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Author Version

National, regional, and global rates and trends in contraceptive prevalence and unmet need for family planning between 1990 and 2015: a systematic and comprehensive analysis

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Summary
Background
Expansion of access to contraception and reduction of unmet need for family planning are key components to improve reproductive health, but scarce data and variability in data sources create difficulties in monitoring of progress for these outcomes. We estimated and projected indicators of contraceptive prevalence and unmet need for family planning from 1990 to 2015.

Methods
We obtained data from nationally representative surveys, for women aged 15–49 years who were married or in a union. Estimates were based on 930 observations of contraceptive prevalence between 1950 and 2011 from 194 countries or areas, and 306 observations of unmet need for family planning from 111 countries or areas. We used a Bayesian hierarchical model combined with country-specific time trends to yield estimates of these indicators and uncertainty assessments. The model accounted for differences by data source, sample population, and contraceptive methods included in the measure.

Findings
Worldwide, contraceptive prevalence increased from 54·8% (95% uncertainty interval 52·3–57·1) in 1990, to 63·3% (60·4–66·0) in 2010, and unmet need for family planning decreased from 15·4% (14·1–16·9) in 1990, to 12·3% (10·9–13·9) in 2010. Almost all subregions, except for those where contraceptive prevalence was already high in 1990, had an increase in contraceptive prevalence and a decrease in unmet need for family planning between 1990 and 2010, although the pace of change over time varied between countries and subregions. In 2010, 146 million (130–166 million) women worldwide aged 15–49 years who were married or in a union had an unmet need for family planning. The absolute number of married women who either use contraception or who have an unmet need for family planning is projected to grow from 900 million (876–922 million) in 2010 to 962 million (927–992 million) in 2015, and will increase in most developing countries.

Interpretation
Trends in contraceptive prevalence and unmet need for family planning, and the projected growth in the number of potential contraceptive users indicate that increased investment is necessary to meet demand for contraceptive methods and improve reproductive health worldwide.

National, regional and global rates and trends in contraceptive prevalence and unmet need for family planning between 1990 and 2015: a systematic and comprehensive analysis

Supplementary webappendix

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1 DATA

1.1 Definitions of regions and sub-regions

The definition of regions and sub-regions follows that implemented in the most recent publications of the United Nations Population Division (see supplementary table 10 for the complete list adapted from World Urbanization Prospects: The 2011 Revision.[1] The terms "developed countries" and "developing countries" are used for statistical convenience and do not necessarily express a judgement about the stage reached by a particular country or area in the development process. The term "country" as used in this study also refers, as appropriate, to territories or areas. The developed countries group comprises all regions of Europe plus Northern America, Australia/New Zealand and Japan. The developing countries group comprises all regions of Africa, Asia (excluding Japan) and Latin America and the Caribbean, as well as Melanesia, Micronesia and Polynesia. Results for the total population of Melanesia, Micronesia and Polynesia combined are referred to as Mela-Micro-Polynesia.

1.2 Data on contraceptive prevalence and unmet need for family planning

Data base Data on contraceptive prevalence and unmet need for family planning are assessed and compiled on a regular basis by the United Nations Population Division. The most recent publications based on this database are the 2012 updates for the MDG Database on contraceptive prevalence and unmet need for family planning[2, 3] and World Contraceptive Use 2012.[4] The data base presents data available as of July 2012.

Contraceptive prevalence is measured as the percentage of women who report themselves or their partners as currently using at least one contraceptive method of any type (modern or traditional). Modern methods of contraception include female and male sterilization, oral hormonal pills, the intra-uterine device (IUD), male and female condoms, injectables, the implant (including Norplant), vaginal barrier methods and emergency contraception. Traditional methods of contraception include rhythm (periodic abstinence), withdrawal, prolonged abstinence, breastfeeding, douching, lactational amenorrhoea method (LAM) and folk methods.

Unmet need for family planning is defined as the percentage of women who want to stop or delay childbearing but are not using any method of contraception to prevent pregnancy. The measurement of unmet need for family planning requires survey data on desire for another birth and its timing, pregnancy, post-partum amenorrhea, infecundity, and wantedness of a current pregnancy or last live birth.

The contraceptive prevalence indicator is generally based on nationally representative household surveys with questions on current use of contraception. Surveys that commonly include this information are: Demographic and Health Surveys (DHS), Reproductive Health Surveys (RHS), Multiple Indicator Cluster Surveys (MICS), and other national surveys. On average, surveys are undertaken every three to five years. Observations from service statistics (public and private sector facilities that provide contraception) are not used because the data tend to omit use of traditional methods and service statistics systems tend to be more variable across countries in their quality and coverage of women of reproductive-age than household-based surveys.

Generally, there is no discrepancy between estimates published by the United Nations Population Division and observations of contraceptive prevalence and unmet need for family planning published in national survey reports. However, some published observations of contraceptive prevalence (in particular contraceptive prevalence disaggregated as modern and traditional method use) have been adjusted by the United Nations Population Division to improve comparability.

The data base includes 933 observations on contraceptive prevalence (any method) for 194 countries and areas. Three observations from the data base were excluded from our study because they were not related to the current use of contraception, but pertained to "past or current use" or to "method used since the last pregnancy". In total 930 observations were used in the model. All countries or areas that do not have any observed data on

contraceptive prevalence in the data base had total populations of less than one million people in 2010, except for Cyprus. The resulting global estimates of contraceptive prevalence and unmet need cover more than 99 per cent of all women aged 15-49 who are married or in a union.

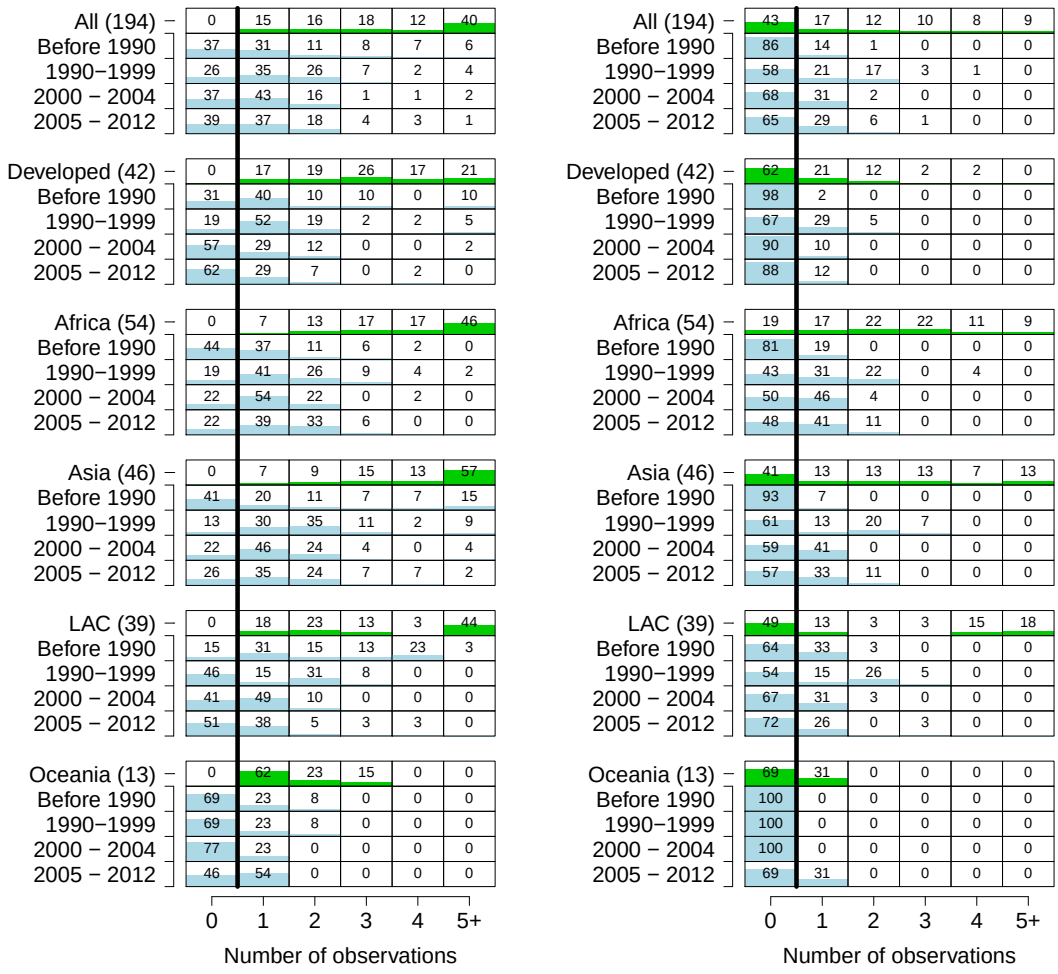


Figure 1: **Overview of the percentage of countries with 0,1,2,3,4 or 5+ observations on total contraceptive prevalence (left) or unmet need (right), summarized for all countries, for all developed countries combined, and by region for the developing countries.** The first row (green) for each group of countries refers to the entire observation period; each cell contains the percentage of countries with 0,1,2,3,4 or 5+ observations. Similarly, subsequent rows (blue) show the percentage of countries by number of observations in the period before 1990, from 1990 to 1999, from 2000 to 2004 and from 2005 to 2011. The coloured shading visualizes the percentage of countries in each cell. The number with the subgroup refers to the total number of countries within that subgroup. "LAC" refers to Latin America and the Caribbean.

Data availability Figure 1 gives an overview on data availability by region and period, for observations on total prevalence and unmet need. In general, 60% of the 194 countries and areas with data on contraceptive prevalence had less than five observations (930 observations in total). The earliest observation is from 1950 survey in Japan and there are 9 observations for year 2011. Countries in Asia had the most observations on contraceptive prevalence over the full time period (57% had five or more observations and another 13% had four observations). Countries in Africa also had relatively good data coverage overall (46% had five or more observations and 17% had four observations) followed by countries in Latin America and the Caribbean.

Countries in Oceania tended to have the most limited data available overall and across the different time periods. Contraceptive use data for developed countries and Latin America and the Caribbean were more sparse in recent time periods as compared with other regions.

Out of the 194 countries with any data on contraceptive prevalence, only 111 countries had data on unmet need for family planning (306 observations in total) and for many countries the data were not very recent. In Africa, a region that has the most coverage on this indicator (only 19% of countries had no observations on unmet need over the full time period), 48% of all African countries had no observations on unmet need after 2005. Among countries in Asia, 41% had no observations on unmet need followed by 49% in Latin America and the Caribbean. The majority of developed countries and those in Oceania had no observations on unmet need for family planning.

Of the 930 observations on contraceptive prevalence, 234 observations are from DHS, 86 observations from MICS, 43 observations from World Fertility Surveys (WFS), 39 from Contraceptive Prevalence Surveys (CPS), 35 observations from RHS and 22 observations from Fertility and Family Surveys (FFS). Other international survey programs provide each less than 20 observations. National surveys, that were not conducted as part of an internationally coordinated program, account for less than half of all observations on contraceptive prevalence (414 observations, 45% of all observations). The concentration towards one international survey programme is more apparent in the case of unmet need for family planning data, where of the total 306 observations, 209 observations are from DHS.

Data comparability issues Differences in the survey design and implementation, as well as differences in the way survey questionnaires are formulated and administered can affect the comparability of data over time and between countries. Two common differences are the range of contraceptive methods included and the use of probe questions regarding the types of contraceptive methods known. An example of the former is the inclusion of folk methods in some surveys. Folk methods are generally not reported and can result in overestimating the overall level of contraceptive prevalence and traditional method use. An example of the latter is when probe questions, which help ensure that the respondent understands the meaning of the different contraceptive methods, are not included in the survey and then can result in an underestimation of the use of traditional methods as respondents assume that questions from an interviewer about contraceptive use refer to modern methods and not traditional methods that one does not have to go to a pharmacy, shop or health facility to obtain, such as withdrawal or rhythmn.

The characteristics (age, sex, marital or union status) of the persons for whom contraceptive prevalence is measured can also affect the comparability of data on contraceptive prevalence. We used women who are married or in a union, between ages 15 to 49 as the base population. Illustrations of alternative samples that are sometimes used in survey-based data are: sexually active women (irrespective of marital status), ever-married women, or a combined sample of men and women who are married or in a union. The time frame used to assess contraceptive prevalence can also vary. Often it is left to the respondent to determine what is meant by "currently using" a method of contraception. Some surveys ask about use within the past month. Occasionally, when information on current use is not collected, data on use of contraceptive methods at last sexual intercourse or during the previous year are utilized. For the purpose of our study, data pertaining to "method used since the last pregnancy" or to "past or current use" were excluded.

1.3 Women of reproductive age (15-49) who are married or in a union

Estimates of contraceptive prevalence were constructed for the base population of women who are married or in a union and of reproductive age (MWRA). MWRA estimates and projections in this review were prepared for individual countries on an age-specific basis, in order to take account of the substantial changes in age structure in the reproductive ages that will occur during the projection period. Estimates and projections of the number of women of reproductive age, by five-year age groups, were provided as part of the estimates and projections (Medium variant) of population in the 2010 Revision of World Population Prospects produced by the Population Division of the Department of Economic and Social Affairs of the United Nations.[5]

For most countries, marital status data were obtained through censuses, surveys and estimates based on population registers. The proportions of women married or living in consensual union, by five-year age groups were taken from World Marriage Data 2008.[6] For countries in Europe, where data did not report consensual unions, these data were complemented by estimates of the proportion of women aged 20-34 years living in cohabitation in or around year 2000.[7] Marital status figures were available for about 99% of the world population.

2 METHODS

The goal of this study was the categorization of MWRA (the base population) into four groups: women who use traditional contraceptive methods, women who use modern contraceptive methods, women who have unmet need for contraceptive methods, and women who do not need any method (who are not avoiding a pregnancy). In other words, the outcome of interest was a compositional vector, here denoted by $\boldsymbol{p}_{c,t} = (p_{c,t,1}, p_{c,t,2}, p_{c,t,3}, p_{c,t,4})$, where $p_{c,t,m}$ denotes the proportion of women in country c, in year t, who use traditional methods ($m = 1$), modern methods ($m = 2$), have unmet need for contraceptive methods ($m = 3$), or do not use and do not need contraceptive methods ($m = 4$), see Figure 2.

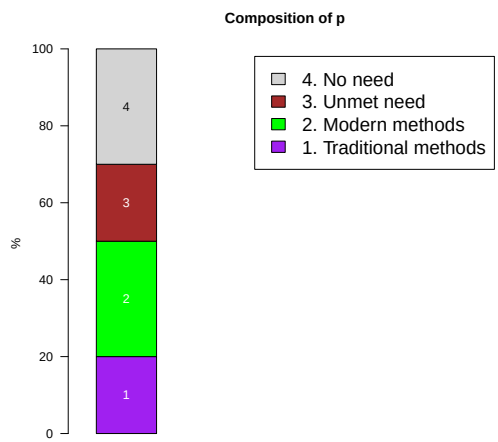


Figure 2: **Illustration of composition $\boldsymbol{p}_{c,t} = p_{c,t,1:4}$.** Categorization of women who use traditional contraceptive methods, women who use modern contraceptive methods, women who have unmet need for contraceptive methods, and women who do not need any method (who are not avoiding a pregnancy).

Compositional vector $\boldsymbol{p}_{c,t}$ was not observed, instead we observed $\boldsymbol{y}_i = y_{i,1:4}$, where $y_{i,m}$ denotes the proportion of women in category m (traditional, modern, unmet need, no need respectively) for observation $i = 1, \ldots, I$ for country $c[i]$ and year $t[i]$. The data model for an observation $\boldsymbol{y}_i$ given $\boldsymbol{p}_{c[i],m[i]}$ is explained in detail in Section 2.3. In short, we assumed that the expected values of the log-ratios of various observed proportions in vector $\boldsymbol{y}_i$ are equal to the corresponding log-ratios of the vector $\boldsymbol{p}_{c[i],t[i]}$'s for observations from the base population, and a bias-adjusted and/or perturbed version of $\boldsymbol{p}_{c[i],t[i]}$ otherwise (to take into account possible errors in measuring $\boldsymbol{p}_{c,t}$ caused by survey characteristics). First we discuss the model for the changes over time in the compositional vector $\boldsymbol{p}_{c,t}$ and the hierarchical structure when estimating these time trends.

2.1 Time trends in contraceptive prevalence and unmet need

Modeling components of the compositional vector Because the components of compositional vector $\boldsymbol{p}_{c,t}$ are restricted to add up to one, they cannot be modelled independently; independent models for each component $p_{c,t,m}$ for $m = 1, 2, 3, 4$ would not guarantee that they add up to one. We guarantee that the components do add up to one by modelling total contraceptive method use over time, to then categorize the women who use any contraceptive method into modern and traditional methods, and the women who do not use any method into women with unmet need and women without need for contraceptive methods. Specifically, if $P_{c,t}$ denotes total contraceptive prevalence, $R_{c,t}$ the ratio of modern to total prevalence, and $Z_{c,t}$ the ratio of unmet need to no contraceptive use in country c, year t

$$P_{c,t} \quad = \quad p_{c,t,1} + p_{c,t,2}, \tag{1}$$

$$R_{c,t} = p_{c,t,2}/(p_{c,t,1} + p_{c,t,2}), \quad (2)$$
$$Z_{c,t} = p_{c,t,3}/(p_{c,t,3} + p_{c,t,4}), \quad (3)$$

with $0 \leq P_{c,t}, R_{c,t}, Z_{c,t} \leq 1$, then the compositional vector $\boldsymbol{p}_{c,t}$ is given by:

$$p_{c,t,1} = (1 - R_{c,t}) \cdot P_{c,t}, \quad (4)$$
$$p_{c,t,2} = R_{c,t} \cdot P_{c,t}, \quad (5)$$
$$p_{c,t,3} = (1 - P_{c,t}) \cdot Z_{c,t}, \quad (6)$$
$$p_{c,t,4} = (1 - P_{c,t}) \cdot (1 - Z_{c,t}), \quad (7)$$

with $\sum_{m=1}^{4} p_{c,t,m} = 1$.

We modelled $\{P_{c,\cdot}, R_{c,\cdot}, Z_{c,\cdot}\}$ on the logit-scale to restrict the outcomes to be between 0 and 1. Each of the quantities is modelled by systematic (latent) trends, with autocorrelated distortions added to it:

$$P_{c,t} = \text{logit}^{-1}\left(\text{logit}(P^*_{c,t}) + \varepsilon_{c,t}\right), \quad (8)$$
$$R_{c,t} = \text{logit}^{-1}\left(\text{logit}(R^*_{c,t}) + \eta_{c,t}\right), \quad (9)$$
$$Z_{c,t} = \text{logit}^{-1}\left(\text{logit}(Z^*_{c,t}) + \theta_{c,t}\right), \quad (10)$$

where the country-specific systematic trends are denoted by $\{P^*_{c,\cdot}, R^*_{c,\cdot}, Z^*_{c,\cdot}\}$ and the autocorrelated distortions by $\{\varepsilon_{c,\cdot}, \eta_{c,\cdot}, \theta_{c,\cdot}\}$ for $\{P_{c,\cdot}, R_{c,\cdot}, Z_{c,\cdot}\}$ respectively. The distortions were modelled by autoregressive processes of order 1 (AR(1)-models):

$$\varepsilon_{c,t} \sim N(\rho_\varepsilon \cdot \varepsilon_{c,t-1}, \tau^2_\varepsilon), \quad (11)$$
$$\eta_{c,t} \sim N(\rho_\eta \cdot \eta_{c,t-1}, \tau^2_\eta), \quad (12)$$
$$\theta_{c,t} \sim N(\rho_\theta \cdot \theta_{c,t-1}, \tau^2_\theta), \quad (13)$$

with autoregressive parameter $0 < \rho_\cdot < 1$ and variance $\tau^2_\cdot$. The distributions for the distortions in the first observation year $t_{c,1}$ in country c are given by:

$$\varepsilon_{c,t_{c,1}} \sim N\left(0, \frac{\tau^2_\varepsilon}{1 - \rho^2_\varepsilon}\right), \quad (14)$$
$$\eta_{c,t_{c,1}} \sim N\left(0, \frac{\tau^2_\eta}{1 - \rho^2_\eta}\right), \quad (15)$$
$$\theta_{c,t_{c,1}} \sim N\left(0, \frac{\tau^2_\theta}{1 - \rho^2_\theta}\right). \quad (16)$$

Systematic trends in contraceptive use The systematic trends in total contraceptive prevalence P^*_c and the ratio of modern to total use R^*_c are given by logistic curves from 0 to asymptotes $\tilde{P}_c$ and $\tilde{R}_c$, increasing at pace ω_c and ψ_c and centred in year Ω_c and Ψ_c respectively:

$$P^*_{c,t} = \frac{\tilde{P}_c}{1 + \exp(-\omega_c(t - \Omega_c))}, \quad (17)$$
$$R^*_{c,t} = \frac{\tilde{R}_c}{1 + \exp(-\psi_c(t - \Psi_c))}. \quad (18)$$

The systematic trends in total prevalence, its break-down into modern and traditional method use, and example trajectories after adding the autocorrelated distortion terms are illustrated in Figure 3 (panel a). Note that the trend in traditional method use (the inverted U-shape in the illustration) is not modelled explicitly, it follows from the logistic curves for total prevalence and for the ratio of modern to total prevalence. The actual trend in a country of interest depends on the timing, pace and asymptotes for total prevalence, and the uptake of modern methods as a ratio of any method. The asymptotes of total contraceptive use and the ratio of modern to

total prevalence in a country may vary for a number of reasons, in part due to restrictions on the availability of modern methods or the extent to which induced abortion is practised. We do not take into account these other factors.

Examples of different segments of different "contraceptive prevalence transitions" are given in panel b for Bangladesh and France. In Bangladesh, the increase of total contraceptive prevalence is driven almost entirely by the uptake of modern methods, and the start of the contraceptive prevalence transition is within the observation period. France is at the end of its contraceptive prevalence transition. From 1970 onwards, the use of modern contraceptive methods increased, while the use of traditional methods declined.

Systematic trends in unmet need The country-specific systematic trend in the ratio of unmet need to no contraceptive use, $Z^*_{c,t}$, was modelled as a function of total prevalence $P_{c,t}$. We chose to model the ratio as a function of total contraceptive prevalence, as opposed to unmet need as a function of total contraceptive prevalence for two reasons. Firstly, modelling the ratio of unmet need to no contraceptive use guarantees that the percentage of women with unmet need does not exceed the percentage of women who do not use any methods. Secondly, unmet need and total contraceptive use are dependent (because they refer to the elements of the same compositional vector), while the ratio is not dependent on total contraceptive use. The model for the ratio is given by:

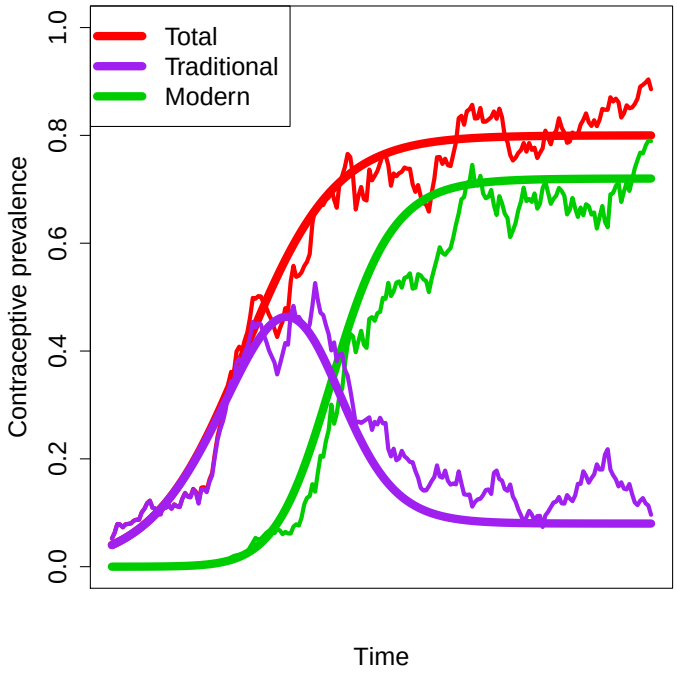
$$Z^*_{c,t} = \frac{1}{1 + \exp(z_c + \beta_1(P_{c,t} - 0.4) + \beta_2 \cdot (P_{c,t} - 0.4)^2)}, \tag{19}$$

with country-specific "intercept" z_c and world-level parameters $\{\beta_1, \beta_2\}$. (Note that 0.4 was subtracted from $P_{c,t}$ to reduce correlation between the z_c's and the β's, this does not affect the fitted trend line). This model was motivated by observed trends on the world and country level, as illustrated in Figure 4. The observed world pattern (illustrated by a loess fit to the data) corresponds closely with the fit of the parametric function.

Note on the inclusion of covariates for estimating contraceptive prevalence and unmet need Given the lack of data on contraceptive prevalence and in particular, unmet need for several countries, covariates that are deemed to be associated with the outcomes of interest, such as the wanted total fertility rate or women's educational attainment, could be considered for inclusion in the model as predictors. We chose not to include covariates because for most candidates, data are limited and additional model assumptions would be required to construct estimates and short-term projections of the covariate for all country-years of interest. Gains of including a covariate may be limited if there is considerable uncertainty associated with it. Instead, our approach was to focus on developing a parsimonious and internally consistent model of family planning indicators. The advantage of this approach is that modeled estimates can be used in further analyses to examine the ways that family planning behaviour is associated with covariates of interest without the pitfall of "rediscovering" covariates that were used to estimate the family planning indicators in the first place.

Figure 3: **Theoretical model of contraceptive prevalence (total, modern and traditional methods) over time.** (a) Model representation: simulated examples of systematic trends (smooth lines, modelled by parametric functions on contraceptive prevalence and the ratio of modern use to any method use), and simulated trajectories (non-smooth lines, modelled by the systematic trends with autocorrelated distortions) of total, modern and traditional prevalence. (b) Trajectories of contraceptive prevalence for Bangladesh and France illustrate segments of different examples of the "contraceptive prevalence transition".

a: Model representation.



b: Illustrations.

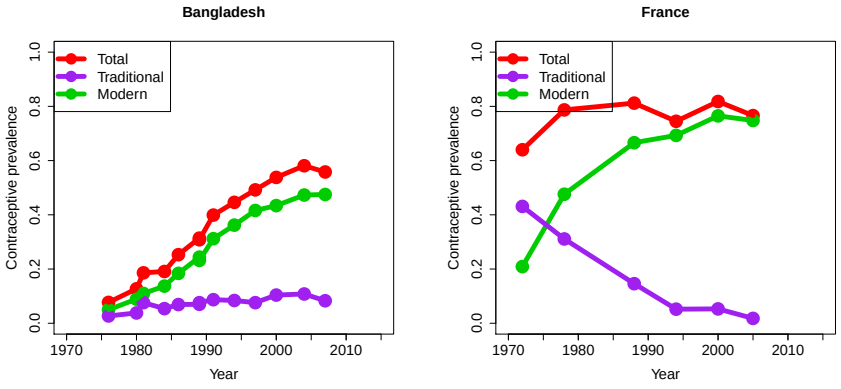
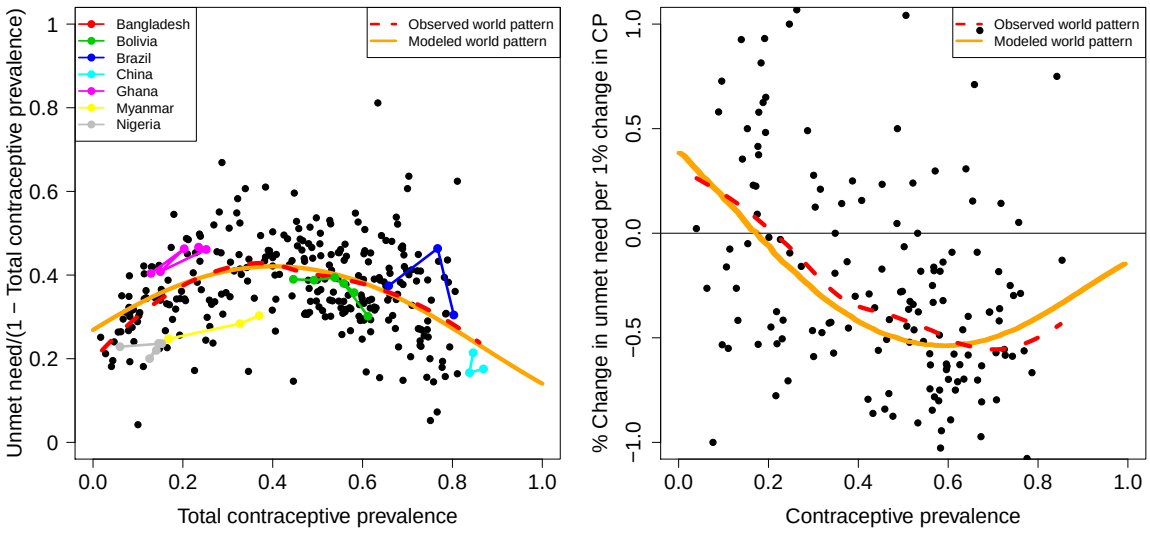


Figure 4: **Illustration of the model for the ratio of unmet need to no contraceptive use.** (a) The ratio of unmet need for contraceptives to no contraceptive use plotted versus total contraceptive prevalence. Observations are highlighted for selected countries, observations for remaining countries are plotted in black. A loess smoother fit to the data (dashed red line) suggests the "observed world pattern", which corresponds closely to the parametric function used in our model (solid orange line). (b) The ratio of the percentage change in unmet need to a one percentage point increase in contraceptive prevalence plotted versus total contraceptive prevalence. The solid orange line illustrates the estimated relation between the rate of change ratios and the level of contraceptive prevalence, showing that for a trajectory of increasing contraceptive prevalence, unmet need is first estimated to increase (until a contraceptive prevalence level of around 20%) before the decrease sets in. Subsequently, the rate of decrease in unmet need accelerates until contraceptive prevalence is around 60%. Dots represent the observed ratios from subsequent surveys in countries, plotted versus the average of reported contraceptive prevalence in the two surveys. A loess smoother fit to the data (dashed red line) suggests a similar trajectory of changes in the rate of change in unmet need, as compared to changes in contraceptive prevalence.

a: Model representation.

b: Rate of change.



2.2 Bayesian hierarchical model

Estimating the country-specific parameters of the systematic trends presented a challenge because of the limited number of observations for each country. We used a Bayesian hierarchical model[8, 9] to estimate the parameters in each country, such that the estimates are based on the observations in the country of interest, as well as on the (sub)-regional and/or global experience. For classifying countries into (sub)-regions, we used the United Nations Population Division classification described earlier.

Different levels of hierarchy were used for different sets of country parameters to best incorporate expected differences and similarities across countries and (sub)-regions. Country-specific asymptotes $\tilde{P}_c$ and $\tilde{R}_c$, for total contraceptive prevalence and the ratio of modern to total contraceptive use, were estimated with a hierarchical model with one level (world-country):

$$\log\left(\frac{\tilde{P}_c - 0.5}{1 - \tilde{P}_c}\right) \quad \sim \quad N(\tilde{P}_w, \kappa_P^{(c)}),$$

$$\log\left(\frac{\tilde{R}_c - 0.5}{1-\tilde{R}_c}\right) \quad \sim \quad N(\tilde{R}_w, \kappa_R^{(c)}),$$

where both asymptotes were restricted to be between 50% and 100% (based on expert opinion), and $\tilde{P}_w$ is world mean and $\kappa_P^{(c)}$ the variance of $\tilde{P}_c$'s, and $\tilde{R}_w$ is world mean and $\kappa_R^{(c)}$ the variance of $\tilde{R}_c$'s.

For pace parameters ω_c and ψ_c, three-level hierarchical models were used because these parameters are expected to vary across countries, sub-regions and regions. For pace parameter ω_c for the uptake of any method, the transformation

$$\omega_c^* = \log\left(\frac{\omega_c - 0.01}{0.5-\omega_c}\right)$$

is used, such that ω_c is restricted to be between 0.01 and 0.5 (a reasonable range, corresponding to the transition from 10% to 90% of $\tilde{P}_c$ taking at least 10 years, and at most 4 centuries), and the hierarchical distributions are given by:

$$\begin{aligned}
\omega_c^* &\sim N(\omega_{s[c]}^*, \kappa_\omega^{(c)}),\\
\omega_s^* &\sim N(\omega_{r[s]}^*, \kappa_\omega^{(s)}),\\
\omega_r^* &\sim N(\omega_w^*, \kappa_\omega^{(r)}),
\end{aligned}$$

such that the (logit-transformed) ω_c's are distributed around a sub-regional mean $\omega_{s[c]}^*$ ($s[c]$ refers to the subregion of country c), and the sub-regional means are distributed around a regional mean $\omega_{r[s]}^*$ ($r[s]$ is the region of sub-region s). The variances on the country, sub-regional and regional level are given by $\kappa_\omega^{(c)}$, $\kappa_\omega^{(s)}$ and $\kappa_\omega^{(r)}$ respectively. Similarly, for pace parameter ψ_c for the uptake of modern methods (as a proportion of any method)

$$\begin{aligned}
\psi_c^* &= \log\left(\frac{\psi_c - 0.01}{0.5-\psi_c}\right),\\
\psi_c^* &\sim N(\psi_{s[c]}^*, \kappa_\psi^{(c)}),\\
\psi_s^* &\sim N(\psi_{r[s]}^*, \kappa_\psi^{(s)}),\\
\psi_r^* &\sim N(\psi_w^*, \kappa_\psi^{(r)}).
\end{aligned}$$

For the timing of the uptake of modern methods (as a proportion of any method), Ψ_c, differences in (sub)-regional means are expected and again a three-level model is used:

$$\begin{aligned}
\Psi_c &\sim N_T(\Psi_{s[c]}, \kappa_\Psi^{(c)}),\\
\Psi_s &\sim N(\Psi_{r[s]}, \kappa_\Psi^{(s)}),\\
\Psi_r &\sim N(\Psi_w, \kappa_\Psi^{(r)}),
\end{aligned}$$

where the country-specific timings are restricted to be later than 1800 (a non-informative lower bound). Similarly, for the timing of the uptake of any method, Ω_c, the model for the developing countries (denoted by $c \in L$) is again a three-level hierarchical model:

$$\begin{aligned}
\Omega_c &\sim N_T(\Omega_{s[c]}, \kappa_\Omega^{(c)}), \qquad c \in L\\
\Omega_s &\sim N(\Omega_{r[s]}, \kappa_\Omega^{(s)}),\\
\Omega_r &\sim N(\Omega_L, \kappa_\Omega^{(L)}),
\end{aligned}$$

while for all developed countries there is no distinction between regions; we do not expect differences in (sub-) regional means across developed countries:

$$\Omega_c \quad \sim \quad N_T(\Omega_D, \kappa_\Omega^{(D)}), \qquad c \in D.$$

Finally, the country-specific "intercept" z_c for the proportion of women with unmet need among all women who do not use any contraceptive methods is modelled with a two-level model (given the variability across sub-regions within regions, subregional means are not assumed to be distributed around a regional mean):

$$\begin{aligned} z_c &\sim N(z_{s[c]}, \kappa_z^{(c)}), \\ z_s &\sim N(z_w, \kappa_z^{(r)}). \end{aligned}$$

2.3 Data model

As before, let $y_{i,m}$ denote the proportion of women in category m for observation $i = 1, \ldots, I$, where m refers to 1) women using a modern method, 2) women using a traditional method, 3) women with unmet need and 4) women without need for contraceptive methods ($m = 1, 2, 3, 4$). We used the Logistic-normal distribution for compositional data.[10, 11] This corresponds to assuming a multivariate normal distribution for the log-ratios of all-but-one of the categories in a compositional vector with respect to a left-out category. Because unmet need was missing for many observations (only the sum of women who do not use any method was known), the data model was set up sequentially; we first considered the log-ratios of traditional to no contraceptive method use and modern to no contraceptive method use (or total to no method use if the break-down into modern and traditional method use was missing), and then considered the log-ratio of unmet need to no need for contraceptive methods for observations with information on this break-down.

Specifically, with $y_{i,3+4} = y_{i,3} + y_{i,4}$, the data model for categorization of all women into categories (1), (2) and (3+4) is given by:

$$\begin{bmatrix} \log\left(\frac{y_{i,1}}{y_{i,3+4}}\right) \\ \log\left(\frac{y_{i,2}}{y_{i,3+4}}\right) \end{bmatrix} \sim N\left(\begin{bmatrix} \log\left(\frac{q_{i,1}}{q_{i,3+4}}\right) \\ \log\left(\frac{q_{i,2}}{q_{i,3+4}}\right) \end{bmatrix}, \mathbf{\Sigma}_{S[i]}\right), \tag{20}$$

where $q_{i,m}$ is the perturbed and bias-adjusted proportion of women in category m for observation i ($p_{c[i],t[i],m}$ for non-biased observations from the base population, and the perturbed and bias-adjusted version of that proportion for other observations, explained in detail in Sections 2.3.2 and 2.3.3, and summarized in Section 2.3.4), $S[i]$ refers to the source of observation i (the categorization of sources is explained in Section 2.3.1), and covariance matrix $\mathbf{\Sigma}_S$ is given by:

$$\mathbf{\Sigma}_S = \begin{bmatrix} \sigma_{S,1}^2 & \rho_S \sigma_{S,1} \sigma_{S,2} \\ \rho_S \sigma_{S,1} \sigma_{S,2} & \sigma_{S,2}^2 \end{bmatrix},$$

where $\sigma_{S,k}^2$ is the error variance of source S for the log-ratios $k = 1$ (traditional) and $k = 2$ (modern), and ρ_S is correlation in the log-ratios. For observations with outcomes on all methods only (traditional and modern combined, 13 observations), the data model is given by:

$$\log\left(\frac{y_{i,1+2}}{1 - y_{i,1+2}}\right) \sim N\left(\log\left(\frac{q_{i,1+2}}{1-q_{i,1+2}}\right), \sigma_T^2\right),$$

where σ_T^2 is the error variance for total prevalence on the logit-transformed scale. Because of the limited number of observations, this error variance is assumed to be the same across all sources.

The data model for the break-down of women who do not use any method (categories 3 and 4) into the categories unmet/no need is given by:

$$\text{logit}\left(\frac{y_{i,3}}{y_{i,3+4}}\right) = \log\left(\frac{y_{i,3}}{y_{i,4}}\right) \sim N\left(\log\left(\frac{q_{i,3}}{q_{i,4}}\right), \sigma_{S[i],3}^2\right), \tag{21}$$

where $\sigma_{S,3}^2$ is the error variance of source S for the log-ratios of unmet need to no need. To avoid difficulties with undefined ratios, observed proportions y_m smaller than 1% were rounded upwards to 1%.

2.3.1 Data categorization based on source types

We categorized the different data sources for contraceptive use into four categories: 1) DHS (234 observations), 2) MICS (86 observations), 3) other international survey programmes (196 observations), and 4) National surveys (414 observations), see Table 1. For each source category, we estimated a variance-covariance matrix ($\mathbf{\Sigma}_S$ in Eq. 20) to allow for differences in average errors across observations of the different source types.

For estimating the error variance in the data model for unmet need (Eq. 21, observations from all sources other than DHS were combined. That is, we estimated the error variance of observations on unmet need from DHS based on 209 observations, and the error variance for other sources based on 97 observations.

Data	DHS	MICS	Other	National Survey
Contraceptive Use	234	86	196	414
Unmet need	209	97		

Table 1: **Number of observations by source for contraceptive prevalence and unmet need.**

2.3.2 Data categorization based on characteristics of the population sampled

Overview of population characteristics Characteristics of sampled populations that were different from the base population of MWRA were summarized into eight categories, see Table 2. The first three categories are given by: 1) samples limited to specific geographical areas of a country or specific population groups (57 observations), 2) samples covering ever-married or all women (53 observations), 3) samples including both men and women or husbands and wives (7 observations). These three categories have potentially different effects on estimated contraceptive prevalence and it is left unspecified whether the effect is in a positive or negative direction. Examples of samples from only a specific geographical area of a country covered are the survey for Armenia in 1991, that took place only in Yerevan, or the survey in Sri Lanka in 2006, that excluded the Northern Province. Examples of specific samples that differ from the base population are the surveys for the United States of America in 1955, 1960, 1965 and 1970 in which only white women were surveyed, or the surveys in Belgium in 1966, 1975, 1982 and 1991 with data pertaining to the Flemish population only. In the second category of ever-married or all women are, for example, data from the surveys in China in 1982, 1988 and 1992 pertaining to ever-married women or data from 2006 survey in Cuba pertaining to all women. Examples for the third category are surveys from India for years 1970, 1980 and 1988 that included samples of both men and women.

Categories 4 and 5 in Table 2 refer to samples from populations with additional information related to fertility, absence of pregnancy and sexual activity (66 observations in total). Fertile, sexually active or non-pregnant women are a theoretically higher risk group for pregnancy as compared with the base population and, therefore, higher contraceptive prevalence levels are expected. Surveys pertaining to all sexually active women (25 observations) were mostly from developed countries. Sexually active women who are not in union generally have higher levels of condom use than women in marital unions. Therefore, for all sexually active women, the use of modern contraceptive methods is expected to be higher, while traditional method use is expected to be potentially different (without assuming whether higher or lower) compared to the base population.

The 41 observations in category 5 refer to populations that are expected to have higher contraceptive prevalence (higher use of both modern and traditional methods) compared to the base population. Their characteristics are described in Table 3. For example, data from a 2002 survey in Iran pertaining to non-pregnant women or data from a 1983 survey in Rwanda pertaining to fertile women.

Lastly, categories 6, 7 and 8 in Table 2 refer to differences in age groups of the sampled populations. Age groups were categorized based on the magnitude of difference and expected implications for contraceptive prevalence in the baseline age group. We classified reported age groups that started at ages 13–17 and ended at ages 47–51 as base line age groups (based on a negligible difference with the 15 to 49 years old age group).

Group	Characteristics of sampled population	# obs.	Contraceptive use compared to base population of MWRA?
1	Specific geographical region or population group	57	Potentially different
2	Ever-married or all women	53	Potentially different
3	Husband and wives or both sexes	7	Potentially different
4	All sexually active women	25	Modern use is expected to be higher, traditional use is potentially different
5	Non-pregnant women, married sexually active and/or fertile women (Table 3)	41	Traditional and modern use are expected to be higher
6	Age group starts at ages 13-17 but ends after age 51	2	Traditional and modern use are expected to be lower
7	Women married in last 12 years before survey (age unknown)	3	Traditional and modern use are expected to be higher
8	Other age group (not described by groups 6 and 7)	253	Potentially different

Table 2: **Categorization of non-base population samples, number of observations in each category and comparison of the expected prevalence levels in the non-base category compared to the base category of MWRA (women of ages 15 to 49 years, who are currently married or in a union).**

Description of characteristics	# obs.
Fertile women	1
Non-pregnant women	13
Sexually active, married women	1
Sexually active, non-pregnant women	4
Women exposed to the risk of pregnancy	17
Women who were sexually active during the month prior to the interview	3
Women who were sexually active during the three months prior to the interview	2

Table 3: **Overview of characteristics of sampled populations that were expected to have higher contraceptive prevalence compared to the base population of MWRA because of additional information related to fertility, absence of pregnancy and sexual activity.**

Age groups that started at ages 13–17 but ended after age 51 (2 observations) were categorized as age groups deemed to have lower contraceptive prevalence because this group included women older than the standard reproductive age group and thus less likely to be using contraception to prevent pregnancy. Samples of women of unknown age who married up to 12 years before the survey date (3 observations) were categorized as age groups deemed to have higher method use. The remaining age groups (253 observations) were classified as "other" age groups and there were no expected directional biases. Of the 253 observations in this category, 131 observations referred to ages 15–44.

Perturbation multipliers We modelled expected differences in prevalence between non-baseline groups and MWRA through the inclusion of perturbation multipliers.[11] We first introduce what "perturbing a compositional vector" using perturbation multipliers refers to, and then explain how it was applied in our study.

The result of perturbing a baseline compositional vector $\boldsymbol{p} = (p_1, p_2, p_3, p_4)$ by perturbation vector $\boldsymbol{V} = (V_1, V_2, V_3, V_4) > \mathbf{0}$ is denoted by $\tilde{\boldsymbol{q}} = (\tilde{q}_1, \tilde{q}_2, \tilde{q}_3, \tilde{q}_4)$ and given by:

$$\tilde{q}_m \quad = \quad \frac{p_m \cdot V_m}{\sum_{n=1}^{4} p_n \cdot V_n},$$

where V_m denotes the perturbation multiplier for category m. Examples of two perturbations are given in Figure 5. In the first example, multiplier $V_2 > 1$, while the other multipliers are all equal to one. The perturbation results in an increase in the proportion of women in category 2 (who use modern methods); instead of $p_2 \cdot 100$ women that use modern methods, compared to $(1 - p_2) \cdot 100$ women in the other categories (which we would expect for the base population), there are $V_2 \cdot p_2 \cdot 100$ women for every $(1 - p_2) \cdot 100$ women in the other categories in the perturbed composition. If multipliers $V_2 > 1$ and $V_1 > 1$, while the other multipliers are all equal to one (second example), we find that instead of $p_2 \cdot 100$ women who use modern methods and $p_1 \cdot 100$ women that use traditional methods, compared to $(1-p_1-p_2)\cdot 100$ women who do not use any methods (which we would expect for the base population), there are $V_2 \cdot p_2 \cdot 100$ women who use modern, and $V_1 \cdot p_1 \cdot 100$ women who use traditional methods for every $(1 - p_1 - p_2) \cdot 100$ women who do not use any methods in the perturbed composition. If a multiplier for a given category is less than 1, the opposite reasoning holds true and that category will be smaller than expected.

