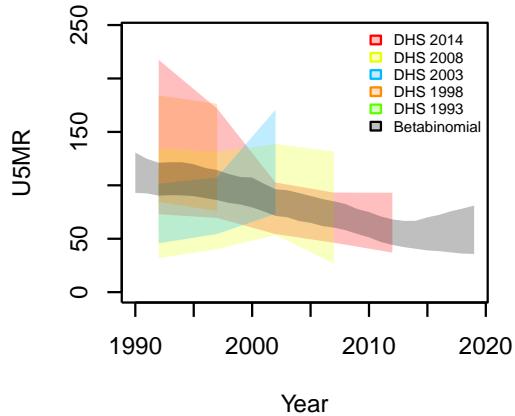
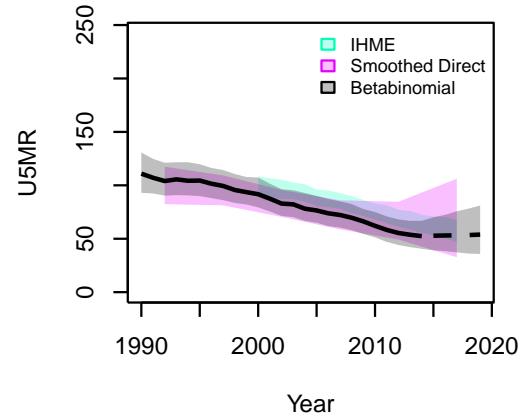
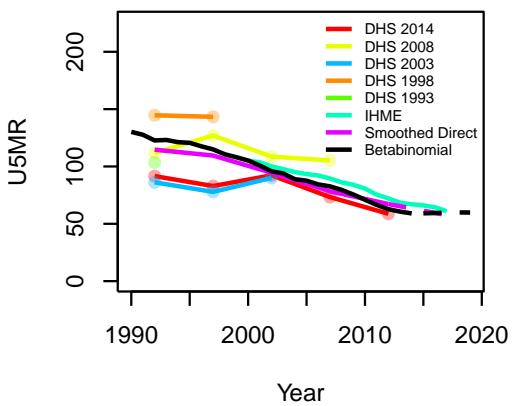


Figure 9: Benchmarked U5MR rates per 1000 live births. Top: DHS direct estimates with national trends from IHME GBD, UN-IGME, Smoothed Direct and Betabinomial estimates. Middle: 95% uncertainty intervals for DHS data. Bottom: IHME GBD, UN-IGME, Smoothed Direct and Betabinomial estimates with for the unstratified model. 95% uncertainty intervals