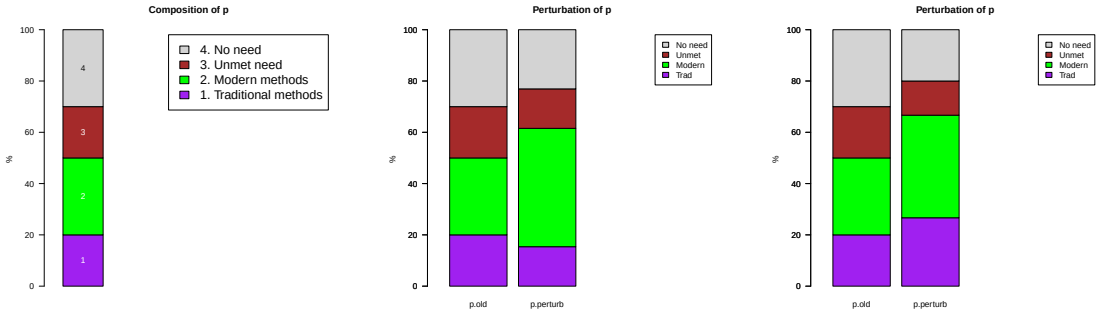


Figure 5: **Illustrations of compositions and perturbations.** Left: Baseline composition $\boldsymbol{p}$ of categories 1) women using a modern method, 2) women using a traditional method, 3) women with unmet need and 4) women without need for contraceptive methods ($m = 1, 2, 3, 4$). Centre: Illustration of the perturbation of $\boldsymbol{p}$ when the relative proportion of women in category 2 (using modern methods) is two times larger than in the baseline composition ($V_2 = 2$, $V_{1,3,4} = 1$). Right: Illustration of the perturbation of $\boldsymbol{p}$ when categories 1 and 2 are twice as large compared to the baseline outcomes ($V_{1,2} = 2$, $V_{3,4} = 1$).

In our study, if the sampled population in observation i was part of group g in Table 2, multiplier $V^{(g)}_{j[i],1}$ was included to perturb traditional use, and multiplier $V^{(g)}_{j[i],2}$ was included to perturb modern use, where $j[i]$ refers to the multiplier index assigned to observation i. If there were repeated observation from the same category within a country, one multiplier was assigned for all such observations in the country. Table 4 provides an

overview of the number of multipliers assigned in each group and lists the restrictions on the V's based on the expected differences.

g	Non-baseline group	# $V_{j,m}^{(g)}$	Assumption
1	Geographical region	23	$V_{j,\cdot} > 0$
2	Ever-married/all women	41	$V_{j,\cdot} > 0$
3	Husband/wives, both sexes	3	$V_{j,\cdot} > 0$
4	All sexually active women	17	$V_{j,1} > 0, V_{j,2} > 1$
5	Non-pregnant/fertile/married sexually active women	33	$V_{j,\cdot} > 1$
6	Age group with - bias	2	$V_{j,\cdot} < 1$
7	Age group with + bias	2	$V_{j,\cdot} > 1$
8	Age group different	96	$V_{j,\cdot} > 0$

Table 4: **Summary of non-baseline categories and assigned perturbation vectors.**

Estimation of perturbation multipliers Because of the limited number of observations within each country, estimating the multipliers independently in each country is not possible. Instead, perturbation parameters were grouped based on the expected average outcome across countries, and the estimation procedure is group-specific. The three groups (A,B, and C) are given by:

A: Group of multipliers for traditional and/or modern use in sampled populations where use could be different from the base population, but where it is not clear whether use would be lower or higher. This group refers to traditional and modern use among women from different geographical regions within a country, women of age groups that differ from 15-49 years old leading to an unknown change in use, husband/wives, both sexes, ever-married/all women, as well as traditional use among all sexually active women, who are not necessarily married or in union ($g = 1, 2, 3, 8$, $m = 1, 2$ and $g = 4, m = 1$). A multi-level model was used to estimate the $V_{j,m}^{(g)}$'s in this group, to allow the multipliers to differ across countries while shrinking multipliers towards the group average for countries with little information. The multi-level model is given by:

$$\log(V_{j,m}^{(g)}) \quad \sim \quad N(0, \delta_m^2),$$

such that the V's are restricted to be positive but not necessarily larger than 1. δ_m^2 is the variance of the multipliers on the log-scale (for traditional use, m=1, and modern use, m=2).

B: Group of multipliers for modern use in population groups where use is believed to be higher or lower than in the base population. The "higher-use" group includes non-pregnant women or married sexually active women, women from age groups that are believed to have higher contraceptive prevalence, and all sexually active women ($g = 4, 5, 7$). The "lower-use" group includes the women from a different age group deemed to have lower contraceptive prevalence ($g = 6$). For these multipliers, a multi-level model was used:

$$\begin{aligned} V_{j,2}^{(g)} &= 1 + W_{j,2}^{(g)}, \qquad g = 4, 5, 7 \\ V_{j,2}^{(g)} &= 1/(1 + W_{j,2}^{(g)}), \qquad g = 6 \\ \log(W_{j,2}^{(g)}) &\sim N(\mu_2, \lambda_2^2). \end{aligned}$$

such that the V's are restricted to be larger (smaller) than 1 for the "higher-use" ("lower-use") group. Information about the multipliers is exchanged across countries through the hierarchical distribution for the multipliers on the transformed scale, with mean μ_2 and variance λ_2^2.

C: Group of multipliers for traditional use in population groups where use is believed to be higher or lower than in the base population. The "higher-use" group includes non-pregnant women or married sexually

active women and women from age groups that are believed to have higher contraceptive prevalence ($g = 5, 7$). The "lower-use" group includes the women from a different age group deemed to have lower contraceptive prevalence ($g = 6$). The multipliers in this group are determined by parameter μ_1, with

$$\begin{aligned} V_{j,1}^{(g)} &= 1 + \exp(\mu_1), \qquad g = 5, 7 \\ V_{j,1}^{(g)} &= 1/(1 + \exp(\mu_1)), \qquad g = 6, \end{aligned}$$

such that the V's are restricted to be larger (smaller) than 1 for the "higher-use" ("lower-use") group. (A multi-level approach for estimating the multipliers was not used because it led to convergence issues and multiplier estimates which were equal to 1 with high posterior probability, thus contradicting expert knowledge).

After applying all permutations, the resulting compositional vector is denoted by $\tilde{\boldsymbol{q}}_{i,m}$ with

$$\tilde{q}_{i,m} = \frac{p_{c[i],t[i],m} \cdot v_{i,m}}{\sum_{n=1}^{4} p_{i,n} \cdot v_{i,n}},$$

where $v_{i,m}$ denotes the product of all multipliers for observation i, for contraceptive use category m:

$$v_{i,m} = \prod_{g=1}^{8} \tilde{V}_{i,m}^{(g)}.$$

$\tilde{V}_{i,m}^{(g)}$ is the multiplier for observation i, for contraceptive use category m, with respect to non-baseline category g:

$$\tilde{V}_{i,m}^{(g)} = \begin{cases} 1 & \text{if } m = 3, 4 \text{ or if } i \notin S^{(g)}, \\ V_{j[i],m}^{(g)} & \text{if } m = 1, 2 \text{ and if } i \in S^{(g)}, \end{cases}$$

where $V_{j[i],m}^{(g)}$ is the j-th assigned multiplier to non-baseline observation i for category g and $S^{(g)}$ is the set of all non-baseline observations i in category g.

2.3.3 Misclassification biases

Four types of misclassification errors (leading to misclassification biases) were identified in the surveys in the data base:

1. Exclusion of sterilization from modern method use, regardless of the reason of the sterilization, is expected to lead to under-reporting of total and modern method use (6 observations). For example, in a 1975 survey in Denmark male and female sterilization were excluded from method use.

2. Inclusion of sterilization for non-contraceptive reasons in modern method use, is expected to lead to over-reporting of total and modern method use (10 observations). For example, surveys in 2000 and 2004 in France included some cases of sterilization for non-contraceptive reasons.

3. Inclusion of folk methods in traditional method use (136 observations) is expected to lead to higher overall reporting, as well as higher reporting of traditional methods. Folk methods are local methods and spiritual methods of unproven effectiveness, like herbs or amulets.[12] For example, folk methods are included in traditional method use in Bolivia in 1998 survey or in Paraguay in surveys in years 1979, 1987, 1990, 1995 and 1998.

4. The absence of probing questions about knowledge of specific methods is expected to lead to under-reporting by women of traditional method use (86 observations). This is reported for data source MICS, a cross-national survey programme that has not systematically implemented a set of probe questions about contraceptive method knowledge.

We estimated the proportion of women that was misclassified from category n into category m (e.g., from having unmet need into using traditional methods in 3) as a proportion $\gamma_{n,m}$ of the expected (potentially perturbed) proportion of women in category n for observation i such that (1) $\tilde{q}_{i,2}\gamma_{2,4}$ refers to the misclassification bias when sterilization is excluded from modern contraceptive use, (2) $\tilde{q}_{i,4}\gamma_{4,2}$ refers to the misclassification bias when sterilization is included in modern contraceptive use, (3) $\tilde{q}_{i,3}\gamma_{3,1}$ to the misclassification bias when folk methods are included in traditional methods, and finally, (4) $\tilde{q}_{i,1}\gamma_{1,3}$ to the misclassification bias in absence of probing (signified by data source being from MICS).

The resulting perturbed and bias-adjusted compositional vector $\boldsymbol{q}_i$ is given by:

$$\begin{aligned} q_{i,1} &= \tilde{q}_{i,1}(1-\gamma_{1,3}) + \tilde{q}_{i,3}\gamma_{3,1}, \\ q_{i,2} &= \tilde{q}_{i,2}(1-\gamma_{2,4}) + \tilde{q}_{i,4}\gamma_{4,2}, \\ q_{i,3} &= \tilde{q}_{i,3}(1-\gamma_{3,1}) + \tilde{q}_{i,1}\gamma_{1,3}, \\ q_{i,4} &= \tilde{q}_{i,4}(1-\gamma_{4,2}) + \tilde{q}_{i,2}\gamma_{2,4}. \end{aligned}$$

To avoid numerical problems with logarithms of proportions that are zero, perturbed estimated probabilities that were less than 1% were rounded upwards to 1% (same approach as for observed proportions).

2.3.4 Example-based explanation of bias and perturbation parameters

Bias parameters were included in the model to account for survey misclassification errors. For example, women who use traditional methods may not report this use in a survey interview without probe questions about traditional method use and thus may be identified as having unmet need for contraceptives. Based on all surveys without probing questions, we estimated the average proportion of traditional method users that are misclassified. This proportion is referred to as the misclassification bias parameter.

Perturbation parameters were included to account for differences in method use and unmet need for sampled populations that differ from MWRA. For example, we expect modern method use to be higher among all sexually active women as compared to MWRA. In other words, if there are 50 modern method users for every 100 non-modern-method users among MWRA, we expect that among sexually active women only, there will be more than 50 modern method users for every 100 non-modern-method users, i.e. $V{\cdot}50$ users with $V > 1$. Multiplier V is referred to as the perturbation parameter for modern use among sexually active women, and estimated for all surveys that sample sexually active women only. If the sampled population refers to a specific geographical region, we assume in the illustration above that there are $V'{\cdot}50$ modern method users with $V' > 0$ such that modern use could be higher or lower than in the baseline population.

The full list of bias and perturbation parameters, for both modern as well as traditional methods, and their estimated values, are given in the results graphs in section 3.2. The interpretation of the parameters follows the examples described above.

2.4 Full model specification and prior distributions

2.4.1 List of main symbols

$p_{c,t,m}$	Unobserved proportion of MWRA in country c, year t in category m (referring to traditional and modern use, unmet need and no need respectively)
$P_{c,t}$	Total contraceptive prevalence in country c, year t
$R_{c,t}$	Ratio of modern to total prevalence in country c, year t
$Z_{c,t}$	Ratio of unmet need to no method in country c, year t
$B_{c,t}$	Demand satisfied, $B_{c,t} = \frac{p_{c,t,1+2}}{p_{c,t,1+2+3}}$
$P^*_{c,t}$	Systematic trend in $P_{c,t}$
$R^*_{c,t}$	Systematic trend in $R_{c,t}$
$Z^*_{c,t}$	Systematic trend in $Z_{c,t}$
$\tilde{P}_c$	Asymptote of $P^*_{c,t}$
$\tilde{R}_c$	Asymptote of $R^*_{c,t}$
ψ_c	Pace parameter for increase in $R^*_{c,t}$
ω_c	Pace parameter for increase in $P^*_{c,t}$
Ψ_c	Midpoint for increase in $R^*_{c,t}$
Ω_c	Midpoint for increase in $P^*_{c,t}$
z_c	"Intercept" parametric model for $Z^*_{c,t}$
$\{\beta_1, \beta_2\}$	Coefficients of parametric model for $Z^*_{c,t}$
$\varepsilon_{c,t}$	AR(1) distortion for $P_{c,t}$
$\eta_{c,t}$	AR(1) distortion for $R_{c,t}$
$\theta_{c,t}$	AR(1) distortion for $Z_{c,t}$
$\{\rho_\varepsilon, \rho_\eta, \rho_\theta\}$	Autoregressive coefficients for the AR(1) distortions
$\{\tau_\varepsilon, \tau_\eta, \tau_\theta\}$	Variance parameters of the AR(1) distortions
$q_{i,m}$	Perturbed and bias-adjusted proportion of women for observation i
$y_{i,m}$	Observed proportion of women in observation i
$\gamma_{n,m}$	Misclassification bias parameter (from category n to m)
$V^{(g)}_{j,m}$	j-th Multiplier for perturbation category g, contraceptive use category m

2.4.2 Full model specification

$$
\begin{aligned}
p_{c,t,1} &= (1 - R_{c,t}) \cdot P_{c,t}, \\
p_{c,t,2} &= R_{c,t} \cdot P_{c,t}, \\
p_{c,t,3} &= (1 - P_{c,t}) \cdot Z_{c,t}, \\
p_{c,t,4} &= (1 - P_{c,t}) \cdot (1 - Z_{c,t}), \\
P_{c,t} &= \text{logit}^{-1}\left(\text{logit}(P^*_{c,t}) + \varepsilon_{c,t}\right), \\
R_{c,t} &= \text{logit}^{-1}\left(\text{logit}(R^*_{c,t}) + \eta_{c,t}\right), \\
Z_{c,t} &= \text{logit}^{-1}\left(\text{logit}(Z^*_{c,t}) + \theta_{c,t}\right), \\
\varepsilon_{c,t} &\sim N(\rho_\varepsilon \cdot \varepsilon_{c,t-1}, \tau^2_\varepsilon), \\
\eta_{c,t} &\sim N(\rho_\eta \cdot \eta_{c,t-1}, \tau^2_\eta), \\
\theta_{c,t} &\sim N(\rho_\theta \cdot \theta_{c,t-1}, \tau^2_\theta), \\
\varepsilon_{c,t_{c,1}} &\sim N\left(0, \frac{\tau^2_\varepsilon}{1 - \rho^2_\varepsilon}\right),
\end{aligned}
$$

$$
\begin{aligned}
\eta_{c,t_{c,1}} &\sim N\left(0, \frac{\tau_\eta^2}{1-\rho_\eta^2}\right), \\
\theta_{c,t_{c,1}} &\sim N\left(0, \frac{\tau_\theta^2}{1-\rho_\theta^2}\right), \\
P^*_{c,t} &= \frac{\tilde{P}_c}{1+\exp(-\omega_c(t-\Omega_c))}, \\
R^*_{c,t} &= \frac{\tilde{R}_c}{1+\exp(-\psi_c(t-\Psi_c))}, \\
Z^*_{c,t} &= \frac{1}{1+\exp(z_c+\beta_1(P_{c,t}-0.4)+\beta_2\cdot(P_{c,t}-0.4)^2)}, \\
\log\left(\frac{\tilde{P}_c-0.5}{1-\tilde{P}_c}\right) &\sim N(\tilde{P}_w, \kappa_P^{(c)}), \\
\log\left(\frac{\tilde{R}_c-0.5}{1-\tilde{R}_c}\right) &\sim N(\tilde{R}_w, \kappa_R^{(c)}), \\
\omega_c^* &= \log\left(\frac{\omega_c-0.01}{0.5-\omega_c}\right), \\
\omega_c^* &\sim N(\omega^*_{s[c]}, \kappa_\omega^{(c)}), \\
\omega_s^* &\sim N(\omega^*_{r[s]}, \kappa_\omega^{(s)}), \\
\omega_r^* &\sim N(\omega^*_w, \kappa_\omega^{(r)}), \\
\psi_c^* &= \log\left(\frac{\psi_c-0.01}{0.5-\psi_c}\right), \\
\psi_c^* &\sim N(\psi^*_{s[c]}, \kappa_\psi^{(c)}), \\
\psi_s^* &\sim N(\psi^*_{r[s]}, \kappa_\psi^{(s)}), \\
\psi_r^* &\sim N(\psi^*_w, \kappa_\psi^{(r)}),
\end{aligned}
$$

$$
\begin{aligned}
\Psi_c &\sim N_T(\Psi_{s[c]}, \kappa_\Psi^{(c)}), \\
\Psi_s &\sim N(\Psi_{r[s]}, \kappa_\Psi^{(s)}), \\
\Psi_r &\sim N(\Psi_w, \kappa_\Psi^{(r)}), \\
\Omega_c &\sim \begin{cases} N_T(\Omega_{s[c]}, \kappa_\Omega^{(c)}), & c \in L, \\ N_T(\Omega_D, \kappa_\Omega^{(D)}), & c \in D, \end{cases} \\
\Omega_s &\sim N(\Omega_{r[s]}, \kappa_\Omega^{(s)}), \\
\Omega_r &\sim N(\Omega_L, \kappa_\Omega^{(L)}), \\
z_c &\sim N(z_{s[c]}, \kappa_z^{(c)}), \\
z_s &\sim N(z_w, \kappa_z^{(r)}).
\end{aligned}
$$

Data model

$$
\begin{aligned}
\begin{bmatrix} \log\left(\frac{y_{i,1}}{y_{i,3+4}}\right) \\ \log\left(\frac{y_{i,2}}{y_{i,3+4}}\right) \end{bmatrix} &\sim N\left(\begin{bmatrix} \log\left(\frac{q_{i,1}}{q_{i,3+4}}\right) \\ \log\left(\frac{q_{i,2}}{q_{i,3+4}}\right) \end{bmatrix}, \mathbf{\Sigma}_{S[i]}\right), \\
\mathbf{\Sigma}_S &= \begin{bmatrix} \sigma_{S,1}^2 & \rho_S\sigma_{S,1}\sigma_{S,2} \\ \rho_S\sigma_{S,1}\sigma_{S,2} & \sigma_{S,2}^2 \end{bmatrix},
\end{aligned}
$$

$$
\begin{aligned}
\log\left(\frac{y_{i,1+2}}{1-y_{i,1+2}}\right) &\sim N\left(\log\left(\frac{q_{i,1+2}}{1-q_{i,1+2}}\right), \sigma_T^2\right) \text{ (for observations without break-down)}, \\
\log\left(\frac{y_{i,3}}{y_{i,4}}\right) &\sim N\left(\log\left(\frac{q_{i,3}}{q_{i,4}}\right), \sigma_{S[i],3}^2\right), \\
\tilde{q}_{i,m} &= \frac{p_{c[i],t[i],m} \cdot v_{i,m}}{\sum_{n=1}^{4} p_{i,n} \cdot v_{i,n}}, \\
v_{i,m} &= \prod_{g=1}^{G} V_{i,m}^{(g)}, \\
\tilde{V}_{i,m}^{(g)} &= \begin{cases} 1 & \text{if } m = 3,4 \text{ or if } i \notin S^{(g)}, \\ V_{j[i,g],m}^{(g)} & \text{if } m = 1,2 \text{ and if } i \in S^{(g)}, \end{cases} \\
V_{j,m}^{(g)} & \begin{cases} \sim \text{logN}(0, \delta_m^2), & \text{for } g = 1,2,3,6, m = 1,2 \text{ and for } g = 4, m = 1, \\ = 1/(1 + W_{j,m}^{(g)}), & \text{for } g = 8, m = 1,2, \\ = 1 + W_{j,m}^{(g)}, & \text{otherwise}, \end{cases} \\
\log(W_{j,m}^{(g)}) & \begin{cases} = \mu_1, & \text{for } m = 1, \\ \sim N(\mu_2, \lambda_2^2), & \text{for } m = 2, \end{cases} \\
q_{i,1} &= \tilde{q}_{i,1}(1-\gamma_{1,3}) + \tilde{q}_{i,3}\gamma_{3,1}, \\
q_{i,2} &= \tilde{q}_{i,2}(1-\gamma_{2,4}) + \tilde{q}_{i,4}\gamma_{4,2}, \\
q_{i,3} &= \tilde{q}_{i,3}(1-\gamma_{3,1}) + \tilde{q}_{i,1}\gamma_{1,3}, \\
q_{i,4} &= \tilde{q}_{i,4}(1-\gamma_{4,2}) + \tilde{q}_{i,2}\gamma_{2,4}.
\end{aligned}
$$

2.4.3 Prior distributions

Spread-out prior distributions were used for the world-level mean parameters of the logistic curves and parametric function for unmet need (some centred at least-squares estimates):

$$
\begin{aligned}
\tilde{P}_w &\sim N(0, 10^2), \\
\tilde{R}_w &\sim N(0, 10^2), \\
\omega_w^* &\sim N(-1, 10^2), \\
\phi_w^* &\sim N(-1, 10^2), \\
\Phi_w &\sim N(1980, 50^2), \\
\Omega_D &\sim N(1920, 50^2), \\
\Omega_L &\sim N(1980, 50^2), \\
z_w &\sim N(-0.38, 1), \\
\beta_1 &\sim N(0.12, 1), \\
\beta_2 &\sim U(0, 10).
\end{aligned}
$$

For the AR(1) distortion terms:

$$
\tau_{\cdot}^{-1/2} \sim U(0.01, 1), \tag{22}
$$

$$
\rho_{\cdot} \sim U(0, 1). \tag{23}
$$

Inverse-Gamma prior distributions were used for the across-countries variance parameters $\kappa_{\cdot}^{(c)}$'s:

$$
1/\kappa_{\cdot}^{(c)} \sim \text{Gamma}(\nu_{\cdot 0}/2, \nu_{\cdot 0}/2 \cdot \kappa_{\cdot 0}), \tag{24}
$$

such that

$$
E\{\kappa_{\cdot}\} = \frac{\nu_{\cdot 0}/2}{\nu_{\cdot 0}/2 - 1}\kappa_{\cdot 0}, \tag{25}
$$

$$\text{mode}\{\kappa_{\cdot}\} \quad = \quad \frac{\nu_{\cdot 0}/2}{\nu_{\cdot 0}/2+1}\kappa_{\cdot 0}, \tag{26}$$

with mode$\{\kappa_{\cdot}\} < \kappa_{\cdot 0} < E\{\kappa_{\cdot}\}$. The prior variance parameters $\kappa_{\cdot 0}$ were estimated based on a model fit without AR-terms (systematic curves only) to the data. For unmet need intercept z_c, "prior sample size" ν_{z0} was set to 1. For the parameters of the logistic functions, the total prior sample size $\nu_{\cdot 0}$ was set to 10 (with a prior sample size of 8 for $\kappa_{\Omega}^{(c)}$ and 2 for $\kappa_{\Omega}^{(D)}$ to reflect the relative break-down into developing and developed countries). These somewhat informative prior distributions for the across-country variance of the logistic parameters were chosen to rule out complete shrinkage (after including the AR-terms) of the country-specific parameters to the sub-regional or world means based on the assumption that underlying trends and "long-term asymptotes" differ between countries.

Uniform priors were used for the standard deviations on the sub-regional and regional level:

$$\sqrt{\kappa_{\cdot}^{(s,r,L,D)}} \quad \sim \quad U(0, K_{\kappa,\cdot}^{(s,r,L,D)}), \tag{27}$$

where $K_{\kappa,\cdot}^{(s,r,L,D)}$ is the upper bound for $\sqrt{\kappa_{\cdot}}^{(s,r,L,D)}$, set a large value such that its prior distribution did not restrict posterior outcomes.

Spread-out inverse-Wishart distributions were used for the covariance matrices $\mathbf{\Sigma}_S$ for sources $S = 1, \ldots, 4$:

$$\mathbf{\Sigma}_S \quad \sim \quad IW(\text{Diag}(0.1), 2).$$

Because of the limited number of observations, the error variance parameter for observed total prevalence (on the logit-scale) was assigned a somewhat informative prior based on an estimate for the observations where the break-down was available:

$$\sigma_T^2 \quad \sim \quad \text{IGamma}(0.5, 0.5 \cdot 0.15^2).$$

The prior for the variance parameter related to unmet need was again spread out:

$$\sigma_{S,3} \quad \sim \quad U(0.01, 2), \text{ for } S = 1, 2,$$

and $\sigma_{3,3} = \sigma_{4,3} = \sigma_{2,3}$.

We used uniform prior distributions for all (four) misclassification bias parameters, and spread out distributions for the mean and variance of the perturbation multipliers:

$$\begin{aligned} \gamma_{m,n} &\sim U(0,1), \\ \mu_m &\sim N(-2, 1.25^2), \\ \delta_m &\sim U(0,2), \\ \lambda_2 &\sim U(0.01, 2). \end{aligned}$$

2.5 Computation and inference

We obtained samples from the posterior distributions of all model parameters using a Markov chain Monte Carlo (MCMC) algorithm, implemented in open source software packages `R 2.14`[13] and `JAGS` (Just Another Gibbs Sampler[14]), using `R`-packages **R2jags**[15] (version 0.03-07) and **rjags**.[16] Results were obtained from 5 chains; the total number of iterations in each chain was 150,000, keeping every 50th iteration, and discarding the first 50,000 iterations as burn-in. Convergence of the MCMC algorithm and the sufficiency of the number of samples obtained was checked through visual inspection of trace plots and convergence diagnostics of Raftery and Lewis[17, 18, 19], and Gelman and Rubin[20], both implemented in the **coda** `R`-package. [21]

For each posterior sample of the model parameters, trajectories of contraceptive prevalence and unmet need were constructed for all countries. Specifically, for a country of interest c, the j-th posterior sample of the model parameters of its logistic curves for total prevalence and the ratio of modern to total prevalence was used to construct the logistic curves $P^{*(j)}_{c,t}$ and $R^{*(j)}_{c,t}$ from 1990 to 2015. Posterior samples of the AR(1) distortion terms $\varepsilon^{(j)}_{c,t}$ and $\eta^{(j)}_{c,t}$ from 1990 to 2015 were obtained by sampling these distortions conditional on the posterior sample for the observation years in the country. E.g. to obtain a "future distortion" term after the last observation year $t_{c,n}$ in country c, we sampled

$$\varepsilon^{(j)}_{c,t_{c,n+1}} \sim N(\rho^{(j)}_{\varepsilon}\varepsilon^{(j)}_{c,t_{c,n}}, \tau^{2(j)}_{\varepsilon}).$$

Back-projections from the first observation year $t_{c,1}$ were obtained by sampling

$$\varepsilon^{(j)}_{c,t_{c,0}} \sim N(\rho^{(j)}_{\varepsilon}\varepsilon^{(j)}_{c,t_{c,1}}, \tau^{2(j)}_{\varepsilon}).$$

The logistic curves and the distortion terms were combined to obtain the posterior sample of country-specific trajectories of traditional and modern prevalence from 1990 to 2015.

Similarly, to obtain the trajectories of unmet need for countries with unmet need data, the j-th posterior sample of the model parameters for the expected ratio of unmet need to no use of contraceptive methods was used to construct that ratio $Z^{*(j)}_{c,t}$ for 1990 to 2015. Distortions $\theta^{(j)}_{c,t}$ were sampled for all years of interest, conditional on the posterior samples in the observation years.

For countries without data on unmet need, the country-specific parameter $z^{(j)}_{c}$ in the ratio $Z^{*(j)}_{c,t}$ was sampled from its hierarchical distribution,

$$z^{(j)}_{c} \sim N(z^{(j)}_{s[c]}, \kappa^{(c)(j)}_{z}),$$

using the j-th posterior sample $\{z^{(j)}_{s[c]}, \kappa^{(c)(j)}_{z}\}$ for the subregional mean and the variance parameter. The distortion term in the first observation year $t_{c,1}$ for contraceptive prevalence was sampled from its respective distribution:

$$\theta_{c,t_{c,1}} \sim N\left(0, \frac{\tau^{2(j)}_{\theta}}{1-\rho^{2(j)}_{\theta}}\right),$$

and the distortions for the remaining years were obtained in the same way as discussed for the $\varepsilon^{(j)}_{c,t}$'s.

Uncertainty intervals (UIs) were based on the 2.5 and 97.5 percentiles of the posterior sample of estimates for each country, for each year from 1990 to 2015, and reflect the uncertainty in the country-year estimates. The "best" estimates were given by the median outcome in each year.

2.5.1 Subregional estimates

Aggregate estimates (e.g., for (sub)-regions) were constructed by taking into account the number of MWRA in each country (see 1.3), denoted by $W_{c,t}$ for country c, year t. The aggregate estimate for the subset of countries $C_S = \{c_1, \ldots, c_n\}$ is given by

$$\boldsymbol{p}^{[C_S]}_{t} = \frac{1}{\sum_{c\in C_S} W_{c,t}} \sum_{c\in C_S} W_{c,t} \cdot \boldsymbol{p}_{c,t}.$$

When constructing the aggregate estimates, future/past distortions of the time trends were assumed to be uncorrelated.

Aggregate estimates of demand satisfied, denoted by $B^{[C_S]}_{t}$ for subset C_S, were constructed as follows:

$$B^{[C_S]}_{t} = \frac{\sum_{c\in C_S} W_{c,t} \cdot p_{1+2,c,t}}{\sum_{c\in C_S} W_{c,t} \cdot p_{1+2+3,c,t}}.$$

The model-based estimate for an outcome of interest in a given year (e.g. total, modern or traditional contraceptive prevalence) for a country or aggregate group (e.g., region) is given by the median value of all trajectories for the outcome in that year. As a result, the model-based estimates of modern and traditional prevalence for a country or aggregate group do not always sum exactly to the estimated total contraceptive prevalence for the country or aggregate group because the trajectory that gives the median for total prevalence does not have to correspond to the median trajectory for traditional and/or modern method prevalence.

2.5.2 Inference on changes

We estimated changes in various indicators over time. For example, given the j-th posterior sample of total prevalence $p^{(j)}_{1+2,c,t}$ for country c, years t_1 and t_2, sample $j = 1, \ldots, J$, the j-th posterior sample for the change in prevalence is given by

$$p^{(j)}_{1+2,c,t_2} - p^{(j)}_{1+2,c,t_1}.$$

The median estimate for the change, and its 95% uncertainty interval were based on the corresponding sample percentiles. The probability that a change was positive (e.g., whether an increase in total prevalence has occurred, referred to as the posterior probability of an increase, PPI) is given by

$$P(p_{1+2,c,t_2} > p_{1+2,c,t_1}) \approx \frac{1}{J} \sum_j I(p^{(j)}_{1+2,c,t_2} > p^{(j)}_{1+2,c,t_1}),$$

where I refers to the index function , $I(p^{(j)}_{1+2,c,t_2} > p^{(j)}_{1+2,c,t_1}) = 1$ if $p^{(j)}_{1+2,c,t_2} > p^{(j)}_{1+2,c,t_1}$, 0 otherwise. The same procedure was used for other indicators as well as well as for aggregate outcomes.

Lastly, to examine whether the change from t_1 to t_2 was bigger/smaller than the change from t_2 to t_3 (e.g., did contraceptive prevalence increase more slowly from 2000 to 2010, than from 1990 to 2000?), we constructed posterior samples of those differences and calculated posterior probabilities of either a positive or a negative change. E.g., for contraceptive prevalence $p_{1+2,c,t}$ in country c, the posterior probability that the change in (2000-2010) was bigger than the change in (1990-2000), is given by:

$$\begin{aligned} &P((p_{1+2,c,t_3} - p_{1+2,c,t_2}) > (p_{1+2,c,t_2} - p_{1+2,c,t_1})) \approx \\ &\quad \frac{1}{J} \sum_j I((p_{1+2,c,t_3} - p_{1+2,c,t_2})^{(j)} > (p_{1+2,c,t_2} - p_{1+2,c,t_1})^{(j)}), \end{aligned}$$

where $t_1 = 1990, t_2 = 2000, t_3 = 2010$. Again, the same procedure was used for other indicators as well as well as for aggregate outcomes.

2.6 Model validation

Cross-validation was used to validate model performance, in which some observations were excluded while the model was fitted to the remaining observations (the training set).

We carried out three validation exercises. In the first exercise, 20% of the observations within each country were left out at random, such that the training set consisted of 80% of all observations. In the second validation exercise, all data with observation years after (and including) 2005 were left out (17% of all observations, 23% of the observations with information on unmet need) to check the predictive performance of the model. In the third validation exercise we left out all observations on unmet need for a random subset of 22 countries with data on unmet need (20% of the countries), to check how well the model predicts unmet need for countries without observations.

Out-of-sample performance was assessed using three measures, based on the left-out observations and their predictive posterior distributions:

(1) Median prediction error and median absolute prediction error.
A prediction error was defined as the difference between the left-out observation and its posterior predictive median estimate. I.e., the error in predicting total prevalence for left-out observation i was given by

$$e_{i,1+2} = y_{i,1+2} - \hat{y}_{i,1+2},$$

where $\hat{y}_{i,1+2}$ is the predictive posterior median of $y_{i,1+2}$ (taking into account perturbations and biases).

(2) Proportion of the left-out observations that fell below their respective posterior predictive median estimate. This proportion is expected to be around 50%.

(3) Coverage of 95% prediction intervals for the left-out observations.
Calibration of the predictive distributions of the excluded observations was assessed by checking that the prediction intervals contained the left-out observations the right proportion of the time. If left-out observations are independent from one another, we expect that around 5% of the left-out observations fall outside their respective predictions intervals. Higher proportions suggest that the uncertainty intervals for true prevalence are too narrow, while smaller proportions suggest that they are too wide.

Because left-out observations within one country are expected to be dependent (to err in the same direction if prevalence was under- or over-estimated for several years within countries under consideration), only one left-out observation within a country was included when calculating the performance measures. When leaving out data at random, one observation was selected at random within each country. When leaving out data after/in 2005 or all unmet data in a subset of countries, the most recent left-out observation within each country was selected.

To assess how confident one can be about the current estimates and projections, we also compared the current estimates and projections (based on the full data set) to the estimates and uncertainty bounds based on the training set. The goal is to check that additional data did not change the estimates and projections significantly; as more data become available, we expect the current (updated) estimates to lie well within the previously constructed uncertainty intervals. The smaller the proportion of estimates and projections that fall outside their respective uncertainty intervals, the better (contrary to the previously described measure of calibration).

Changes in estimates and bounds were summarized for a year of interest, here 2008 was chosen. Reported outcomes measures were based on the difference between an updated and "old" median estimate (where the latter is based on the training set) and the proportion of countries in which the updated median estimate for a specific year was outside the previously constructed 95% UI for the year of interest.

3 RESULTS

Supplementary tables (an overview of selected subregional and country estimates of contraceptive prevalence and satisfied demand for family planning, and country estimates for changes in demand satisfied) and figures (estimates for all countries) are provided in Sections 5 and 6.

3.1 Error variance parameters

As described in Eq.20, the observed log-ratios of traditional and modern contraceptive use to no contraceptive use were assumed to be drawn from a multivariate normal distribution. The estimates for the standard deviations for both ratios, as well as the estimated correlation between the ratios, are shown in Figure 6 (top row) for the four source categories (DHS, MICS, Other international survey programmes and National surveys). Errors tend to be smaller for the log-ratio of modern to no contraceptive prevalence compared to traditional to no contraceptive use (the average median posterior estimate for all 4 sources combined is 0.13 for modern use, compared to 0.34 for traditional use). A comparison across sources shows that MICS tends to have higher error for both log-ratios as compared to the other 3 source categories, especially for the log-ratio of traditional to no contraceptive use. The correlation is small but positive for all source categories, suggesting that if a survey overestimates (underestimates) the ratio of modern to no contraceptive use, the ratio of traditional to no contraceptive use also tends to be overestimated (underestimated).

Estimates of the error standard deviation of the log-ratio of unmet need for contraceptives to no need for observations from a DHS, and observations from other sources are shown in Figure 6 (bottom row). The standard deviation is much smaller for observations from DHS compared to other sources (0.09 with 95% UI (0.03, 0.14) for DHS compared to 0.63 with 95% UI (0.53, 0.76) for other sources) and moreover, the error variance of other sources is very large, suggesting that these log-ratios are subject to substantial sampling and/or non-sampling errors.

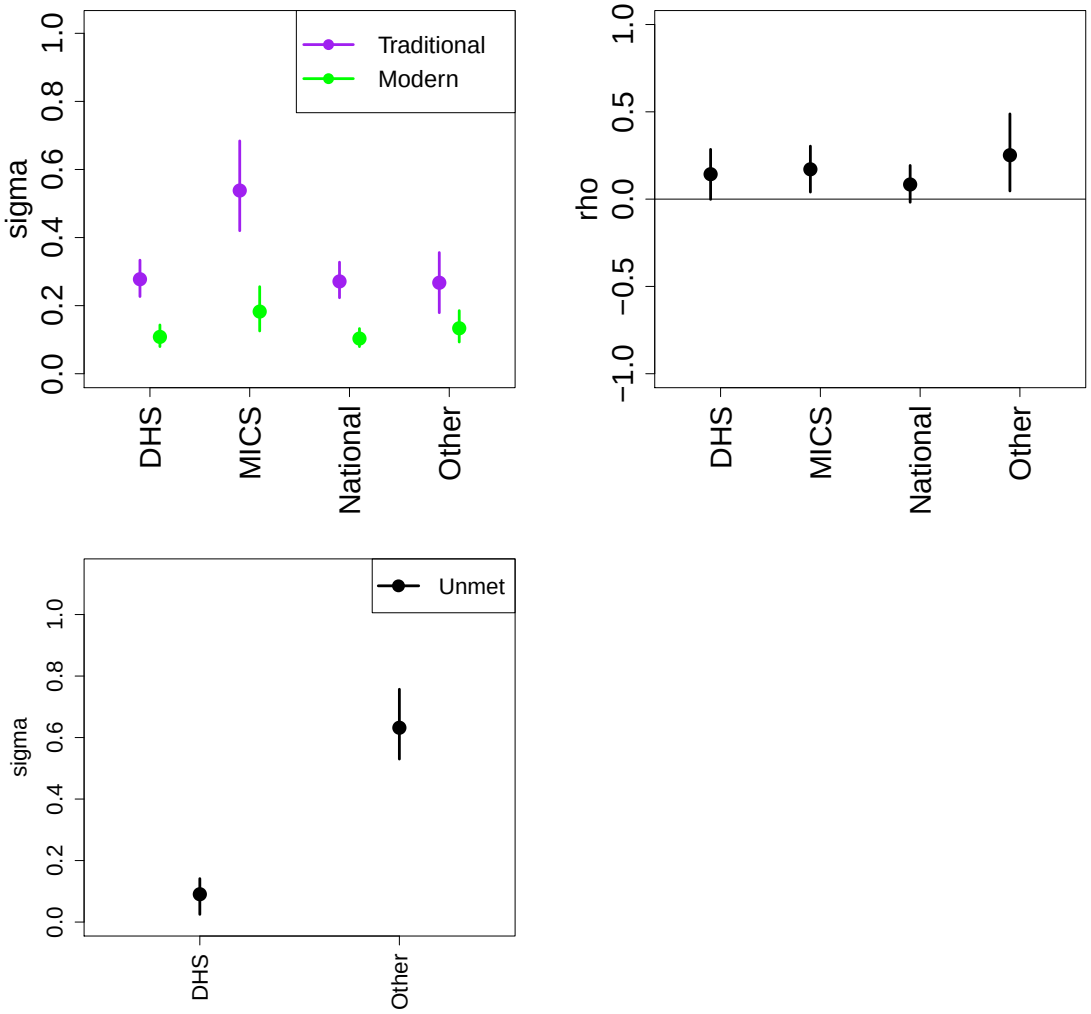


Figure 6: **Overview of estimates of standard deviations by source of observed contraceptive prevalence log-ratios.** Top row: Estimated standard deviations (sigma) and correlation (rho) for the log-ratios of traditional and modern contraceptive use to no use, by source. Bottom graph: Estimated standard deviations (sigma) for the log-ratio of unmet need to no need for contraceptive methods, by source ("Other" here refers to any source other than DHS). Vertical lines display 95% uncertainty intervals.

3.2 Misclassification biases and perturbation multipliers

The estimated misclassification bias parameters are shown in Figure 7 and refer to the estimated proportion of women who were misclassified from one category to another category: (1) the estimated proportion of women who use modern methods but are misclassified as having unmet need if sterilization is excluded from modern method use, (2) the estimated proportion of women who do not have a need for contraceptive methods but are misclassified as using modern methods if sterilization for non-contraceptive reasons is included among modern method use, (3) the estimated proportion of women who have an unmet need for effective contraceptive methods but are misclassified as using traditional methods if folk methods are included as traditional methods, and (4) the estimated proportion of women who use traditional methods but are misclassified as having unmet need if the survey does not include probing questions.

For all but the folk misclassification bias, the median estimate for the proportion of misclassified women is at least 5% and there is considerable uncertainty about the extent of the misclassification bias. For folk biases, the proportion of women that is misclassified (the proportion of women that uses folk methods among the total number of women with unmet need) was small (4.2% with 95% UI (3.1, 5.4%)).

The estimates of the perturbation multipliers and corresponding uncertainty bounds are summarized in Figure 8. While the median posterior estimates (dots) tend to be close to 1 for most multipliers, the UIs tend to be wide (e.g., covering outcomes from around 0.5 to 1.5 for a large subset of multipliers), suggesting substantial uncertainty about the measured ratios of contraceptive prevalence.

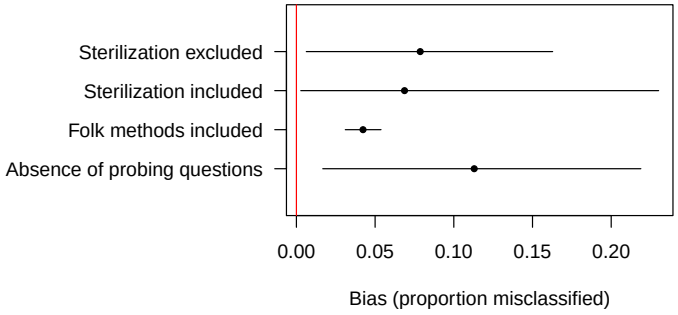


Figure 7: **Estimates and uncertainty intervals for the misclassification bias parameters**. The parameters refer to biases resulting from exclusion of sterilization from modern method use regardless of the reason of the sterilization, inclusion of sterilization for non-contraceptive reasons in modern method use, inclusion of folk methods in traditional method use, and the absence of probing questions about knowledge of specific methods (signified by data source being from MICS). Horizontal lines display 95% uncertainty intervals.

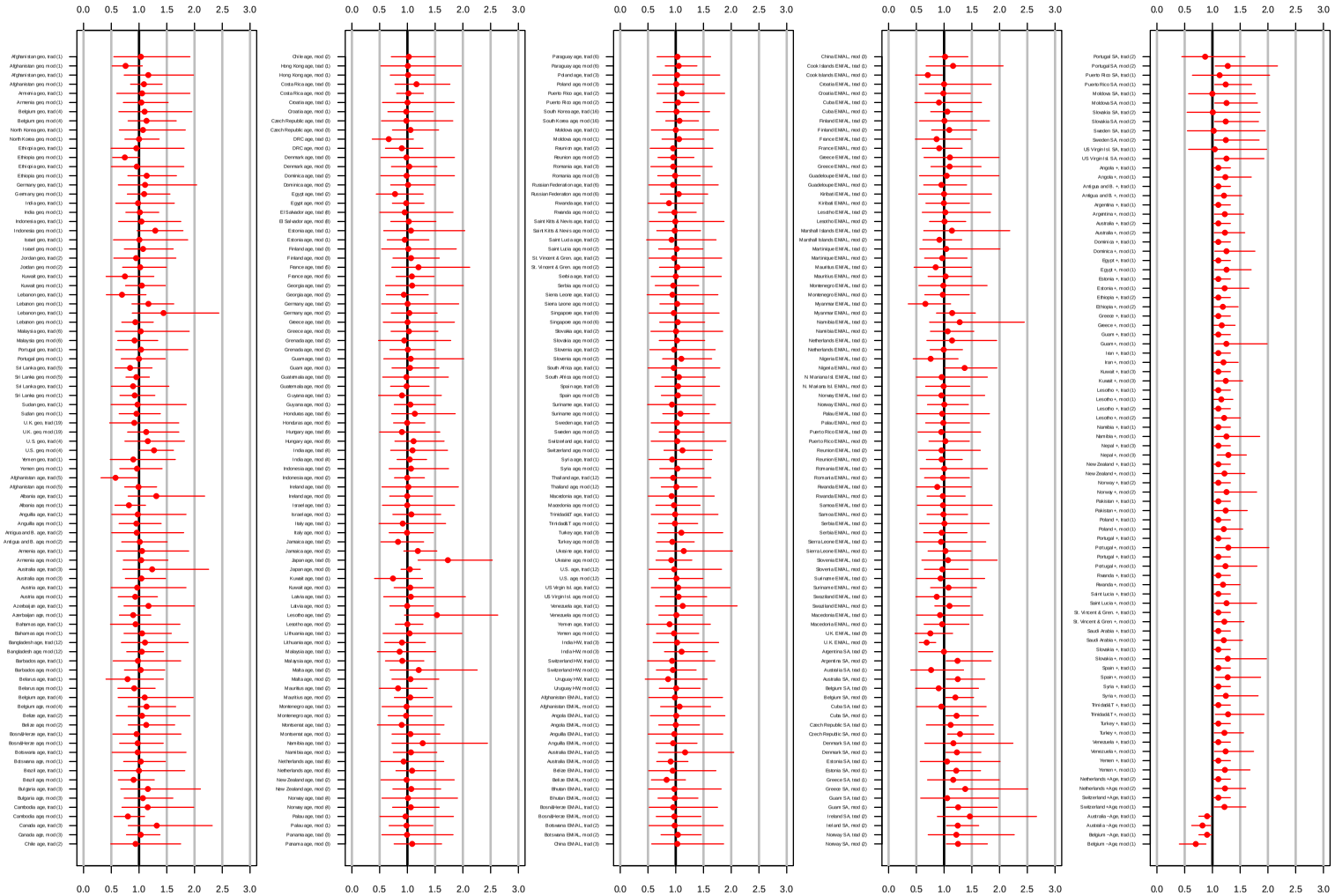


Figure 8: **Estimates of the perturbation multipliers with uncertainty bounds.** The detailed description of each multiplier (country, category, traditional or modern use, number of observations) can be read when zooming in on the figure. Horizontal lines display 95% uncertainty intervals.

3.3 Model validation

The results related to the left-out observations for the three validation exercises are summarized in Table 5. For exercise (1), when leaving out 20% of all observations at random, the calibration results suggested that the model is well calibrated for all countries combined. The coverage probabilities for all categories were around 95% as expected, albeit slightly higher for unmet need, and slightly lower for traditional use. The median error (difference between the left-out observation and the predictive median posterior estimate) was negative for unmet need but small (-2%) and negligible for the other categories. The maximum median absolute error was 4% for left-out observations of total contraceptive prevalence. The validation results related to the changes in estimates are summarized in Table 6 (note that changes in unmet need estimates included changes in countries where no data on unmet need were left out because changes in total prevalence could also have affected the estimates of unmet need). Changes in estimates were small in this validation exercise and the maximum percentage of estimates that fell outside the bounds that were constructed based on the training set was 6.8% for contraceptive use, and 2.9% for unmet need.

For exercise (2), when leaving out all observations starting in 2005, coverage probabilities were again reasonable and errors were small; the maximum median absolute error is 4% in the four categories. Changes in estimates are small as well, and the updated estimate is within the uncertainty interval (UI) that would have been constructed in 2005 for at least 95.4% of the countries with left-out observations for all categories.

Lastly, also when leaving out all data on unmet need in a random subset of 22 countries with data on unmet need, the validation exercise suggested the model was well calibrated. The median difference between the training and updated estimate for 2008 in the 22 countries was close to 0%, and the median absolute difference was 3%. The updated median estimate for 2008 was within the previously constructed 95% UI for all but one country.

		95% prediction interval			Median	Errors	
	# Obs	% Below	% Within	% Above	% Below	ME	MAE
Exercise 1 (20%)							
Traditional	103	12.0	86.0	2.0	49.5	0.00	0.02
Modern	103	4.0	95.0	1.0	47.6	0.00	0.03
Total	103	5.0	95.0	0.0	52.4	-0.00	0.04
Unmet	34	0.0	100.0	0.0	70.6	-0.02	0.02
Exercise 2 (end)							
Traditional	107	10.0	87.0	3.0	57.0	-0.01	0.02
Modern	107	2.0	94.0	4.0	59.8	-0.01	0.04
Total	107	4.0	94.0	2.0	62.6	-0.02	0.04
Unmet	59	5.0	90.0	5.0	45.8	0.00	0.03
Exercise 3 (unmet)							
Unmet	22	0.0	95.0	5.0	50.0	-0.00	0.03
Expected		**2.5**	**95**	**2.5**	**50**		

Table 5: **Summary of model validation results for the left-out observations.** For each exercise, for each category of contraceptive prevalence, the reported outcomes are: number of left-out observations (countries), percentage of left-out observations that fall below/in/above the respective 95% prediction intervals based on the training set and below their posterior predictive median estimate, and their median error (ME) and the median absolute error (MAE).

	# Countries	95% UI % Below	95% UI % Above	Differences Median	Differences Median abs.
Exercise 1 (20%)					
Traditional	103	2.9	3.9	0.00	0.01
Modern	103	1.9	4.9	0.00	0.02
Total	103	2.9	3.9	0.01	0.02
Unmet	103	2.9	0.0	-0.00	0.01
Exercise 2 (end)					
Traditional	107	0.9	0.9	-0.00	0.01
Modern	107	1.9	1.9	-0.01	0.03
Total	107	1.9	1.9	-0.01	0.03
Unmet	107	0.9	3.7	0.01	0.02
Exercise 3 (unmet)					
Unmet	22.00	0.00	4.6	0.00	0.03
Expected		$\leq \mathbf{2.5}$	$\leq \mathbf{2.5}$		

Table 6: **Summary of model validation results: changes in estimates for 2008.** For each exercise, for each category of contraceptive prevalence, the reported outcomes are: number of countries with excluded observations, the percentage of countries for which the estimate based on the full data set falls below/above the uncertainty interval based on the training set, and the differences between the updated estimates and the estimates constructed based on the training set.

3.4 Differences between model-based estimates and observations

The model-based point estimates do not necessarily duplicate the observations since the model draws on all available data for a country, accounts for differences among survey data sources, differences in sample populations and how contraceptive prevalence was measured and is informed by sub-regional, regional and global patterns.

To investigate differences, we compared our model-based point estimates from 1990 to 2012 with observations for total and modern contraceptive prevalence and unmet need and selected all observations where absolute differences with the model-based estimates were more than 5 percentage points. Differences of this magnitude occurred in a small proportion of observations: 7.1% for total contraceptive prevalence, 4.2% for modern use and 6.9% for unmet need for family planning (corresponding to 45, 26 and 19 observations, respectively). Of the cases where differences are more than 5 percentage points, the majority are observations with a sampled population that differs from MWRA or with misclassification issues (see Table 7). For these observations, differences in reported prevalence as compared to prevalence in the baseline population are not surprising and are accounted for in our model, so the resulting differences are as expected.

The observations without special characteristics that differ more than 5 percentage points from the model-based estimate are listed in Table 8. Only 5 observations for total contraceptive prevalence and 1 observation for modern method prevalence do not have any special characteristics that were accounted for in the model. An investigation of the data for these countries suggested that discrepancies arise because of conflicting information from data sources in the country. For example, 4 observations on total prevalence in Pakistan that are more than 5 percentage points different from the model-based point estimates are also quite different from observations from other national surveys that show higher levels of contraceptive prevalence. Another example is Viet Nam, where the DHS in 2002 reports 56.7% modern method use while most other observations in Viet Nam are from a consistent time series of national surveys with higher modern method prevalence, explaining the higher model-based estimate of 61.7% for 2002.

For unmet need for family planning, we find that all 9 observations without special characteristics that differ more than 5 percentage points from the model-based estimate are from data sources other than the Demographic and Health Survey (DHS). As discussed in Section 3.1, we estimated that the error variance for DHS observations on unmet need is much lower than for observations from all other non-DHS sources. In other words, observations on unmet need from non-DHS data sources are estimated to be less informative than DHS observations. As a result, larger differences between observations from non-DHS sources and model-based es-

timates are not unlikely, especially if the non-DHS observation contradicts information on the expected unmet need level from DHS data. For example, in India, the model-based estimate of unmet need in 2007 is 15.1%, which is much lower than the 20.5% as reported in a national survey in that year, but in line with the lower observations on unmet need from DHS.

This analysis of differences between model-based estimates and observations pinpoints to country-years with conflicting sources of information, that may warrant further investigation into data quality of the observations.

	Any method	Modern methods	Unmet need
# Observations in/after 1990			
Total	636	622	277
More than ± 5 percentage points difference with model-based estimate	45	26	19
More than ± 5 percentage points difference AND special characteristics	40	25	10
Among selected observations with special characteristics			
Other than MWRA	16	19	0
Different age group	18	15	5
Not nationally representative	4	2	0
Misclassification bias	12	13	5
Among selected observations without special characteristics			
Source DHS	0	1	0

Table 7: **Summary of comparison of model-based point estimates with observed data for total and modern contraceptive prevalence and unmet need.** Additional information on special characteristics (such as biases or samples from a non-baseline population) and source are listed for selected observations with more than 5 percentage points difference from the model-based estimates. Note that listing totals of special characteristics can add to more than the number of observations because observations can belong to more than one category.

	Category	Country	Model-based Estimate (%)	Observation (%)	Year	Source
1	Any method	Pakistan	23.7	17.0	1998	NS
2	Any method	Pakistan	19.9	13.0	1995	NS
3	Any method	Pakistan	13.8	6.9	1991	NS
4	Any method	Pakistan	22.0	15.0	1996	NS
5	Any method	Saudi Arabia	29.3	20.8	1999	NS
6	Modern methods	Viet Nam	61.7	56.7	2002	DHS
7	Unmet need	Myanmar	25.9	20.6	1991	NS
8	Unmet need	Togo	36.4	31.0	2010	Other
9	Unmet need	India	15.1	20.5	2007	NS
10	Unmet need	Venezuela (Bolivarian Republic of)	13.4	18.9	1998	NS
11	Unmet need	Serbia	13.3	6.6	2010	Other
12	Unmet need	Cape Verde	21.0	14.2	1998	Other
13	Unmet need	Pakistan	30.1	37.5	1996	NS
14	Unmet need	Sri Lanka	8.8	18.2	2000	NS
15	Unmet need	Timor-Leste	20.5	3.8	2003	NS

Table 8: **Overview of observations without special characteristics for which the difference between the model-based estimate and the observation is more than 5 percentage points.** Source "NS" refers to a national survey.

3.5 A note on the width of uncertainty intervals

For countries where regular DHS surveys show a smooth trend in prevalence, such as Kenya and Bangladesh, UIs may be wider than expected; based on the data from those two countries alone, there is a reason to be confident in the DHS observations and dramatic changes during the period from one survey to the next seem unlikely. However, the width of the UIs is based on (i) the estimate of the uncertainty in (or error variance of) a DHS observation, and (ii) the assessment of possible changes in prevalence from one year to the next, from all available data sources in all countries. There are several countries (i.e., Egypt, Senegal and Tanzania) with substantial drops in prevalence between two DHS surveys that are only one or two years apart, suggesting either a large error in one of the two DHSs or an (unexpected) decline in prevalence from one year to the next. As a result, the error variance of the DHS and the variability in prevalence from one year to the next are informed by both data and trends in Kenya and Bangladesh, as well as data and trends in countries like Egypt, Senegal and Tanzania. The resulting UIs in years with DHSs in Kenya and Bangladesh are thus informed by the estimated magnitude of DHS errors, and the widths of the UIs increase during years without observations and during the projection period to allow for possible changes in prevalence levels.

3.6 Comparison of estimates across studies

Sub-regional estimates of MWRA's use of modern contraception using other approaches are generally within the uncertainty intervals of our estimates. A comparison of our estimates with the estimates by Singh and Darroch (2012)[22] is shown in Figure 9. At the sub-regional level, modern contraceptive prevalence estimates based on a constant extrapolation from the most recent survey observation are generally lower than estimates from our approach but still within the 95% uncertainty intervals for most subregions. The exceptions are Middle Africa and Western Africa (estimates from Singh and Darroch are at the lower bound of the 95% uncertainty interval) and Eastern Asia (the estimate from Singh and Darroch is outside the upper bound of the 95% uncertainty interval, likely due to a higher estimate of modern contraceptive prevalence used for China by the latter study). Point estimates for unmet need for modern methods are comparable across the studies for all subregions except Eastern Asia (the estimate from Singh and Darroch is at the lower bound of the 95% uncertainty interval, and, again, likely due to a higher estimate of modern contraceptive prevalence used for China by the latter study).

Table 9 shows comparisons of the absolute number of married or in-union women in 2012 in developing regions using modern methods or with an unmet need for modern methods from this study and those from Singh and Darroch (2012). Since there is not an equivalent estimate for married or in-union women with an unmet need for modern methods from Singh and Darroch (2012), we multiplied the percentage given in that study (56.7% using modern methods and 18% with an unmet need for modern methods) to the number of married or in-union women from our study. The differences are small despite the different models and populations of married or in-union women. The number of married or in-union women using modern contraceptive methods is 0.2% lower in our estimate compared to the adjusted Singh and Darroch (2012) estimate and the number of married or in-union women with an unmet need for modern methods is 2.6% higher. The absolute numbers based on the Singh and Darroch (2012) study are within the uncertainty intervals of our modeled estimates and are very close to our point estimates.

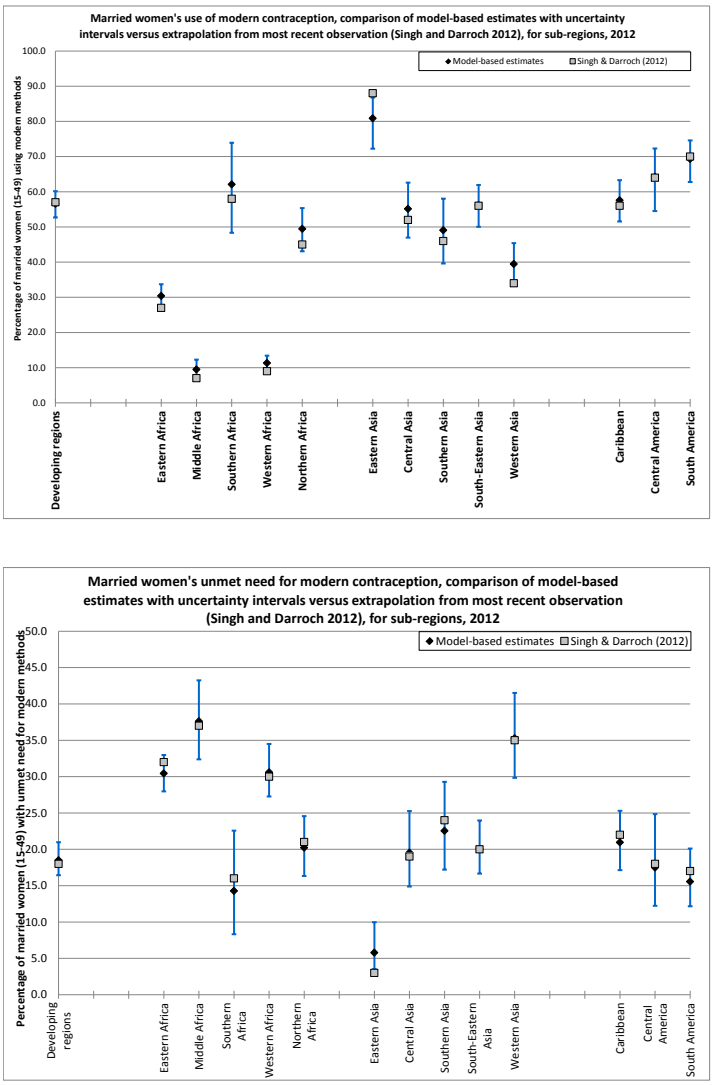


Figure 9: **Comparison of the percentage of married or in-union women aged 15 to 49 years (MWRA) who use modern methods or have an unmet need for modern methods in 2012 in selected sub-regions based on the current study and the study by Singh and Darroch (2012).** 95% uncertainty intervals from the current study are presented in blue.

	Estimated number of MWRA in developing countries:	
	Using modern methods	With unmet need for modern methods
Current study (95% UI)	600,000 (559,000–638,000)	196,000 (174,000–223,000)
Singh & Darroch (2012)	596,000	Not reported
MWRA prevalence estimates from Singh & Darroch (2012) applied to estimated number of MWRA used in current study	601,000	191,000

Table 9: **Comparison of the number of married or in-union women aged 15 to 49 years (MWRA) in 2012 in developing regions who use modern methods or have an unmet need for modern methods based on the current study and the study by Singh and Darroch (2012).**

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5 SUPPLEMENTARY TABLES

Africa	
Northern Africa	Algeria; Egypt; Libya; Morocco; Sudan; Tunisia
Middle Africa	Angola; Cameroon; Central African Republic; Chad; Congo; Democratic Republic of the Congo; Equatorial Guinea; Gabon; Sao Tome and Principe
Western Africa	Benin; Burkina Faso; Cape Verde; Cote d'Ivoire; Gambia; Ghana; Guinea; Guinea-Bissau; Liberia; Mali; Mauritania; Niger; Nigeria; Senegal; Sierra Leone; Togo
Southern Africa	Botswana; Lesotho; Namibia; South Africa; Swaziland
Eastern Africa	Burundi; Comoros; Djibouti; Eritrea; Ethiopia; Kenya; Madagascar; Malawi; Mauritius; Mozambique; Reunion; Rwanda; Somalia; South Sudan; Uganda; United Republic of Tanzania; Zambia; Zimbabwe
Asia	
Southern Asia	Afghanistan; Bangladesh; Bhutan; India; Iran (Islamic Republic of); Maldives; Nepal; Pakistan; Sri Lanka
Western Asia	Armenia; Azerbaijan; Bahrain; Georgia; Iraq; Israel; Jordan; Kuwait; Lebanon; State of Palestine; Oman; Qatar; Saudi Arabia; Syrian Arab Republic; Turkey; United Arab Emirates; Yemen
South-Eastern Asia	Cambodia; Indonesia; Lao People's Democratic Republic; Malaysia; Myanmar; Philippines; Singapore; Thailand; Timor-Leste; Viet Nam
Eastern Asia	China; China, Hong Kong SAR; Democratic People's Republic of Korea; Japan; Mongolia; Republic of Korea
Central Asia	Kazakhstan; Kyrgyzstan; Tajikistan; Turkmenistan; Uzbekistan
Europe	
Southern Europe	Albania; Bosnia and Herzegovina; Croatia; Greece; Italy; Malta; Montenegro; Portugal; Serbia; Slovenia; Spain; The former Yugoslav Republic of Macedonia
Western Europe	Austria; Belgium; France; Germany; Netherlands; Switzerland
Eastern Europe	Belarus; Bulgaria; Czech Republic; Hungary; Poland; Republic of Moldova; Romania; Russian Federation; Slovakia; Ukraine
Northern Europe	Denmark; Estonia; Finland; Ireland; Latvia; Lithuania; Norway; Sweden; United Kingdom
Latin America and the Caribbean	
Caribbean	Anguilla; Antigua and Barbuda; Bahamas; Barbados; Cuba; Dominica; Dominican Republic; Grenada; Guadeloupe; Haiti; Jamaica; Martinique; Montserrat; Puerto Rico; Saint Kitts and Nevis; Saint Lucia; Saint Vincent and the Grenadines; Trinidad and Tobago; United States Virgin Islands
South America	Argentina; Bolivia (Plurinational State of); Brazil; Chile; Colombia; Ecuador; Guyana; Paraguay; Peru; Suriname; Uruguay; Venezuela (Bolivarian Republic of)
Central America	Belize; Costa Rica; El Salvador; Guatemala; Honduras; Mexico; Nicaragua; Panama
Northern America	
Northern America	Canada; United States of America
Oceania	
Australia and New Zealand	Australia; New Zealand
Polynesia	Cook Islands; Samoa; Tuvalu
Melanesia	Fiji; Papua New Guinea; Solomon Islands; Vanuatu
Micronesia	Guam; Kiribati; Marshall Islands; Nauru; Northern Mariana Islands; Palau

Table 10: **Classification of countries and areas by regions and sub-regions.** The names of countries or areas refer to their short form as presented in the United Nations Multilingual Terminology Database (http://unterm.un.org/).

	CP (any)		CP (modern)		Unmet need	
	(2010-2000)-(2000-1990)	(2010-2005)-(2005-2000)	(2010-2000)-(2000-1990)	(2010-2005)-(2005-2000)	(2010-2000)-(2000-1990)	(2010-2005)-(2005-2000)
World	-4.8 [-9.5 ; -0.2] ”	-0.7 [-4.5 ; 3]	-5.3 [-9.9 ; -0.8] ”	-0.9 [-4.5 ; 2.7]	2 [-0.5 ; 4.5] *	0.4 [-1.5 ; 2.3]
Developed countries	-1.3 [-6.4 ; 4]	-1.1 [-5.3 ; 3.1]	-2.2 [-8 ; 3.9]	-1.5 [-6.3 ; 3.3]	0.7 [-2.2 ; 3.5]	0.5 [-1.7 ; 2.7]
Developing countries	-5.8 [-11.3 ; -0.4] ”	-0.7 [-5 ; 3.6]	-6 [-11.2 ; -0.7] ”	-0.7 [-4.9 ; 3.3]	2.4 [-0.5 ; 5.3] *	0.3 [-1.8 ; 2.5]
Developing (excl. China)	-3.2 [-9.1 ; 2.8]	-1.2 [-6.1 ; 3.6]	-3 [-8.7 ; 2.7]	-1.3 [-5.8 ; 3.4]	1.5 [-2.1 ; 5.1]	0.6 [-2 ; 3.3]
Africa	-2 [-4.8 ; 0.6] ’	0.9 [-1.6 ; 3.3]	-0.9 [-3.1 ; 1.3]	0.9 [-1.1 ; 3]	0.9 [-1.5 ; 3.3]	-0.2 [-2.2 ; 1.9]
Eastern Africa	3.7 [0.1 ; 7.2] **	2.9 [-0.7 ; 6.5] *	4.4 [1.3 ; 7.3] ***	2.7 [-0.6 ; 5.9] *	-2.6 [-6.6 ; 1.3] ’	-2.6 [-5.7 ; 0.4] ”
Burundi	-2.5 [-12.3 ; 6.2]	8.3 [-0.7 ; 16.4] **	1.5 [-3.6 ; 6.5]	6.9 [0.6 ; 12.2] **	-1.5 [-16.5 ; 12.5]	-0.2 [-11.7 ; 10.6]
Comoros	1.5 [-16.7 ; 20.9]	0.1 [-17.8 ; 16.1]	1.6 [-13.6 ; 19.7]	0.3 [-16.2 ; 14.6]	-5.4 [-22.4 ; 10.7]	-0.2 [-12.5 ; 11.9]
Djibouti	11.3 [0.1 ; 25.7] **	1.5 [-8.9 ; 13.3]	12.4 [2.6 ; 25.7] ***	0.9 [-8.4 ; 12]	-1 [-17.7 ; 13.9]	-1.5 [-13.8 ; 9.5]
Eritrea	4.3 [-4.5 ; 16]	2.1 [-5.8 ; 10.8]	3.5 [-3.3 ; 13.3]	1.7 [-4.4 ; 8.8]	1 [-13.4 ; 15.4]	0.3 [-11.1 ; 11.4]
Ethiopia	15.8 [10.6 ; 20.8] ***	4.5 [-1.4 ; 10] *	15.8 [11.3 ; 20.2] ***	4.3 [-1.2 ; 9.6] *	-12.6 [-23.9 ; -0.7] ”	-6.8 [-13.7 ; 0.9] ”
Kenya	-2 [-21 ; 16.3]	2.6 [-14.7 ; 20.2]	-1 [-17.6 ; 15]	2.9 [-13.4 ; 19]	4.9 [-7.7 ; 17.9]	-1.1 [-12.6 ; 10.7]
Madagascar	8.1 [-5.7 ; 22]	1.2 [-14.5 ; 16.3]	8.7 [-1 ; 18.8] **	1.4 [-11.9 ; 14.2]	-2.3 [-14.2 ; 9.2]	0.1 [-9.6 ; 9.5]
Malawi	-1.7 [-11.9 ; 8.4]	1.5 [-11.1 ; 13.5]	-1 [-9.4 ; 7.5]	1.6 [-9.9 ; 12.3]	-0.8 [-10.1 ; 8.4]	-0.4 [-9.1 ; 8.4]
Mauritius	-0.2 [-18.3 ; 17.2]	-0.2 [-13.6 ; 14.3]	10.1 [-19.4 ; 38.4]	2.1 [-21 ; 25.6]	0.6 [-7.8 ; 9.1]	0.3 [-6.9 ; 6.6]
Mozambique	-0.8 [-7.8 ; 5.9]	-3.5 [-12 ; 3.4]	-0.5 [-6.7 ; 5.1]	-2.3 [-9.6 ; 3.7]	1.9 [-10.9 ; 15.8]	2.2 [-7.1 ; 11.9]
Reunion	3 [-15.3 ; 23.1]	-0.6 [-15.3 ; 16.2]	1 [-17.6 ; 21]	-0.7 [-15.5 ; 15.9]	-1.2 [-13.8 ; 9]	0.5 [-9.7 ; 8.4]
Rwanda	38.9 [27.8 ; 49.3] ***	22.4 [12.1 ; 31.6] ***	38.8 [32.4 ; 44.7] ***	25 [17.9 ; 30.6] ***	-14.3 [-23.3 ; -5.2] ”’	-16.2 [-23.7 ; -7.5] ”’
Somalia	4.9 [-5.9 ; 19]	1.9 [-7.7 ; 12.2]	2 [0 ; 7] **	1.3 [-0.4 ; 5.7] *	-0.7 [-17.4 ; 14.6]	-0.7 [-12.6 ; 10.6]
South Sudan	2 [-1.1 ; 6.2] *	1 [-1.4 ; 4.6]	1 [-0.2 ; 3.1] *	0.6 [-0.4 ; 2.6]	0.8 [-15.4 ; 16]	0.3 [-12.2 ; 11.9]
Uganda	-2.5 [-11.4 ; 6.3]	5 [-4.9 ; 14.5]	0.6 [-6 ; 7.4]	3.1 [-5.2 ; 11]	-6.3 [-18.3 ; 5.9]	-3.9 [-14.3 ; 5.8]
United Republic of Tanzania	-3.2 [-15.9 ; 9.1]	3.5 [-9.7 ; 16]	-1.9 [-12 ; 8.1]	2 [-9.4 ; 12.7]	4.6 [-5 ; 14.2]	-1.1 [-10 ; 7.2]
Zambia	-2.7 [-19.1 ; 13.8]	-0.6 [-18.1 ; 16.3]	-1.9 [-15.3 ; 11.3]	0.7 [-14.9 ; 15.9]	-1.6 [-13.4 ; 10.1]	-1.9 [-13.2 ; 9.2]
Zimbabwe	-5.8 [-21.7 ; 10.8]	-4.3 [-15.2 ; 7.1]	-6.8 [-22.1 ; 8.8]	-5.3 [-15.8 ; 5.8]	3.8 [-6.5 ; 14.5]	0.6 [-6.5 ; 7.7]
Middle Africa	-2.3 [-10.2 ; 4.5]	-1 [-7.2 ; 4.7]	1.1 [-1.5 ; 3.6]	-0.5 [-3.5 ; 2.2]	0.5 [-7.3 ; 8]	0.3 [-5.2 ; 6.1]
Angola	3.3 [-4.1 ; 14.8]	0.9 [-6.8 ; 8.6]	2.2 [-3.3 ; 11.1]	0.7 [-5.2 ; 6.8]	0.2 [-16 ; 15]	-0.1 [-12 ; 11.1]
Cameroon	-2.3 [-14.9 ; 8.8]	-5.1 [-16.9 ; 5.9]	3.7 [-1.6 ; 9.1] *	-3.1 [-10.4 ; 3.6]	1.9 [-8.6 ; 12.5]	1.4 [-6.5 ; 9.6]
Central African Republic	-2.5 [-17.8 ; 13.4]	1.9 [-11.6 ; 15.1]	1.1 [-5.9 ; 10.3]	1.4 [-6.6 ; 10.3]	-0.2 [-13.2 ; 12.5]	-0.6 [-10.8 ; 8.7]
Chad	0.2 [-3.5 ; 4.9]	1.9 [-0.9 ; 5.9] *	0.6 [-1.4 ; 3.8]	0.9 [-0.9 ; 3.7]	1.9 [-10.4 ; 14.6]	0.5 [-8.2 ; 9.4]
Congo	-0.7 [-23.8 ; 20.6]	-2.3 [-17.6 ; 13.3]	4.1 [-11.9 ; 16.2]	2.9 [-5.4 ; 13.3]	-0.6 [-14.5 ; 13.3]	1.2 [-7.6 ; 11.2]
Democratic Republic of the Congo	-4.7 [-20.1 ; 7.8]	-1 [-12.9 ; 9.7]	-0.2 [-4.9 ; 3.5]	-0.6 [-6.1 ; 3.9]	0.1 [-15 ; 14]	0.1 [-10.4 ; 10.7]
Equatorial Guinea	3.8 [-7.3 ; 19]	0.8 [-10.8 ; 11.2]	2.6 [-4.6 ; 14.4]	0.7 [-7.7 ; 8.6]	-0.6 [-16.3 ; 13.8]	-0.4 [-11.6 ; 10.4]
Gabon	-0.7 [-19.8 ; 20.4]	0.2 [-18.2 ; 16.6]	2.8 [-9.6 ; 20.3]	0.6 [-14 ; 13.1]	-3.1 [-16.6 ; 10.9]	0 [-11.6 ; 11.2]
Sao Tome and Principe	-0.9 [-17.8 ; 16.6]	2.6 [-13.1 ; 17.7]	-3.3 [-18.5 ; 12.1]	2.3 [-12.2 ; 16]	-1.8 [-17.7 ; 13.4]	-3 [-15 ; 9.3]
Northern Africa	-6.8 [-14.7 ; 0.8] ”	-0.3 [-7.2 ; 6.2]	-6.3 [-13.9 ; 1] ”	-0.2 [-6.8 ; 6.2]	5.5 [0.5 ; 10.7] **	0.3 [-3.6 ; 4.3]
Algeria	-9.8 [-29.2 ; 8.8]	1.2 [-15.5 ; 18]	-8.3 [-26.5 ; 9.4]	0.4 [-16 ; 16.8]	4.9 [-7.5 ; 17.5]	-0.5 [-11 ; 9.6]
Egypt	-7.4 [-21.3 ; 6.1]	-1.4 [-13.9 ; 10.5]	-8.1 [-21.6 ; 5]	-1.1 [-13.2 ; 10.6]	7.2 [-0.4 ; 15.1] **	0.9 [-4.7 ; 7.1]
Libya	-3 [-29.4 ; 22.9]	-0.8 [-18.6 ; 17.9]	-0.2 [-25.2 ; 24.4]	-0.6 [-19.6 ; 17.9]	1 [-15.2 ; 16.1]	0.5 [-11.4 ; 11.2]
Morocco	-13.6 [-35.6 ; 7.8]	-1.5 [-18.3 ; 15.2]	-10.7 [-32.8 ; 10.6]	-1 [-18.1 ; 16.5]	6.7 [-5.3 ; 18.5]	0.5 [-8.9 ; 9.5]
Sudan	4.9 [-1.3 ; 11.7] *	0.9 [-5.1 ; 7.2]	3.7 [-1.4 ; 9.5] *	0.6 [-4.6 ; 6.1]	1.2 [-14.8 ; 15.6]	0.1 [-11.8 ; 11.2]
Tunisia	-10.7 [-28.7 ; 6.5]	2.4 [-13.7 ; 18.9]	-10.4 [-28.4 ; 6.4]	3.2 [-13.5 ; 19.3]	5.6 [-5.3 ; 17.3]	-1.2 [-11.4 ; 8.3]
Southern Africa	-2 [-20.5 ; 16.4]	-1.6 [-16.1 ; 13.3]	-2.5 [-21 ; 15.7]	-1.7 [-15.9 ; 13.1]	0.7 [-10.5 ; 12.5]	1 [-7.7 ; 9.3]
Botswana	0.9 [-18.7 ; 20.4]	-1.4 [-19.7 ; 16.8]	0.6 [-18.2 ; 19.4]	-1.5 [-19.5 ; 16.3]	-1.4 [-16.1 ; 12]	0.6 [-11.4 ; 11.8]
Lesotho	0.6 [-14 ; 14.7]	2.8 [-12 ; 17.6]	0.1 [-13.6 ; 13.4]	3 [-11.3 ; 17.2]	-5.3 [-18.8 ; 7.8]	-3.3 [-14.2 ; 7.4]
Namibia	-1.1 [-17.7 ; 15.2]	-3.8 [-20.5 ; 12.6]	-3.8 [-20.2 ; 12]	-4 [-20.4 ; 12.2]	-4.7 [-15.2 ; 6.2]	-0.7 [-11.4 ; 10.2]
South Africa	-2.6 [-24 ; 18.6]	-1.8 [-18.4 ; 15.4]	-3.1 [-24.2 ; 18.1]	-1.8 [-18.3 ; 15.2]	1.6 [-11.4 ; 15.2]	1.4 [-8.6 ; 11]
Swaziland	21.1 [6.3 ; 34.5] ***	1.1 [-13.4 ; 15.4]	20.2 [6.6 ; 32.8] ***	1.4 [-12.4 ; 15]	-15 [-29.2 ; -1.4] ”	-4 [-15.1 ; 7]
Western Africa	-3.1 [-7.6 ; 1.1] ’	1.2 [-3.3 ; 5.3]	-1.7 [-4.6 ; 1]	1.2 [-1.9 ; 4.1]	1.1 [-3.7 ; 5.8]	1.3 [-3.2 ; 6]
Benin	-4 [-16.5 ; 8.9]	3.3 [-7.3 ; 14]	-0.8 [-7.1 ; 6.6]	2.4 [-3.7 ; 9.5]	0.1 [-12.5 ; 13.1]	0.1 [-9.5 ; 9.8]
Burkina Faso	1.9 [-6.3 ; 9]	-1.7 [-10.1 ; 5.6]	6 [0.5 ; 11] **	-0.6 [-7.2 ; 5.2]	-4.5 [-18.2 ; 8.7]	0.4 [-10.3 ; 11.2]
Cape Verde	-15.8 [-37.2 ; 5.6] ’	-4.7 [-20.6 ; 10.6]	-14.2 [-34.8 ; 6.1] ’	-5.8 [-21.1 ; 8.9]	5.9 [-9.4 ; 21]	1.4 [-8.2 ; 12.2]
Cote d’Ivoire	-1.8 [-13.1 ; 10.2]	2.4 [-7.5 ; 12.5]	-0.8 [-8.6 ; 7.7]	2.1 [-5 ; 9.9]	-0.4 [-14.1 ; 14]	0 [-11.9 ; 11]
Gambia	4.5 [-6.3 ; 18.6]	-0.5 [-12.6 ; 10.1]	3 [-6.3 ; 15.6]	-0.3 [-10.9 ; 9]	-1.1 [-17.6 ; 13.8]	-0.2 [-12.2 ; 10.9]
Ghana	-2.1 [-15.6 ; 10.3]	-0.2 [-10.4 ; 10.7]	-3.3 [-13.6 ; 6.2]	0.8 [-7.1 ; 9.5]	-0.7 [-14.2 ; 12.6]	-0.6 [-11.6 ; 10.2]
Guinea	0.5 [-5.4 ; 8.3]	1.2 [-3.7 ; 8.1]	-0.8 [-4.9 ; 4.7]	2.3 [-1.1 ; 7.5] *	-0.2 [-11.7 ; 11.3]	3.6 [-4.3 ; 12.4]
Guinea-Bissau	2.8 [-4.8 ; 11]	0.9 [-6.6 ; 7.9]	3 [-1.3 ; 8.6] *	0.8 [-4.2 ; 6.2]	0.3 [-16 ; 15.1]	-0.1 [-12 ; 11.2]
Liberia	1.3 [-9.5 ; 10.1]	1.2 [-6.4 ; 9]	1.3 [-9 ; 9.5]	1.1 [-6.1 ; 8.5]	-0.2 [-17.1 ; 16]	-0.7 [-13 ; 11.4]
Mali	0.2 [-5.2 ; 6.5]	1.5 [-3.5 ; 7.3]	-0.3 [-4.9 ; 5.3]	1.2 [-3.3 ; 6.5]	-4.4 [-17 ; 7.5]	1 [-9.7 ; 11.3]
Mauritania	0.2 [-5.5 ; 7.6]	1 [-6.2 ; 8.1]	1.3 [-3.1 ; 7.3]	0.6 [-5.3 ; 6.6]	-1.8 [-15.6 ; 12.8]	0.1 [-12.4 ; 12.1]
Niger	-0.3 [-7.2 ; 7.6]	1.4 [-5.2 ; 8.7]	0.7 [-3.4 ; 5.9]	1.4 [-3 ; 6.6]	1.8 [-8.3 ; 12]	2.2 [-5.2 ; 10.3]
Nigeria	-5.4 [-13.6 ; 1.9] ’	1.3 [-7 ; 8.9]	-3.5 [-8.7 ; 1.3] ’	1.2 [-4.5 ; 6.6]	2.8 [-5.4 ; 10.9]	2.1 [-6.2 ; 10.5]
Senegal	0 [-6.2 ; 5.6]	0.7 [-3.8 ; 5.1]	-1.3 [-6.5 ; 3.5]	0.3 [-3.8 ; 4.4]	1.7 [-14.5 ; 16.8]	-0.2 [-10.3 ; 10.3]
Sierra Leone	1.3 [-2.4 ; 5.4]	1.5 [-2.1 ; 5.3]	1.1 [-2 ; 4.6]	1.3 [-1.7 ; 4.7]	0.4 [-16.5 ; 15.6]	0.4 [-11.6 ; 11.9]
Togo	-0.5 [-13.8 ; 12.3]	1.9 [-8.7 ; 11.2]	0.1 [-5.4 ; 5.5]	0.2 [-7.7 ; 6.8]	4.4 [-9.1 ; 18.3]	-0.2 [-12.2 ; 11.3]
Asia	-5.7 [-12.7 ; 1] ”	-0.7 [-6.2 ; 4.8]	-6 [-12.8 ; 0.5] ”	-0.7 [-6.1 ; 4.5]	2.4 [-1.3 ; 6.1] *	0.3 [-2.4 ; 3.1]
Central Asia	-9.2 [-22 ; 3.1] ’	1.9 [-7.1 ; 10.9]	-9.3 [-21.6 ; 2.7] ’	0.7 [-8.2 ; 9.6]	4.9 [-1.6 ; 11.9] *	-1 [-6.2 ; 3.9]
Kazakhstan	-12.2 [-35.1 ; 9.8]	5.5 [-10.9 ; 22.6]	-10.1 [-32.3 ; 12.5]	1.5 [-14.6 ; 18.3]	6.7 [-5.8 ; 20.7]	-2.7 [-13.9 ; 7.2]
Kyrgyzstan	-4.1 [-30 ; 22.1]	6.2 [-10.7 ; 22.6]	-4.5 [-29.8 ; 20.6]	3.2 [-12.8 ; 19.2]	2.6 [-10.7 ; 16]	-2.8 [-12.8 ; 6.2]
Tajikistan	1.1 [-19.1 ; 23.2]	0.2 [-14.8 ; 15.4]	1.6 [-15.4 ; 20.8]	-1 [-14.3 ; 12.7]	-1.7 [-16.6 ; 11.8]	-0.3 [-11.2 ; 10]

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Table 11 – continued from previous page