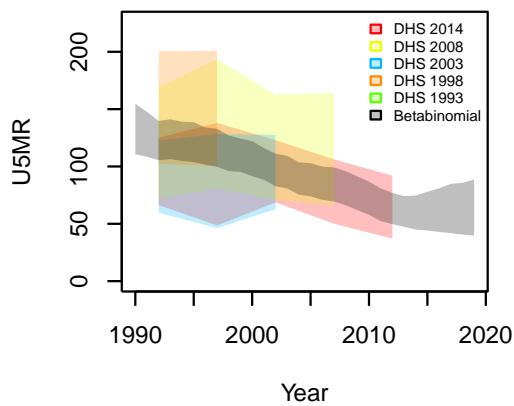
5 Admin 1 Figures

Ashanti**Ashanti****Ashanti****Brong Ahafo****Brong Ahafo****Brong Ahafo**

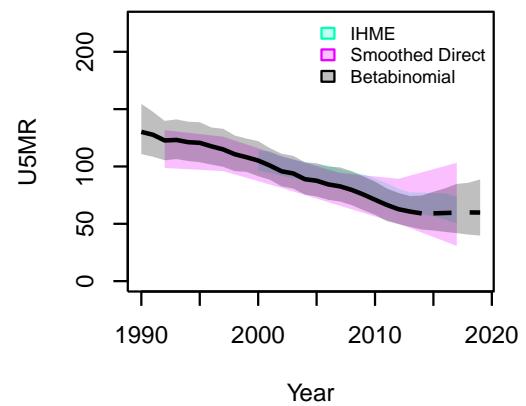
Central



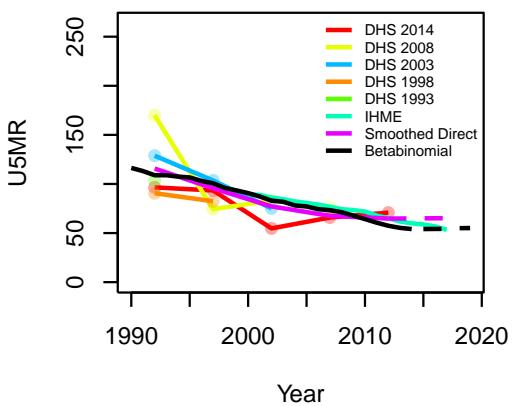
Central



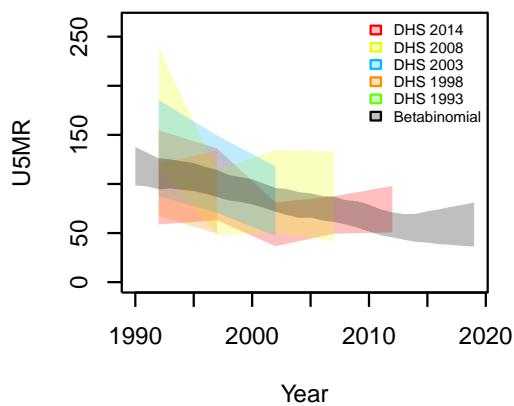
Central



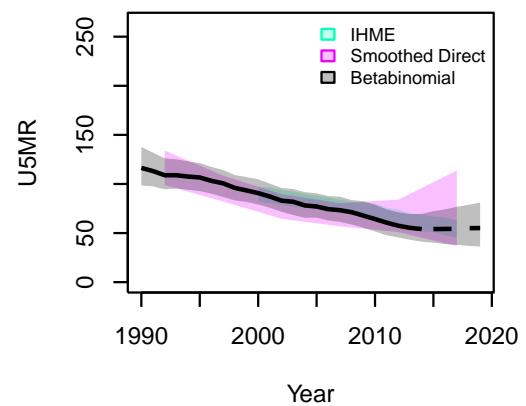
Eastern



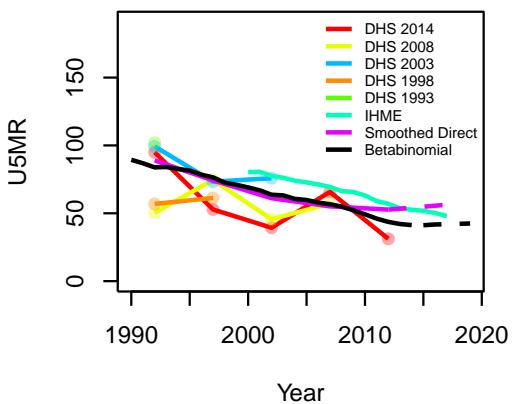
Eastern



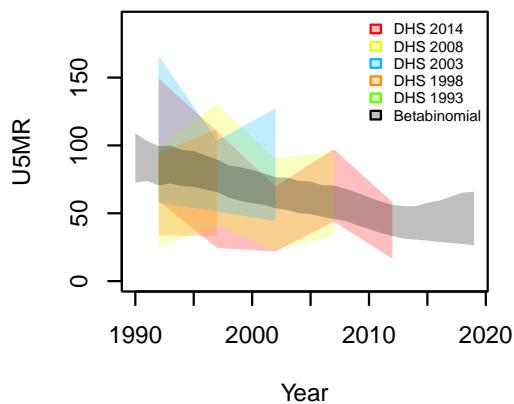