	CP (any)		CP (modern)		Unmet need	
	(2010-2000)-(2000-1990)	(2010-2005)-(2005-2000)	(2010-2000)-(2000-1990)	(2010-2005)-(2005-2000)	(2010-2000)-(2000-1990)	(2010-2005)-(2005-2000)
Turkmenistan	-4.7 [-29.6 ; 18.1]	-0.9 [-17.6 ; 18]	-2.9 [-27.8 ; 22.3]	-0.8 [-20.1 ; 20.1]	3.4 [-6.8 ; 16.3]	0.3 [-9.3 ; 7.6]
Uzbekistan	-12 [-34.1 ; 9.3]	-0.2 [-15.4 ; 15.3]	-13.2 [-34.4 ; 7.7]	0.4 [-15 ; 15.9]	5.6 [-5.3 ; 17.5]	0.1 [-8.2 ; 7.8]
Eastern Asia	-8.9 [-19.8 ; 0.7] ”	-0.1 [-8.6 ; 7.7]	-9.1 [-20 ; 0.6] ”	-0.2 [-8.7 ; 7.7]	3.1 [-0.6 ; 8] **	0 [-3 ; 3.1]
China	-9.6 [-21.5 ; 1.1] ”	-0.4 [-9.7 ; 8.2]	-9.9 [-22 ; 0.7] ”	-0.5 [-9.7 ; 8.2]	3.3 [-0.7 ; 8.7] *	0.2 [-3.1 ; 3.6]
China, Hong Kong SAR	-7.4 [-18.5 ; 3.5] ’	0.6 [-10.1 ; 11.5]	-8 [-20.3 ; 4.6]	0.2 [-11.4 ; 11.9]	2.5 [-1.8 ; 7.9]	-0.1 [-4.9 ; 4.6]
Democratic People’s Republic of Korea	-5.1 [-25.2 ; 14.2]	-0.7 [-16.3 ; 15.5]	-3.4 [-24.5 ; 17.6]	-0.7 [-17.9 ; 17]	2.7 [-8.6 ; 14.3]	0.4 [-9.2 ; 9]
Japan	2.5 [-13.3 ; 18.3]	5.8 [-8.7 ; 19.8]	5.4 [-9.7 ; 21]	5.6 [-8.2 ; 19.3]	-1.3 [-13.3 ; 10.1]	-2.8 [-13.1 ; 6.7]
Mongolia	-17.4 [-37.6 ; 1.9] ”	-7.1 [-20.8 ; 7]	-13.9 [-32.9 ; 5.1] ’	-10.3 [-23.6 ; 3.5] ’	8.5 [-2 ; 20.4] *	3.4 [-4.1 ; 11.4]
Republic of Korea	-2.2 [-11.1 ; 6.3]	-2.5 [-11.4 ; 6.7]	1.6 [-10.3 ; 14.2]	-2.8 [-14.7 ; 9.8]	1 [-4.1 ; 6.1]	1 [-3.5 ; 5.5]
South-Eastern Asia	-3.5 [-10.7 ; 3.6]	-0.3 [-6.4 ; 5.6]	-4.9 [-11.9 ; 2.1] ’	-1.8 [-7.8 ; 4.1]	1.4 [-3.1 ; 6.1]	0.1 [-3.9 ; 4]
Cambodia	9 [-1.3 ; 19.9] **	-1.8 [-12.7 ; 8.8]	3.3 [-4.6 ; 11.8]	-0.5 [-8.8 ; 7.5]	-10.3 [-21.1 ; 1.2] ”	1.8 [-5.9 ; 8.9]
Indonesia	0.1 [-14.4 ; 14]	-0.7 [-13.2 ; 11.2]	-1.9 [-15.8 ; 11.7]	-1.4 [-13.7 ; 10.3]	-0.1 [-8.9 ; 8.6]	-0.2 [-8 ; 8]
Lao People’s Democratic Republic	-1 [-16.9 ; 15.2]	0.2 [-13.7 ; 14.4]	-1.9 [-16.6 ; 13.4]	0.3 [-12.7 ; 13.8]	-5.7 [-21 ; 9.1]	-0.8 [-12.1 ; 10]
Malaysia	1.1 [-23.2 ; 24.9]	3.9 [-13.1 ; 21.7]	3.5 [-21.5 ; 27.7]	3.1 [-14.3 ; 20.8]	-0.4 [-16 ; 14.2]	-2 [-13.7 ; 8.7]
Myanmar	-9.4 [-24.9 ; 6]	0.5 [-16.6 ; 17.6]	-6.5 [-21.1 ; 8]	0.2 [-15.8 ; 16.5]	0 [-13 ; 12.6]	-0.5 [-11.2 ; 9.8]
Philippines	-4.5 [-19 ; 10.1]	-2.1 [-12 ; 7.5]	-4.2 [-16.3 ; 8.4]	-3.1 [-12.1 ; 5.7]	3.4 [-7.8 ; 14.6]	1.5 [-7 ; 10.1]
Singapore	4.4 [-16.4 ; 25.6]	-0.6 [-17 ; 17.5]	-0.1 [-21.8 ; 21.5]	-0.5 [-17.9 ; 18.1]	-2 [-15.7 ; 9.9]	0.4 [-10.8 ; 10]
Thailand	-4.4 [-16.9 ; 8.1]	5 [-3.8 ; 13.6]	-4.9 [-17.4 ; 7.6]	4.2 [-4.7 ; 12.8]	2.5 [-4.6 ; 9]	-1.8 [-6.6 ; 2.8]
Timor-Leste	20.1 [9.8 ; 30.1] ***	9.1 [-0.1 ; 17.7] **	18.2 [9.1 ; 26.9] ***	9.8 [1.6 ; 17.5] ***	9.9 [-0.7 ; 20.7] **	0.7 [-9.9 ; 10.7]
Viet Nam	-11.4 [-21.7 ; -1] ”	-2.9 [-9.8 ; 4.1]	-15.9 [-27.9 ; -3.7] ”’	-8.7 [-17.7 ; 0.5] ”	5.8 [-1.2 ; 13.7] *	1.4 [-2.9 ; 5.5]
Southern Asia	-1.9 [-15.1 ; 11.3]	-2.1 [-12.8 ; 8.5]	-1.7 [-14.3 ; 10.8]	-1.7 [-11.8 ; 8.5]	1.4 [-6.5 ; 9.3]	0.8 [-4.8 ; 6.9]
Afghanistan	11.6 [3.7 ; 18.2] ***	-0.5 [-7.8 ; 6.3]	9.2 [3.2 ; 14.3] ***	-2.2 [-8.4 ; 3.3]	0.1 [-16 ; 14.9]	-0.9 [-12.7 ; 9.8]
Bangladesh	-11.2 [-27.7 ; 6.3] ’	0.3 [-13.9 ; 14.7]	-9 [-25.6 ; 7.7]	0.6 [-13.4 ; 14.9]	2.5 [-8.2 ; 12.7]	-0.8 [-8.9 ; 7.3]
Bhutan	14.6 [2.8 ; 27.6] ***	-1.3 [-20.5 ; 17.8]	14.5 [2.9 ; 27.2] ***	-1.2 [-20 ; 17.6]	-12.7 [-26.7 ; 0.6] ”	-1 [-13.1 ; 10.9]
India	0.6 [-17.2 ; 18]	-3.3 [-17.7 ; 11]	0.5 [-16.2 ; 17.2]	-2.6 [-16.2 ; 10.9]	1.2 [-9.2 ; 11.7]	1.1 [-6.4 ; 9.3]
Iran (Islamic Republic of)	-17.7 [-34.6 ; -3.3] ”’	1.9 [-12.1 ; 17.6]	-18.3 [-37.7 ; 0.1] ”	1 [-16.6 ; 20.3]	9.1 [0.5 ; 20.1] **	-0.7 [-9.9 ; 6.5]
Maldives	-17 [-33.3 ; -1.3] ”	0 [-14.7 ; 14.6]	-16.9 [-30.9 ; -3] ”	-2.4 [-15.7 ; 10.9]	6.3 [-7.4 ; 19.5]	0 [-10.9 ; 10.6]
Nepal	1.2 [-9.8 ; 12]	-5.6 [-19.7 ; 8.1]	-1.7 [-12.3 ; 8.8]	-7.3 [-20.8 ; 5.7]	-2.6 [-14.2 ; 9]	3 [-6.7 ; 13]
Pakistan	-9.3 [-21.5 ; 3.6] ’	3.8 [-8 ; 16.3]	-6.9 [-16.6 ; 3.7] ’	3.8 [-6 ; 14.2]	-1.1 [-14.4 ; 11.6]	0.3 [-9.1 ; 10.2]
Sri Lanka	-2 [-18.4 ; 12.8]	-0.7 [-14.6 ; 14.2]	-2.5 [-23.3 ; 16.9]	-1.7 [-19.9 ; 17.5]	0.3 [-7.7 ; 8.6]	1.5 [-5 ; 8.1]
Western Asia	-1.3 [-9.5 ; 7.1]	-1.2 [-8 ; 5.6]	0.1 [-9.6 ; 9.6]	-0.5 [-9.3 ; 8.6]	-0.6 [-5.9 ; 4.4]	0.9 [-3.1 ; 4.8]
Armenia	-4.2 [-21.7 ; 13.1]	5.1 [-8.4 ; 18.5]	6.8 [-5.4 ; 20.4]	8.3 [0 ; 16.2] **	-0.4 [-12 ; 12.5]	-1.1 [-9.4 ; 7.4]
Azerbaijan	-7.2 [-30.6 ; 16.8]	3.2 [-14.5 ; 20.9]	2 [-13.1 ; 21.4]	5.9 [-6.6 ; 19.6]	3.4 [-9.5 ; 16.4]	-0.6 [-9.7 ; 9.1]
Bahrain	-4.5 [-26.7 ; 19.5]	-0.6 [-17.3 ; 18]	1 [-25.4 ; 27.5]	-0.6 [-21.7 ; 20.9]	2.6 [-12.5 ; 16]	0.5 [-11.1 ; 10.1]
Georgia	0.6 [-22.1 ; 25.1]	-1.5 [-17.5 ; 14.2]	4.6 [-15.3 ; 25.8]	-1.3 [-15.3 ; 13.6]	-1.4 [-16.5 ; 12.9]	0.9 [-9.5 ; 11.1]
Iraq	-9.1 [-26.9 ; 7.7]	-3.9 [-20.8 ; 12.7]	-4.5 [-17.5 ; 7.7]	-3.2 [-18 ; 11.2]	-0.5 [-14.7 ; 13.5]	1.6 [-9.7 ; 12.8]
Israel	-2 [-22.5 ; 23.3]	-0.4 [-15.7 ; 16.7]	-1 [-27.8 ; 28.4]	-0.3 [-19.9 ; 20.9]	1.2 [-13.7 ; 12.5]	0.4 [-10 ; 9.1]
Jordan	-8.2 [-25.9 ; 9.5]	-0.3 [-17.1 ; 17.3]	-7.5 [-24.7 ; 9.3]	-0.1 [-17.8 ; 17.9]	5.1 [-5.3 ; 15.2]	1.5 [-8.5 ; 11]
Kuwait	-1.2 [-22.4 ; 19.3]	-0.7 [-20 ; 18.5]	4.9 [-15.7 ; 25.3]	-0.5 [-19.4 ; 18.1]	0.1 [-14.6 ; 14.5]	0.4 [-12 ; 12.1]
Lebanon	-1.3 [-22.6 ; 19.2]	4.7 [-11.2 ; 20.7]	-1.9 [-24.6 ; 20.8]	6.7 [-10.7 ; 23.8]	0.7 [-12.4 ; 13.9]	-2.5 [-13 ; 7.5]
State of Palestine	-7 [-27.6 ; 13.8]	2.7 [-12.9 ; 18.2]	-5 [-23.5 ; 13.8]	1 [-14.1 ; 16.1]	2.8 [-11.1 ; 16.6]	-1.4 [-12.4 ; 9.2]
Oman	-3.3 [-21.5 ; 15.5]	-0.9 [-19.8 ; 17.2]	-1.8 [-18.1 ; 16.2]	-0.6 [-18.2 ; 15.8]	-4.5 [-21.1 ; 10.4]	-0.1 [-11.9 ; 11.5]
Qatar	-0.9 [-23 ; 20.6]	-0.7 [-19.6 ; 18.1]	2.7 [-18.6 ; 23.7]	-0.4 [-19.2 ; 17.7]	-0.2 [-15.4 ; 14.5]	0.5 [-11.8 ; 12.3]
Saudi Arabia	1.7 [-19.8 ; 23.6]	2.6 [-14.4 ; 18.3]	0.1 [-19.7 ; 19.9]	2.3 [-13.4 ; 16.8]	-1.1 [-16 ; 13.4]	-0.7 [-12 ; 10.2]
Syrian Arab Republic	1.9 [-19.6 ; 23.2]	-3.9 [-21.7 ; 13.3]	1 [-19.3 ; 21]	-2.8 [-20.5 ; 14.5]	-1.7 [-16.8 ; 12.6]	2 [-9.5 ; 13.3]
Turkey	0.8 [-16.6 ; 18.3]	-2.5 [-17.1 ; 12.6]	0.2 [-22 ; 22.5]	-1.8 [-22.6 ; 19.6]	-0.5 [-11.1 ; 9.7]	1.7 [-6.6 ; 9.7]
United Arab Emirates	0.6 [-23 ; 23.8]	-0.6 [-19.6 ; 17.1]	-0.6 [-22 ; 20.9]	-0.2 [-18.3 ; 16]	-1.8 [-17.9 ; 12.8]	0.1 [-11.7 ; 11.7]
Yemen	3.9 [-12.6 ; 20.9]	1.8 [-12.4 ; 16.7]	5.2 [-7.7 ; 18.4]	1.5 [-10.1 ; 14.1]	-8.3 [-25 ; 8]	-1.5 [-14 ; 10.4]
Europe	-2.3 [-7.9 ; 3.5]	-2.1 [-6.1 ; 1.9]	-4.3 [-11.2 ; 3]	-2.7 [-7.8 ; 2.4]	1.3 [-2 ; 4.4]	1 [-1.1 ; 3.2]
Eastern Europe	-3.8 [-13.6 ; 6.3]	-5.2 [-12.3 ; 1.2] ’	-4.8 [-18 ; 9.2]	-6 [-15.6 ; 3.8]	2 [-3.7 ; 7.6]	2.4 [-0.9 ; 6.4] *
Belarus	-0.4 [-24.3 ; 24.3]	-6.8 [-22.3 ; 7.9]	-2.8 [-28.5 ; 23.9]	-5 [-22.5 ; 11.7]	0.4 [-15.5 ; 14.6]	3.6 [-5.4 ; 13.3]
Bulgaria	7.9 [-11.7 ; 28.8]	-0.3 [-15.2 ; 16.7]	-1.7 [-29.7 ; 27.4]	-1.6 [-21.7 ; 20.3]	-5.3 [-20 ; 7.2]	0.4 [-11.5 ; 10.2]
Czech Republic	0.6 [-18.5 ; 20.2]	-0.3 [-15 ; 16.5]	-13.4 [-36.5 ; 10]	-0.8 [-17.1 ; 17.9]	-0.2 [-12.6 ; 11]	0.2 [-10.4 ; 8.7]
Hungary	-1.7 [-19.3 ; 18.8]	-0.1 [-13.3 ; 15.2]	-2.9 [-24.1 ; 21.7]	-0.5 [-15.7 ; 17]	0.9 [-10.9 ; 10.3]	0.2 [-9 ; 7.4]
Poland	-0.3 [-21.1 ; 24.1]	-0.2 [-15.5 ; 16.9]	-1.4 [-32.5 ; 28.3]	-0.7 [-22.8 ; 21.2]	0.3 [-14.3 ; 12.1]	0.3 [-10.4 ; 9]
Republic of Moldova	-0.1 [-21.6 ; 20.2]	1.1 [-12.8 ; 14.4]	-3.1 [-28.2 ; 22.6]	2.9 [-13.7 ; 19]	0.4 [-11.6 ; 13]	-0.9 [-8.2 ; 8]
Romania	-4.3 [-25 ; 15.6]	-3.4 [-18.2 ; 10.7]	-3 [-27 ; 19.7]	-3.7 [-22.3 ; 15.7]	2.9 [-8.2 ; 14.5]	1.4 [-6.5 ; 9.6]
Russian Federation	-6.8 [-24.5 ; 11.6]	-8.9 [-21.5 ; 2.4] ’	-5.6 [-29.7 ; 20]	-7.9 [-25.4 ; 10.3]	3.7 [-6.6 ; 14.2]	3.8 [-1.6 ; 11.2] *
Slovakia	-2.6 [-21.4 ; 17.5]	-0.2 [-14.6 ; 16.3]	-14.1 [-38.7 ; 12.7]	-0.9 [-19.4 ; 19.5]	1.4 [-10.6 ; 12.3]	0.2 [-9.9 ; 8.4]
Ukraine	-2.9 [-24.2 ; 17.5]	-2.6 [-17.3 ; 11.6]	-5 [-30.8 ; 22.9]	-10.1 [-27.7 ; 7]	0.9 [-10.7 ; 13]	1.8 [-6.1 ; 10.1]
Northern Europe	-0.1 [-6.6 ; 6.1]	-1.1 [-6.5 ; 3.9]	-0.7 [-7.4 ; 5.7]	-1.1 [-6.5 ; 4.1]	0.2 [-3.7 ; 4]	0.5 [-2.2 ; 3.4]
Denmark	-0.2 [-19.6 ; 23.2]	-0.2 [-14.6 ; 16.5]	-0.5 [-20.4 ; 23.8]	-0.2 [-15.4 ; 16.6]	0.3 [-13.8 ; 10.4]	0.2 [-9.6 ; 8.3]
Estonia	0 [-23.7 ; 24.6]	-0.4 [-16.6 ; 17.7]	-2.2 [-32.1 ; 24.9]	-0.8 [-18.4 ; 18.2]	0.3 [-15.4 ; 14.2]	0.3 [-11.1 ; 9.9]
Finland	-0.3 [-18.2 ; 21.9]	-0.3 [-14.2 ; 15.6]	-0.4 [-18.4 ; 21.7]	-0.3 [-14.2 ; 15.5]	0.3 [-12.8 ; 9.6]	0.2 [-9 ; 7.6]
Ireland	-4.4 [-26.5 ; 16.8]	4.8 [-10.1 ; 19.7]	-5.7 [-31 ; 17.4]	2.3 [-12.7 ; 17.2]	2.3 [-9.8 ; 15.4]	-2.3 [-11.8 ; 6.4]
Latvia	-0.6 [-22.9 ; 23.5]	-0.4 [-16.1 ; 17.1]	-2.6 [-29.6 ; 24]	-0.7 [-17.8 ; 17.9]	0.3 [-14.8 ; 13.7]	0.4 [-10.8 ; 9.6]
Lithuania	1.2 [-24.4 ; 27.1]	-0.5 [-18.2 ; 18.1]	-1.2 [-31.5 ; 27]	-0.9 [-19.3 ; 17.9]	-0.6 [-16.9 ; 14.7]	0.4 [-11.7 ; 10.9]
Norway	-4.9 [-20.2 ; 11.6]	-3 [-14 ; 6.1]	-1.8 [-19.1 ; 18.1]	-3.6 [-16.1 ; 7.8]	2.2 [-6.2 ; 10.1]	1.2 [-3.2 ; 7.2]

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Table 11 – continued from previous page

	CP (any)		CP (modern)		Unmet need	
	(2010-2000)-(2000-1990)	(2010-2005)-(2005-2000)	(2010-2000)-(2000-1990)	(2010-2005)-(2005-2000)	(2010-2000)-(2000-1990)	(2010-2005)-(2005-2000)
Sweden	0.9 [-19 ; 21.2]	-0.4 [-15 ; 16.8]	2.6 [-19.7 ; 26.1]	-0.4 [-17.1 ; 18]	-0.2 [-12.5 ; 11]	0.3 [-10 ; 8.5]
United Kingdom	0.2 [-8.8 ; 9]	-1.7 [-9.5 ; 5.3]	-0.6 [-9.7 ; 8.3]	-1.4 [-9.1 ; 5.8]	0.2 [-5.5 ; 5.5]	0.7 [-3 ; 5]
Southern Europe	-2.6 [-13.3 ; 8.2]	1 [-7 ; 9.2]	-7.2 [-19.6 ; 5.2]	0.1 [-9 ; 9.3]	1.5 [-5.1 ; 7.9]	-0.5 [-5.6 ; 4.2]
Albania	-6 [-26.3 ; 14.6]	-4.7 [-19.6 ; 10.4]	-1.9 [-14.1 ; 14.8]	-7.7 [-18.4 ; 3.6] '	5.1 [-7 ; 17]	2.6 [-6.5 ; 11.6]
Bosnia and Herzegovina	-1 [-24.9 ; 22.7]	7.9 [-9.6 ; 25.2]	-1.8 [-15.2 ; 15.3]	8.4 [-1.6 ; 20.9] *	0.5 [-15.5 ; 14.9]	-3.7 [-15.8 ; 7.3]
Croatia	-0.7 [-22.9 ; 24]	-0.3 [-16.7 ; 17.4]	-1.5 [-31.1 ; 25.7]	-0.5 [-21.3 ; 19.9]	0.5 [-14.7 ; 13.3]	0.3 [-10.8 ; 10]
Greece	7.3 [-13.7 ; 27.2]	-3.3 [-19.2 ; 14.3]	7.8 [-18 ; 33.6]	-3.6 [-25.5 ; 18.2]	-3.7 [-17 ; 8.8]	1.8 [-8.8 ; 11.2]
Italy	-0.1 [-24 ; 24.9]	-0.5 [-17.2 ; 17.4]	-3 [-31.3 ; 25.9]	-0.6 [-20.9 ; 20.1]	0.3 [-14.7 ; 13.7]	0.3 [-10.7 ; 9.9]
Malta	-0.7 [-15.5 ; 15.9]	-0.1 [-10.8 ; 13.1]	-4.1 [-34.8 ; 29.5]	-0.5 [-21.9 ; 23.5]	0.4 [-7.7 ; 7.1]	0.1 [-6.5 ; 5.1]
Montenegro	-4.5 [-27.6 ; 18.3]	10.1 [-7.2 ; 26.9]	-9.9 [-28.9 ; 11.6]	13.7 [0.5 ; 28.4] **	2.2 [-12.4 ; 16.6]	-4.9 [-16.9 ; 5.7]
Portugal	-1.1 [-20.1 ; 17.4]	-3.4 [-15.4 ; 7.7]	-7.8 [-31.2 ; 15.2]	-5.6 [-19.3 ; 7.5]	0.7 [-9.2 ; 10.2]	1.5 [-4.2 ; 8.1]
Serbia	-5.5 [-25.9 ; 15.5]	10.3 [-6.4 ; 27.3]	-16.7 [-32.1 ; 0.8] "	12.4 [0.5 ; 22.6] **	2.4 [-10.3 ; 14.1]	-4.7 [-15.9 ; 4.3]
Slovenia	-1.8 [-20.4 ; 18.3]	-0.1 [-13 ; 14.9]	-7.5 [-33.2 ; 20.8]	-0.5 [-17.9 ; 19.3]	0.9 [-11 ; 11]	0.2 [-8.9 ; 7.4]
Spain	-8.8 [-27.1 ; 9.1]	3.2 [-11.8 ; 17.9]	-17.5 [-37.6 ; 1.9] "	1.6 [-13.1 ; 16.3]	4.6 [-6.8 ; 17.2]	-1.6 [-11.7 ; 7.9]
The former Yugoslav Republic of Macedonia	-1.1 [-24.3 ; 24.1]	-0.3 [-17.2 ; 17.4]	-1 [-30.6 ; 24.6]	-0.4 [-20.9 ; 18.8]	0.7 [-15.2 ; 14.5]	0.3 [-11 ; 10.6]
Western Europe	0 [-10.4 ; 11.5]	0.8 [-7.2 ; 9.5]	-2.3 [-13 ; 9.3]	0.2 [-7.9 ; 8.8]	0.1 [-6.3 ; 5.2]	-0.1 [-4.8 ; 4]
Austria	1.9 [-23.2 ; 27.1]	-0.5 [-18.4 ; 18.1]	-0.2 [-25.2 ; 24.8]	-0.6 [-18.2 ; 17.7]	-0.9 [-16.4 ; 13.7]	0.4 [-11.1 ; 10.8]
Belgium	4.4 [-14.3 ; 22.3]	-1.8 [-15.4 ; 12]	1.5 [-17.1 ; 19.5]	-1.9 [-15.4 ; 11.9]	-1.7 [-11.6 ; 7.5]	0.9 [-6.4 ; 7.9]
France	-4.2 [-18.7 ; 8.7]	2.3 [-10.3 ; 14.7]	-7.4 [-22.4 ; 6.1]	0.4 [-12.2 ; 12.8]	1.8 [-3.5 ; 8.6]	-0.3 [-5.5 ; 5.1]
Germany	0.9 [-19.2 ; 24.5]	-0.3 [-15.2 ; 16.7]	-0.6 [-21.2 ; 22.8]	-0.3 [-15.7 ; 16.7]	-0.2 [-13.7 ; 10.2]	0.2 [-9.7 ; 8.2]
Netherlands	6.3 [-9.8 ; 23.2]	2.4 [-13.2 ; 18.3]	3.9 [-12.1 ; 20.4]	2.6 [-12.6 ; 18.2]	-2.7 [-13.6 ; 6.3]	-1 [-10.6 ; 7.5]
Switzerland	-3.2 [-21 ; 16.1]	-0.2 [-12.8 ; 14.9]	-3.9 [-22.4 ; 16.6]	-0.2 [-13.6 ; 15.3]	1.4 [-8.3 ; 10.2]	0.2 [-8.1 ; 6.4]
Latin America and the Caribbean	-5.5 [-13.1 ; 2.4] '	-2 [-7.4 ; 3.3]	-6 [-13.8 ; 2.1] '	-2.4 [-8 ; 3]	2.2 [-2.9 ; 6.9]	1.1 [-2.1 ; 4.5]
Caribbean	-3.8 [-11.5 ; 3.8]	1.2 [-5.4 ; 8.1]	-3.7 [-11.4 ; 3.7]	1 [-5.5 ; 7.8]	0.3 [-4.9 ; 5.4]	-0.9 [-5.2 ; 3.3]
Anguilla	1.5 [-23.3 ; 26.8]	0.9 [-17.8 ; 19.4]	0.9 [-23.4 ; 25.2]	0.6 [-17.2 ; 18.5]	-1.3 [-18 ; 14.5]	-0.6 [-12.9 ; 11.1]
Antigua and Barbuda	-2 [-25.8 ; 24.2]	-0.5 [-17.8 ; 18]	-1.8 [-25.1 ; 23.5]	-0.4 [-17.6 ; 17.6]	1.3 [-15.6 ; 15.8]	0.3 [-11.7 ; 11]
Bahamas	-1.6 [-23.8 ; 23.9]	-0.5 [-16.7 ; 17.7]	-1.5 [-23.7 ; 23.6]	-0.4 [-16.5 ; 17.2]	1.2 [-15.3 ; 14.4]	0.4 [-10.9 ; 10.2]
Barbados	-2 [-25.9 ; 24.7]	-0.6 [-18 ; 17.9]	-1.8 [-25.4 ; 24]	-0.6 [-17.8 ; 17.3]	1.2 [-15.5 ; 15.4]	0.4 [-11.5 ; 10.9]
Cuba	1.5 [-16.3 ; 18.8]	-1.1 [-15.6 ; 13.7]	0.6 [-16.9 ; 17.9]	-1.4 [-15.7 ; 13.2]	-0.6 [-11.4 ; 9.9]	0.7 [-8.3 ; 9]
Dominica	-1.8 [-26 ; 24.4]	-0.6 [-18 ; 17.8]	-1.8 [-25.2 ; 23.5]	-0.5 [-17.7 ; 17.6]	1.2 [-15.8 ; 16]	0.4 [-11.4 ; 11.1]
Dominican Republic	-10.2 [-24.7 ; 4.1] '	5.1 [-9.4 ; 20.2]	-9.2 [-23.4 ; 4.7] '	3.4 [-10.6 ; 18.3]	3.8 [-5.3 ; 13.2]	-3.1 [-13.3 ; 6.5]
Grenada	-2.6 [-26.9 ; 24.3]	-0.8 [-18 ; 17.4]	-2.5 [-26.7 ; 23.3]	-0.7 [-17.8 ; 17]	1.7 [-15.2 ; 16.4]	0.5 [-11.2 ; 10.9]
Guadeloupe	-2.2 [-27.1 ; 23.7]	-0.7 [-18.4 ; 17.7]	-2 [-27.3 ; 22.7]	-0.6 [-18.6 ; 17.8]	1.1 [-15.6 ; 16.4]	0.4 [-11.7 ; 11.6]
Haiti	-5.2 [-18.9 ; 9.6]	1.4 [-10.9 ; 14.5]	-4.8 [-16.7 ; 8.3]	2.4 [-8.1 ; 14.3]	-4.8 [-18.6 ; 8.1]	-1.4 [-11 ; 7.8]
Jamaica	-9 [-28.6 ; 10.1]	-1.2 [-16.7 ; 15.4]	-9.8 [-29.1 ; 9]	-1.5 [-16.9 ; 15]	5 [-7.2 ; 17.4]	0.8 [-9.6 ; 9.8]
Martinique	-2.1 [-26.6 ; 23.8]	-0.5 [-18.3 ; 17.8]	-2.1 [-26.7 ; 23.3]	-0.5 [-18.6 ; 17.7]	1.2 [-15.4 ; 16.3]	0.4 [-11.7 ; 11.3]
Montserrat	-1.8 [-25.4 ; 24]	-0.5 [-17.5 ; 18.1]	-1.7 [-25.2 ; 23.7]	-0.4 [-17.4 ; 17.9]	1.3 [-15.6 ; 15.5]	0.3 [-11.4 ; 10.7]
Puerto Rico	-5.1 [-22.2 ; 11.4]	-1 [-13 ; 11.7]	-2.8 [-23.8 ; 18.8]	-0.8 [-15.9 ; 16.3]	2.3 [-5.4 ; 11.1]	0.5 [-5.9 ; 6]
Saint Kitts and Nevis	-2.1 [-27.2 ; 24.1]	-0.7 [-18.3 ; 17.4]	-1.9 [-26.7 ; 23.2]	-0.5 [-18 ; 17.2]	1.2 [-15.7 ; 16.8]	0.4 [-11.5 ; 11.5]
Saint Lucia	-2.2 [-27.2 ; 23.8]	-0.5 [-18.3 ; 18.2]	-2.2 [-26.4 ; 23.2]	-0.5 [-17.8 ; 17.6]	1.5 [-15.8 ; 16.7]	0.4 [-11.7 ; 11.2]
Saint Vincent and the Grenadines	-1.9 [-25 ; 23.8]	-0.6 [-17.2 ; 17.3]	-1.8 [-24.6 ; 23.3]	-0.6 [-16.9 ; 17.2]	1.3 [-15.6 ; 14.8]	0.5 [-11.2 ; 10.4]
Trinidad and Tobago	13.3 [-6.9 ; 33.6] *	1.1 [-15.9 ; 18.3]	12.6 [-5.4 ; 31.2] *	0.8 [-14.9 ; 16.6]	-6.3 [-21.2 ; 6.9]	-0.7 [-11.9 ; 9.9]
United States Virgin Islands	-5.7 [-27.4 ; 15.5]	-1.4 [-16.5 ; 14.5]	-6 [-28.8 ; 16.5]	-1.4 [-17.6 ; 15.6]	2.9 [-9.1 ; 16.1]	0.8 [-8.3 ; 9.3]
Central America	-10.1 [-23.5 ; 3.9] '	-1.4 [-12.3 ; 9.1]	-9.3 [-23.4 ; 4.8] '	-2.8 [-14 ; 7.9]	6.1 [-3.2 ; 15.1] *	0.8 [-6.1 ; 7.6]
Belize	-9.2 [-30.1 ; 11]	7.1 [-10.4 ; 25]	-7.8 [-27 ; 11.6]	6.2 [-10.8 ; 23]	4.5 [-10.2 ; 19.4]	-3.6 [-16.2 ; 8.1]
Costa Rica	-4.2 [-15.6 ; 8.5]	0.1 [-10.4 ; 13.3]	-3.5 [-16.5 ; 11.3]	0.3 [-11.3 ; 14.2]	1.9 [-4.7 ; 7.9]	0 [-6.4 ; 4.6]
El Salvador	-4.8 [-22.1 ; 12.9]	-3.1 [-18.8 ; 13.2]	-3.3 [-20.2 ; 14]	-2.6 [-18.8 ; 13.9]	2.7 [-8.4 ; 13.6]	1.7 [-8 ; 10.2]
Guatemala	-1.8 [-22.8 ; 19.4]	-1.1 [-19.4 ; 17.1]	-1.1 [-20.6 ; 19.1]	-0.4 [-17.6 ; 16.6]	-2.9 [-16.8 ; 10.5]	0.2 [-12.2 ; 11.9]
Honduras	-7.9 [-27.4 ; 11.2]	-3.4 [-18.7 ; 11.1]	-6.6 [-26.4 ; 12.6]	-3.8 [-19 ; 11.3]	3.2 [-10.9 ; 17.4]	-0.2 [-9.9 ; 10.7]
Mexico	-11.2 [-28.6 ; 6.9]	-1.3 [-15.6 ; 12.4]	-10.5 [-28.9 ; 8.2]	-3.3 [-18 ; 11]	7.6 [-4.7 ; 19.2]	1 [-8.1 ; 9.8]
Nicaragua	-12.9 [-30.8 ; 4.5] '	-3.7 [-18.2 ; 10.6]	-13.3 [-30.5 ; 3.8] '	-4 [-18.2 ; 10.3]	5.8 [-6.6 ; 18.4]	2.6 [-7 ; 11.8]
Panama	-1.2 [-26.6 ; 25.1]	0.3 [-18.2 ; 19.5]	-1 [-25.6 ; 24.5]	0.3 [-17.8 ; 18.5]	0.9 [-16.6 ; 16.5]	-0.1 [-12.8 ; 11.6]
South America	-4.1 [-14 ; 6.6]	-2.5 [-9.5 ; 4.2]	-5.2 [-15.5 ; 5.9]	-2.6 [-9.8 ; 4.3]	1 [-5.7 ; 7]	1.5 [-2.6 ; 5.7]
Argentina	1.8 [-22.3 ; 24.7]	-8.4 [-23.3 ; 6.8]	-3.3 [-27 ; 19.8]	-4.2 [-19.4 ; 11.6]	-1 [-16 ; 13.9]	4.6 [-4.7 ; 14.2]
Bolivia (Plurinational State of)	-10.7 [-28.8 ; 6.9]	-2.7 [-19.8 ; 14.5]	-5.7 [-20.3 ; 8.7]	-2 [-20.5 ; 15.9]	3.7 [-9 ; 16.9]	0.7 [-12.1 ; 13.4]
Brazil	-3.6 [-20.8 ; 14.9]	-2.6 [-14.5 ; 8.9]	-5 [-23 ; 14.2]	-3.6 [-15.5 ; 8.3]	0.5 [-11.1 ; 10.8]	1.8 [-5.1 ; 9]
Chile	-2.5 [-26.7 ; 20.6]	-1.1 [-18 ; 16.4]	-4.2 [-27.9 ; 18.7]	-1.2 [-17.9 ; 15.9]	1.1 [-14 ; 16.5]	0.8 [-11 ; 11.4]
Colombia	-5.5 [-14.9 ; 4.2]	-1.6 [-11.7 ; 9.1]	-0.5 [-11.6 ; 10.9]	-1.9 [-13.8 ; 10.7]	0.6 [-4.6 ; 5.9]	1.1 [-5.4 ; 7]
Ecuador	-8.6 [-27.1 ; 9.2]	-4.5 [-18.4 ; 9.1]	-3.9 [-23.4 ; 15.5]	-4.1 [-19.9 ; 11.6]	5.6 [-5.6 ; 16.5]	2.5 [-5.5 ; 10.5]
Guyana	4.3 [-12.3 ; 20.4]	6.9 [-5 ; 18.9]	3.6 [-12.4 ; 19.3]	6.4 [-5.3 ; 18.1]	-0.5 [-14.9 ; 13.3]	-1.7 [-12.4 ; 9.2]
Paraguay	-3.5 [-20.7 ; 15.5]	-4.7 [-18.1 ; 8.8]	-0.1 [-18.5 ; 19.4]	-4.5 [-19.7 ; 11]	0.9 [-10.8 ; 10.3]	2.6 [-4.6 ; 9.6]
Peru	-5.7 [-17.2 ; 6]	2.8 [-6.4 ; 12.4]	-15 [-28.2 ; -1.2] "	3.6 [-8.3 ; 15.4]	0.4 [-6.7 ; 7.6]	-3.5 [-10.7 ; 2.8]
Suriname	6.1 [-15.4 ; 27.2]	0.4 [-17 ; 17.3]	5.7 [-15 ; 26.3]	0.2 [-16.8 ; 16.7]	-3.3 [-19.2 ; 11.3]	-0.2 [-12.2 ; 11.4]
Uruguay	1.3 [-15.3 ; 19.9]	1 [-12.4 ; 14.1]	-1.5 [-19 ; 17.8]	-0.2 [-13.4 ; 13.1]	-0.4 [-10.9 ; 8.2]	-0.3 [-7.7 ; 6.8]
Venezuela (Bolivarian Republic of)	-9.3 [-29.8 ; 10.1]	-0.5 [-15.7 ; 17.1]	-7.4 [-28.2 ; 12.7]	-0.5 [-16.5 ; 17.4]	5.1 [-8.1 ; 19.1]	0.5 [-11.8 ; 9.9]
Northern America	-0.1 [-13.5 ; 14]	-0.8 [-12.9 ; 11.5]	0.4 [-13.8 ; 15]	-0.8 [-13.3 ; 12]	0.1 [-7.4 ; 6.4]	0.3 [-5.6 ; 5.9]
Canada	-5 [-23.2 ; 11.9]	1.9 [-11.9 ; 16.8]	-5 [-23.1 ; 11.9]	1.5 [-12.1 ; 16.3]	2.3 [-6.5 ; 12.3]	-0.6 [-9.2 ; 6.3]

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Table 11 – continued from previous page

	CP (any)		CP (modern)		Unmet need	
	(2010-2000)-(2000-1990)	(2010-2005)-(2005-2000)	(2010-2000)-(2000-1990)	(2010-2005)-(2005-2000)	(2010-2000)-(2000-1990)	(2010-2005)-(2005-2000)
United States of America	0.6 [-14.3 ; 16.1]	-1.1 [-14.5 ; 12.7]	1 [-14.7 ; 17.3]	-1.1 [-15.1 ; 13.1]	-0.2 [-8.4 ; 6.8]	0.5 [-6.1 ; 6.7]
Oceania	3.9 [-8.8 ; 16.1]	-0.5 [-9.2 ; 8.5]	2.6 [-9.5 ; 14.6]	-0.1 [-8.6 ; 8.6]	-1.8 [-9.8 ; 5.4]	0.3 [-5.3 ; 5.6]
Australia and New Zealand	4.1 [-12.4 ; 20.3]	-0.8 [-12.3 ; 10.7]	2.5 [-13.9 ; 18.4]	-0.3 [-11.7 ; 11.3]	-1.8 [-12 ; 7.4]	0.5 [-6.6 ; 7.5]
Australia	5.8 [-13.9 ; 25.1]	-1 [-15 ; 12.9]	4 [-15.6 ; 23.3]	-0.4 [-14 ; 13.5]	-2.6 [-15.1 ; 8.7]	0.6 [-8 ; 9.1]
New Zealand	-2.7 [-23 ; 18.8]	-0.2 [-14.5 ; 16.5]	-3.8 [-24.4 ; 17.5]	-0.2 [-14.3 ; 16.4]	1.4 [-10.8 ; 12.6]	0.2 [-9.6 ; 7.9]
Melanesia	2.4 [-15.4 ; 20]	-0.3 [-14.4 ; 12.9]	2.1 [-13.5 ; 18]	-0.2 [-12.8 ; 11.9]	-1.3 [-13.6 ; 10.2]	0 [-9.1 ; 8.7]
Fiji	-0.1 [-25.3 ; 25]	0 [-18.2 ; 18.1]	0 [-25.3 ; 23.9]	0 [-17.9 ; 17.4]	0.3 [-15.9 ; 15]	0 [-11.5 ; 11.1]
Papua New Guinea	2.6 [-19.2 ; 24.3]	-0.5 [-17.5 ; 15.8]	2.3 [-16.6 ; 21.5]	-0.3 [-15.7 ; 14.3]	-1.5 [-16.7 ; 12.3]	0 [-11.1 ; 10.5]
Solomon Islands	1.4 [-22.1 ; 23.5]	1.3 [-15 ; 18.3]	1.3 [-20 ; 20.9]	1 [-13.7 ; 16.6]	-0.2 [-14.1 ; 12.9]	0.2 [-10 ; 10.3]
Vanuatu	-3.5 [-27.8 ; 19.5]	0.6 [-16.8 ; 18.1]	-2.6 [-25.6 ; 19]	-0.1 [-16.7 ; 16.5]	0.9 [-14.4 ; 15.9]	-0.4 [-12.1 ; 10.6]
Micronesia	-2.4 [-17.6 ; 12.4]	-0.8 [-11.7 ; 10.4]	-2.5 [-16.9 ; 11.7]	-0.9 [-11.5 ; 9.8]	0.7 [-8.2 ; 10]	0.4 [-6.4 ; 7]
Guam	-5.2 [-30.3 ; 19.6]	-1.3 [-19.9 ; 17.1]	-4.4 [-28.8 ; 19.4]	-1.2 [-19.6 ; 17.2]	2.2 [-13.3 ; 17.2]	0.7 [-11.1 ; 11.6]
Kiribati	0.6 [-20.3 ; 24.4]	0 [-18.5 ; 17.2]	-0.3 [-19.8 ; 21.4]	0 [-17.8 ; 16.2]	-1.1 [-16.5 ; 12.8]	0.1 [-11.1 ; 11.3]
Marshall Islands	-0.7 [-27 ; 23.1]	-0.8 [-19.3 ; 17.7]	-1.7 [-26.6 ; 20.9]	-1.6 [-19.3 ; 15.9]	0.4 [-14 ; 13.9]	0.9 [-9.2 ; 10.8]
Nauru	1 [-23.5 ; 23.2]	1 [-15.9 ; 18.3]	1.2 [-20.1 ; 20]	1.4 [-13 ; 16.5]	-0.6 [-15.6 ; 14.4]	-0.5 [-12.1 ; 9.9]
Northern Mariana Islands	-0.1 [-25.5 ; 22.9]	0.1 [-18.2 ; 16.9]	0.2 [-24.1 ; 21.5]	0.1 [-17.2 ; 16.2]	0 [-15.3 ; 15.1]	0 [-11.3 ; 11.2]
Palau	1.5 [-21.1 ; 24.3]	0.9 [-16.5 ; 17.9]	0.8 [-20.4 ; 22.3]	0.5 [-15.9 ; 16.5]	-1.1 [-17 ; 13.4]	-0.4 [-11.8 ; 10.3]
Polynesia	1.8 [-14.7 ; 17.5]	0.2 [-14.1 ; 12.7]	1.5 [-14.5 ; 16.7]	0.2 [-13.8 ; 12.4]	-0.7 [-14.4 ; 13.8]	-0.5 [-10.9 ; 10.4]
Cook Islands	3.4 [-21.4 ; 27.8]	-0.1 [-18.8 ; 18.9]	3 [-21 ; 26.5]	0 [-17.9 ; 18.3]	-1.8 [-18.9 ; 14.1]	0.2 [-12.6 ; 12.2]
Samoa	1.2 [-17.6 ; 19.2]	0.3 [-16.1 ; 14.6]	1 [-17.2 ; 18.5]	0.3 [-15.8 ; 14.2]	-0.1 [-15.7 ; 16.3]	-0.6 [-12.4 ; 11.9]
Tuvalu	1.4 [-21.3 ; 20.9]	1.5 [-14.2 ; 17.3]	1.1 [-18.8 ; 18.4]	1.5 [-12.2 ; 15.4]	-0.7 [-16.2 ; 14.4]	-0.5 [-11.8 ; 10.6]

Table 11: **Estimates of median increase in the absolute percentage points change in the period (1990-2000) to (2000-2010) and (2000-2005) to (2005-2010) in contraceptive prevalence (any method and modern methods) and unmet need, for the world, developed countries, developing countries (incl. and excl. China), and all subregions and the world, with 95% uncertainty intervals.** Symbols: Probability that the change was positive: * >0.9, ** >0.95, *** >0.99. Probability that the change was negative: ′ >0.9, ″ >0.95, ‴ >0.99.

	CP (modern)			CP (traditional)		
	1990	2010	Change 1990–2010	1990	2010	Change 1990–2010
World	47.8 [45.3; 50.1]	57 [54.1; 59.7]	9.2 [5.6 ; 12.8] ***	7 [6.2; 7.9]	6.2 [5.3; 7.6]	-0.7 [-2 ; 0.8]
Developed countries	52.8 [49.2; 56.3]	62 [57.5; 66]	9.1 [4.8 ; 13.3] ***	15.2 [12.6; 18.3]	9.4 [7; 12.7]	-5.8 [-9.1 ; -2.5] '''
Developing countries	46.7 [43.7; 49.4]	56.2 [53; 59.3]	9.5 [5.3 ; 13.8] ***	5.1 [4.4; 6]	5.7 [4.7; 7.3]	0.6 [-0.7 ; 2.3]
Developing (excl. China)	33.5 [30.9; 36.2]	46.5 [42.9; 50]	13 [8.5 ; 17.3] ***	6.8 [5.9; 8]	7.4 [6.1; 9.5]	0.7 [-1.1 ; 2.9]
Africa	12.7 [11.9; 13.6]	25.3 [24; 26.7]	12.6 [11 ; 14.2] ***	4.7 [4.2; 5.3]	5.6 [4.8; 6.4]	0.9 [-0.1 ; 1.9] **
Eastern Africa	7.6 [6.8; 8.5]	27.8 [25.9; 29.7]	20.1 [18 ; 22.2] ***	4.3 [3.6; 5.2]	4.8 [3.8; 5.9]	0.5 [-0.8 ; 1.9]
Burundi	1.9 [0.7; 3.5]	17.4 [14.7; 20.4]	15.5 [12.3 ; 18.8] ***	6.5 [3.4; 11.5]	4.5 [2.8; 7.1]	-2 [-7.2 ; 2]
Comoros	6.3 [2.4; 13.2]	31.7 [16.9; 51.4]	25 [8.5 ; 46.7] ***	7.2 [2.6; 16.2]	6.9 [1.6; 21]	-0.2 [-11.5 ; 14.9]
Djibouti	1.1 [0.1; 4.7]	21.2 [12.7; 33.5]	19.8 [10.4 ; 32.7] ***	1.9 [0.3; 7]	2.4 [0.7; 7]	0.4 [-5.2 ; 5.6]
Eritrea	2.3 [0.9; 4.7]	11 [5.4; 20.8]	8.6 [2.5 ; 18.8] ***	3 [1.2; 6.4]	3.9 [1.1; 10.3]	0.8 [-3.7 ; 7.6]
Ethiopia	2.1 [1.3; 3.2]	25.8 [22; 29.8]	23.7 [19.7 ; 27.8] ***	0.5 [0.1; 1.5]	1.1 [0.2; 2]	0.5 [-0.6 ; 1.5]
Kenya	21 [16.1; 26.6]	41.1 [32.4; 50.1]	20.1 [9.8 ; 30.4] ***	7.4 [4.4; 11.7]	5.9 [2.8; 11.5]	-1.5 [-6.8 ; 4.7]
Madagascar	4.1 [2.3; 6.9]	30.3 [22.2; 39.2]	26.1 [17.4 ; 35.3] ***	10 [5.7; 16.5]	9.7 [4.8; 17.7]	-0.3 [-8.7 ; 9]
Malawi	6.3 [4.2; 9]	42 [37.5; 46.6]	35.7 [30.4 ; 40.7] ***	5.3 [3.1; 8.5]	3 [1.6; 5.1]	-2.3 [-5.8 ; 0.8] '
Mauritius	45 [33.4; 55.9]	49.4 [29.2; 66.9]	4.3 [-18.2 ; 25.3]	29.8 [19; 42.9]	25.5 [10.6; 47.2]	-4.3 [-23.9 ; 19.6]
Mozambique	3.1 [1.4; 6.3]	11.8 [9.2; 14.9]	8.6 [4.7 ; 12.3] ***	0.8 [0.2; 2.8]	1.4 [0.6; 2.6]	0.6 [-1.4 ; 1.9]
Reunion	66 [61.3; 70.3]	69.1 [51.1; 82.9]	3.1 [-14.5 ; 17.3]	5.5 [3.4; 8.7]	2.4 [0.5; 10]	-2.9 [-6.5 ; 4.3]
Rwanda	7.1 [4.5; 10.6]	41.1 [36.2; 45.5]	33.9 [28.1 ; 39.2] ***	10.6 [6.7; 16.2]	8.2 [5.4; 12.3]	-2.4 [-8.6 ; 3.2]
Somalia	0.1 [0; 0.7]	2.9 [0.5; 7.8]	2.7 [0.4 ; 7.7] ***	4.3 [1.1; 14]	15.6 [6.5; 33.4]	10.6 [0.9 ; 27.6] **
South Sudan	0.1 [0; 0.5]	1.6 [0.3; 3.8]	1.5 [0.3 ; 3.7] ***	0.5 [0.1; 2.2]	3.2 [0.5; 6.6]	2.5 [0.1 ; 6] **
Uganda	3.6 [2.4; 5.3]	24.1 [19.5; 29.5]	20.5 [15.6 ; 26] ***	3.2 [1.8; 5.5]	4.1 [2.4; 6.9]	0.9 [-1.9 ; 4]
United Republic of Tanzania	6.4 [4.5; 8.8]	27.6 [21.8; 34.3]	21.1 [14.9 ; 28.1] ***	4.6 [2.7; 7.7]	6.5 [3.4; 11.5]	1.9 [-2.6 ; 7.3]
Zambia	7.5 [4.7; 11.6]	31 [21.4; 41.6]	23.4 [13 ; 34.8] ***	6.9 [3.7; 12]	11.7 [5.4; 21.8]	4.7 [-3.6 ; 15.7]
Zimbabwe	37.9 [30.7; 45.2]	57.4 [52.6; 62.2]	19.5 [10.7 ; 28.1] ***	6.2 [3.5; 10.5]	1.4 [0.6; 2.3]	-4.8 [-9.1 ; -1.9] '''
Middle Africa	2.8 [2.1; 3.8]	8.3 [7; 10]	5.4 [3.8 ; 7.4] ***	8.5 [6; 11.9]	11.1 [8.6; 14.2]	2.6 [-1.4 ; 6.4] *
Angola	2 [0.7; 4.8]	8.8 [4; 18]	6.6 [1.2 ; 16.2] ***	2.1 [0.5; 6.2]	3.8 [0.8; 11.8]	1.5 [-2.5 ; 9]
Cameroon	3.7 [2.4; 5.4]	14 [10.5; 18]	10.2 [6.4 ; 14.6] ***	8.4 [5.4; 12.5]	11.4 [7.1; 17.5]	3 [-2.9 ; 9.9]
Central African Republic	2.6 [1.2; 5.5]	11.5 [6.1; 20]	8.8 [2.6 ; 17.4] ***	9 [4.3; 16.3]	14.3 [6; 28]	5.2 [-5.3 ; 19.3]
Chad	0.7 [0.2; 1.6]	3.3 [1.6; 6.4]	2.6 [0.6 ; 5.8] ***	1.3 [0.4; 3.1]	2.2 [0.7; 5.1]	0.9 [-1.3 ; 3.9]
Congo	6 [1.2; 17.7]	18.6 [13.7; 24.4]	12.3 [-0.2 ; 20.3] **	17.5 [6.1; 36.3]	25.7 [17.4; 35.5]	8 [-11.1 ; 22.9]
Democratic Republic of the Congo	2.7 [1.6; 4.4]	5.7 [4.7; 7.2]	3 [1 ; 4.8] ***	11 [6.5; 17.6]	13.5 [9.5; 19.1]	2.5 [-4.8 ; 9.5]
Equatorial Guinea	3.1 [0.9; 8.2]	11.7 [5.1; 24.2]	8.4 [0.4 ; 21.2] **	4.1 [1.1; 12.5]	6.9 [1.7; 19.6]	2.5 [-4.9 ; 13.9]
Gabon	6.5 [1.8; 15.7]	19.4 [8.5; 36]	12.6 [-1.3 ; 30.8] **	13.8 [5.3; 28.6]	18 [6.4; 36.1]	3.9 [-13.5 ; 22.8]
Sao Tome and Principe	15.6 [6.6; 29.3]	34.1 [26.3; 43]	18.2 [2.9 ; 31.8] **	4.8 [1.2; 14.1]	3.5 [1.4; 7.7]	-1.2 [-10.7 ; 3.9]
Northern Africa	33.4 [30.3; 36.5]	48.6 [43.4; 53.5]	15.2 [9.1 ; 20.9] ***	4.6 [3.7; 5.7]	5.3 [3.5; 7.8]	0.7 [-1.4 ; 3.4]
Algeria	39 [31.7; 46.7]	54.6 [42.2; 66.4]	15.6 [1.3 ; 29.6] **	6.5 [3.8; 10.8]	7.3 [2.8; 16.5]	0.8 [-5.3 ; 10.2]
Egypt	40.6 [34.8; 46.7]	58.6 [49.4; 66.9]	18 [7.2 ; 28] ***	2.7 [1.7; 4.1]	2.7 [1.4; 5.3]	0 [-1.8 ; 2.7]
Libya	21.9 [11.8; 34.4]	39.7 [21; 60.9]	17.5 [-4.4 ; 41.9] *	15.7 [7.1; 29.1]	14.5 [4.2; 35.4]	-1 [-18.2 ; 20.1]
Morocco	32.9 [26.6; 39.6]	55.8 [40.3; 69.4]	22.9 [6.3 ; 38] ***	6.5 [3.8; 10.4]	8.8 [3.2; 20.3]	2.2 [-4.5 ; 13.9]
Sudan	5.9 [4.5; 7.6]	9.8 [6.4; 14.6]	3.9 [0 ; 8.9] **	2.6 [1.6; 4]	1.9 [0.7; 4.2]	-0.7 [-2.5 ; 1.8]
Tunisia	43.7 [36.2; 51.4]	54.6 [41.6; 66.3]	10.8 [-4 ; 25.1] *	9 [5.3; 14.6]	8.8 [3.4; 19.4]	-0.2 [-7.9 ; 10.9]
Southern Africa	45.2 [35.8; 54.5]	61.4 [48.7; 72.6]	16.1 [0.5 ; 31.1] **	1.1 [0.5; 2.3]	0.7 [0.2; 2.2]	-0.3 [-1.5 ; 1]
Botswana	32.9 [25.6; 41.1]	51.4 [37.6; 64.9]	18.4 [3 ; 33.3] ***	1.6 [0.7; 3.6]	1.4 [0.2; 4.5]	-0.3 [-2.2 ; 2.7]
Lesotho	16.8 [11.7; 23.5]	46.7 [39; 54.6]	29.8 [20 ; 39.3] ***	3.7 [1.7; 7.1]	1.1 [0.5; 2.2]	-2.6 [-6.1 ; -0.2] "
Namibia	26 [19.6; 33.1]	55 [42.4; 66.8]	28.9 [14.3 ; 42.6] ***	3.6 [1.7; 7.2]	0.7 [0.2; 2.3]	-2.8 [-6.5 ; -0.4] "
South Africa	48.7 [37.9; 59.5]	63 [48.3; 75.9]	14.1 [-4 ; 31.4] *	0.7 [0.1; 2.1]	0.6 [0.1; 2.3]	-0.1 [-1.4 ; 1.5]
Swaziland	19.1 [14.2; 25.2]	60.3 [54; 65.3]	41 [32.4 ; 48.4] ***	2.4 [1.2; 4.8]	2.2 [1.5; 3.4]	-0.2 [-2.7 ; 1.6]
Western Africa	3.5 [3.1; 4]	10.2 [8.9; 11.7]	6.6 [5.3 ; 8.2] ***	4.1 [3.3; 5.1]	4.8 [3.6; 6.4]	0.8 [-0.8 ; 2.5]
Benin	1.7 [0.6; 3.8]	8.9 [4.7; 15.4]	7.1 [2.4 ; 13.8] ***	9.1 [5.3; 14.8]	10.2 [4.7; 18.7]	1 [-6.8 ; 10.3]
Burkina Faso	3.5 [2.1; 5.4]	15 [12.6; 17.8]	11.5 [8.5 ; 14.7] ***	3.2 [1.5; 6.3]	1.7 [1; 2.8]	-1.5 [-4.6 ; 0.6] '
Cape Verde	23.5 [17.6; 30.4]	58.1 [44.6; 70.5]	34.6 [19.5 ; 48.3] ***	5.6 [3; 10]	3.8 [1.5; 9.5]	-1.7 [-6.8 ; 4.5]
Cote d'Ivoire	2.6 [1.2; 4.7]	11.3 [6.4; 19]	8.6 [3.3 ; 16.4] ***	5 [2.8; 8.5]	6 [2.1; 14.2]	0.9 [-4.2 ; 9.2]
Gambia	6.7 [5.5; 7.9]	17.8 [9.7; 30.2]	11.1 [2.9 ; 23.7] ***	3.5 [1.6; 6.1]	2.5 [0.6; 8.4]	-0.8 [-4.2 ; 4.9]
Ghana	6.6 [4.9; 8.7]	18.2 [12.8; 24.6]	11.6 [5.9 ; 18.2] ***	8.4 [5.8; 11.9]	5.8 [2.8; 10.7]	-2.7 [-7.2 ; 2.9]
Guinea	0.8 [0.4; 1.4]	6.4 [3.3; 11.6]	5.5 [2.4 ; 10.9] ***	1 [0.3; 1.9]	4.2 [1.7; 9.2]	3.2 [0.5 ; 8.3] ***
Guinea-Bissau	1.5 [0.3; 4.7]	8.5 [4.9; 13.8]	6.8 [2.2 ; 12.4] ***	3.3 [0.9; 9.4]	4.8 [1.8; 10.6]	1.5 [-4.6 ; 7.2]
Liberia	6.3 [4; 9.8]	12.2 [8.1; 17.9]	5.9 [0.8 ; 12] **	0.7 [0.1; 2]	0.6 [0.1; 2.2]	-0.1 [-1.2 ; 1.3]
Mali	2.2 [1.4; 3.3]	8.4 [5.2; 13.3]	6.2 [2.8 ; 11.1] ***	1.7 [0.7; 3.4]	0.8 [0.2; 2.7]	-0.8 [-2.6 ; 1.1]
Mauritania	1 [0.3; 1.6]	10.2 [6.3; 16.1]	9.3 [5.3 ; 15.2] ***	2.2 [1.4; 3.5]	2 [0.6; 5.7]	-0.2 [-2.2 ; 3.5]
Niger	2 [1.2; 3.2]	7 [3.8; 11.9]	4.9 [1.5 ; 10] ***	1.8 [0.8; 3.7]	5.1 [2.2; 10.4]	3.2 [-0.2 ; 8.5] **
Nigeria	3.7 [3.1; 4.5]	8.7 [6.6; 11.2]	5 [2.8 ; 7.6] ***	3.5 [2.3; 5.3]	5.6 [3.6; 8.5]	2.1 [-0.6 ; 5.2] *
Senegal	4.1 [2.8; 5.8]	11.9 [10.1; 14.2]	7.9 [5.3 ; 10.4] ***	3 [1.6; 5.2]	0.7 [0.2; 1.6]	-2.3 [-4.6 ; -0.6] '''
Sierra Leone	2 [1; 3.6]	6.7 [4.6; 9.7]	4.7 [2.2 ; 7.9] ***	0.7 [0.1; 2.1]	0.8 [0.1; 2.4]	0.1 [-1.2 ; 1.6]
Togo	3.9 [2.3; 6.4]	14 [11.4; 17.3]	10.1 [6.5 ; 13.8] ***	21 [13.5; 30.4]	2.6 [1.7; 4.4]	-18.3 [-27.8 ; -10.6] '''
Asia	51.9 [48.1; 55.3]	61 [56.9; 65]	9.1 [3.7 ; 14.6] ***	4.7 [3.9; 5.9]	5.7 [4.4; 7.7]	0.9 [-0.8 ; 3]
Central Asia	41.4 [32.4; 50.3]	54.5 [47.3; 61.1]	13.1 [1.5 ; 24.6] **	9.2 [5.6; 14.8]	6.8 [4; 11.4]	-2.4 [-8.6 ; 3.2]
Kazakhstan	42.1 [28; 56]	53.4 [40.3; 65.6]	11.2 [-8.1 ; 30]	12.2 [5.2; 24.6]	5.3 [1.9; 13.3]	-6.6 [-19.5 ; 3.5] '
Kyrgyzstan	42.7 [26.6; 58.7]	50.8 [37.1; 64.2]	7.8 [-13.3 ; 29.5]	9.6 [3.5; 22.7]	4.9 [1.6; 13.7]	-4.3 [-17.6 ; 5.2]
Tajikistan	20.9 [7.7; 39.7]	35.5 [25.9; 46.3]	14.3 [-6.7 ; 33.2] *	5.9 [1.4; 18.2]	5.9 [2.8; 11.8]	0 [-12.3 ; 7.3]
Turkmenistan	37.6 [18.8; 56.7]	50.6 [32; 67.4]	12.7 [-13.3 ; 38.9]	14.9 [5.1; 33.4]	13.7 [4.6; 31.9]	-1.1 [-20.6 ; 17.7]
Uzbekistan	45.9 [29.4; 60.6]	60.5 [48.4; 71.4]	14.6 [-4.9 ; 34.9] *	5.4 [2; 13.2]	6.1 [2.4; 14.3]	0.6 [-7.7 ; 9.2]
Eastern Asia	75.1 [68.1; 80.7]	81.2 [74; 86.2]	5.9 [-2.9 ; 14.8] *	1.7 [1.1; 2.7]	1.3 [0.7; 2.6]	-0.3 [-1.5 ; 1]
China	77.3 [69.4; 83.6]	83.6 [75.8; 89.2]	6.2 [-3.6 ; 16]	1 [0.4; 2.2]	0.7 [0.2; 2.1]	-0.3 [-1.5 ; 1.1]
China, Hong Kong SAR	77.5 [72.1; 82]	75.8 [67.6; 82.4]	-1.7 [-11.2 ; 6.8]	6.2 [3.7; 10.3]	4.2 [1.9; 8.7]	-2 [-6.6 ; 3.1]
Democratic People's Republic of Korea	52 [44; 59.5]	59.7 [44.2; 73.4]	7.7 [-9.7 ; 23.6]	9.3 [5.2; 15.4]	8.8 [3.1; 21.3]	-0.5 [-8.8 ; 12.5]
Japan	53.7 [49.9; 57.7]	48.4 [35.9; 61]	-5.3 [-18.5 ; 7.7]	5 [3.5; 6.9]	5.5 [2.2; 12.5]	0.5 [-3.3 ; 7.7]
Mongolia	40.1 [26.8; 53.3]	52 [42.8; 60.9]	11.8 [-4.3 ; 28] *	13.8 [6.3; 26.2]	6.2 [3.2; 11.5]	-7.4 [-20.1 ; 1.6] '
Republic of Korea	67.3 [58.6; 74.5]	68.9 [59.2; 76.8]	1.6 [-6.9 ; 10]	9.5 [5.2; 16.6]	9.7 [5; 18]	0.2 [-6.3 ; 7.3]
South-Eastern Asia	41.3 [37.9; 44.8]	55.5 [50.5; 60.3]	14.3 [8.2 ; 20.1] ***	7.1 [5.6; 9]	6.6 [5.3; 8.3]	-0.5 [-2.7 ; 1.7]
Cambodia	5.4 [2.4; 11.6]	35 [30.8; 39.5]	29.5 [22.2 ; 35.2] ***	2.7 [1; 7]	14.1 [9.5; 20.2]	11.1 [5 ; 17.7] ***
Indonesia	46.6 [40.6; 52.9]	58.7 [48.2; 68.5]	12.1 [-0.1 ; 23.8] **	2.1 [1.2; 3.4]	2 [0.9; 4.4]	-0.1 [-1.9 ; 2.4]
Lao People's Democratic Republic	12.2 [7.5; 18.7]	42.4 [29.8; 55.4]	30.1 [15.5 ; 44.7] ***	1.7 [0.5; 4.3]	3.7 [1.4; 8.9]	2 [-1.3 ; 7.1]
Malaysia	33.4 [22.2; 45.6]	39.3 [23.6; 55.6]	5.9 [-10.3 ; 22.1]	18.5 [9.1; 32.3]	15.1 [5.4; 32.1]	-3.3 [-16.5 ; 12.1]
Myanmar	13.1 [9.7; 17.3]	43.3 [34.5; 52.4]	30 [20.2 ; 40.3] ***	2.9 [1.6; 5.3]	2 [1; 3.9]	-0.9 [-3.4 ; 1.4]
Philippines	23.7 [15.8; 32.8]	35.6 [29.7; 41.7]	11.8 [0.9 ; 22.1] **	17.9 [10.5; 27.9]	13.9 [9.1; 20.1]	-3.9 [-14.7 ; 5.7]
Singapore	52 [38.8; 64]	57.1 [37.5; 74]	5 [-14.1 ; 23.2]	13 [6.1; 25.3]	7.3 [1.8; 22.2]	-5.3 [-16.8 ; 7.6]
Thailand	67 [57.7; 74.9]	77.4 [72; 82]	10.4 [0.8 ; 20.8] **	2.1 [1; 4.1]	1.9 [1; 3.3]	-0.2 [-2.4 ; 1.5]
Timor-Leste	19 [14.6; 24.3]	21.3 [16.7; 26.7]	2.2 [-4.8 ; 9.4]	2.8 [1.4; 5.3]	2.3 [1.2; 4]	-0.6 [-3.2 ; 1.6]
Viet Nam	40.5 [32.3; 48.8]	62.2 [57.2; 67.3]	21.7 [12.1 ; 31.4] ***	17.1 [10.5; 25.9]	15.7 [11.1; 20.9]	-1.4 [-11.3 ; 7.2]
Southern Asia	32.9 [27.4; 38.9]	47.7 [40; 55.3]	14.7 [5 ; 24.3] ***	5.6 [3.9; 8.3]	7.5 [4.8; 12.2]	1.9 [-1.8 ; 6.9]
Afghanistan	3.8 [1.7; 7.9]	16.6 [14.2; 19.3]	12.7 [8.1 ; 16.2] ***	1.5 [0.4; 4.5]	5.5 [3.6; 8.3]	3.9 [0.7 ; 6.9] **
Bangladesh	26.5 [19.9; 33.9]	51.2 [44.7; 57.5]	24.6 [15.1 ; 33.5] ***	7.3 [3.9; 12.5]	9.1 [5.7; 14.1]	1.8 [-4.2 ; 7.6]
Bhutan	13.6 [6.8; 24.4]	63.7 [57.5; 69]	49.9 [37.3 ; 59.2] ***	0.4 [0.1; 1.5]	0.8 [0.2; 1.5]	0.4 [-0.6 ; 1.1]
India	36.5 [29.2; 44.3]	50.1 [39.7; 60.4]	13.5 [0.7 ; 26.2] **	4.8 [2.7; 8.4]	6.7 [3.2; 13.1]	1.8 [-3 ; 8.5]
Iran (Islamic Republic of)	36.3 [30; 42.7]	57.8 [40.5; 72.3]	21.5 [3.1 ; 37.3] **	19.1 [13.2; 26.7]	13.8 [5.2; 30.2]	-5.3 [-17 ; 12]
Maldives	18.6 [14; 24.1]	29.5 [23.4; 36.1]	10.8 [2.6 ; 18.9] ***	8.9 [5.1; 14.5]	6.6 [3.4; 11.6]	-2.3 [-8.8 ; 3.9]
Nepal	17.6 [13.4; 22.6]	44.3 [37.9; 50.9]	26.6 [18.5 ; 34.6] ***	1 [0.5; 1.7]	4.4 [2.5; 7.3]	3.4 [1.5 ; 6.4] ***
Pakistan	9.4 [8; 11.1]	23.9 [16.3; 33.2]	14.5 [6.7 ; 23.9] ***	2.8 [1.9; 4.1]	8.2 [4.1; 14.9]	5.3 [1 ; 12.1] ***
Sri Lanka	41.9 [31; 52.5]	54.6 [38.5; 68.1]	12.6 [-6.1 ; 30.1] *	23.6 [14; 36.2]	16 [6.9; 31.8]	-7.3 [-22.9 ; 10.1]
Western Asia	25.5 [21.7; 29.4]	38.4 [33.2; 43.4]	12.9 [6.5 ; 19.2] ***	18.6 [14.6; 23.1]	19.1 [14.6; 24.5]	0.5 [-5.8 ; 7.2]
Armenia	24.1 [14.6; 35.7]	26 [21.8; 30.4]	1.9 [-9.9 ; 12.4]	27.4 [15.3; 43.1]	29.1 [20.7; 38.7]	1.7 [-15.6 ; 16.8]
Azerbaijan	15.9 [6.3; 32.2]	17.4 [9.4; 29.1]	1.4 [-16.3 ; 16.8]	25.7 [10.8; 46.5]	36.3 [22; 51.4]	10.2 [-12.5 ; 31]
Bahrain	30.3 [23.4; 37.7]	41.4 [20.7; 62.4]	11 [-10.8 ; 33]	24.5 [16.5; 34.5]	23.2 [8.5; 46.6]	-1.3 [-18.4 ; 22.2]
Georgia	17.3 [7; 33.4]	32.3 [18.5; 48.4]	14.5 [-4.2 ; 32.8] *	13.8 [4.7; 30.9]	18.6 [7.7; 36]	4.4 [-12.8 ; 22]
Iraq	12.7 [9.4; 17.1]	33.3 [26.7; 40.4]	20.5 [12.5 ; 28.3] ***	4.6 [2.6; 7.9]	16.9 [10.9; 24.9]	12.2 [5.5 ; 20.2] ***
Israel	48.6 [31.5; 64.4]	53.9 [28.9; 74.9]	5.2 [-18.1 ; 26.5]	17.2 [6.9; 35.1]	15.8 [3.8; 40.6]	-1.4 [-18.1 ; 20.1]
Jordan	27.2 [23.6; 31.2]	41.4 [33.7; 49]	14.2 [5.5 ; 22.7] ***	13.3 [8.9; 19.1]	17.3 [10.6; 25.9]	3.9 [-4.8 ; 13.7]

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Table 12 – continued from previous page

	CP (modern)			CP (traditional)		
	1990	2010	Change 1990–2010	1990	2010	Change 1990–2010
Kuwait	35.1 [27.1; 43.7]	43.6 [26.7; 61.1]	8.5 [-10.2 ; 27.4]	3.9 [2.1; 7.1]	10.6 [3.4; 25.7]	6.6 [-1.1 ; 21.6] *
Lebanon	37.6 [25.1; 50.6]	38.7 [23.7; 54.1]	1.2 [-18.8 ; 21.3]	24.5 [13.9; 38.6]	22.4 [10.7; 38.9]	-2.1 [-20.4 ; 17.5]
State of Palestine	26.1 [14.8; 39.6]	41.3 [29.2; 53.4]	15 [-3 ; 32.5] *	13 [5.5; 25]	12.4 [5.9; 22.9]	-0.5 [-14.1 ; 12.4]
Oman	10.2 [7.3; 14]	36.9 [21.2; 55.3]	26.5 [10.3 ; 45.4] ***	2 [1.1; 3.8]	9.3 [3.2; 22.4]	7.2 [0.9 ; 20.3] ***
Qatar	30.1 [22.2; 39.4]	41.1 [23.9; 59.3]	11 [-8.2 ; 30.6]	5.4 [2.8; 10.1]	10.9 [3.5; 26.2]	5.3 [-2.9 ; 20.7]
Saudi Arabia	21.8 [12.2; 35]	29.8 [17.4; 46.4]	8 [-9.9 ; 27.4]	3.7 [1.3; 9.2]	4.4 [1.1; 13.3]	0.6 [-5.2 ; 9.2]
Syrian Arab Republic	26.4 [18.2; 35.8]	43.9 [30.9; 56.7]	17.3 [1.4 ; 32.4] **	10.6 [5.7; 18.5]	13.8 [6.1; 27]	3.1 [-7.8 ; 17.2]
Turkey	32.7 [24.6; 41.1]	46.7 [34.9; 57.7]	14 [-0.5 ; 27.8] **	29.2 [20.4; 39.4]	25.5 [15; 39.1]	-3.6 [-18.2 ; 12.4]
United Arab Emirates	19.2 [10.8; 31.3]	37.4 [20.2; 58.1]	17.7 [-2.2 ; 41.3] **	4.3 [1.6; 10]	7.1 [2; 20.1]	2.6 [-4.5 ; 15.6]
Yemen	5 [3.3; 7.3]	23.7 [14.5; 35]	18.7 [9.2 ; 30.1] ***	3.1 [1.7; 5.6]	12.2 [5.5; 23.5]	8.9 [1.9 ; 20.4] ***
Europe	46.7 [42.2; 51.1]	60.2 [55.1; 64.7]	13.4 [7.9 ; 18.8] ***	21.3 [17.3; 25.9]	11.7 [8.5; 16.1]	-9.5 [-14.4 ; -4.7] '''
Eastern Europe	35.9 [27.7; 44.1]	57.2 [48; 64.8]	21.2 [11.5 ; 30.7] ***	29.4 [21.8; 38.8]	16.2 [10.1; 25.1]	-13.1 [-22.6 ; -3.9] '''
Belarus	39.9 [23.2; 56.3]	57.4 [42.4; 69.9]	17.3 [-3.9 ; 38.6] *	15.6 [5.7; 33.7]	10.5 [3.5; 24.9]	-4.7 [-23.5 ; 11.1]
Bulgaria	33.7 [17.2; 53]	55.2 [31.2; 74]	20.7 [-5.8 ; 44.6] *	43.5 [23.7; 63.3]	13.8 [3.1; 39]	-28.2 [-49.9 ; -2.5] ''
Czech Republic	44.3 [28.3; 59.2]	63.1 [42; 78.9]	18.4 [-4.1 ; 40] *	27.2 [13.7; 45.1]	6.7 [1.2; 24.9]	-19.1 [-38.3 ; -1.1] ''
Hungary	64.1 [50.8; 74.7]	68.2 [47.1; 82.8]	4.1 [-16.1 ; 21.3]	11.8 [5.4; 23.3]	5.9 [1.2; 23.5]	-5.3 [-16.2 ; 9.8]
Poland	26.5 [15.1; 40.2]	46 [20.9; 69.2]	19 [-6 ; 43.3] *	42.8 [25.9; 60.7]	22.4 [5.5; 50.7]	-19.7 [-41.2 ; 6.4] '
Republic of Moldova	34.1 [15.2; 54.3]	47.2 [31.7; 61.2]	12.7 [-12.5 ; 37.8]	32.9 [14.5; 55.3]	19.5 [8.6; 36.2]	-12.9 [-39.3 ; 11.1]
Romania	12.4 [6.2; 22.3]	45.3 [25.4; 63]	32.3 [12.8 ; 50.1] ***	47.2 [31; 62.8]	23 [8.5; 45.2]	-23.4 [-42.6 ; -0.5] ''
Russian Federation	40.4 [25.6; 54.8]	63.6 [46.8; 75.9]	22.7 [6.9 ; 37.7] ***	22.4 [10.5; 39.7]	14.2 [5.7; 30.5]	-7.7 [-23.6 ; 7.2]
Slovakia	35.3 [19.7; 51.2]	59 [35.1; 77.3]	23 [-0.9 ; 46.1] **	34.2 [16.8; 55.7]	11.1 [2; 35]	-21.6 [-43.8 ; 0.1] ''
Ukraine	32.7 [12.1; 54.5]	51.3 [39.2; 62.3]	18.2 [-6.2 ; 43] *	32.8 [13.2; 57.2]	15 [7.3; 27.3]	-17 [-43.9 ; 5.3] '
Northern Europe	68.7 [62.1; 74.1]	74.5 [68; 79.6]	5.8 [0.1 ; 11.5] **	4.8 [3.2; 7.3]	3.3 [2; 5.5]	-1.5 [-3.9 ; 0.7] '
Denmark	67.1 [53.1; 77.8]	66.6 [45.3; 82.6]	-0.3 [-19.3 ; 15.6]	5.4 [1.8; 14.1]	4.1 [0.7; 17.6]	-1.1 [-7.9 ; 9.4]
Estonia	47.3 [25.1; 64.7]	55.3 [32.8; 74.5]	7.6 [-15.5 ; 35.7]	14.7 [4.7; 38.2]	8.4 [1.3; 28.7]	-5.3 [-30.6 ; 12.4]
Finland	72.9 [62; 81.3]	72.3 [52.4; 85.9]	-0.4 [-18.5 ; 13.5]	2 [0.8; 4.7]	1.7 [0.3; 8.2]	-0.2 [-2.6 ; 5.3]
Ireland	60.2 [35.6; 76]	62.4 [46.8; 75.7]	2.1 [-16.9 ; 27.4]	8.7 [2.1; 32.5]	3.9 [1.1; 11.6]	-4.3 [-27.8 ; 4.1]
Latvia	53.4 [33.2; 69.1]	59.4 [38.3; 76.7]	5.7 [-17 ; 32.2]	12.6 [4.2; 32.6]	7.4 [1.4; 25.7]	-4.2 [-26.2 ; 12.2]
Lithuania	35.7 [16.5; 52.5]	47.5 [26.2; 67.9]	11.5 [-12.3 ; 40.6]	17.6 [6.6; 40.2]	10 [1.6; 30.5]	-6.5 [-33.5 ; 13.2]
Norway	68.4 [56; 78.3]	73.1 [57; 84.2]	4.5 [-9.6 ; 16.8]	5.6 [2.2; 12.7]	6.4 [1.9; 18.1]	0.7 [-5.4 ; 10.7]
Sweden	62.2 [44.5; 75.3]	61.8 [40.1; 78.3]	-0.2 [-21 ; 18.9]	8.8 [2.7; 23.5]	7.8 [1.7; 26.4]	-0.9 [-13.1 ; 14.5]
United Kingdom	73.7 [63.9; 81.4]	80.9 [71.7; 87.5]	7.2 [-0.4 ; 14.7] **	2.1 [0.9; 5]	1.2 [0.4; 3.1]	-0.9 [-3.2 ; 0.5] '
Southern Europe	35.2 [27.6; 43.4]	50.3 [40.5; 59.1]	14.8 [3.6 ; 26.1] ***	29.1 [21.6; 38.3]	15.2 [9.7; 24.9]	-13.5 [-23.9 ; -3.3] '''
Albania	10 [2.5; 27.1]	14 [8.3; 22.6]	4 [-13.8 ; 15.6]	56.5 [35.3; 74.3]	50.8 [37.6; 62.8]	-5.7 [-26.4 ; 17.5]
Bosnia and Herzegovina	10.2 [3.9; 22.3]	17 [8.3; 29.9]	6.6 [-8.2 ; 20.9]	40.9 [22.5; 60.1]	31.9 [15.5; 51.8]	-8.8 [-30.1 ; 12.6]
Croatia	24 [7.3; 53.1]	43.4 [15; 72.3]	17.5 [-6 ; 42.6] *	38.5 [12.3; 64.7]	20.9 [2.4; 53.7]	-15.6 [-39.7 ; 9.2]
Greece	30.9 [15; 49.6]	44.6 [23.1; 64.5]	13.2 [-11.1 ; 36.8]	37.6 [18.5; 58.3]	23.2 [7.5; 46.7]	-13.8 [-37.1 ; 10.5]
Italy	31.8 [15.4; 50.6]	48 [24.6; 69]	15.4 [-10.2 ; 42.1]	29.5 [13.2; 50.8]	15.5 [3.4; 40.5]	-12.9 [-37.1 ; 11.4]
Malta	43.5 [24.9; 61.9]	59.3 [30.3; 79.7]	15.2 [-13.8 ; 41.1]	40.1 [20.9; 61.2]	21.3 [4.8; 52.2]	-17.8 [-42.1 ; 11]
Montenegro	19.5 [8.3; 35.6]	24.1 [12.7; 38]	4.5 [-14.8 ; 22.6]	35.7 [17.9; 55.5]	26.8 [11.9; 47.1]	-8.5 [-30 ; 14.2]
Portugal	53.9 [35; 68.7]	71.7 [54.5; 82.3]	17.6 [-1.2 ; 36.9] **	20 [8.5; 39.2]	6.1 [1.9; 17.8]	-13.2 [-31 ; -0.3] ''
Serbia	16.9 [7; 33.2]	22.1 [18.1; 26.6]	5.1 [-11.2 ; 16.1]	42.6 [23.4; 61.7]	37.3 [27.6; 47.3]	-5.2 [-25.2 ; 15]
Slovenia	51.5 [32.5; 67.4]	64.1 [39.4; 80.7]	12.3 [-12.8 ; 35]	23.8 [10.4; 44.2]	9.8 [1.8; 33.7]	-12.9 [-32.6 ; 8.7] '
Spain	48.8 [35; 61.4]	63 [51.6; 72.9]	14.2 [-2.6 ; 31.3] **	17 [8.1; 31.1]	3.2 [1.3; 7.6]	-13.5 [-28 ; -4] '''
The former Yugoslav Republic of Macedonia	17 [4.5; 45.6]	39.5 [12.6; 69.5]	20.3 [-1.8 ; 45.3] **	40.1 [13.8; 65.5]	21.3 [2.5; 54.4]	-16.6 [-41.3 ; 8] '
Western Europe	66.4 [59.7; 72]	68.2 [58.1; 75.9]	1.8 [-8.6 ; 10.7]	6.7 [4.2; 10.8]	2.9 [1.3; 8.2]	-3.6 [-7.8 ; 1.3] '
Austria	48.7 [32.1; 64.4]	55.3 [35.7; 72.9]	6.4 [-15.7 ; 28.4]	5.5 [1.6; 17.1]	3.2 [0.6; 13]	-1.9 [-13.8 ; 7.1]
Belgium	67.1 [55.4; 76.7]	69 [55.4; 79.6]	1.9 [-14 ; 17]	4.7 [2.1; 10]	1.9 [0.5; 5.8]	-2.7 [-8.2 ; 1.7] '
France	68.3 [57.6; 76.8]	73 [60.8; 82.3]	4.9 [-9.8 ; 18.3]	8.7 [4.1; 17.4]	1.9 [0.6; 5.4]	-6.6 [-15.5 ; -1.2] '''
Germany	65.6 [53.2; 75.8]	66.8 [46.1; 82]	1.3 [-18.9 ; 17.6]	5.8 [2.4; 13.1]	3.2 [0.5; 14.9]	-2.3 [-9.6 ; 7.9]
Netherlands	71.4 [61.7; 79.3]	65.1 [53.7; 74.9]	-6.2 [-16.5 ; 3.6]	3.5 [1.6; 7.6]	2.2 [0.9; 5.3]	-1.3 [-4.8 ; 1.2]
Switzerland	71.2 [59.5; 80.4]	71.5 [53.5; 84.9]	0.5 [-17.6 ; 15.6]	5 [2; 11.6]	3.7 [0.7; 14.8]	-1.1 [-7.6 ; 8.7]
Latin America and the Caribbean	53.3 [48.8; 57.3]	67 [62.8; 70.7]	13.8 [8 ; 19.6] ***	8.2 [6.4; 11.1]	6.1 [4.7; 8.1]	-2.1 [-5.2 ; 0.6] '
Caribbean	49.5 [45.7; 52.8]	57.4 [52; 62.3]	8 [1.7 ; 13.9] ***	3.7 [2.8; 5]	3.8 [2.4; 6.2]	0.2 [-1.7 ; 2.6]
Anguilla	37.3 [16.9; 60.1]	48.1 [30.7; 66.2]	10.6 [-12.8 ; 34.6]	2.4 [0.5; 10.7]	2.3 [0.6; 8.4]	-0.1 [-7.2 ; 4.8]
Antigua and Barbuda	50.9 [37.7; 64.1]	59.5 [37.8; 78.3]	8.5 [-12.3 ; 27]	2.2 [0.9; 5.6]	2.2 [0.4; 10.5]	0 [-2.9 ; 7.3]
Bahamas	59 [45.8; 71]	64.6 [42.8; 81.6]	5.6 [-14.7 ; 23]	1.7 [0.4; 4.5]	1.7 [0.2; 8.4]	0 [-2.2 ; 5.6]
Barbados	53.4 [40.9; 65.2]	60.9 [39.6; 79.1]	7.7 [-13.2 ; 25.3]	1.7 [0.6; 4.1]	1.8 [0.3; 8.4]	0.1 [-2 ; 6]
Cuba	67.1 [58; 75.1]	70.1 [57.3; 80.7]	3 [-11.5 ; 16.3]	2.4 [1.1; 5]	1.3 [0.3; 4.3]	-1 [-3.6 ; 1.8]
Dominica	50.7 [36.7; 64.3]	59.1 [37.8; 77.4]	8.3 [-12 ; 26.8]	2.2 [0.8; 5.9]	2.2 [0.3; 11]	0 [-2.9 ; 7.4]
Dominican Republic	50.9 [44.5; 57.2]	66.9 [57.2; 75.5]	16.1 [4.3 ; 27] ***	4.2 [2.6; 6.8]	2.2 [1; 4.9]	-2 [-4.8 ; 1] '
Grenada	49.2 [38.6; 59.8]	59.4 [37.7; 79.2]	10.2 [-11.2 ; 30.1]	2.8 [1.3; 6.2]	2.7 [0.4; 12.4]	-0.1 [-3.3 ; 8.7]
Guadeloupe	37.5 [19.5; 59]	50.4 [26.1; 74]	12.2 [-8.7 ; 32.9]	6.3 [1.1; 22]	5.4 [0.6; 25.4]	-0.6 [-10.9 ; 13.1]
Haiti	9.6 [7.4; 12.3]	28.7 [18.9; 40.5]	19.1 [8.9 ; 31.2] ***	1.6 [0.9; 2.7]	5.5 [1.9; 13.2]	3.9 [0.2 ; 11.5] **
Jamaica	52.2 [45.3; 59.1]	66 [51.6; 78]	13.8 [-1.8 ; 27.8] **	3.8 [2.3; 6.1]	2.9 [1; 8]	-0.9 [-3.9 ; 4.1]
Martinique	41.6 [23; 61.7]	52.9 [28.7; 75.2]	10.8 [-10.2 ; 31.1]	6.1 [1.1; 20.8]	5.2 [0.5; 24.3]	-0.7 [-10.4 ; 12.7]
Montserrat	54.6 [37.6; 70.1]	62.1 [39.8; 81.3]	7.6 [-13.4 ; 26.6]	0.9 [0.1; 3.4]	1 [0.1; 6.1]	0.1 [-1.4 ; 4.1]
Puerto Rico	65.3 [54.4; 74.4]	68.7 [51.9; 80.9]	3.4 [-14.4 ; 18.7]	8.9 [4.3; 17.4]	9.2 [2.9; 24.2]	0.3 [-9.7 ; 15.3]
Saint Kitts and Nevis	42.8 [27.8; 59.5]	54.3 [31.8; 75.5]	11.2 [-9.9 ; 31]	3.5 [1.1; 10.3]	3.4 [0.5; 15.9]	-0.1 [-5 ; 9.8]
Saint Lucia	47.4 [34.5; 60.3]	57.5 [36; 76.5]	10 [-10.3 ; 29.3]	1.4 [0.3; 3.7]	1.5 [0.2; 7.7]	0.2 [-1.7 ; 5.4]
Saint Vincent and the Grenadines	55.5 [42.5; 68.1]	62 [40.8; 79.9]	6.3 [-13.7 ; 24.3]	2.6 [1; 6.5]	2.5 [0.4; 11.4]	-0.1 [-3.2 ; 7.6]
Trinidad and Tobago	42.5 [33.2; 52.3]	41.5 [29.6; 54.2]	-0.9 [-16.1 ; 14.4]	7 [3.4; 13.1]	5.9 [2.1; 14.5]	-1 [-7.9 ; 7.4]
United States Virgin Islands	57.4 [34.3; 75.3]	66.6 [48.4; 80.3]	9 [-11.4 ; 32.2]	6.4 [1.5; 22.4]	5.7 [1.5; 18.1]	-0.5 [-14.3 ; 9.7]
Central America	47.8 [42.3; 53.4]	64 [55.8; 71.1]	16.2 [6.2 ; 25.2] ***	7.4 [5.1; 11.1]	5.2 [3; 9.5]	-2.2 [-6.6 ; 2.7]
Belize	37.8 [27.5; 48.8]	42.3 [28.7; 56.7]	4.5 [-11.9 ; 21.1]	5.1 [2.3; 11]	4.8 [1.6; 13.2]	-0.3 [-6.3 ; 7.7]
Costa Rica	63.1 [55.1; 70.1]	78.4 [75.3; 81.1]	15.3 [7.8 ; 23.7] ***	9.7 [5.7; 16]	3.2 [2.2; 4.7]	-6.4 [-12.8 ; -2.2] '''
El Salvador	45.5 [33.5; 57.5]	64.7 [51.9; 75.7]	19.1 [7.4 ; 30.1] ***	4.2 [1.8; 9.3]	6.6 [2.6; 15]	2.2 [-1.9 ; 9]
Guatemala	22.7 [16; 30.9]	41.3 [26.7; 56.7]	18.6 [1.9 ; 35.6] **	4.5 [2.2; 8.6]	7 [2.4; 17.1]	2.4 [-3.7 ; 12.5]
Honduras	35.1 [26.8; 44.3]	57.2 [44; 69]	21.9 [6.7 ; 36.3] ***	8.5 [4.6; 14.7]	8.2 [3.3; 18.1]	-0.3 [-7.9 ; 9.7]
Mexico	50.9 [43.8; 58.1]	66.9 [56.2; 76.2]	16 [2.8 ; 27.7] ***	7.9 [4.9; 12.8]	4.7 [2; 10.5]	-3.2 [-8.8 ; 3.3]
Nicaragua	41.4 [33; 50.2]	68.9 [58; 78.1]	27.4 [13.1 ; 40.1] ***	3.9 [2.1; 7]	3.7 [1.6; 8.1]	-0.3 [-4 ; 4.5]
Panama	52.1 [37.7; 65.7]	50 [42.6; 57.4]	-2.1 [-17.4 ; 13.4]	4.4 [1.6; 11]	3.4 [1.8; 6.3]	-0.9 [-7.4 ; 2.7]
South America	55.7 [49.4; 61.3]	69.4 [63.8; 73.8]	13.6 [5.8 ; 21.3] ***	8.9 [6.5; 13.1]	6.5 [4.9; 9.2]	-2.3 [-6.6 ; 1.2] '
Argentina	48.4 [24.8; 68]	63.8 [47.9; 76.5]	14.9 [-8.4 ; 42.1]	4 [0.9; 13.9]	5.8 [1.9; 16]	1.6 [-7.6 ; 11.2]
Bolivia (Plurinational State of)	13.8 [10.3; 18]	36.3 [26.2; 46.6]	22.4 [11.6 ; 33.3] ***	20.3 [14.1; 27.7]	23.4 [13.8; 35.9]	3 [-9.1 ; 16.9]
Brazil	64 [53; 73.2]	75.9 [66.3; 83.2]	11.8 [-1.1 ; 24.8] **	7.2 [3.3; 14.5]	3.3 [1.4; 7.8]	-3.7 [-11.3 ; 1.8] '
Chile	47.8 [25.8; 67.9]	60.7 [44.1; 75]	12.3 [-10.1 ; 37.9]	4.3 [1; 15.1]	3 [0.8; 10.2]	-1.1 [-11.4 ; 5.2]
Colombia	54.9 [50.5; 59.4]	71.8 [65.5; 77.1]	16.8 [9.1 ; 23.8] ***	11.7 [8.1; 16.5]	6.6 [3.7; 11.2]	-5.1 [-10.6 ; 0.8] ''
Ecuador	42.4 [36.1; 48.6]	60.1 [45.1; 72.4]	17.7 [1.5 ; 31.6] **	10.6 [6.9; 15.6]	11.4 [4.7; 24.7]	0.8 [-7.7 ; 14.2]
Guyana	34.6 [25.7; 44.7]	39.9 [32.9; 47.4]	5.3 [-6.7 ; 16.9]	1.4 [0.5; 3.2]	0.8 [0.2; 2.1]	-0.6 [-2.3 ; 0.8]
Paraguay	34.9 [30.8; 39.1]	67.6 [56.5; 76.4]	32.6 [21.4 ; 42.1] ***	13.2 [9; 18.8]	9.3 [4.5; 18.2]	-3.8 [-10.7 ; 5.3]
Peru	30.9 [24.3; 37.8]	50.8 [45.2; 56]	19.8 [11 ; 28.3] ***	24.2 [16.8; 32.8]	24.1 [18; 31.5]	-0.1 [-10.9 ; 10.3]
Suriname	40.6 [26.9; 54.6]	49 [36.3; 62]	8.4 [-10.4 ; 27.4]	1.5 [0.3; 4.6]	1.1 [0.2; 3.6]	-0.3 [-3.2 ; 1.9]
Uruguay	73.5 [63.6; 81]	74.1 [60.7; 84.2]	0.6 [-13.5 ; 13.6]	7.4 [3.3; 15]	2.7 [0.8; 8.2]	-4.4 [-11.9 ; 1.2] '
Venezuela (Bolivarian Republic of)	53.1 [43; 62.8]	63.6 [46.1; 77.7]	10.4 [-9.4 ; 27.6]	5.5 [2.7; 10.7]	5.6 [1.5; 17.2]	0.1 [-6.4 ; 11.9]
Northern America	67.2 [57.9; 74.8]	71.2 [59.7; 80.1]	4 [-4.9 ; 12.2]	4.5 [2.2; 9.1]	4.9 [2; 12]	0.4 [-3.3 ; 6.1]
Canada	71.9 [62.1; 79.9]	71.4 [56.6; 82.7]	-0.5 [-15.9 ; 13.2]	2 [0.9; 4.4]	1.7 [0.5; 5.3]	-0.3 [-2.7 ; 3.1]
United States of America	66.7 [56.3; 75.2]	71.2 [58.4; 81.2]	4.6 [-5.3 ; 13.4]	4.7 [2.3; 9.9]	5.2 [2; 13.2]	0.4 [-3.6 ; 6.9]
Oceania	55.8 [48.8; 61.9]	55 [45.7; 63.3]	-0.8 [-10.3 ; 8.4]	3.8 [2.3; 6.3]	4.1 [2.1; 7.8]	0.2 [-2.5 ; 3.8]
Australia and New Zealand	68.4 [58.9; 76]	66.6 [54.2; 76.8]	-1.7 [-13.9 ; 9.8]	2.9 [1.5; 5.8]	2.7 [1.1; 6.6]	-0.2 [-3 ; 3.3]
Australia	68.9 [57.8; 77.9]	66.3 [51.4; 78.3]	-2.5 [-17.2 ; 10.9]	2.5 [1; 5.9]	2.4 [0.8; 6.9]	-0.1 [-3.2 ; 4]
New Zealand	66.5 [52.3; 78.2]	68.3 [49.4; 82.4]	1.9 [-17.2 ; 18.7]	4 [1.4; 10.6]	3 [0.7; 12.2]	-0.9 [-6.6 ; 7]
Melanesia	21.5 [14.6; 30.4]	31.2 [20.2; 44.6]	9.6 [-3.8 ; 24.7] *	5.8 [2.7; 12.1]	6.3 [2.3; 15.7]	0.4 [-6.3 ; 9.4]
Fiji	38.8 [21.3; 59.9]	45.5 [22.9; 70.8]	6.5 [-13.3 ; 27.1]	5 [1.1; 16.7]	4.5 [0.6; 19.8]	-0.4 [-8.3 ; 10.6]
Papua New Guinea	18.1 [10; 29]	29.2 [16.4; 45.1]	10.8 [-5.3 ; 29] *	5.9 [2.1; 13.5]	6.5 [1.8; 17.8]	0.5 [-7.8 ; 11.6]

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Table 12 – continued from previous page

	CP (modern)			CP (traditional)		
	1990	2010	Change 1990–2010	1990	2010	Change 1990–2010
Solomon Islands	21.1 [8.5; 38.6]	29.9 [20.3; 41.2]	8.6 [-10.4 ; 25.6]	5.3 [1.2; 16.5]	6 [2.4; 13.2]	0.6 [-10.2 ; 8.1]
Vanuatu	27.2 [19.3; 36.4]	38.7 [27.9; 50.9]	11.5 [-2.6 ; 26] *	3.6 [1.5; 7.9]	2.7 [0.9; 7.1]	-0.9 [-5.2 ; 3.6]
Micronesia	30.6 [20; 42.6]	42.7 [31.2; 53.7]	11.7 [-1.5 ; 25.2] **	6.8 [2.9; 15.2]	6.3 [2.8; 13.9]	-0.5 [-8.1 ; 6.3]
Guam	34.6 [16.8; 55.3]	47 [27.3; 65.6]	11.8 [-10.1 ; 33.9]	7.8 [1.9; 22.8]	7.7 [2.1; 22]	0 [-13.3 ; 12.4]
Kiribati	25.8 [12.8; 42.3]	35.9 [20.7; 54.5]	10.1 [-9.6 ; 31.1]	5 [1.3; 14.5]	5 [1.3; 15.2]	0.1 [-8.5 ; 9.2]
Marshall Islands	26.4 [16.9; 38.2]	42.9 [32.3; 53.6]	16.4 [1.2 ; 30.3] **	4.5 [1.6; 10.9]	2 [0.7; 4.8]	-2.4 [-8.6 ; 1.1] '
Nauru	18.6 [7; 35.9]	25.4 [17.1; 35.1]	6.7 [-11.4 ; 21.8]	8 [2; 21.6]	10.4 [4.7; 19.8]	2.2 [-11.2 ; 12.1]
Northern Mariana Islands	26.2 [12.3; 47.3]	36.3 [16.7; 63.3]	9.9 [-8.4 ; 30.7]	3.8 [0.6; 15.2]	4 [0.5; 18.4]	0.1 [-6.8 ; 10.3]
Palau	24.2 [10.2; 43.4]	34.1 [19.7; 51.9]	9.5 [-10.2 ; 29.7]	3.6 [0.7; 12.7]	3.5 [0.9; 11.5]	0 [-7.9 ; 6.7]
Polynesia	22.9 [13.3; 36]	30.1 [24.6; 36.1]	7.1 [-6.7 ; 18.9]	1.3 [0.4; 3.9]	1.2 [0.5; 2.5]	-0.1 [-2.4 ; 1.1]
Cook Islands	50.2 [36.1; 63.6]	52.1 [33.8; 69.5]	1.9 [-19.8 ; 23.9]	3.2 [1.1; 8.6]	3.1 [0.9; 10.1]	0 [-5.6 ; 6.6]
Samoa	20.9 [10.2; 35.8]	28.3 [22.5; 35]	7.4 [-8.3 ; 20.2]	0.7 [0.1; 3.5]	0.6 [0.1; 2]	-0.1 [-2.6 ; 1]
Tuvalu	18.1 [6.1; 35.4]	24.8 [17.2; 34.1]	6.5 [-11.5 ; 22.1]	4.6 [0.9; 15.9]	6.3 [2.5; 13.2]	1.5 [-8.9 ; 8.6]