Eastern



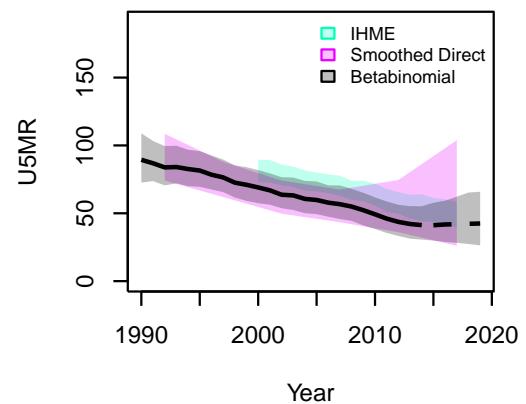
Greater Accra



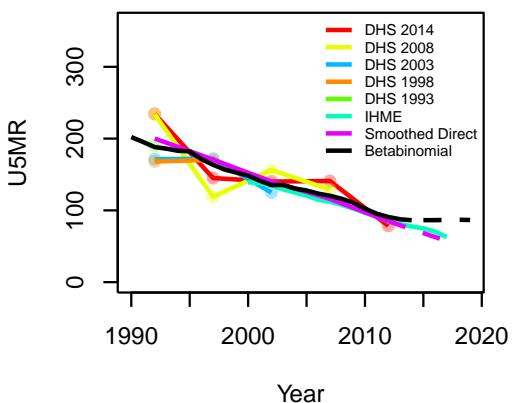
Greater Accra



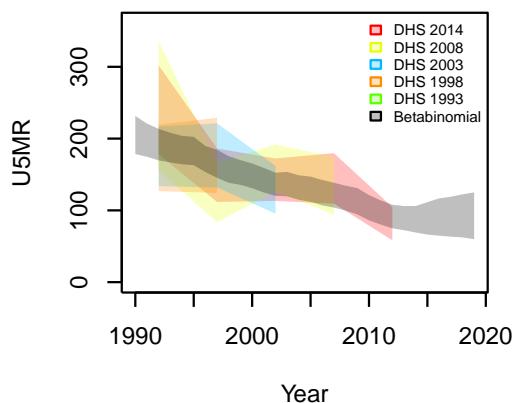
Greater Accra



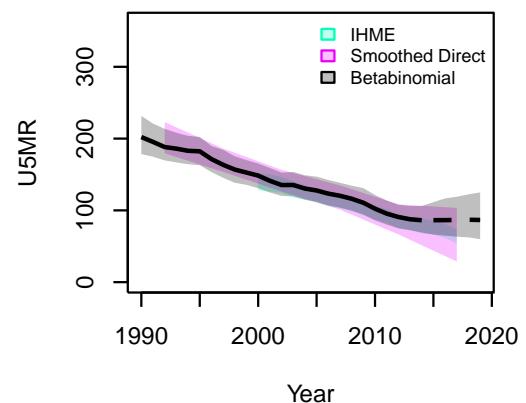
Northern



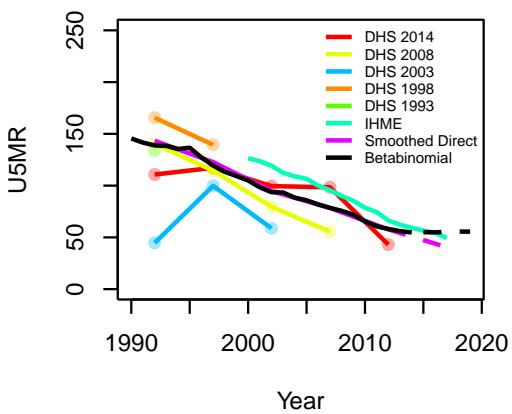
Northern



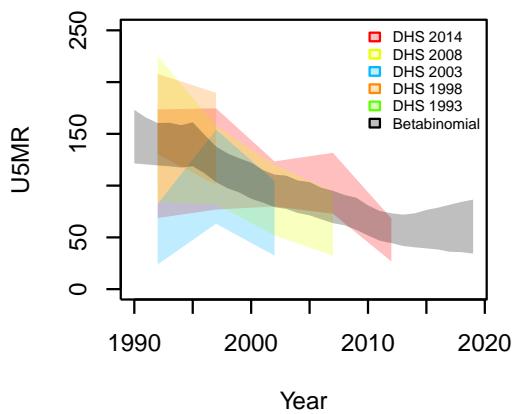
Northern



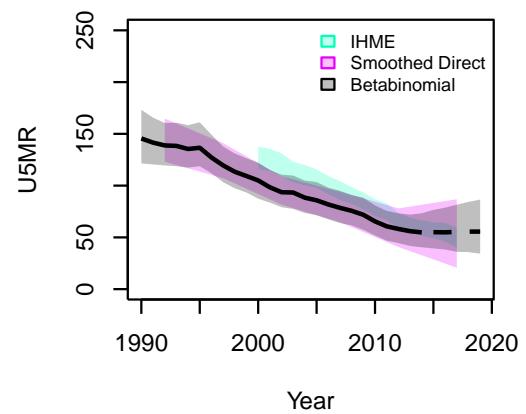
Upper East



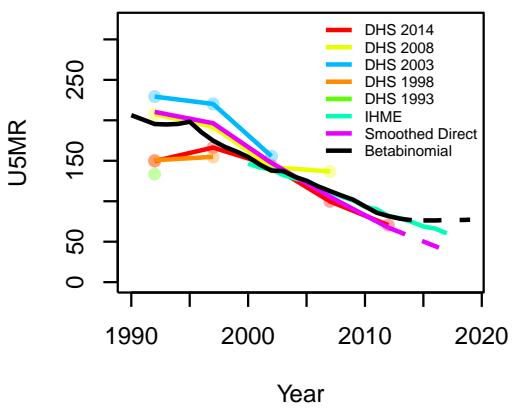