Table 12: **Estimates (%) and 95% uncertainty intervals of contraceptive prevalence (CP) for modern and traditional methods, for the world, developed countries, developing countries (incl. and excl. China), all subregions and all countries, for 1990 and 2010.**

	1990	2010	Change 1990-2010
World	78.1 [75.8; 80]	83.7 [81.4; 85.7]	5.7 [2.7 ; 8.6] ***
Developed countries	86.4 [83.6; 88.8]	88.5 [85.6; 90.9]	2.1 [-0.7 ; 4.8] *
Developing countries	75.9 [73.1; 78.2]	82.9 [80.3; 85.2]	7.1 [3.5 ; 10.6] ***
Developing (excl. China)	65.6 [62.4; 68.6]	77.1 [73.6; 80.1]	11.5 [6.8 ; 15.9] ***
Africa	39.8 [37.6; 41.9]	57.1 [54.8; 59.3]	17.3 [14.2 ; 20.3] ***
Eastern Africa	28.2 [25.3; 31.3]	55.3 [52.4; 58.2]	27.1 [22.9 ; 31.1] ***
Burundi	23.6 [14.5; 35]	43 [34.4; 53.3]	19.3 [5.8 ; 32.3] ***
Comoros	28.3 [15.9; 43.8]	58.4 [38.9; 79.6]	29.7 [5.1 ; 56.9] ***
Djibouti	10.4 [2.6; 27]	44.3 [29.3; 62]	32.9 [12.3 ; 55] ***
Eritrea	15.7 [8.6; 26.3]	33.9 [20.9; 50.3]	17.8 [1.5 ; 36.5] **
Ethiopia	7.6 [4.3; 12.9]	49.6 [43.5; 55.3]	41.8 [34.3 ; 48.6] ***
Kenya	43.8 [36.3; 51.7]	65.6 [55.4; 75.3]	21.7 [9 ; 34] ***
Madagascar	31.6 [22; 42.6]	66.3 [55.9; 76.2]	34.5 [19.4 ; 48.9] ***
Malawi	24.9 [18.6; 32.4]	62.7 [57.4; 67.7]	37.7 [28.7 ; 45.9] ***
Mauritius	91.7 [85.9; 95.7]	92.3 [81.5; 97.2]	0.5 [-10.1 ; 7.7]
Mozambique	14.2 [7.1; 25.6]	35.9 [27.5; 45.4]	21.5 [8.1 ; 33.5] ***
Reunion	88.4 [82.3; 93.2]	89 [73.3; 96.5]	0.4 [-14.3 ; 9.3]
Rwanda	32.4 [24.7; 41.3]	70.6 [64.9; 75.3]	38 [27.7 ; 47.2] ***
Somalia	13.4 [3.9; 34.5]	38.3 [20.9; 60.8]	23.6 [4.2 ; 46.8] ***
South Sudan	2.2 [0.3; 8.7]	14.4 [5.7; 27.2]	11.7 [2.9 ; 24.4] ***
Uganda	17.7 [12.2; 24.8]	44.3 [36.9; 52.5]	26.6 [16.3 ; 36.5] ***
United Republic of Tanzania	28.9 [22.2; 36.8]	57.3 [48.7; 65.9]	28.3 [16.6 ; 39.5] ***
Zambia	33.2 [24.3; 43.5]	63.1 [50.9; 75.4]	29.8 [13.4 ; 45.6] ***
Zimbabwe	67.1 [57.9; 75.6]	78.7 [72.8; 84.1]	11.6 [1.2 ; 22.1] **
Middle Africa	30.2 [23.4; 38]	42.7 [37; 48.9]	12.4 [3.8 ; 20.7] ***
Angola	13.5 [5.3; 28.8]	31.2 [16.2; 51.3]	16.9 [0.5 ; 37.2] **
Cameroon	34.6 [26.2; 43.8]	53.5 [43.9; 63.5]	18.8 [5.8 ; 31.8] ***
Central African Republic	35.5 [22.3; 50.7]	53.4 [37.2; 70.5]	17.6 [-2.6 ; 38.9] **
Chad	9 [3.7; 18.2]	20.3 [11.7; 32.9]	11.1 [-1.1 ; 24.9] **
Congo	48.6 [26.5; 70.7]	69.1 [59.1; 78.3]	20.3 [-2.4 ; 43.8] **
Democratic Republic of the Congo	32.8 [22.1; 45.9]	41.1 [32.8; 50.6]	8.1 [-6 ; 21.7]
Equatorial Guinea	21.2 [8.2; 41.8]	40.5 [22.9; 62.7]	18.2 [-2.3 ; 42] **
Gabon	40.9 [23.1; 60.3]	59.8 [40.6; 79.6]	18.4 [-5.9 ; 45.4] *
Sao Tome and Principe	35.5 [19.4; 54.7]	50.8 [41; 61.3]	15.1 [-5.7 ; 35.1] *
Northern Africa	61.7 [57.3; 65.9]	78.3 [73; 82.9]	16.6 [10.1 ; 22.6] ***
Algeria	67.9 [56; 79.2]	82.5 [69; 92.1]	14.4 [-0.6 ; 27.9] **
Egypt	65 [57.7; 71.8]	84.3 [76.4; 90.1]	19.1 [8.9 ; 28.4] ***
Libya	61 [43.4; 77.9]	77.4 [55.6; 92.4]	15.7 [-8.1 ; 38.7] *
Morocco	63.7 [55.7; 71.3]	85.6 [72.7; 93.8]	21.7 [7.3 ; 33.5] ***
Sudan	22.7 [17.9; 28.5]	29 [19.9; 40.7]	6.3 [-4.2 ; 18.5]
Tunisia	74.6 [63.8; 84.1]	83.9 [70.6; 92.7]	9 [-5.2 ; 22.1] *
Southern Africa	68.1 [57.7; 77.7]	81.9 [70.4; 90]	13.5 [-1.3 ; 27.1] **
Botswana	56.7 [47.2; 66.2]	74 [58.9; 86.2]	17.2 [0.6 ; 32] **
Lesotho	38.3 [28.7; 49.4]	67.1 [58.9; 74.8]	28.8 [15.2 ; 41.1] ***
Namibia	55.4 [46.4; 64.5]	74.5 [61.9; 84.9]	19.1 [3.4 ; 33.3] ***
South Africa	70.9 [59.2; 81.5]	83.4 [70.1; 92.5]	12.1 [-4.6 ; 27.4] *
Swaziland	38.5 [29.1; 49.6]	79 [72.4; 84.3]	40.3 [28.1 ; 51] ***
Western Africa	23.4 [20.8; 26.6]	37.2 [33.2; 41.5]	13.7 [8.8 ; 18.7] ***
Benin	28 [18.4; 39.8]	40.6 [28.5; 54.3]	12.4 [-3.8 ; 28.9] *
Burkina Faso	20.4 [13.6; 29.4]	35.8 [29; 43.9]	15.3 [4.6 ; 26] ***
Cape Verde	49.4 [39; 60.6]	80.3 [67.1; 90.1]	30.7 [14 ; 45.1] ***
Cote d'Ivoire	20.5 [13.4; 29.7]	36.7 [24; 52.3]	16 [1.2 ; 32.6] **
Gambia	24.4 [16; 36.6]	39.8 [24.2; 58.7]	15.1 [-0.6 ; 32.5] **
Ghana	29.5 [23.9; 36]	40.3 [31.4; 50.1]	10.7 [-0.3 ; 22.1] **
Guinea	6.7 [3.7; 11.4]	30.5 [19.3; 44.3]	23.5 [11.6 ; 38.1] ***
Guinea-Bissau	15.1 [5.7; 31.8]	31.1 [19.8; 46.1]	15.5 [-0.3 ; 31.7] **
Liberia	17.6 [11.5; 25.7]	27 [19.1; 36.5]	9.3 [-1.3 ; 20.3] **
Mali	13 [8.1; 19.7]	24.2 [16; 34.9]	11.1 [0.8 ; 22.8] **
Mauritania	9.7 [5.9; 15.1]	28.1 [18.3; 40.6]	18.3 [7.6 ; 31.2] ***
Niger	16.7 [10.8; 25.1]	39 [26.9; 52.6]	22 [7.2 ; 37.2] ***
Nigeria	25.5 [20.5; 31.6]	40.4 [32.8; 48.8]	14.7 [5.2 ; 24.3] ***
Senegal	17.7 [12.7; 23.9]	27.7 [22.3; 34.4]	10 [1.8 ; 18] ***
Sierra Leone	8.7 [4.5; 16.3]	20.3 [14.2; 28.4]	11.4 [2.5 ; 20.1] ***
Togo	37 [26.9; 48.6]	31.6 [24.9; 40]	-5.4 [-18.5 ; 7.4]
Asia	79.5 [76.1; 82.2]	85.9 [82.6; 88.6]	6.4 [2.1 ; 10.6] ***
Central Asia	74.4 [64.9; 82.2]	82.8 [76.2; 88]	8.4 [-1.9 ; 19.2] *
Kazakhstan	75.5 [60.7; 87.1]	79.8 [65.9; 89.9]	4.1 [-13.5 ; 22.3]
Kyrgyzstan	78 [61; 90]	80.2 [65.9; 90.7]	1.9 [-16.7 ; 22]
Tajikistan	50.8 [25.8; 75]	65 [49.8; 78.9]	13.8 [-12.1 ; 42.3]
Turkmenistan	79 [57.7; 92.1]	87.5 [73; 95.3]	7.9 [-10.8 ; 32.4]
Uzbekistan	76.5 [59.3; 88.6]	87.7 [76.9; 94.5]	11 [-5 ; 29.9] *
Eastern Asia	92.5 [87.3; 95.6]	95.1 [90.8; 97.3]	2.5 [-2 ; 7.6]
China	93.5 [88; 96.8]	96.2 [91.6; 98.4]	2.5 [-2.3 ; 8.1]
China, Hong Kong SAR	95.7 [92; 98]	94.1 [87.8; 97.4]	-1.6 [-7.3 ; 2.2]
Democratic People's Republic of Korea	81.8 [71.6; 89.8]	87.8 [74; 95.5]	5.8 [-8.1 ; 17.4]
Japan	79.5 [71.4; 87.1]	75.9 [60.5; 88.1]	-3.6 [-18.1 ; 8.6]
Mongolia	78.5 [63; 89.3]	81.6 [71.4; 89.5]	3.1 [-10.5 ; 19.7]
Republic of Korea	92.4 [86.2; 96.4]	93.4 [87.3; 97]	1 [-3.8 ; 5.8]
South-Eastern Asia	71.9 [68.3; 75.5]	82 [77.5; 85.8]	10 [4.4 ; 15.3] ***
Cambodia	20.8 [10.7; 35.4]	67.6 [62.1; 72.9]	46.7 [30.9 ; 58.7] ***
Indonesia	73.7 [67.6; 79.6]	82.1 [72.2; 89.5]	8.4 [-3.1 ; 18.2] *
Lao People's Democratic Republic	30.4 [19.4; 44.8]	66.7 [51.2; 80.6]	35.9 [16.3 ; 53.9] ***
Malaysia	73.8 [60; 85.1]	76.5 [59.2; 89.2]	2.7 [-13.7 ; 17.8]
Myanmar	38.5 [28.4; 50.5]	69.4 [57.4; 80.5]	30.6 [16.3 ; 44.2] ***
Philippines	60 [48.9; 71.1]	68.7 [61.5; 75.3]	8.7 [-4.4 ; 21.9] *
Singapore	84.7 [73.6; 92.4]	84.7 [66.8; 94.7]	0.1 [-16.4 ; 12.8]
Thailand	87.2 [80.3; 92]	93.8 [89.5; 96.5]	6.5 [0.2 ; 14] **
Timor-Leste	53.4 [44.9; 61.6]	44.9 [37.2; 53]	-8.4 [-19.8 ; 3.2] '
Viet Nam	77.4 [68.7; 85.1]	92.7 [89.3; 95.2]	15.1 [7 ; 24.3] ***
Southern Asia	64.2 [57.3; 70.9]	78.4 [70.7; 84.6]	14.1 [3.9 ; 23.5] ***
Afghanistan	16.5 [7.8; 30.9]	43 [33.2; 55.4]	26.1 [12.6 ; 39.2] ***
Bangladesh	57.1 [47.8; 65.9]	82.4 [76.8; 87.1]	25.2 [15 ; 35.6] ***
Bhutan	32.4 [18.3; 50.5]	83.8 [76.5; 89.8]	51.1 [33.4 ; 65.8] ***
India	67.2 [58.5; 75.6]	80 [69.6; 88.3]	12.7 [-0.3 ; 24.9] **
Iran (Islamic Republic of)	76.5 [66.8; 85.3]	89.6 [76.8; 96.1]	12.7 [-0.5 ; 23.5] **
Maldives	48 [37.9; 59.3]	56.1 [47.7; 64.7]	7.9 [-5.4 ; 21.2]
Nepal	35.7 [28; 44.4]	65 [57.8; 72]	29.2 [18.1 ; 39.8] ***
Pakistan	28.8 [24.5; 33.7]	55.5 [44.1; 67.5]	26.6 [14.3 ; 39.3] ***
Sri Lanka	86.2 [78.8; 91.6]	90.8 [82.6; 95.6]	4.5 [-5.2 ; 13.4]
Western Asia	66.8 [61.9; 71.2]	77.5 [73.2; 81.4]	10.7 [5.2 ; 16.3] ***
Armenia	71 [57; 82.9]	74.5 [66.7; 81.9]	3.6 [-10.5 ; 19.1]
Azerbaijan	68 [45.3; 86.4]	78.6 [65.9; 88.5]	10.3 [-11 ; 35]
Bahrain	75.5 [64.4; 85.2]	84.9 [65.8; 95.2]	8.8 [-9.5 ; 23.4]
Georgia	55 [32.6; 76.5]	73.9 [57.1; 87.2]	18.3 [-4.8 ; 44.2] *
Iraq	36.4 [25.9; 50.1]	71.4 [59.9; 81.9]	34.5 [21.1 ; 46.7] ***
Israel	85.3 [70.9; 94]	88.6 [69.3; 97.2]	3.1 [-13.4 ; 15.9]
Jordan	61 [55.1; 67.1]	80.8 [74.2; 86.6]	19.7 [11 ; 27.9] ***
Kuwait	60.6 [48.1; 73.6]	76 [56.9; 90.2]	15 [-5 ; 32.6] *

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Table 13 – continued from previous page

	1990	2010	Change 1990-2010
Lebanon	82 [69.5; 91.2]	81.4 [66.3; 91.8]	-0.6 [-16.4 ; 14.2]
State of Palestine	61.3 [43.1; 78.2]	74.9 [60.3; 86.6]	13.3 [-6.3 ; 33.7] *
Oman	28.9 [19.6; 42.3]	68.3 [48.4; 86.1]	38.8 [17.9 ; 58.2] ***
Qatar	57.2 [43.8; 71.2]	74 [53.8; 89.3]	16.3 [-4.5 ; 35.6] *
Saudi Arabia	46.7 [30; 65]	56.5 [38.7; 75.7]	9.5 [-12.6 ; 33]
Syrian Arab Republic	58.9 [45; 72.8]	78.6 [63.2; 89.6]	19.2 [1.8 ; 35.6] **
Turkey	80.8 [73.6; 86.9]	89.3 [82.3; 94]	8.3 [-0.8 ; 17.2] **
United Arab Emirates	44.4 [28.4; 62.5]	66.9 [45; 86.5]	21.8 [-2.8 ; 48] **
Yemen	17.8 [12.1; 25.2]	53.4 [39; 68.7]	35.4 [19.6 ; 51.5] ***
Europe	85.9 [82.4; 88.8]	88.6 [85.5; 91.1]	2.7 [-0.6 ; 6.1] *
Eastern Europe	83.9 [77.3; 89.1]	89.6 [84.6; 92.9]	5.6 [0.3 ; 11.7] **
Belarus	76.7 [60; 89]	86.5 [73.1; 94.6]	9.2 [-6 ; 26.7]
Bulgaria	90.4 [80.3; 96]	85.5 [68.2; 95]	-4.5 [-21.1 ; 6.9]
Czech Republic	87.9 [78.5; 93.8]	87.6 [71.5; 95.8]	-0.3 [-15.4 ; 10.5]
Hungary	91.1 [83.2; 95.7]	90.7 [75.5; 97.3]	-0.3 [-14.3 ; 8.2]
Poland	87.2 [75.7; 94.5]	87.5 [68.6; 96.4]	0.2 [-16.4 ; 11.8]
Republic of Moldova	86.2 [72.1; 94.2]	85.3 [74.5; 92.6]	-0.7 [-14.1 ; 14.6]
Romania	81.5 [67.7; 91]	88 [75.4; 95.1]	6.1 [-6.9 ; 20.4]
Russian Federation	82.4 [69.6; 91.5]	92.7 [84.2; 97]	9.8 [1.2 ; 21.4] **
Slovakia	87.5 [75.8; 94.7]	88.6 [72; 96.5]	1 [-13.7 ; 12.4]
Ukraine	85.1 [69.9; 94.1]	86.3 [77.6; 92.3]	1.1 [-11 ; 17]
Northern Europe	89.6 [83.9; 93.3]	92 [87.3; 95]	2.4 [-1.3 ; 6.6] *
Denmark	89.5 [78.6; 95.6]	88.9 [70.8; 96.9]	-0.6 [-15.9 ; 9.5]
Estonia	82.6 [66.6; 92.8]	84.3 [64.9; 95]	1.4 [-16.2 ; 17.7]
Finland	90.7 [81.8; 95.9]	90.7 [74; 97.4]	-0.1 [-14.8 ; 8.5]
Ireland	87.8 [72.3; 95.6]	85.3 [70.1; 94.2]	-2.3 [-16.3 ; 12.4]
Latvia	84.4 [70; 93.2]	85.5 [67.6; 95.4]	1.2 [-16.2 ; 16.4]
Lithuania	75.3 [59; 87.9]	79.5 [59.3; 92.6]	4 [-15.9 ; 21.9]
Norway	90.4 [80.8; 96]	93.7 [84.2; 97.8]	3 [-4.9 ; 11.3]
Sweden	88.8 [76.1; 95.6]	88.3 [71.3; 96.5]	-0.3 [-15.7 ; 11.6]
United Kingdom	91.3 [83; 96]	94.7 [88.2; 97.8]	3.2 [-1.6 ; 9.4] *
Southern Europe	83.1 [76.4; 88.3]	84.1 [76.6; 89.5]	1 [-6.6 ; 8.4]
Albania	85.7 [69.5; 94.9]	82.4 [72.9; 89.4]	-3.4 [-15.8 ; 13.5]
Bosnia and Herzegovina	72.7 [52.7; 88.7]	70.6 [51.4; 86.8]	-1.8 [-22.4 ; 19]
Croatia	83.5 [61.7; 95.3]	85.1 [62.8; 96.4]	1.5 [-15.6 ; 18.1]
Greece	86.7 [72.6; 94.7]	86.5 [70; 95.3]	-0.2 [-15.5 ; 13.5]
Italy	82.4 [67; 92.3]	84.4 [65.9; 94.8]	1.9 [-16 ; 18.2]
Malta	95.5 [89.5; 98.3]	94.6 [83.6; 98.5]	-0.8 [-10.7 ; 4.6]
Montenegro	76.4 [57.3; 90.4]	72.6 [54.1; 87.9]	-3.5 [-23.1 ; 16]
Portugal	90.5 [79.6; 96.1]	92.8 [82.1; 97.3]	2.1 [-7.6 ; 12.3]
Serbia	81.6 [64; 93]	81.7 [72.3; 89.4]	0.2 [-12.7 ; 17.2]
Slovenia	90.7 [80.8; 96.1]	90.6 [75.4; 97.1]	-0.1 [-14.3 ; 10]
Spain	83.1 [71.3; 91.5]	83.5 [71.6; 91.7]	0.5 [-12.8 ; 13.7]
The former Yugoslav Republic of Macedonia	79.3 [56.1; 93.9]	82.6 [59; 95.6]	3.1 [-15.1 ; 21.3]
Western Europe	90.5 [85.3; 94.1]	89.5 [81.5; 94.2]	-0.9 [-8.2 ; 4.3]
Austria	76.9 [59.5; 90]	80.4 [59.9; 93.3]	3.3 [-16.7 ; 21.9]
Belgium	90.9 [82.5; 95.9]	89.9 [78.3; 96.1]	-1 [-12.2 ; 8.2]
France	93.7 [87.9; 97]	93 [84.3; 97.2]	-0.7 [-9.2 ; 5.7]
Germany	89.4 [79.3; 95.5]	89 [71.5; 96.9]	-0.3 [-16.5 ; 10]
Netherlands	91.4 [83.3; 96.3]	86.5 [75; 94]	-4.7 [-14.2 ; 2.5] '
Switzerland	92.2 [83.6; 97]	92.1 [78.3; 97.9]	-0.1 [-12.7 ; 8.3]
Latin America and the Caribbean	78.4 [74.5; 81.6]	87.6 [84.1; 90.2]	9.1 [4.5 ; 13.8] ***
Caribbean	72.9 [68.5; 76.6]	78.2 [73.1; 82.6]	5.3 [-0.7 ; 11] **
Anguilla	61.5 [35.9; 83.6]	71.5 [51.9; 87.5]	9.5 [-14.1 ; 35.7]
Antigua and Barbuda	73.5 [58.2; 86]	81.5 [59.6; 94.6]	7.7 [-12 ; 23.9]
Bahamas	80 [65.6; 90.4]	85 [64.1; 95.7]	4.6 [-13.7 ; 19.1]
Barbados	75.2 [60.8; 86.8]	82.2 [60.7; 94.8]	6.8 [-12.6 ; 22.1]
Cuba	86.9 [77.2; 93.3]	88.3 [76.2; 95.2]	1.4 [-10.7 ; 11.9]
Dominica	73.2 [57.2; 86.6]	81.2 [59.9; 94.3]	7.5 [-11.8 ; 24]
Dominican Republic	74.2 [67.6; 80.1]	84.9 [76.1; 91.3]	10.6 [0 ; 20] **
Grenada	72.3 [59.4; 83.7]	82 [60.2; 95]	9.2 [-11.3 ; 25.5]
Guadeloupe	66 [43.8; 86.3]	77.7 [52.1; 94.1]	10.6 [-10.3 ; 30.8]
Haiti	20.8 [16; 26.5]	49.3 [36.4; 63.6]	28.4 [14.6 ; 43.6] ***
Jamaica	75.6 [66.7; 83.6]	86.5 [73; 94.4]	10.6 [-3.5 ; 22.4] *
Martinique	69.7 [48.1; 87.8]	79.5 [54.8; 94.4]	9.1 [-10.5 ; 28.1]
Montserrat	75.6 [57; 89.1]	82.4 [59.6; 95.3]	6.5 [-13 ; 23.5]
Puerto Rico	91.1 [82.8; 95.9]	93.3 [83.4; 97.7]	2.1 [-7.3 ; 10.8]
Saint Kitts and Nevis	67.6 [49.3; 83.8]	78.4 [55.1; 93.8]	10.4 [-9.9 ; 28.6]
Saint Lucia	69.4 [53.8; 83]	79.2 [56.7; 93.4]	9.3 [-10.9 ; 26.8]
Saint Vincent and the Grenadines	78 [63.6; 89.3]	83.7 [62.7; 95.3]	5.4 [-13.1 ; 20.6]
Trinidad and Tobago	73.2 [62.7; 82.3]	70.5 [55.4; 83.8]	-2.6 [-19.3 ; 13.5]
United States Virgin Islands	83.7 [61.6; 94.8]	89.4 [75; 96.5]	5.3 [-9.1 ; 26.1]
Central America	72.7 [66.6; 78.3]	85.2 [77.5; 90.5]	12.4 [3.1 ; 20.4] ***
Belize	63 [50; 75.4]	67.6 [50.9; 82.5]	4.5 [-14.3 ; 22.3]
Costa Rica	90 [83.1; 94.6]	94.5 [91.1; 96.9]	4.5 [-0.2 ; 10.8] **
El Salvador	72.4 [59.9; 83.3]	89.3 [79.4; 95.1]	16.4 [5.8 ; 27.9] ***
Guatemala	48.7 [38.6; 59.3]	69.3 [52.3; 84.1]	20.5 [0.9 ; 38.5] **
Honduras	63.6 [52.6; 74.4]	81.7 [69.2; 90.6]	17.8 [1.8 ; 32.4] **
Mexico	74.7 [67; 81.6]	86.9 [76.9; 93.4]	12 [0.2 ; 22.1] **
Nicaragua	63.4 [53.1; 73.6]	87.5 [77.8; 93.8]	23.9 [10 ; 36.2] ***
Panama	76.5 [60.8; 88.9]	73.4 [62.8; 83.4]	-3.1 [-17.2 ; 12.9]
South America	81.1 [75.9; 85.1]	89.5 [85.2; 92.5]	8.4 [2.5 ; 14.5] ***
Argentina	72.8 [46.2; 89.7]	86.9 [73.2; 94.8]	13.6 [-6.1 ; 41.9] *
Bolivia (Plurinational State of)	50.2 [42.3; 58.3]	75.1 [65; 83.5]	24.8 [11.8 ; 36.6] ***
Brazil	86.1 [77.9; 91.8]	91.5 [84.1; 95.8]	5.3 [-4 ; 14.8]
Chile	72.6 [47.4; 89.7]	82.2 [65.7; 92.9]	8.8 [-11.4 ; 35.2]
Colombia	83.2 [79.9; 86.1]	90.4 [86.3; 93.5]	7.3 [2.2 ; 11.7] ***
Ecuador	73.1 [65.9; 79.5]	88.9 [77.8; 95.3]	15.6 [3.3 ; 25.5] ***
Guyana	54.7 [42.8; 67.5]	58.1 [50; 66.2]	3.4 [-11.3 ; 17.5]
Paraguay	72.2 [67; 77]	92.7 [86.1; 96.4]	20.3 [12.7 ; 26.7] ***
Peru	70.5 [63.3; 77.2]	91.3 [89.1; 93]	20.7 [13.7 ; 28.2] ***
Suriname	62.1 [45.4; 77.9]	69.8 [54.2; 83.5]	7.6 [-12.1 ; 27.8]
Uruguay	93.7 [87.5; 97.2]	91.5 [80.7; 96.9]	-2.2 [-12.5 ; 4.8]
Venezuela (Bolivarian Republic of)	75.6 [63.8; 85.8]	85.5 [69.4; 94.7]	9.6 [-8.4 ; 24.3]
Northern America	90.6 [84.8; 94.4]	92.6 [85.8; 96.3]	1.9 [-3.9 ; 7]
Canada	90.5 [81.5; 95.8]	90.2 [77.3; 96.6]	-0.3 [-12.3 ; 8.9]
United States of America	90.7 [84.3; 94.8]	92.9 [85.4; 96.9]	2.2 [-4.2 ; 7.8]
Oceania	80.6 [73.1; 86.4]	79.6 [70.4; 86.6]	-0.9 [-9.5 ; 7.1]
Australia and New Zealand	88.4 [79.6; 94]	87.2 [75.8; 94.1]	-1.2 [-11.3 ; 7.4]
Australia	88.6 [78.2; 95]	87 [73; 94.9]	-1.7 [-13.9 ; 8.6]
New Zealand	88.2 [75.4; 95.3]	89.1 [72.9; 96.8]	0.9 [-14.1 ; 13.1]
Melanesia	50.2 [37.1; 64.7]	61 [45.7; 76.2]	10.4 [-6.4 ; 28]
Fiji	67 [44.7; 87.2]	73.4 [47.3; 93]	5.9 [-15 ; 25.5]
Papua New Guinea	46.1 [30; 63.9]	59.1 [40.7; 77.2]	12.4 [-8.8 ; 34.9]
Solomon Islands	51.8 [28.8; 73.7]	61.8 [46.6; 76.7]	9.7 [-13.2 ; 34.7]
Vanuatu	52.8 [38.8; 68.4]	63.7 [47.9; 78.8]	10.7 [-6.6 ; 28]

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Table 13 – continued from previous page

	1990	2010	Change 1990-2010
Micronesia	61.4 [46.7; 75.1]	72.2 [59.1; 82.6]	10.4 [-3.9 ; 25.5] *
Guam	66.3 [42.9; 85.7]	77.2 [56.2; 91.5]	10.3 [-11.5 ; 33.2]
Kiribati	54.1 [33.6; 74.4]	64.5 [44.3; 83.1]	10.1 [-13 ; 34.6]
Marshall Islands	57.1 [41.5; 73.2]	71.3 [57.5; 83.4]	13.9 [-3.5 ; 30.9] *
Nauru	49.7 [27.3; 72.7]	58.6 [43.7; 73.8]	8.7 [-14.3 ; 32.6]
Northern Mariana Islands	53.7 [32.3; 77.5]	64.6 [38.9; 88.7]	10.5 [-10.9 ; 31.8]
Palau	51.1 [29.2; 73.8]	61 [41.6; 80]	9.6 [-14.1 ; 34.7]
Polynesia	37.6 [24.5; 53.1]	41.9 [35.4; 49.1]	4.4 [-11.9 ; 19.2]
Cook Islands	73 [56; 86.5]	75 [54.1; 90.1]	1.7 [-20.3 ; 23]
Samoa	33.7 [18.6; 51.7]	38.4 [31.3; 46.3]	4.8 [-14 ; 21.6]
Tuvalu	43 [20.1; 66.2]	51.7 [37.9; 66.2]	8.5 [-15.1 ; 33.4]

Table 13: **Estimates of satisfied demand for family planning for 1990 and 2010, and the median absolute percentage point change (1990-2010) for the world, developed countries, developing countries (incl. and excl. China), all subregions and all countries, with 95% uncertainty intervals.** Symbols with the median absolute percentage point change: Probability that the change was positive: * >0.9, ** >0.95, *** >0.99. Probability that the change was negative: ′ >0.9, ″ >0.95, ‴ >0.99.

	Year	Total contraceptive use	Unmet need	Total Demand	Unmet need for modern methods
World	2010	753,000 [719,000; 785,000]	146,000 [130,000; 166,000]	900,000 [876,000; 922,000]	221,000 [202,000; 243,000]
	2015	808,000 [754,000; 855,000]	153,000 [130,000; 182,000]	962,000 [927,000; 992,000]	233,000 [205,000; 267,000]
Developed countries	2010	116,000 [110,000; 121,000]	15,000 [12,100; 18,700]	131,000 [127,000; 134,000]	30,400 [25,600; 36,400]
	2015	113,000 [105,000; 119,000]	14,900 [11,700; 19,200]	128,000 [123,000; 132,000]	28,500 [23,400; 35,200]
Developing countries	2010	638,000 [604,000; 669,000]	131,000 [115,000; 150,000]	769,000 [746,000; 790,000]	191,000 [172,000; 212,000]
	2015	695,000 [642,000; 742,000]	138,000 [116,000; 166,000]	834,000 [800,000; 864,000]	204,000 [178,000; 237,000]
Developing (excl. China)	2010	410,000 [382,000; 436,000]	122,000 [107,000; 139,000]	532,000 [513,000; 548,000]	179,000 [162,000; 198,000]
	2015	466,000 [421,000; 506,000]	127,000 [107,000; 153,000]	594,000 [566,000; 618,000]	191,000 [167,000; 221,000]
Africa	2010	48,700 [46,200; 51,200]	36,600 [34,500; 38,800]	85,300 [82,800; 87,900]	45,400 [43,100; 47,800]
	2015	63,100 [58,200; 68,200]	41,100 [37,800; 44,900]	104,000 [99,600; 109,000]	51,700 [47,900; 55,900]
Eastern Africa	2010	16,200 [15,100; 17,300]	13,000 [12,200; 14,000]	29,200 [28,200; 30,200]	15,400 [14,500; 16,400]
	2015	22,900 [20,100; 25,900]	14,100 [12,300; 16,000]	37,100 [34,800; 39,200]	17,000 [15,200; 18,900]
Burundi	2010	259 [217; 308]	344 [236; 468]	604 [489; 734]	398 [288; 525]
	2015	384 [244; 558]	380 [253; 524]	773 [594; 944]	442 [308; 592]
Comoros	2010	41.2 [23.5; 64.0]	28.9 [16.0; 41.1]	71.1 [55.9; 82.7]	37.0 [24.3; 50.7]
	2015	53.8 [29.1; 82.4]	28.8 [12.5; 44.5]	83.7 [65.1; 97.1]	37.7 [21.5; 55.7]
Djibouti	2010	25.0 [15.1; 39.3]	31.3 [19.4; 45.3]	57.2 [41.4; 73.0]	34.2 [21.9; 47.9]
	2015	38.9 [20.2; 66.5]	32.9 [18.2; 49.2]	73.5 [52.3; 91.7]	36.5 [22.5; 52.8]
Eritrea	2010	135.0 [71.5; 241.0]	263 [192; 344]	403 [299; 522]	302 [223; 391]
	2015	217 [106; 412]	309 [216; 416]	537 [381; 707]	361 [257; 483]
Ethiopia	2010	3,420 [2,910; 3,960]	3,470 [3,090; 3,980]	6,900 [6,420; 7,470]	3,600 [3,230; 4,120]
	2015	5,470 [3,590; 7,610]	3,850 [2,670; 5,050]	9,400 [7,680; 10,800]	4,060 [2,910; 5,240]
Kenya	2010	2,800 [2,230; 3,380]	1,460 [1,090; 1,850]	4,280 [3,900; 4,600]	1,830 [1,460; 2,220]
	2015	3,630 [2,560; 4,620]	1,480 [842; 2,180]	5,120 [4,480; 5,610]	1,910 [1,240; 2,640]
Madagascar	2010	1,230 [949; 1,550]	624 [468; 791]	1,860 [1,620; 2,080]	929 [746; 1,160]
	2015	1,670 [1,110; 2,250]	687 [394; 994]	2,370 [1,940; 2,710]	1,010 [691; 1,440]
Malawi	2010	1,030 [915; 1,140]	612 [532; 689]	1,640 [1,560; 1,710]	682 [605; 758]
	2015	1,390 [1,010; 1,760]	608 [375; 860]	2,010 [1,770; 2,180]	693 [462; 940]
Mauritius	2010	178 [145; 202]	14.90 [5.73; 33.50]	194 [173; 210]	76.7 [41.0; 125.0]
	2015	177 [139; 204]	15.00 [5.02; 36.10]	193 [169; 211]	67.5 [31.5; 121.0]
Mozambique	2010	510 [397; 651]	915 [654; 1,230]	1,430 [1,130; 1,760]	972 [711; 1,280]
	2015	754 [485; 1,140]	1,070 [743; 1,490]	1,840 [1,380; 2,360]	1,140 [804; 1,560]
Reunion	2010	73.7 [55.4; 87.2]	9.12 [3.08; 20.70]	83.4 [72.5; 91.4]	12.50 [5.15; 24.50]
	2015	74.4 [54.5; 89.0]	8.96 [2.70; 21.40]	84.0 [72.4; 92.4]	12.20 [4.69; 25.60]
Rwanda	2010	652 [574; 721]	271 [233; 319]	924 [871; 972]	381 [338; 435]
	2015	833 [617; 1,040]	289 [168; 425]	1,130 [986; 1,230]	395 [267; 548]
Somalia	2010	253 [120; 503]	406 [248; 595]	678 [442; 919]	634 [407; 869]
	2015	388 [170; 758]	440 [254; 650]	852 [558; 1,120]	726 [461; 999]
South Sudan	2010	82.6 [29.9; 155.0]	491 [289; 755]	576 [363; 849]	547 [338; 814]
	2015	165.0 [58.3; 379.0]	602 [363; 902]	781 [489; 1,140]	698 [432; 1,030]
Uganda	2010	1,260 [1,020; 1,530]	1,590 [1,290; 1,900]	2,860 [2,520; 3,180]	1,780 [1,480; 2,080]
	2015	1,930 [1,340; 2,610]	1,690 [1,210; 2,180]	3,650 [3,080; 4,120]	1,940 [1,470; 2,420]
United Republic of Tanzania	2010	2,330 [1,860; 2,860]	1,730 [1,420; 2,060]	4,080 [3,650; 4,470]	2,190 [1,860; 2,540]
	2015	3,240 [2,170; 4,460]	1,820 [1,180; 2,480]	5,110 [4,210; 5,840]	2,370 [1,710; 3,100]
Zambia	2010	765 [567; 982]	445 [313; 570]	1,220 [1,070; 1,340]	658 [519; 820]
	2015	1,020 [678; 1,360]	443 [242; 655]	1,470 [1,240; 1,640]	682 [454; 948]
Zimbabwe	2010	1,060 [972; 1,150]	287 [212; 375]	1,350 [1,270; 1,430]	312 [238; 401]
	2015	1,360 [1,070; 1,630]	318 [170; 512]	1,690 [1,510; 1,830]	351 [203; 541]
Middle Africa	2010	3,810 [3,230; 4,520]	5,110 [4,360; 5,940]	8,940 [8,010; 9,920]	7,300 [6,440; 8,230]
	2015	5,390 [4,110; 7,040]	5,960 [4,860; 7,160]	11,400 [9,760; 13,100]	8,720 [7,310; 10,200]
Angola	2010	410 [197; 825]	913 [546; 1,380]	1,350 [881; 1,910]	1,050 [649; 1,550]
	2015	632 [287; 1,330]	1,080 [645; 1,610]	1,760 [1,130; 2,470]	1,270 [790; 1,850]
Cameroon	2010	838 [654; 1,060]	729 [534; 955]	1,580 [1,310; 1,860]	1,110 [870; 1,390]
	2015	1,130 [750; 1,580]	820 [563; 1,130]	1,970 [1,530; 2,390]	1,280 [939; 1,680]
Central African Republic	2010	194 [115; 306]	167 [109; 240]	367 [266; 468]	278 [193; 375]
	2015	260 [141; 429]	186 [113; 275]	454 [323; 581]	315 [211; 440]
Chad	2010	107.0 [57.3; 198.0]	423 [304; 569]	534 [394; 710]	468 [342; 626]
	2015	180.0 [84.3; 382.0]	515 [351; 725]	705 [488; 992]	586 [403; 820]
Congo	2010	251 [204; 302]	112.0 [79.6; 149.0]	364 [321; 403]	258 [213; 305]
	2015	303 [220; 389]	117.0 [69.6; 173.0]	423 [357; 478]	271 [198; 349]
Democratic Republic of the Congo	2010	1,850 [1,420; 2,410]	2,660 [2,100; 3,270]	4,530 [3,840; 5,250]	3,970 [3,310; 4,680]
	2015	2,660 [1,660; 4,050]	3,110 [2,240; 4,100]	5,840 [4,470; 7,180]	4,810 [3,620; 6,060]
Equatorial Guinea	2010	20.00 [9.55; 38.50]	29.2 [17.6; 43.6]	50.4 [32.8; 69.4]	37.3 [23.3; 53.9]
	2015	27.6 [12.5; 54.0]	31.9 [18.6; 48.1]	61.5 [39.8; 82.8]	42.0 [26.1; 61.1]
Gabon	2010	84.2 [48.8; 128.0]	55.8 [32.1; 78.4]	142 [111; 167]	96.4 [68.7; 127.0]
	2015	106.0 [58.7; 162.0]	59.0 [28.4; 88.2]	167 [128; 197]	104.0 [67.5; 144.0]
Sao Tome and Principe	2010	8.64 [6.67; 10.90]	8.34 [6.70; 9.90]	17.0 [15.5; 18.3]	9.20 [7.63; 10.70]
	2015	11.00 [7.24; 15.20]	8.50 [5.56; 11.30]	19.6 [16.9; 21.7]	9.58 [6.76; 12.40]
Northern Africa	2010	17,600 [15,900; 19,200]	4,870 [3,860; 6,000]	22,500 [21,200; 23,700]	6,610 [5,510; 7,860]
	2015	20,200 [17,400; 22,700]	5,280 [3,890; 6,910]	25,500 [23,600; 27,300]	7,230 [5,650; 9,020]
Algeria	2010	3,680 [2,910; 4,370]	775 [361; 1,390]	4,490 [3,920; 4,940]	1,250 [743; 1,900]
	2015	4,230 [3,130; 5,160]	788 [314; 1,580]	5,060 [4,340; 5,610]	1,300 [685; 2,180]
Egypt	2010	8,450 [7,160; 9,610]	1,570 [1,040; 2,260]	10,000 [9,200; 10,800]	1,970 [1,420; 2,660]
	2015	9,690 [7,410; 11,700]	1,690 [817; 2,930]	11,400 [9,970; 12,600]	2,160 [1,240; 3,420]
Libya	2010	506 [319; 680]	147.0 [54.3; 275.0]	659 [525; 757]	290 [158; 454]
	2015	597 [367; 798]	151.0 [49.8; 301.0]	757 [599; 867]	305 [151; 505]
Morocco	2010	3,200 [2,460; 3,830]	534 [250; 950]	3,740 [3,290; 4,110]	999 [591; 1,570]
	2015	3,530 [2,580; 4,290]	526 [202; 1,060]	4,080 [3,510; 4,530]	1,010 [523; 1,770]
Sudan	2010	636 [427; 934]	1,560 [1,080; 2,110]	2,210 [1,660; 2,820]	1,670 [1,170; 2,230]
	2015	988 [556; 1,650]	1,800 [1,220; 2,460]	2,820 [2,030; 3,670]	1,960 [1,340; 2,660]
Tunisia	2010	1,120 [888; 1,330]	214 [102; 387]	1,340 [1,180; 1,470]	381 [234; 583]
	2015	1,240 [920; 1,500]	216.0 [85.9; 429.0]	1,460 [1,260; 1,620]	388 [209; 651]
Southern Africa	2010	3,630 [2,890; 4,290]	802 [472; 1,240]	4,450 [4,010; 4,810]	852 [522; 1,280]
	2015	3,870 [2,940; 4,620]	772 [406; 1,330]	4,660 [4,120; 5,080]	833 [464; 1,380]
Botswana	2010	99.6 [73.0; 125.0]	34.9 [19.2; 54.6]	135 [116; 151]	38.0 [22.1; 57.5]
	2015	115.0 [78.7; 148.0]	34.3 [16.0; 58.2]	150 [126; 168]	38.1 [19.5; 61.5]
Lesotho	2010	140 [117; 163]	68.2 [53.8; 83.3]	208 [192; 222]	71.5 [57.7; 86.3]
	2015	169 [122; 214]	65.4 [38.1; 96.4]	236 [206; 259]	69.5 [42.8; 100.0]
Namibia	2010	118.0 [91.4; 143.0]	40.4 [25.0; 57.7]	159 [143; 172]	42.2 [27.2; 59.3]
	2015	139.0 [99.2; 175.0]	39.7 [18.8; 65.6]	180 [156; 198]	42.0 [21.3; 67.7]
South Africa	2010	3,200 [2,460; 3,850]	637 [309; 1,080]	3,850 [3,410; 4,210]	675 [348; 1,110]
	2015	3,350 [2,440; 4,110]	609 [249; 1,170]	3,990 [3,450; 4,400]	656 [291; 1,200]
Swaziland	2010	78.5 [70.4; 85.0]	20.8 [15.5; 27.4]	99.4 [93.9; 104.0]	23.7 [18.5; 30.1]
	2015	92.3 [72.5; 109.0]	20.8 [10.7; 34.7]	113 [103; 122]	24.5 [14.3; 38.0]
Western Africa	2010	7,530 [6,540; 8,680]	12,700 [11,500; 14,100]	20,300 [18,700; 22,000]	15,200 [13,800; 16,700]
	2015	10,600 [8,450; 13,500]	14,900 [12,900; 17,400]	25,600 [22,600; 29,100]	17,800 [15,400; 20,600]
Benin	2010	289 [180; 444]	421 [329; 528]	717 [570; 871]	578 [455; 717]
	2015	401 [221; 663]	485 [347; 641]	900 [674; 1,130]	661 [485; 867]
Burkina Faso	2010	501 [421; 597]	900 [673; 1,160]	1,400 [1,150; 1,670]	953 [724; 1,210]
	2015	712 [446; 1,080]	1,030 [742; 1,370]	1,760 [1,350; 2,190]	1,100 [802; 1,440]
Cape Verde	2010	36.7 [28.5; 44.2]	8.98 [4.80; 14.20]	45.9 [41.3; 49.5]	11.50 [7.11; 16.90]

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Table 14 – continued from previous page