Upper East



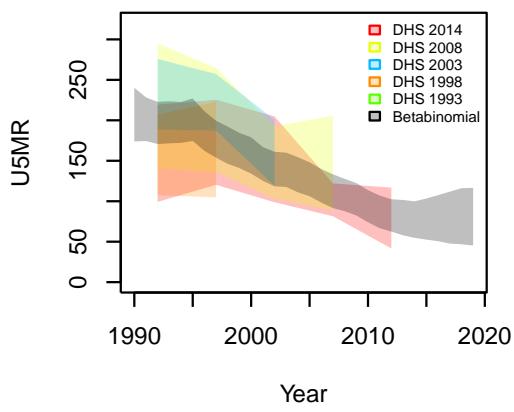
Upper East



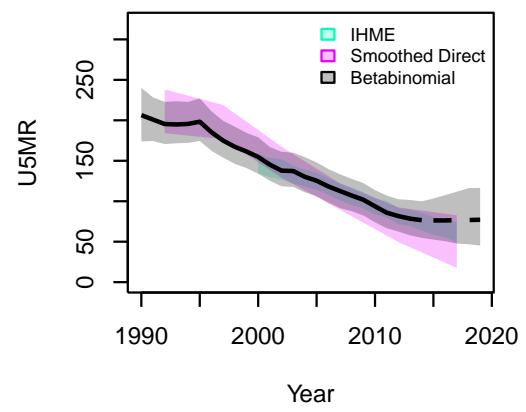
Upper West



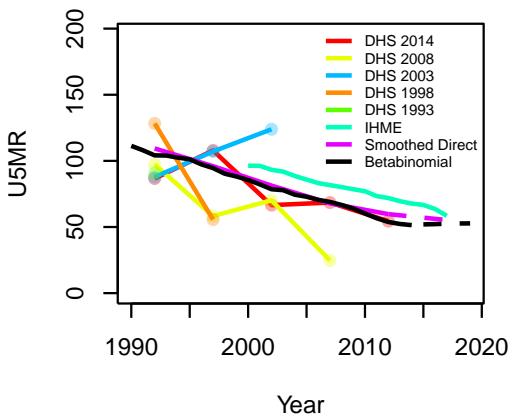
Upper West



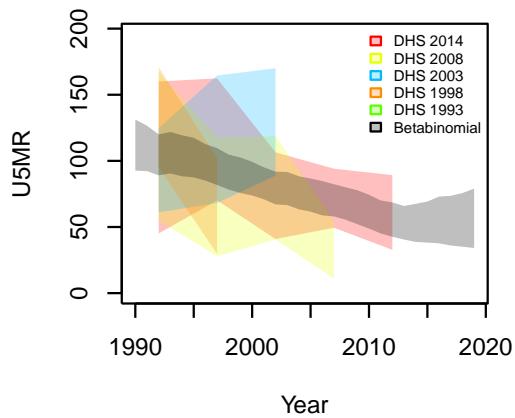
Upper West



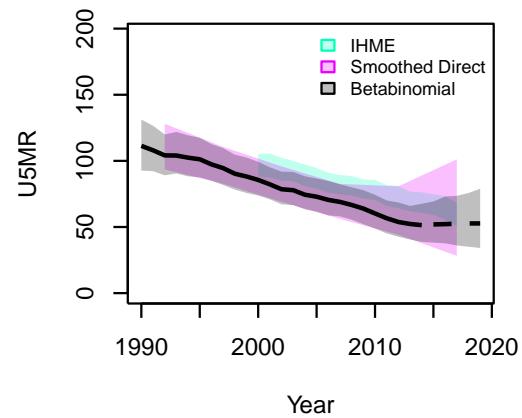
Volta



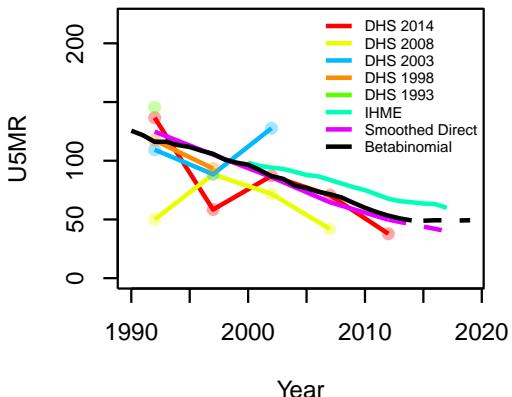
Volta



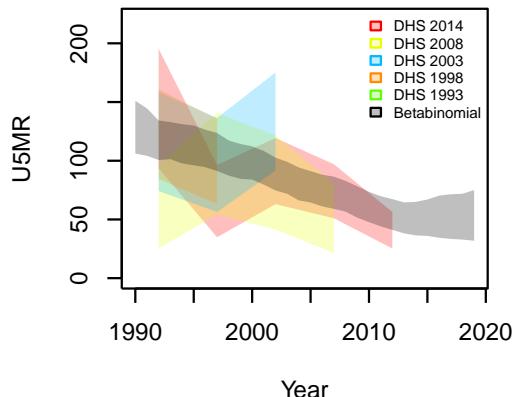
Volta



Western



Western



Western