	Year	Total contraceptive use	Unmet need	Total Demand	Unmet need for modern methods
	2015	41.5 [29.6; 51.2]	8.92 [3.77; 16.50]	50.7 [44.2; 55.6]	11.60 [5.98; 19.50]
Cote d'Ivoire	2010	503 [297; 820]	866 [617; 1,140]	1,390 [1,040; 1,750]	1,050 [766; 1,370]
	2015	723 [375; 1,280]	1,000 [681; 1,350]	1,760 [1,270; 2,250]	1,220 [860; 1,630]
Gambia	2010	67.3 [37.6; 112.0]	101 [63; 147]	171 [120; 223]	111.0 [72.5; 157.0]
	2015	92.7 [47.7; 163.0]	115.0 [70.2; 168.0]	213 [148; 273]	127.0 [81.7; 179.0]
Ghana	2010	887 [647; 1,180]	1,310 [1,090; 1,530]	2,200 [1,920; 2,470]	1,530 [1,310; 1,760]
	2015	1,170 [718; 1,770]	1,410 [1,050; 1,770]	2,600 [2,090; 3,040]	1,660 [1,290; 2,060]
Guinea	2010	190 [109; 330]	434 [323; 565]	630 [480; 817]	513 [385; 667]
	2015	298 [145; 603]	524 [368; 717]	839 [588; 1,160]	632 [446; 865]
Guinea-Bissau	2010	32.1 [20.3; 49.3]	71.3 [43.8; 105.0]	104.0 [72.7; 139.0]	83.3 [54.1; 118.0]
	2015	46.0 [25.2; 80.4]	81.5 [50.4; 119.0]	130.0 [88.9; 174.0]	96.2 [61.5; 135.0]
Liberia	2010	81.4 [54.2; 120.0]	221 [178; 267]	304 [252; 360]	226 [183; 272]
	2015	117.0 [66.3; 197.0]	248 [188; 316]	370 [283; 461]	255 [194; 323]
Mali	2010	272 [169; 434]	854 [658; 1,070]	1,130 [895; 1,400]	882 [685; 1,100]
	2015	416 [222; 764]	1,000 [729; 1,330]	1,440 [1,060; 1,890]	1,040 [760; 1,380]
Mauritania	2010	63.5 [38.8; 101.0]	163 [118; 214]	228 [173; 289]	175 [128; 227]
	2015	94.4 [49.1; 173.0]	184 [129; 245]	283 [204; 367]	198 [141; 261]
Niger	2010	348 [211; 562]	544 [404; 717]	899 [686; 1,170]	696 [524; 915]
	2015	532 [281; 967]	699 [483; 980]	1,250 [878; 1,720]	900 [626; 1,260]
Nigeria	2010	3,680 [2,860; 4,710]	5,440 [4,370; 6,730]	9,160 [7,760; 10,700]	6,910 [5,670; 8,330]
	2015	5,080 [3,230; 7,690]	6,520 [4,740; 8,800]	11,700 [8,930; 14,900]	8,250 [6,100; 10,900]
Senegal	2010	263 [220; 318]	691 [531; 857]	956 [787; 1,130]	706 [547; 874]
	2015	388 [240; 609]	805 [588; 1,040]	1,200 [926; 1,500]	825 [606; 1,060]
Sierra Leone	2010	75.2 [51.0; 111.0]	296 [239; 359]	373 [309; 443]	305 [247; 368]
	2015	114.0 [62.7; 202.0]	337 [250; 442]	457 [343; 587]	350 [259; 457]
Togo	2010	167 [136; 210]	366 [272; 461]	535 [435; 634]	393 [299; 488]
	2015	238 [150; 363]	413 [298; 532]	657 [508; 799]	443 [324; 562]
Asia	2010	527,000 [493,000; 558,000]	86,800 [71,300; 106,000]	614,000 [591,000; 635,000]	132,000 [114,000; 154,000]
	2015	566,000 [514,000; 612,000]	88,500 [66,900; 116,000]	656,000 [622,000; 684,000]	138,000 [113,000; 171,000]
Central Asia	2010	7,130 [6,290; 7,910]	1,480 [1,060; 2,000]	8,630 [8,060; 9,140]	2,290 [1,790; 2,910]
	2015	7,830 [6,660; 8,860]	1,500 [999; 2,180]	9,360 [8,590; 10,000]	2,380 [1,750; 3,190]
Kazakhstan	2010	1,770 [1,350; 2,150]	448 [236; 727]	2,230 [1,960; 2,440]	626 [395; 917]
	2015	1,870 [1,340; 2,320]	423 [189; 762]	2,300 [1,980; 2,560]	613 [345; 978]
Kyrgyzstan	2010	518 [384; 647]	128.0 [65.5; 210.0]	651 [554; 729]	179 [110; 270]
	2015	572 [399; 730]	126.0 [55.2; 228.0]	704 [585; 797]	184.0 [99.6; 300.0]
Tajikistan	2010	503 [373; 642]	269 [156; 418]	779 [634; 914]	346 [227; 493]
	2015	619 [418; 844]	270 [138; 440]	902 [717; 1,050]	361 [221; 540]
Turkmenistan	2010	594 [436; 722]	84.7 [35.0; 166.0]	682 [581; 764]	216 [120; 369]
	2015	663 [473; 814]	90.3 [32.4; 189.0]	756 [634; 853]	226 [112; 408]
Uzbekistan	2010	3,760 [3,070; 4,370]	526 [250; 947]	4,310 [3,850; 4,690]	903 [549; 1,390]
	2015	4,140 [3,140; 4,930]	553 [216; 1,110]	4,710 [4,080; 5,210]	957 [506; 1,650]
Eastern Asia	2010	246,000 [225,000; 261,000]	12,600 [7,120; 23,100]	259,000 [244,000; 271,000]	17,000 [10,800; 27,500]
	2015	248,000 [215,000; 268,000]	13,300 [6,630; 28,700]	261,000 [240,000; 276,000]	17,800 [10,200; 33,400]
China	2010	229,000 [208,000; 244,000]	9,150 [3,960; 19,500]	238,000 [223,000; 250,000]	11,400 [5,670; 21,700]
	2015	231,000 [198,000; 251,000]	9,970 [3,680; 25,100]	241,000 [219,000; 256,000]	12,600 [5,380; 27,900]
China, Hong Kong SAR	2010	847 [762; 912]	53.5 [23.6; 109.0]	903 [842; 951]	101.0 [58.3; 165.0]
	2015	804 [683; 887]	51.6 [18.7; 124.0]	858 [778; 915]	97.9 [48.8; 188.0]
Democratic People's Republic of Korea	2010	2,430 [1,910; 2,850]	338 [132; 700]	2,790 [2,450; 3,050]	678 [359; 1,140]
	2015	2,460 [1,830; 2,940]	337 [117; 752]	2,820 [2,430; 3,110]	666 [318; 1,220]
Japan	2010	7,890 [5,960; 9,740]	2,500 [1,240; 4,190]	10,500 [8,850; 11,800]	3,370 [2,050; 5,100]
	2015	8,020 [5,640; 10,200]	2,280 [1,020; 4,100]	10,400 [8,630; 11,700]	3,100 [1,700; 4,960]
Mongolia	2010	294 [246; 339]	66.0 [38.3; 104.0]	362 [322; 395]	98.9 [66.5; 140.0]
	2015	326 [246; 398]	66.9 [31.5; 120.0]	396 [338; 441]	104.0 [60.4; 162.0]
Republic of Korea	2010	5,910 [5,360; 6,330]	415 [190; 799]	6,340 [5,930; 6,670]	1,170 [709; 1,830]
	2015	5,600 [4,740; 6,190]	402 [152; 917]	6,020 [5,460; 6,430]	1,090 [557; 2,020]
South-Eastern Asia	2010	68,400 [62,700; 73,700]	15,000 [12,100; 18,400]	83,500 [79,900; 86,700]	22,400 [19,300; 25,900]
	2015	74,100 [65,300; 82,000]	14,900 [11,000; 20,100]	89,100 [83,700; 93,700]	22,800 [18,100; 28,300]
Cambodia	2010	1,150 [1,020; 1,280]	551 [472; 631]	1,700 [1,620; 1,780]	882 [781; 994]
	2015	1,490 [1,110; 1,830]	489 [279; 734]	1,980 [1,770; 2,150]	879 [609; 1,200]
Indonesia	2010	30,200 [24,700; 35,100]	6,590 [4,050; 9,770]	36,900 [33,500; 39,700]	7,670 [5,150; 10,800]
	2015	32,600 [24,500; 39,600]	6,450 [3,040; 11,200]	39,200 [34,200; 43,200]	7,680 [4,170; 12,300]
Lao People's Democratic Republic	2010	502 [358; 648]	248 [149; 369]	758 [635; 857]	294 [193; 412]
	2015	651 [433; 864]	241 [114; 397]	902 [746; 1,020]	299 [171; 452]
Malaysia	2010	2,510 [1,800; 3,180]	765 [370; 1,310]	3,300 [2,770; 3,720]	1,490 [909; 2,230]
	2015	2,810 [1,900; 3,610]	760 [323; 1,400]	3,610 [2,970; 4,070]	1,500 [832; 2,370]
Myanmar	2010	3,650 [2,920; 4,400]	1,610 [992; 2,370]	5,280 [4,500; 5,990]	1,780 [1,170; 2,530]
	2015	4,340 [3,060; 5,620]	1,470 [761; 2,390]	5,860 [4,840; 6,670]	1,700 [991; 2,590]
Philippines	2010	7,410 [6,440; 8,370]	3,360 [2,680; 4,140]	10,800 [10,000; 11,500]	5,470 [4,610; 6,400]
	2015	8,650 [6,660; 10,600]	3,420 [2,150; 4,870]	12,100 [10,800; 13,200]	5,670 [4,120; 7,460]
Singapore	2010	504 [360; 619]	90.3 [33.9; 187.0]	599 [508; 666]	156.0 [74.1; 277.0]
	2015	499 [347; 618]	85.9 [29.0; 183.0]	589 [496; 657]	148 [67; 274]
Thailand	2010	9,630 [8,980; 10,200]	642 [360; 1,080]	10,300 [9,810; 10,700]	879 [569; 1,320]
	2015	9,460 [8,120; 10,400]	667 [286; 1,400]	10,100 [9,310; 10,800]	920 [479; 1,670]
Timor-Leste	2010	32.1 [25.3; 40.3]	39.5 [32.7; 46.4]	71.9 [62.8; 80.7]	42.8 [35.8; 49.6]
	2015	49.0 [31.7; 71.8]	43.5 [31.4; 57.5]	93.6 [74.2; 112.0]	48.5 [36.3; 62.8]
Viet Nam	2010	12,800 [12,200; 13,400]	1,020 [669; 1,480]	13,900 [13,400; 14,300]	3,610 [2,820; 4,460]
	2015	13,700 [11,800; 15,100]	1,100 [507; 2,170]	14,800 [13,700; 15,700]	3,650 [2,130; 5,960]
Southern Asia	2010	185,000 [158,000; 210,000]	50,800 [37,500; 67,000]	236,000 [218,000; 252,000]	76,700 [61,000; 95,300]
	2015	214,000 [171,000; 251,000]	51,000 [32,600; 75,100]	265,000 [238,000; 287,000]	80,000 [57,800; 109,000]
Afghanistan	2010	1,250 [1,070; 1,460]	1,670 [1,020; 2,430]	2,930 [2,250; 3,700]	1,990 [1,330; 2,750]
	2015	1,980 [1,310; 2,830]	1,920 [1,180; 2,810]	3,950 [2,970; 4,890]	2,390 [1,600; 3,310]
Bangladesh	2010	19,800 [17,600; 21,900]	4,230 [3,220; 5,390]	24,100 [22,600; 25,400]	7,250 [5,870; 8,860]
	2015	22,800 [18,600; 26,600]	4,010 [2,230; 6,370]	26,900 [24,300; 29,200]	7,390 [4,870; 10,800]
Bhutan	2010	79.1 [71.4; 85.5]	15.30 [9.42; 22.90]	94.4 [87.3; 101.0]	16.3 [10.4; 23.9]
	2015	97.5 [78.1; 113.0]	14.70 [6.57; 27.50]	113 [100; 123]	16.1 [8.0; 28.9]
India	2010	138,000 [111,000; 163,000]	34,300 [21,200; 50,200]	173,000 [155,000; 188,000]	51,300 [36,000; 69,300]
	2015	158,000 [115,000; 195,000]	33,700 [16,100; 57,200]	192,000 [166,000; 214,000]	52,600 [31,200; 80,900]
Iran (Islamic Republic of)	2010	11,000 [8,750; 12,600]	1,270 [495; 2,720]	12,300 [10,900; 13,300]	3,490 [1,860; 5,930]
	2015	12,100 [9,280; 14,200]	1,360 [468; 3,120]	13,600 [11,900; 14,800]	3,690 [1,790; 6,740]
Maldives	2010	21.4 [17.3; 26.2]	16.8 [13.8; 19.8]	38.3 [34.8; 41.6]	20.8 [17.7; 24.0]
	2015	28.7 [19.6; 38.8]	17.3 [11.3; 23.4]	46.4 [39.1; 52.3]	22.5 [16.4; 29.2]
Nepal	2010	2,960 [2,550; 3,390]	1,600 [1,300; 1,890]	4,560 [4,300; 4,790]	1,870 [1,580; 2,160]
	2015	3,750 [2,880; 4,580]	1,540 [982; 2,150]	5,300 [4,800; 5,700]	1,920 [1,360; 2,530]
Pakistan	2010	9,210 [6,590; 12,200]	7,350 [5,560; 9,250]	16,700 [14,000; 19,100]	9,740 [7,780; 12,000]
	2015	12,700 [8,080; 18,000]	7,780 [4,930; 10,700]	20,700 [16,600; 24,100]	10,800 [7,730; 14,300]
Sri Lanka	2010	2,570 [2,120; 2,930]	262 [133; 455]	2,840 [2,540; 3,080]	849 [497; 1,410]
	2015	2,610 [2,040; 3,050]	268 [109; 546]	2,880 [2,530; 3,170]	840 [433; 1,500]
Western Asia	2010	21,300 [19,800; 22,800]	6,180 [5,130; 7,370]	27,500 [26,300; 28,700]	13,300 [11,500; 15,300]
	2015	24,700 [22,200; 27,100]	6,590 [5,140; 8,320]	31,400 [29,600; 32,900]	14,200 [11,700; 17,200]
Armenia	2010	299 [261; 338]	102.0 [73.1; 135.0]	403 [371; 430]	261 [222; 301]

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Table 14 – continued from previous page

	Year	Total contraceptive use	Unmet need	Total Demand	Unmet need for modern methods
	2015	310 [234; 381]	92.6 [50.1; 144.0]	405 [357; 442]	240 [170; 312]
Azerbaijan	2010	941 [700; 1,170]	256 [150; 380]	1,200 [1,030; 1,340]	890 [677; 1,090]
	2015	1,010 [705; 1,290]	242 [113; 409]	1,260 [1,050; 1,420]	847 [572; 1,110]
Bahrain	2010	117.0 [81.7; 144.0]	20.70 [7.03; 44.20]	138 [117; 154]	63.9 [34.5; 100.0]
	2015	130.0 [88.5; 161.0]	21.50 [6.57; 47.60]	152 [128; 170]	66 [34; 108]
Georgia	2010	309 [216; 400]	109.0 [56.1; 176.0]	421 [349; 477]	224 [146; 315]
	2015	318 [213; 418]	96.3 [42.7; 167.0]	418 [343; 474]	206 [123; 306]
Iraq	2010	2,270 [1,900; 2,640]	911 [542; 1,370]	3,200 [2,770; 3,590]	1,690 [1,260; 2,150]
	2015	2,900 [2,190; 3,590]	991 [523; 1,610]	3,930 [3,330; 4,400]	1,920 [1,320; 2,610]
Israel	2010	717 [494; 871]	91.4 [25.3; 228.0]	813 [684; 904]	265 [115; 499]
	2015	769 [521; 941]	94.7 [24.9; 246.0]	870 [730; 971]	275 [114; 535]
Jordan	2010	504 [438; 567]	119.0 [87.1; 155.0]	624 [580; 662]	268 [212; 335]
	2015	634 [489; 766]	138.0 [71.9; 222.0]	775 [685; 850]	316 [207; 454]
Kuwait	2010	197 [133; 257]	61.8 [27.0; 109.0]	262 [214; 296]	103 [59; 158]
	2015	242 [157; 317]	66.6 [25.4; 124.0]	312 [254; 352]	115.0 [59.8; 186.0]
Lebanon	2010	384 [292; 464]	87.5 [40.0; 156.0]	475 [412; 524]	231 [149; 327]
	2015	414 [300; 509]	86.4 [35.0; 166.0]	504 [429; 558]	230 [134; 349]
State of Palestine	2010	318 [244; 388]	106.0 [57.4; 172.0]	427 [365; 477]	183 [122; 255]
	2015	403 [286; 510]	117.0 [53.1; 205.0]	525 [438; 588]	211 [128; 315]
Oman	2010	179 [112; 254]	82.3 [38.9; 133.0]	266 [208; 309]	121.0 [74.8; 177.0]
	2015	246 [149; 342]	85.2 [33.3; 151.0]	336 [263; 387]	137.0 [76.6; 213.0]
Qatar	2010	95.9 [62.5; 128.0]	33.4 [14.7; 57.9]	131 [105; 149]	55.0 [32.3; 83.1]
	2015	118.0 [75.1; 157.0]	35.5 [14.0; 65.1]	155 [125; 176]	61.1 [33.2; 96.6]
Saudi Arabia	2010	1,470 [910; 2,210]	1,120 [640; 1,670]	2,630 [1,980; 3,200]	1,340 [836; 1,910]
	2015	2,060 [1,200; 3,120]	1,250 [648; 1,960]	3,380 [2,550; 4,040]	1,560 [924; 2,330]
Syrian Arab Republic	2010	1,710 [1,290; 2,090]	466 [234; 800]	2,200 [1,890; 2,430]	894 [584; 1,290]
	2015	2,050 [1,450; 2,560]	493 [211; 916]	2,560 [2,170; 2,850]	989 [575; 1,540]
Turkey	2010	10,100 [8,890; 11,100]	1,200 [696; 1,940]	11,300 [10,600; 11,900]	4,790 [3,340; 6,510]
	2015	10,700 [8,640; 12,200]	1,240 [553; 2,450]	12,000 [10,800; 12,900]	4,830 [2,810; 7,430]
United Arab Emirates	2010	450 [258; 666]	219.0 [98.9; 357.0]	680 [517; 801]	299 [173; 444]
	2015	589 [339; 857]	234.0 [90.2; 406.0]	835 [641; 979]	339 [179; 524]
Yemen	2010	1,290 [866; 1,810]	1,120 [770; 1,480]	2,440 [2,010; 2,780]	1,570 [1,200; 1,970]
	2015	1,930 [1,180; 2,720]	1,170 [657; 1,690]	3,130 [2,550; 3,540]	1,790 [1,240; 2,390]
Europe	2010	74,000 [70,000; 77,600]	9,530 [7,530; 12,000]	83,600 [81,000; 85,900]	21,600 [17,800; 26,400]
	2015	71,600 [66,900; 75,700]	9,460 [7,250; 12,200]	81,000 [78,100; 83,600]	19,900 [16,000; 25,000]
Eastern Europe	2010	33,600 [30,800; 35,800]	3,900 [2,710; 5,690]	37,500 [35,700; 39,000]	11,400 [8,390; 15,500]
	2015	32,500 [29,000; 35,300]	3,970 [2,600; 6,100]	36,500 [34,400; 38,300]	10,300 [7,160; 14,800]
Belarus	2010	1,100 [880; 1,280]	172.0 [72.3; 334.0]	1,280 [1,140; 1,390]	354 [202; 576]
	2015	1,050 [795; 1,260]	166.0 [62.8; 349.0]	1,230 [1,070; 1,350]	322 [163; 567]
Bulgaria	2010	840 [623; 1,000]	142 [52; 298]	988 [867; 1,070]	322 [150; 603]
	2015	807 [578; 969]	131 [45; 290]	943 [820; 1,030]	271 [117; 542]
Czech Republic	2010	998 [739; 1,180]	140.0 [51.7; 304.0]	1,150 [997; 1,250]	253 [111; 510]
	2015	1,040 [751; 1,240]	146.0 [48.7; 329.0]	1,190 [1,030; 1,310]	249 [102; 528]
Hungary	2010	1,070 [807; 1,240]	108 [34; 269]	1,180 [1,030; 1,290]	209.0 [86.7; 461.0]
	2015	1,070 [794; 1,260]	112.0 [33.9; 288.0]	1,190 [1,040; 1,310]	205 [80; 466]
Poland	2010	4,180 [2,930; 5,060]	594 [187; 1,390]	4,800 [4,090; 5,310]	2,000 [898; 3,530]
	2015	4,260 [2,920; 5,190]	602 [179; 1,450]	4,890 [4,130; 5,420]	1,840 [762; 3,420]
Republic of Moldova	2010	444 [361; 514]	76.3 [40.5; 126.0]	522 [473; 561]	208 [131; 311]
	2015	433 [331; 515]	72.3 [31.5; 136.0]	507 [448; 553]	181.0 [98.8; 303.0]
Romania	2010	2,310 [1,810; 2,690]	314 [137; 612]	2,630 [2,320; 2,870]	1,110 [601; 1,790]
	2015	2,320 [1,750; 2,780]	326 [122; 689]	2,670 [2,310; 2,940]	969 [460; 1,740]
Russian Federation	2010	17,600 [15,200; 19,300]	1,390 [582; 2,930]	19,000 [17,500; 20,200]	4,690 [2,470; 8,290]
	2015	16,600 [13,500; 18,800]	1,440 [527; 3,330]	18,200 [16,300; 19,500]	4,200 [1,960; 8,260]
Slovakia	2010	533 [392; 634]	68.4 [22.5; 159.0]	605 [523; 664]	161.0 [65.5; 331.0]
	2015	541 [390; 650]	69.9 [21.3; 168.0]	616 [528; 678]	150 [58; 326]
Ukraine	2010	4,680 [3,930; 5,320]	745 [441; 1,160]	5,440 [4,980; 5,830]	1,830 [1,230; 2,630]
	2015	4,520 [3,520; 5,330]	707 [330; 1,280]	5,240 [4,640; 5,720]	1,590 [898; 2,680]
Northern Europe	2010	9,930 [9,130; 10,500]	861 [549; 1,360]	10,800 [10,200; 11,200]	1,300 [915; 1,850]
	2015	9,740 [8,670; 10,500]	883 [535; 1,530]	10,600 [9,950; 11,200]	1,320 [894; 2,000]
Denmark	2010	472 [338; 567]	58.9 [17.7; 144.0]	534 [456; 590]	94.0 [36.5; 197.0]
	2015	460 [324; 556]	58.2 [16.8; 145.0]	521 [443; 578]	91.5 [34.6; 196.0]
Estonia	2010	113.0 [77.7; 140.0]	20.90 [7.26; 44.20]	135 [113; 150]	38.1 [16.3; 73.0]
	2015	111 [75; 139]	20.00 [6.48; 43.80]	132 [110; 147]	35.7 [14.6; 71.1]
Finland	2010	516 [378; 607]	53.1 [15.7; 138.0]	573 [493; 628]	70.4 [26.2; 158.0]
	2015	506 [367; 597]	52.0 [14.6; 138.0]	561 [482; 618]	69.2 [25.3; 159.0]
Ireland	2010	361 [277; 428]	61.8 [25.6; 124.0]	425 [372; 466]	86.9 [43.1; 153.0]
	2015	374 [275; 452]	62.5 [22.6; 132.0]	440 [379; 485]	88.4 [40.0; 163.0]
Latvia	2010	171 [123; 209]	28.9 [10.0; 61.5]	202 [173; 222]	51.0 [22.8; 97.1]
	2015	166 [118; 204]	27.50 [8.83; 60.40]	195 [166; 216]	47.8 [20.2; 94.0]
Lithuania	2010	325 [216; 420]	83.2 [32.7; 157.0]	412 [340; 464]	146.0 [69.6; 255.0]
	2015	317 [208; 410]	76.8 [28.1; 149.0]	397 [326; 448]	132.0 [59.2; 239.0]
Norway	2010	472 [396; 523]	31.8 [11.5; 76.9]	506 [457; 540]	73.6 [33.4; 150.0]
	2015	471 [381; 531]	34.4 [11.1; 88.7]	507 [452; 546]	75.4 [31.4; 161.0]
Sweden	2010	778 [571; 929]	102.0 [33.2; 238.0]	886 [763; 975]	202.0 [87.1; 412.0]
	2015	784 [563; 947]	103.0 [31.4; 244.0]	894 [763; 988]	199.0 [82.3; 412.0]
United Kingdom	2010	6,750 [6,020; 7,270]	382 [159; 827]	7,150 [6,640; 7,520]	489 [237; 961]
	2015	6,590 [5,560; 7,270]	410 [142; 1,010]	7,020 [6,370; 7,480]	529 [223; 1,150]
Southern Europe	2010	14,300 [12,500; 15,800]	2,700 [1,810; 3,910]	17,000 [15,800; 18,000]	6,070 [4,560; 8,110]
	2015	14,000 [12,100; 15,700]	2,600 [1,660; 3,880]	16,600 [15,400; 17,600]	5,530 [4,020; 7,640]
Albania	2010	391 [322; 449]	83.2 [52.3; 122.0]	475 [435; 507]	389 [327; 441]
	2015	408 [312; 489]	81.9 [39.5; 140.0]	493 [437; 535]	364 [258; 447]
Bosnia and Herzegovina	2010	294 [194; 400]	121.0 [57.7; 202.0]	421 [340; 483]	316 [223; 400]
	2015	299 [188; 406]	109.0 [46.6; 190.0]	413 [330; 473]	277 [179; 374]
Croatia	2010	413 [266; 529]	71.8 [19.6; 166.0]	490 [400; 554]	213.0 [74.2; 394.0]
	2015	404 [260; 514]	68.5 [18.6; 157.0]	476 [388; 538]	185.0 [62.4; 364.0]
Greece	2010	1,110 [828; 1,320]	172.0 [63.7; 366.0]	1,290 [1,110; 1,410]	562 [287; 911]
	2015	1,090 [791; 1,320]	167.0 [56.3; 367.0]	1,270 [1,080; 1,400]	504 [237; 884]
Italy	2010	5,230 [3,640; 6,500]	967 [352; 1,980]	6,250 [5,260; 6,960]	2,310 [1,070; 4,140]
	2015	5,060 [3,440; 6,330]	905 [304; 1,910]	6,020 [5,020; 6,730]	2,040 [875; 3,900]
Malta	2010	50.1 [40.3; 55.9]	2.850 [0.823; 8.070]	53.1 [47.2; 57.0]	16.40 [5.82; 34.50]
	2015	50.9 [40.1; 57.2]	2.970 [0.826; 8.800]	54.0 [47.5; 58.3]	14.90 [4.96; 33.60]
Montenegro	2010	46.3 [31.4; 61.2]	17.30 [8.15; 29.00]	64.3 [52.4; 73.2]	42.1 [28.6; 56.0]
	2015	48.5 [31.7; 64.2]	16.20 [6.93; 28.40]	65.4 [52.8; 74.1]	38.5 [23.6; 54.9]
Portugal	2010	1,330 [1,100; 1,470]	104.0 [39.9; 243.0]	1,430 [1,290; 1,530]	218 [105; 446]
	2015	1,260 [1,000; 1,430]	105.0 [35.9; 263.0]	1,370 [1,220; 1,480]	206.0 [88.4; 457.0]
Serbia	2010	842 [723; 955]	188 [108; 293]	1,030 [927; 1,130]	721 [591; 843]
	2015	866 [662; 1,050]	185.0 [86.4; 328.0]	1,060 [908; 1,170]	651 [441; 862]
Slovenia	2010	205 [155; 238]	21.2 [6.9; 51.9]	228 [199; 247]	51.5 [20.6; 115.0]
	2015	199 [145; 233]	21.00 [6.51; 53.20]	221 [192; 241]	47.0 [17.8; 110.0]
Spain	2010	4,230 [3,500; 4,860]	836 [425; 1,440]	5,090 [4,590; 5,490]	1,060 [623; 1,670]
	2015	4,190 [3,220; 4,990]	803 [346; 1,530]	5,030 [4,420; 5,480]	1,020 [513; 1,750]

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Table 14 – continued from previous page

	Year	Total contraceptive use	Unmet need	Total Demand	Unmet need for modern methods
The former Yugoslav Republic of Macedonia	2010	197 [122; 258]	41.0 [11.6; 88.9]	240 [193; 273]	113.0 [40.3; 201.0]
	2015	199 [124; 261]	40.6 [11.3; 88.5]	242 [195; 275]	101.0 [35.5; 193.0]
Western Europe	2010	16,400 [14,100; 18,000]	1,920 [1,080; 3,290]	18,300 [16,800; 19,400]	2,690 [1,660; 4,290]
	2015	15,400 [13,200; 17,100]	1,830 [1,010; 3,190]	17,300 [15,900; 18,400]	2,560 [1,540; 4,110]
Austria	2010	680 [449; 876]	164.0 [61.4; 320.0]	853 [692; 966]	212.0 [97.1; 378.0]
	2015	660 [430; 854]	150.0 [52.8; 302.0]	818 [662; 928]	196.0 [85.2; 360.0]
Belgium	2010	852 [689; 979]	95.6 [39.2; 198.0]	953 [841; 1,040]	122.0 [59.4; 228.0]
	2015	825 [629; 966]	91.8 [32.9; 208.0]	922 [795; 1,010]	118.0 [52.3; 236.0]
France	2010	5,440 [4,540; 6,100]	410 [170; 878]	5,860 [5,250; 6,340]	569 [290; 1,050]
	2015	5,310 [4,220; 6,090]	419 [152; 991]	5,750 [5,030; 6,300]	582 [260; 1,170]
Germany	2010	7,160 [5,090; 8,580]	882 [266; 2,130]	8,090 [6,810; 8,970]	1,320 [509; 2,790]
	2015	6,530 [4,570; 7,890]	795 [233; 1,990]	7,380 [6,200; 8,200]	1,190 [439; 2,600]
Netherlands	2010	1,460 [1,220; 1,670]	227 [102; 424]	1,700 [1,510; 1,840]	280 [145; 479]
	2015	1,390 [1,080; 1,640]	210.0 [82.1; 434.0]	1,610 [1,410; 1,770]	264 [125; 488]
Switzerland	2010	832 [639; 964]	70.8 [20.7; 183.0]	908 [790; 993]	122.0 [48.3; 261.0]
	2015	800 [599; 939]	71.4 [19.3; 186.0]	877 [753; 965]	121.0 [45.6; 267.0]
Latin America and the Caribbean	2010	69,400 [65,500; 72,700]	9,840 [7,860; 12,500]	79,300 [77,000; 81,200]	15,700 [13,300; 18,600]
	2015	73,200 [67,400; 77,900]	10,300 [7,710; 14,000]	83,600 [80,600; 86,200]	16,400 [13,200; 20,500]
Caribbean	2010	3,940 [3,580; 4,270]	1,100 [888; 1,340]	5,050 [4,800; 5,260]	1,350 [1,140; 1,610]
	2015	4,070 [3,600; 4,510]	1,090 [810; 1,390]	5,160 [4,860; 5,420]	1,360 [1,080; 1,680]
Anguilla	2010	0.767 [0.503; 1.030]	0.303 [0.143; 0.504]	1.080 [0.882; 1.240]	0.346 [0.180; 0.549]
	2015	0.863 [0.548; 1.160]	0.298 [0.125; 0.520]	1.17 [0.95; 1.33]	0.348 [0.166; 0.576]
Antigua and Barbuda	2010	8.82 [5.71; 11.40]	2.000 [0.647; 4.100]	10.90 [8.97; 12.30]	2.44 [0.98; 4.59]
	2015	9.13 [5.85; 11.80]	1.91 [0.58; 4.08]	11.10 [9.13; 12.50]	2.380 [0.893; 4.600]
Bahamas	2010	26.4 [17.6; 33.0]	4.65 [1.45; 10.40]	31.3 [26.1; 34.9]	5.60 [2.11; 11.40]
	2015	27.5 [18.2; 34.5]	4.64 [1.34; 10.60]	32.4 [26.9; 36.2]	5.66 [2.01; 11.70]
Barbados	2010	24.2 [15.8; 31.1]	5.22 [1.69; 10.70]	29.7 [24.4; 33.3]	6.19 [2.47; 11.70]
	2015	23.7 [15.4; 30.5]	4.79 [1.43; 10.30]	28.8 [23.8; 32.4]	5.76 [2.15; 11.20]
Cuba	2010	1,370 [1,120; 1,570]	181.0 [76.7; 359.0]	1,560 [1,400; 1,680]	211 [103; 391]
	2015	1,270 [991; 1,490]	165.0 [59.3; 356.0]	1,440 [1,270; 1,570]	195.0 [84.4; 387.0]
Dominica	2010	5.50 [3.57; 7.12]	1.270 [0.422; 2.560]	6.84 [5.61; 7.68]	1.550 [0.637; 2.850]
	2015	5.84 [3.76; 7.52]	1.250 [0.386; 2.630]	7.16 [5.88; 8.05]	1.540 [0.602; 2.960]
Dominican Republic	2010	1,110 [950; 1,250]	197 [118; 303]	1,310 [1,220; 1,380]	236 [155; 341]
	2015	1,190 [937; 1,390]	198.0 [91.9; 361.0]	1,390 [1,260; 1,490]	244 [131; 406]
Grenada	2010	9.13 [5.89; 11.90]	2.000 [0.609; 4.140]	11.20 [9.24; 12.70]	2.540 [0.973; 4.770]
	2015	9.66 [6.24; 12.50]	1.950 [0.552; 4.200]	11.70 [9.64; 13.30]	2.530 [0.939; 4.890]
Guadeloupe	2010	21.9 [12.5; 30.3]	6.23 [1.88; 12.30]	28.5 [22.3; 32.7]	8.99 [3.68; 16.50]
	2015	21.3 [12.3; 29.1]	5.55 [1.59; 11.30]	27.2 [21.4; 31.1]	8.11 [3.13; 15.30]
Haiti	2010	548 [372; 758]	559 [418; 692]	1,120 [965; 1,240]	654 [521; 793]
	2015	693 [430; 1,010]	566 [357; 755]	1,270 [1,060; 1,430]	677 [475; 874]
Jamaica	2010	263 [207; 308]	41.1 [17.9; 78.6]	306 [272; 331]	53.7 [28.5; 91.5]
	2015	266 [200; 318]	40.0 [15.0; 83.7]	308 [270; 337]	53.4 [25.9; 97.1]
Martinique	2010	16.9 [10.1; 22.8]	4.33 [1.32; 8.79]	21.5 [17.1; 24.5]	6.29 [2.51; 11.70]
	2015	15.80 [9.41; 21.20]	3.74 [1.08; 7.82]	19.8 [15.8; 22.6]	5.50 [2.06; 10.70]
Montserrat	2010	0.329 [0.212; 0.427]	0.0700 [0.0209; 0.1500]	0.403 [0.331; 0.454]	0.0779 [0.0277; 0.1580]
	2015	0.338 [0.216; 0.437]	0.0676 [0.0190; 0.1500]	0.410 [0.335; 0.462]	0.076 [0.026; 0.158]
Puerto Rico	2010	406 [337; 454]	29.0 [10.5; 68.7]	436 [394; 468]	80.5 [38.7; 158.0]
	2015	400 [319; 453]	29.60 [9.65; 75.00]	431 [383; 466]	78.7 [34.8; 163.0]
Saint Kitts and Nevis	2010	2.35 [1.43; 3.17]	0.638 [0.206; 1.250]	3.02 [2.41; 3.43]	0.823 [0.339; 1.470]
	2015	2.56 [1.56; 3.41]	0.628 [0.189; 1.280]	3.22 [2.60; 3.65]	0.828 [0.328; 1.530]
Saint Lucia	2010	15.10 [9.55; 19.90]	3.95 [1.37; 7.75]	19.2 [15.6; 21.8]	4.51 [1.86; 8.23]
	2015	16.6 [10.3; 21.7]	3.93 [1.28; 8.01]	20.7 [16.8; 23.4]	4.57 [1.81; 8.58]
Saint Vincent and the Grenadines	2010	10.70 [7.08; 13.50]	2.070 [0.654; 4.440]	12.8 [10.7; 14.3]	2.63 [1.05; 5.10]
	2015	10.60 [6.95; 13.40]	1.940 [0.572; 4.350]	12.7 [10.5; 14.2]	2.520 [0.973; 4.980]
Trinidad and Tobago	2010	103.0 [74.6; 133.0]	43.0 [24.9; 64.9]	147 [123; 167]	57.0 [38.2; 79.4]
	2015	108.0 [72.4; 143.0]	39.1 [19.4; 62.5]	148 [122; 168]	53.3 [32.4; 78.8]
United States Virgin Islands	2010	7.51 [5.82; 8.73]	0.889 [0.314; 2.000]	8.43 [7.43; 9.16]	1.560 [0.709; 3.060]
	2015	6.89 [5.20; 8.12]	0.812 [0.256; 1.910]	7.74 [6.76; 8.48]	1.410 [0.599; 2.900]
Central America	2010	17,700 [15,600; 19,400]	3,070 [2,030; 4,600]	20,800 [19,600; 21,800]	4,480 [3,260; 6,100]
	2015	19,300 [16,100; 21,700]	3,190 [1,900; 5,290]	22,500 [20,900; 23,800]	4,750 [3,160; 7,080]
Belize	2010	25.4 [17.7; 33.3]	12.10 [6.77; 18.60]	37.9 [31.6; 42.9]	15.10 [9.57; 21.70]
	2015	31.2 [20.5; 41.7]	12.60 [6.14; 20.50]	44.3 [36.4; 50.0]	16.10 [9.25; 24.30]
Costa Rica	2010	529 [511; 544]	30.6 [17.0; 50.5]	560 [541; 579]	52.0 [36.1; 74.0]
	2015	562 [494; 610]	35.0 [14.8; 75.6]	598 [554; 632]	60.3 [33.0; 105.0]
El Salvador	2010	634 [531; 717]	76.0 [36.4; 142.0]	713 [646; 766]	138.0 [79.4; 227.0]
	2015	692 [542; 804]	80.2 [31.5; 171.0]	775 [685; 844]	146.0 [72.5; 265.0]
Guatemala	2010	1,150 [773; 1,520]	503 [281; 745]	1,660 [1,390; 1,860]	683 [450; 944]
	2015	1,440 [933; 1,930]	536 [252; 861]	1,990 [1,650; 2,240]	745 [442; 1,100]
Honduras	2010	761 [610; 891]	170.0 [92.1; 276.0]	935 [856; 997]	272 [176; 395]
	2015	898 [674; 1,080]	178.0 [77.9; 329.0]	1,080 [968; 1,170]	293 [163; 473]
Mexico	2010	13,700 [11,600; 15,400]	2,070 [1,070; 3,560]	15,800 [14,600; 16,700]	3,040 [1,870; 4,630]
	2015	14,600 [11,500; 16,900]	2,110 [890; 4,190]	16,800 [15,200; 18,000]	3,190 [1,660; 5,470]
Nicaragua	2010	654 [553; 735]	93.2 [48.1; 161.0]	749 [695; 793]	129.0 [79.2; 199.0]
	2015	736 [584; 849]	98.3 [40.2; 199.0]	838 [761; 899]	141 [72; 244]
Panama	2010	290 [248; 331]	105.0 [62.2; 157.0]	397 [349; 441]	125.0 [81.9; 176.0]
	2015	324 [244; 400]	102.0 [51.1; 170.0]	430 [368; 479]	125.0 [72.1; 192.0]
South America	2010	47,800 [44,400; 50,500]	5,600 [4,090; 7,820]	53,400 [51,500; 55,000]	9,800 [7,940; 12,300]
	2015	50,000 [45,000; 53,700]	5,910 [4,000; 9,090]	56,000 [53,400; 58,100]	10,200 [7,690; 13,800]
Argentina	2010	4,030 [3,180; 4,690]	608 [253; 1,210]	4,660 [4,150; 5,050]	988 [511; 1,720]
	2015	4,300 [3,230; 5,110]	629 [226; 1,360]	4,960 [4,340; 5,420]	1,010 [477; 1,890]
Bolivia (Plurinational State of)	2010	908 [754; 1,050]	301 [206; 411]	1,210 [1,130; 1,280]	660 [518; 819]
	2015	1,050 [792; 1,280]	299 [153; 486]	1,350 [1,230; 1,450]	664 [435; 928]
Brazil	2010	27,200 [24,100; 29,600]	2,530 [1,270; 4,610]	29,800 [28,000; 31,200]	3,780 [2,240; 6,070]
	2015	28,100 [23,400; 31,300]	2,650 [1,080; 5,670]	30,800 [28,400; 32,600]	3,980 [2,000; 7,350]
Chile	2010	1,560 [1,160; 1,890]	337 [141; 637]	1,910 [1,660; 2,100]	425 [208; 738]
	2015	1,620 [1,160; 1,990]	327 [121; 654]	1,960 [1,670; 2,160]	418 [189; 760]
Colombia	2010	5,240 [4,850; 5,550]	553 [386; 775]	5,790 [5,580; 5,970]	1,000 [746; 1,330]
	2015	5,520 [4,710; 6,120]	570 [269; 1,080]	6,100 [5,690; 6,420]	1,040 [596; 1,720]
Ecuador	2010	1,670 [1,360; 1,910]	207.0 [92.7; 397.0]	1,880 [1,700; 2,020]	487 [287; 793]
	2015	1,810 [1,390; 2,110]	220.0 [81.5; 470.0]	2,040 [1,810; 2,220]	503 [256; 895]
Guyana	2010	55.4 [45.5; 65.9]	39.9 [32.7; 47.1]	95.5 [87.9; 102.0]	41.1 [34.2; 48.2]
	2015	62.9 [44.4; 83.4]	36.9 [23.8; 50.2]	101.0 [86.9; 111.0]	38.4 [25.5; 51.4]
Paraguay	2010	731 [642; 798]	57.6 [29.2; 106.0]	790 [734; 835]	149.0 [92.3; 235.0]
	2015	823 [680; 927]	66.9 [26.5; 145.0]	892 [805; 961]	166.0 [85.7; 303.0]
Peru	2010	3,120 [2,970; 3,270]	297 [243; 368]	3,420 [3,310; 3,530]	1,300 [1,070; 1,580]
	2015	3,360 [2,850; 3,740]	343 [171; 626]	3,700 [3,410; 3,940]	1,290 [783; 2,000]
Suriname	2010	43.7 [32.4; 55.3]	18.9 [10.3; 29.4]	63.1 [53.1; 71.1]	20.0 [11.5; 30.4]
	2015	48.1 [32.8; 62.5]	17.70 [8.37; 29.50]	66.3 [55.1; 74.7]	19.00 [9.81; 30.60]
Uruguay	2010	378 [314; 424]	35.1 [13.5; 77.5]	414 [375; 443]	50.6 [24.0; 97.4]
	2015	383 [305; 436]	35.5 [12.0; 83.8]	421 [375; 453]	51.6 [22.2; 105.0]

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Table 14 – continued from previous page

	Year	Total contraceptive use	Unmet need	Total Demand	Unmet need for modern methods
Venezuela (Bolivarian Republic of)	2010	2,950 [2,220; 3,490]	496 [193; 1,010]	3,460 [3,070; 3,750]	774 [384; 1,360]
	2015	3,180 [2,310; 3,830]	526 [182; 1,140]	3,730 [3,270; 4,060]	807 [367; 1,510]
Northern America	2010	31,700 [27,500; 34,900]	2,550 [1,310; 4,690]	34,300 [31,500; 36,500]	4,760 [2,740; 8,160]
	2015	31,100 [25,700; 35,000]	2,680 [1,170; 5,480]	33,900 [30,400; 36,500]	4,830 [2,480; 9,110]
Canada	2010	3,290 [2,620; 3,790]	359 [131; 791]	3,670 [3,240; 3,990]	452 [204; 889]
	2015	3,240 [2,480; 3,780]	356 [121; 833]	3,620 [3,150; 3,950]	453 [192; 931]
United States of America	2010	28,400 [24,300; 31,500]	2,160 [989; 4,250]	30,700 [27,900; 32,800]	4,280 [2,310; 7,670]
	2015	27,900 [22,600; 31,700]	2,270 [866; 5,080]	30,300 [26,800; 32,800]	4,340 [2,050; 8,610]
Oceania	2010	2,770 [2,340; 3,160]	710 [472; 1,020]	3,490 [3,170; 3,760]	913 [652; 1,240]
	2015	2,950 [2,420; 3,430]	739 [469; 1,100]	3,700 [3,330; 4,010]	963 [670; 1,340]
Australia and New Zealand	2010	2,170 [1,780; 2,490]	319 [153; 591]	2,500 [2,250; 2,700]	414 [229; 695]
	2015	2,230 [1,770; 2,590]	323 [141; 642]	2,570 [2,280; 2,780]	422 [219; 746]
Australia	2010	1,730 [1,360; 2,030]	259 [107; 526]	2,000 [1,760; 2,190]	331 [161; 602]
	2015	1,790 [1,350; 2,140]	264.0 [94.5; 570.0]	2,070 [1,790; 2,270]	337 [151; 648]
New Zealand	2010	446 [330; 528]	54.2 [17.2; 127.0]	503 [432; 552]	78.2 [31.9; 159.0]
	2015	445 [319; 533]	54.6 [16.3; 133.0]	503 [427; 556]	79.2 [31.1; 166.0]
Melanesia	2010	566 [392; 779]	361 [218; 531]	940 [736; 1,110]	465 [307; 650]
	2015	680 [442; 969]	388 [215; 584]	1,080 [840; 1,280]	506 [321; 721]
Fiji	2010	76.3 [40.4; 114.0]	27.3 [8.4; 50.6]	106.0 [77.9; 126.0]	36.1 [15.7; 61.1]
	2015	79.8 [42.5; 118.0]	26.60 [7.67; 50.50]	108.0 [80.2; 128.0]	35.5 [14.8; 61.4]
Papua New Guinea	2010	441 [275; 646]	304 [168; 468]	759 [560; 922]	393 [242; 572]
	2015	540 [312; 814]	328 [164; 518]	884 [648; 1,070]	429 [252; 639]
Solomon Islands	2010	31.6 [22.3; 42.3]	19.4 [11.5; 29.6]	51.7 [40.7; 61.7]	25.1 [16.8; 35.3]
	2015	39.4 [24.5; 56.9]	21.5 [11.6; 33.9]	62.0 [47.0; 74.6]	28.1 [18.0; 41.2]
Vanuatu	2010	16.3 [11.6; 21.4]	9.25 [5.23; 14.20]	25.8 [20.7; 30.3]	10.40 [6.44; 15.20]
	2015	19.7 [12.8; 27.5]	9.99 [5.13; 16.00]	30.1 [23.7; 35.3]	11.50 [6.61; 17.40]
Micronesia	2010	25.0 [19.1; 30.5]	9.63 [6.07; 14.00]	34.8 [30.1; 38.5]	13.10 [9.03; 18.00]
	2015	27.1 [20.1; 33.7]	9.79 [5.89; 14.60]	37.2 [31.8; 41.2]	13.40 [8.93; 18.80]
Guam	2010	14.60 [9.47; 19.20]	4.26 [1.73; 7.93]	19.1 [15.2; 21.7]	6.57 [3.41; 10.90]
	2015	15.40 [9.58; 20.60]	4.28 [1.55; 8.22]	19.9 [15.7; 22.8]	6.61 [3.23; 11.30]
Kiribati	2010	5.06 [3.07; 7.35]	2.75 [1.40; 4.41]	7.93 [5.98; 9.50]	3.46 [2.00; 5.21]
	2015	5.94 [3.46; 8.78]	2.90 [1.32; 4.84]	9.02 [6.75; 10.70]	3.70 [2.01; 5.77]
Marshall Islands	2010	3.95 [2.99; 4.92]	1.580 [0.895; 2.460]	5.57 [4.59; 6.42]	1.78 [1.10; 2.62]
	2015	4.22 [2.82; 5.64]	1.580 [0.797; 2.600]	5.88 [4.64; 6.87]	1.81 [1.05; 2.82]
Nauru	2010	0.400 [0.290; 0.527]	0.283 [0.164; 0.425]	0.690 [0.542; 0.827]	0.405 [0.274; 0.548]
	2015	0.426 [0.270; 0.606]	0.262 [0.142; 0.407]	0.700 [0.535; 0.835]	0.380 [0.243; 0.535]
Palau	2010	1.010 [0.609; 1.480]	0.635 [0.336; 1.000]	1.67 [1.24; 2.01]	0.746 [0.432; 1.120]
	2015	1.12 [0.65; 1.68]	0.627 [0.307; 1.010]	1.78 [1.32; 2.14]	0.747 [0.411; 1.150]
Polynesia	2010	8.71 [7.16; 10.40]	12.0 [10.6; 13.4]	20.8 [19.4; 22.0]	12.4 [11.0; 13.7]
	2015	9.65 [6.83; 13.10]	10.80 [8.33; 13.10]	20.7 [18.2; 22.5]	11.20 [8.81; 13.50]
Cook Islands	2010	1.260 [0.829; 1.660]	0.418 [0.174; 0.753]	1.70 [1.39; 1.92]	0.504 [0.254; 0.829]
	2015	1.370 [0.858; 1.830]	0.425 [0.161; 0.798]	1.82 [1.47; 2.06]	0.520 [0.244; 0.879]
Samoa	2010	6.97 [5.53; 8.62]	11.20 [9.75; 12.50]	18.2 [16.8; 19.3]	11.30 [9.96; 12.60]
	2015	7.76 [5.02; 11.10]	9.98 [7.52; 12.20]	17.9 [15.5; 19.7]	10.20 [7.81; 12.30]
Tuvalu	2010	0.480 [0.342; 0.643]	0.448 [0.288; 0.641]	0.937 [0.743; 1.130]	0.551 [0.384; 0.743]
	2015	0.526 [0.328; 0.771]	0.420 [0.249; 0.620]	0.960 [0.735; 1.160]	0.526 [0.350; 0.729]

Table 14: **Estimates and uncertainty intervals of the number of women (·1,000) aged 15-49, who are married or in a union for total contraceptive use (any method), unmet need, total demand (total contraceptive use (any method) and unmet need combined), and unmet need for modern methods (unmet need and traditional method use combined), for 2010 and 2015, for the world, developed countries, developing countries (incl. and excl. China), all subregions and all countries, with 95% uncertainty intervals.** Numbers are reported in 3 significant digits.

6 SUPPLEMENTARY FIGURES

Figure 10: **Overview of country estimates of family planning indicators for married or in-union women aged 15-49.** Contraceptive prevalence (CP) for any method, modern and traditional methods; ratio of modern contraceptive use over total contraceptive use. Bottom row: unmet need; total demand (the sum of contraceptive prevalence and unmet need for family planning); and satisfied demand for family planning. Observed data points are categorized by source type, characteristics of the populations sampled and misclassification biases. 95% uncertainty intervals are displayed with the shaded areas. The median estimates and 80% uncertainty intervals are presented with black solid lines.

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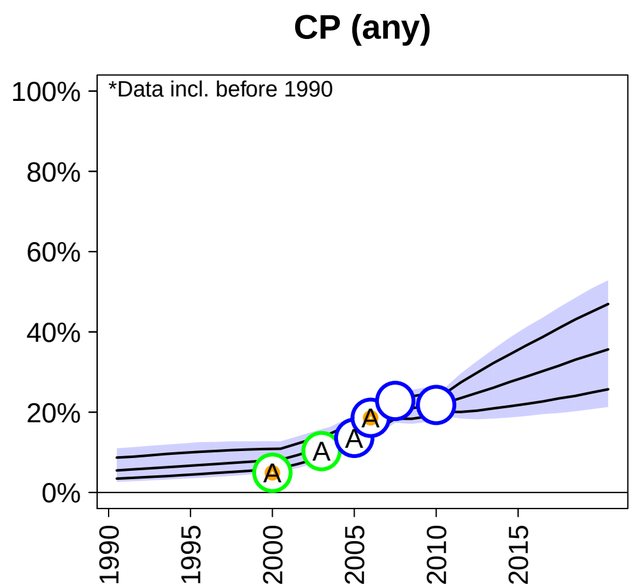

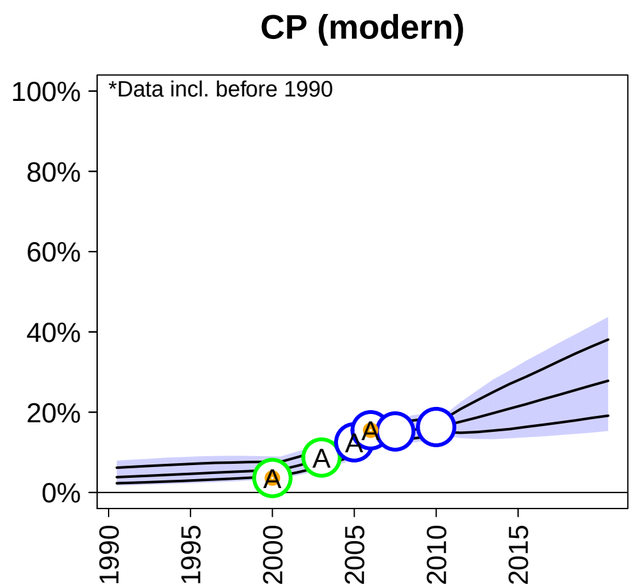

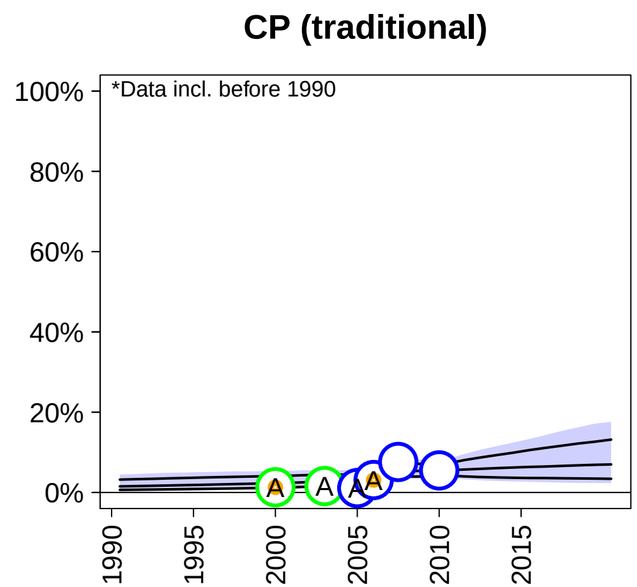

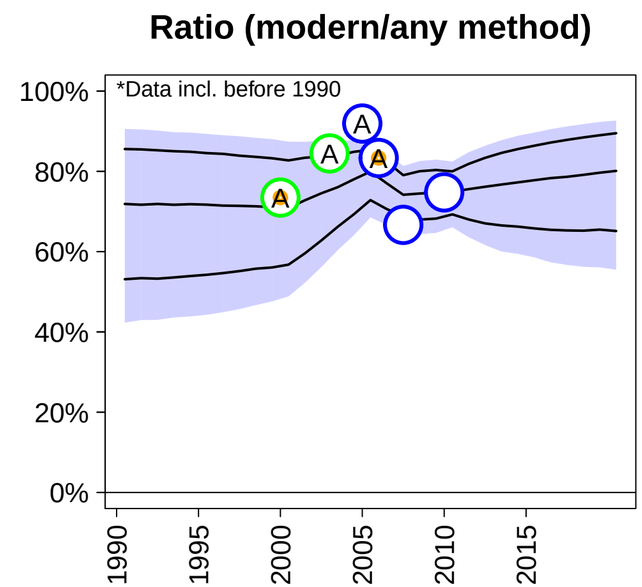

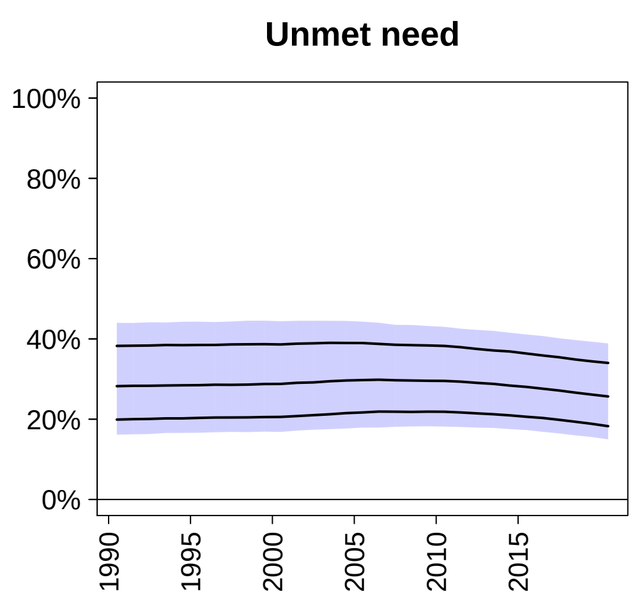

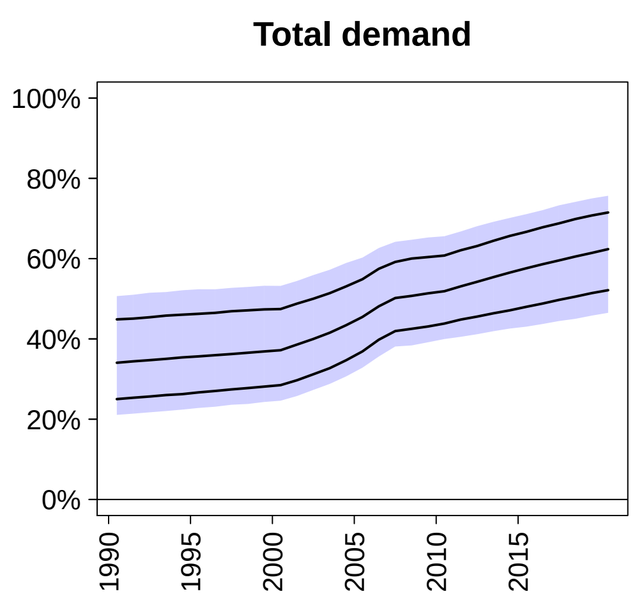

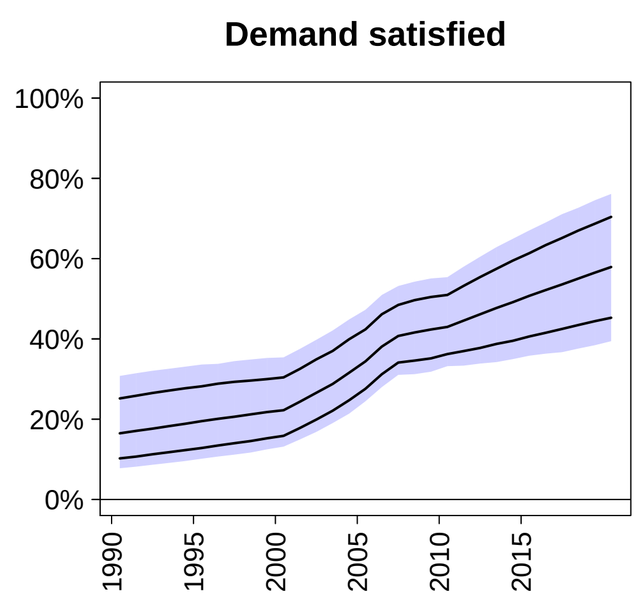

- DHS
- MICS
- Other international survey
- National survey

- Subpopulation

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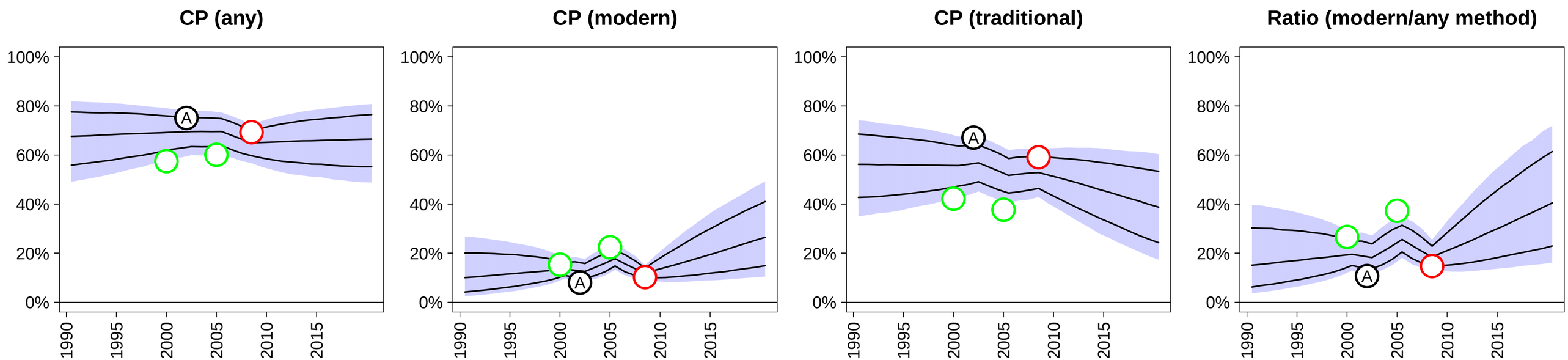
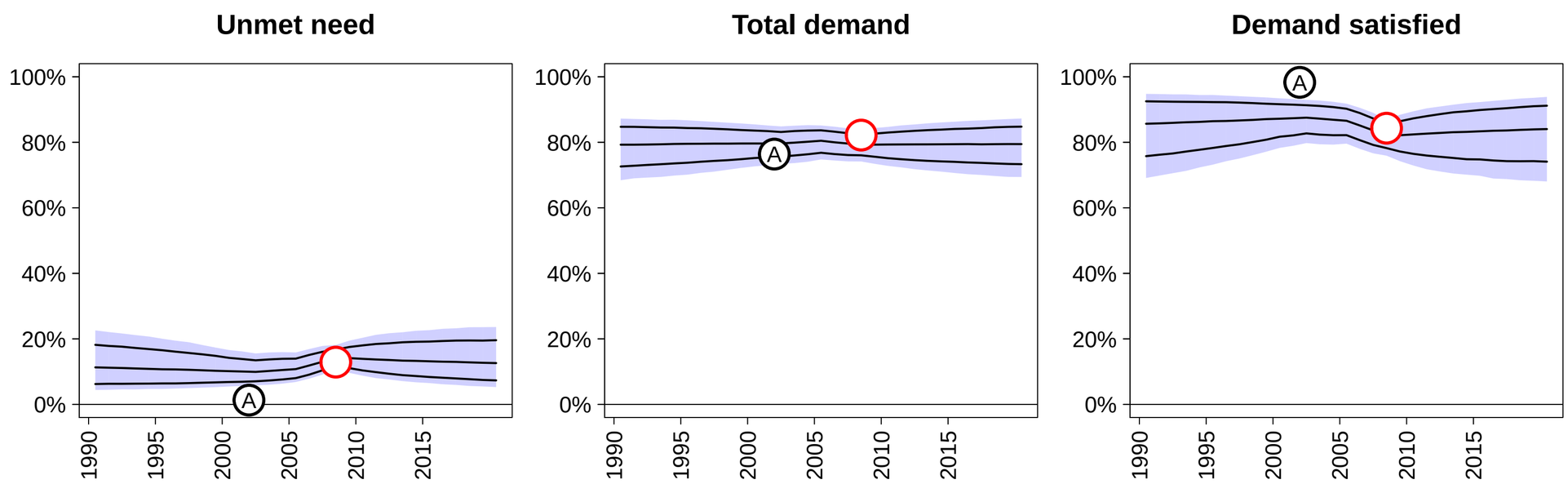
S+: Sterilization excluded

- Married women
- Sexually active women
- Ever married/All women
- Both sexes and husband/wives

Albania (Southern Europe)





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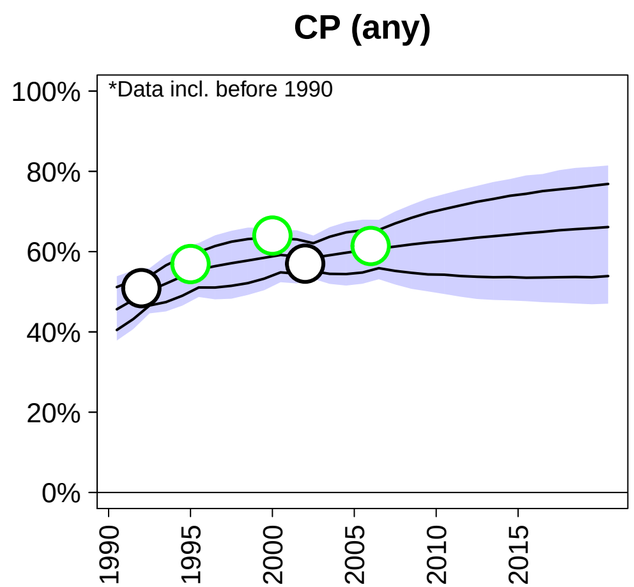
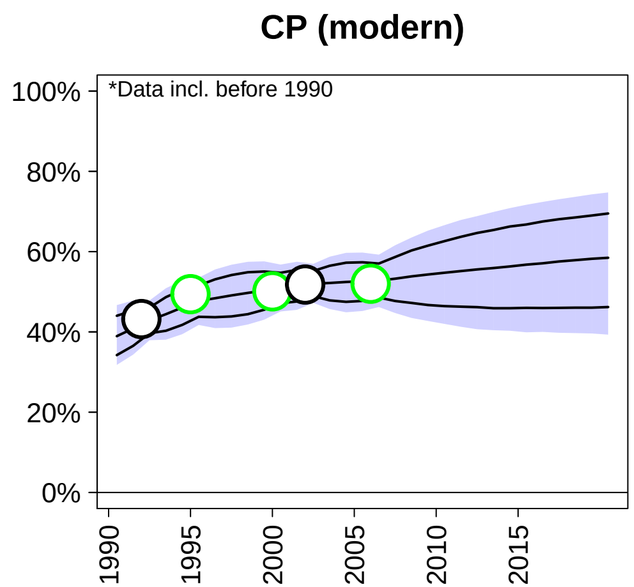
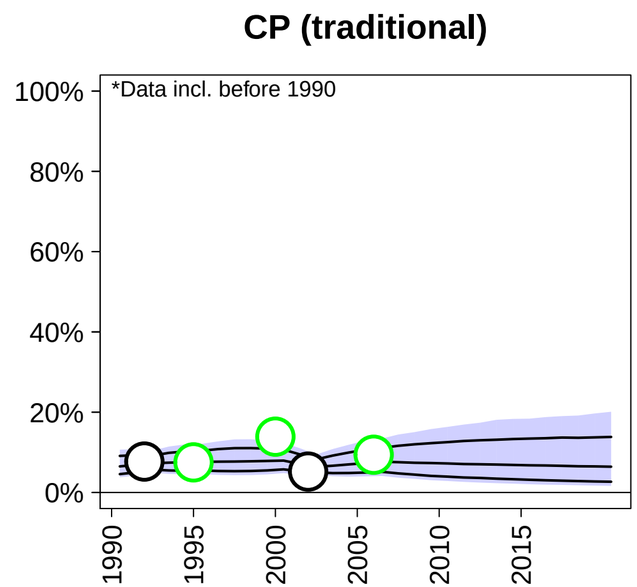
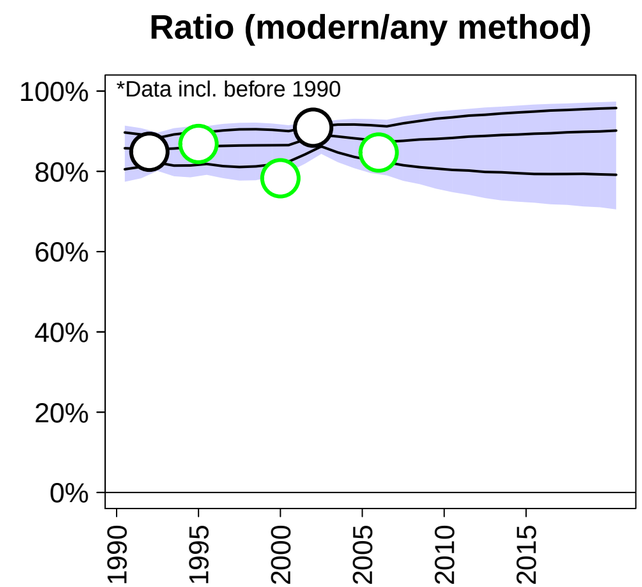
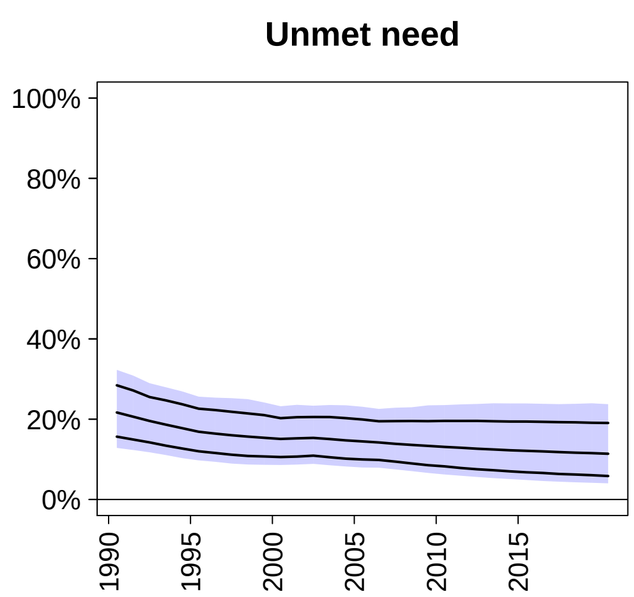
Algeria (Northern Africa)

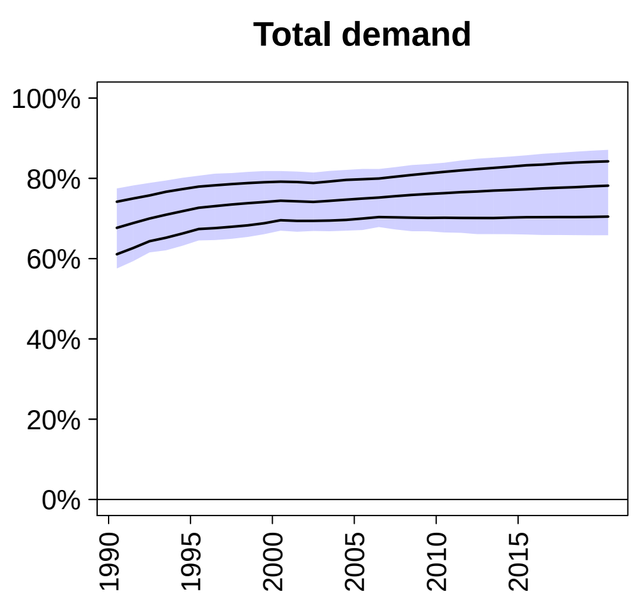


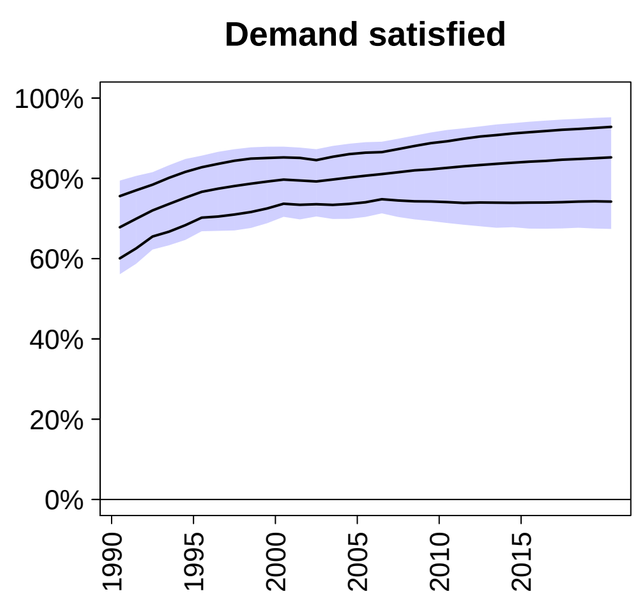












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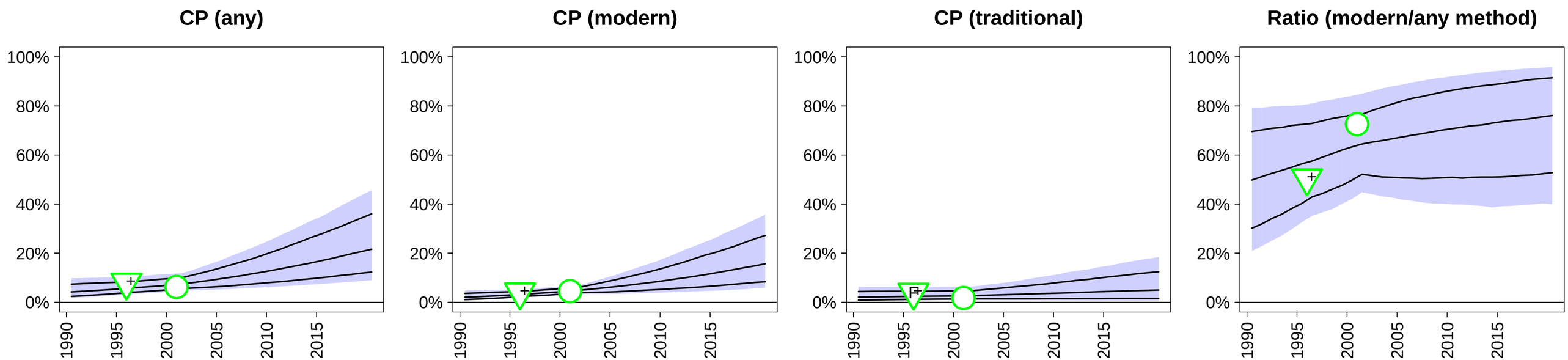
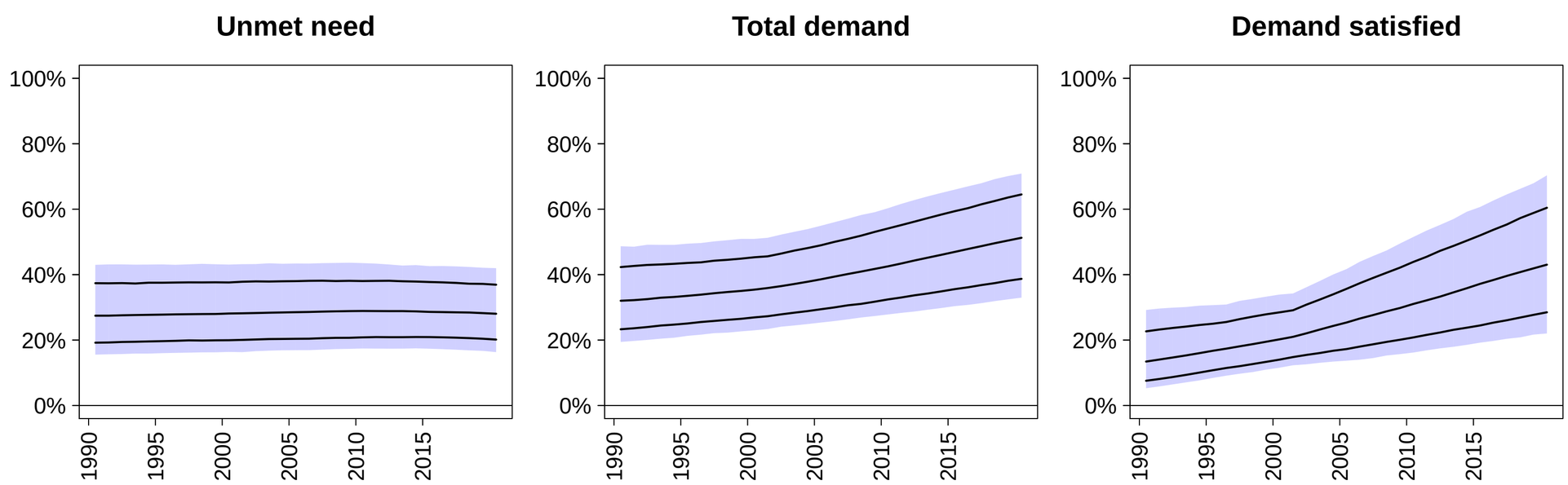
Angola (Middle Africa)





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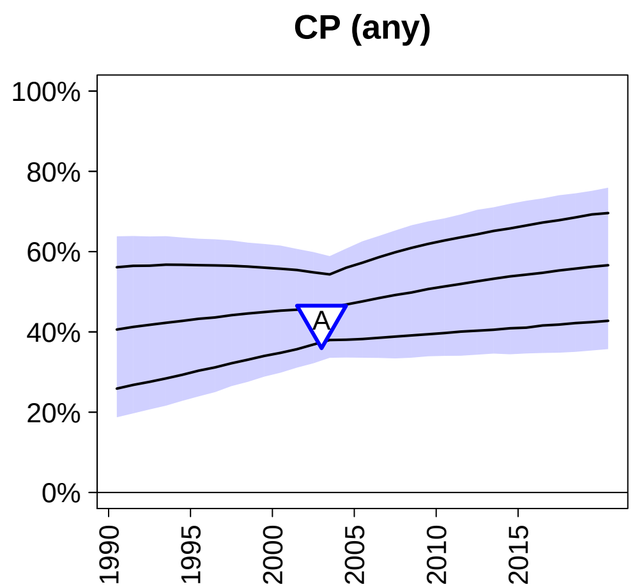
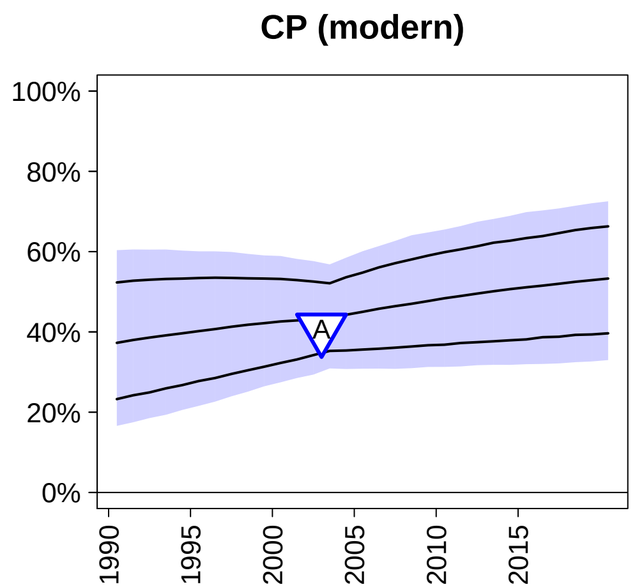
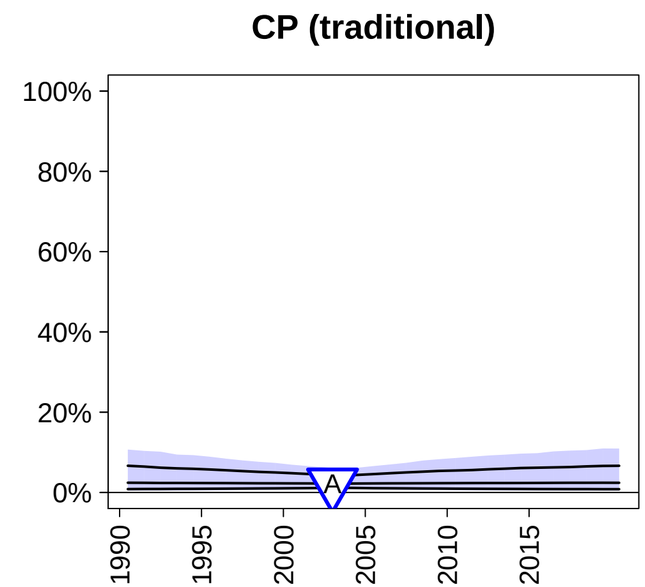
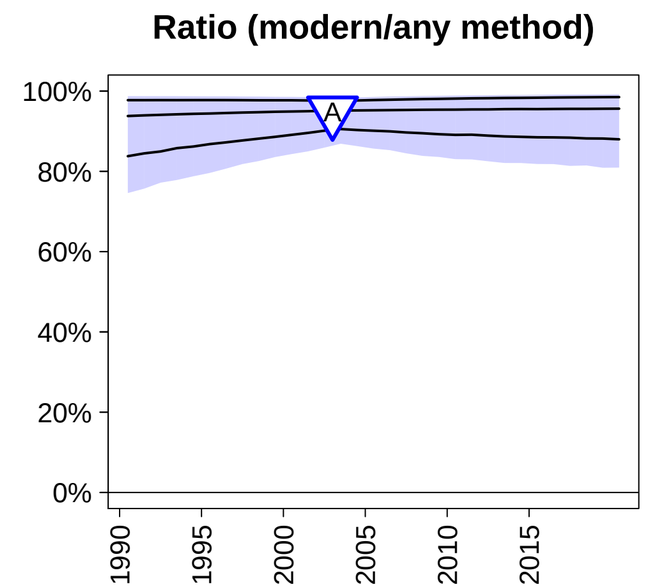
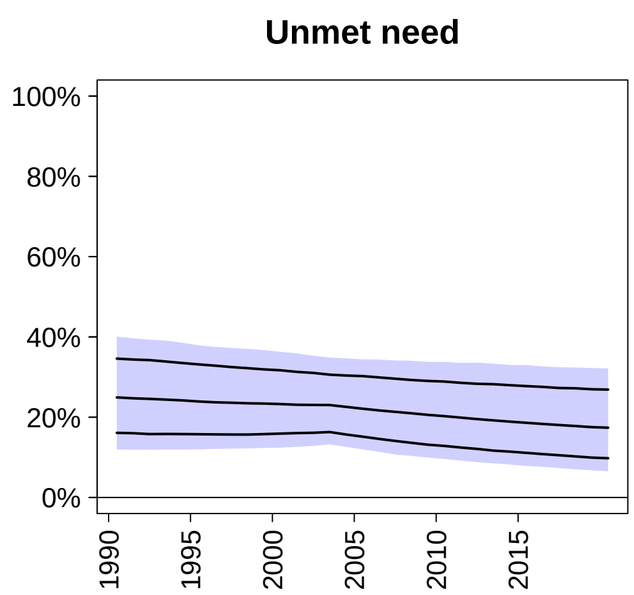
Anguilla (Caribbean)

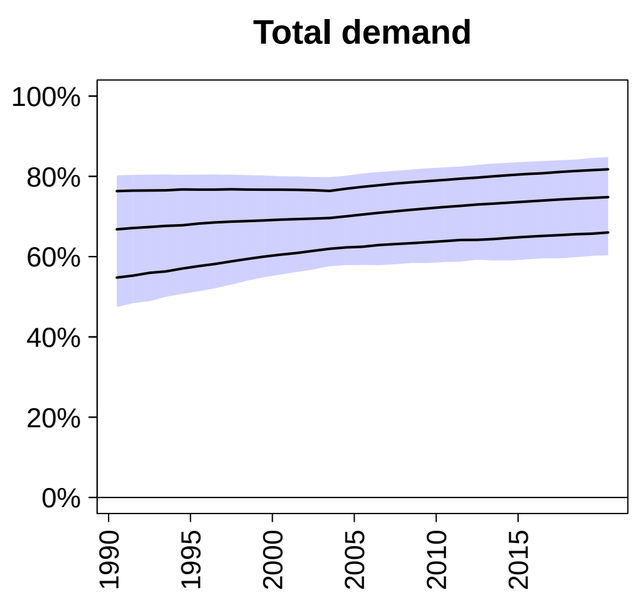


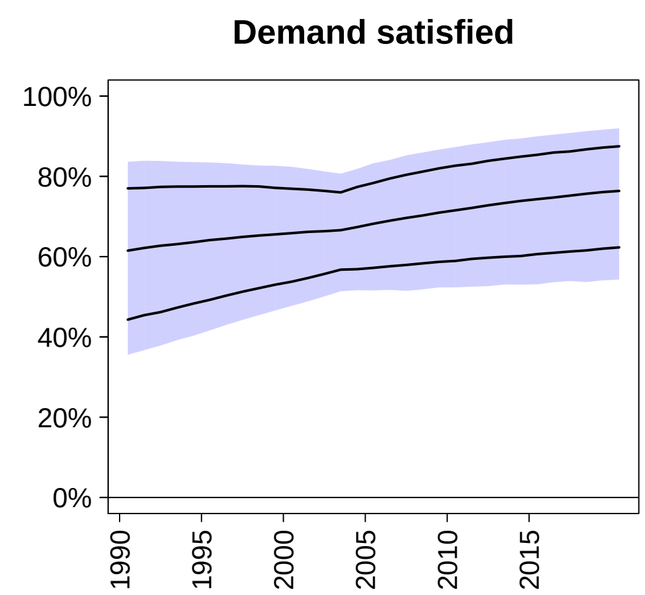












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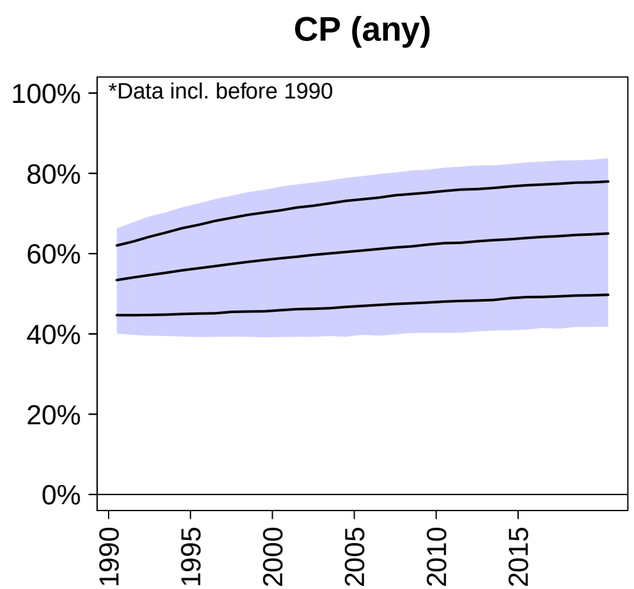
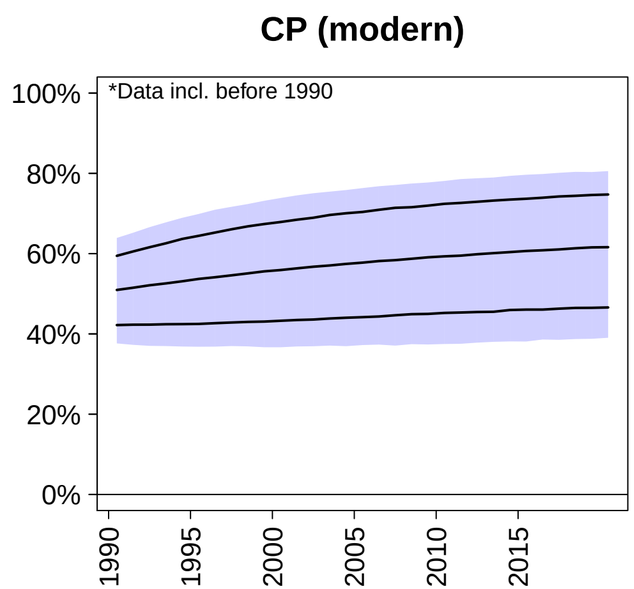
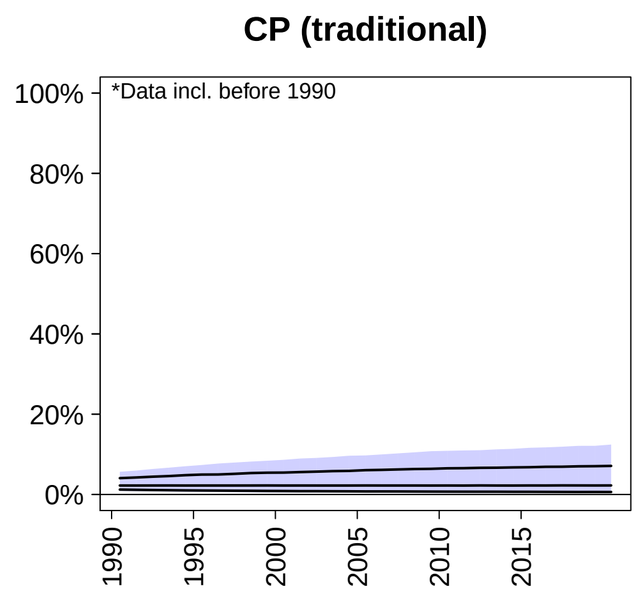
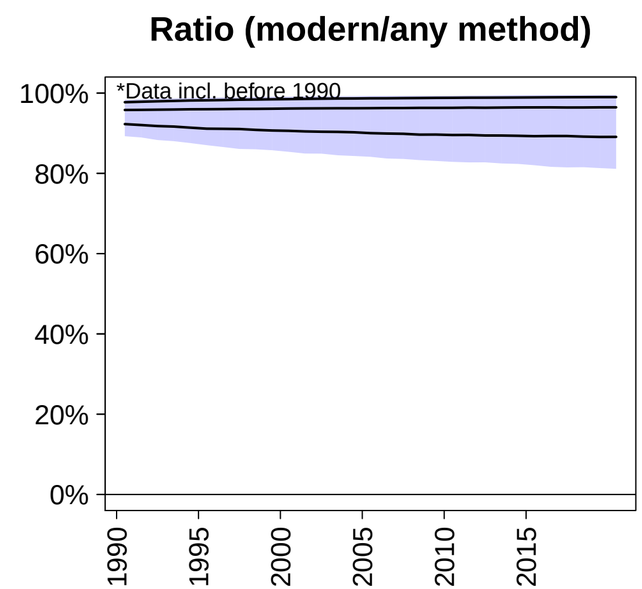
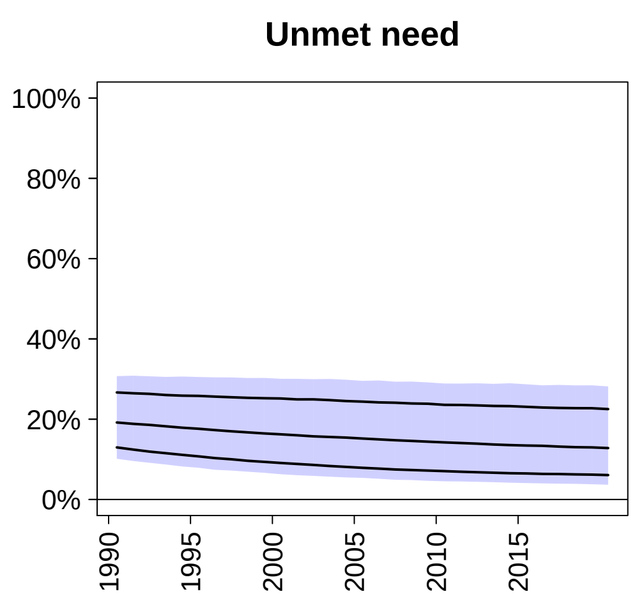
Antigua and Barbuda (Caribbean)

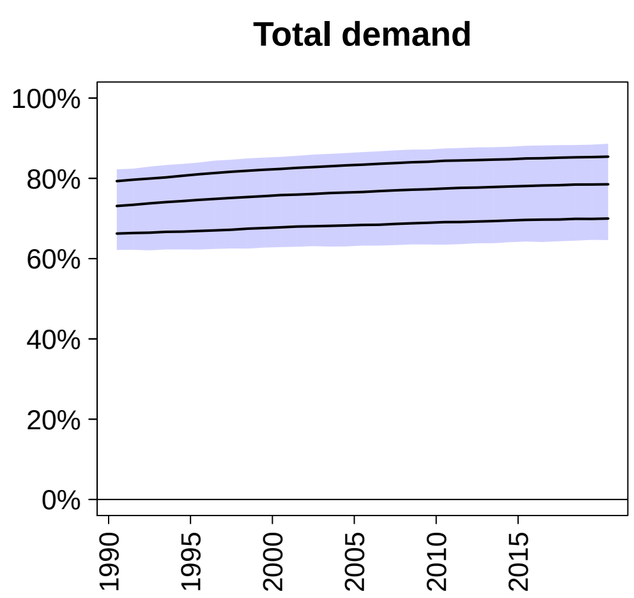


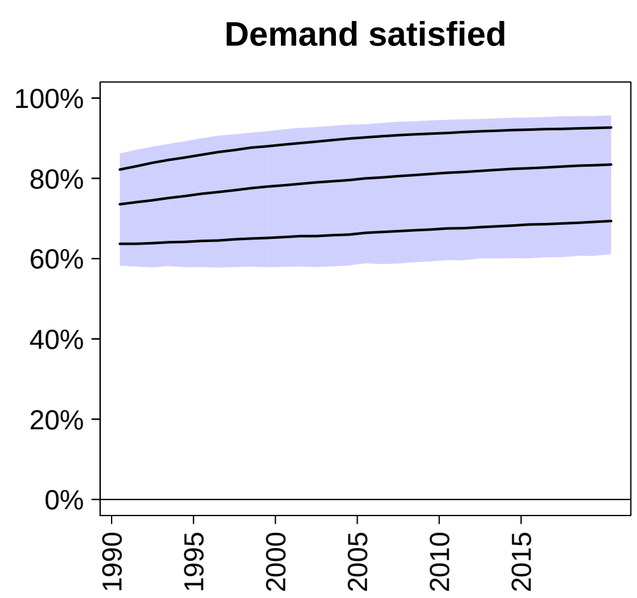












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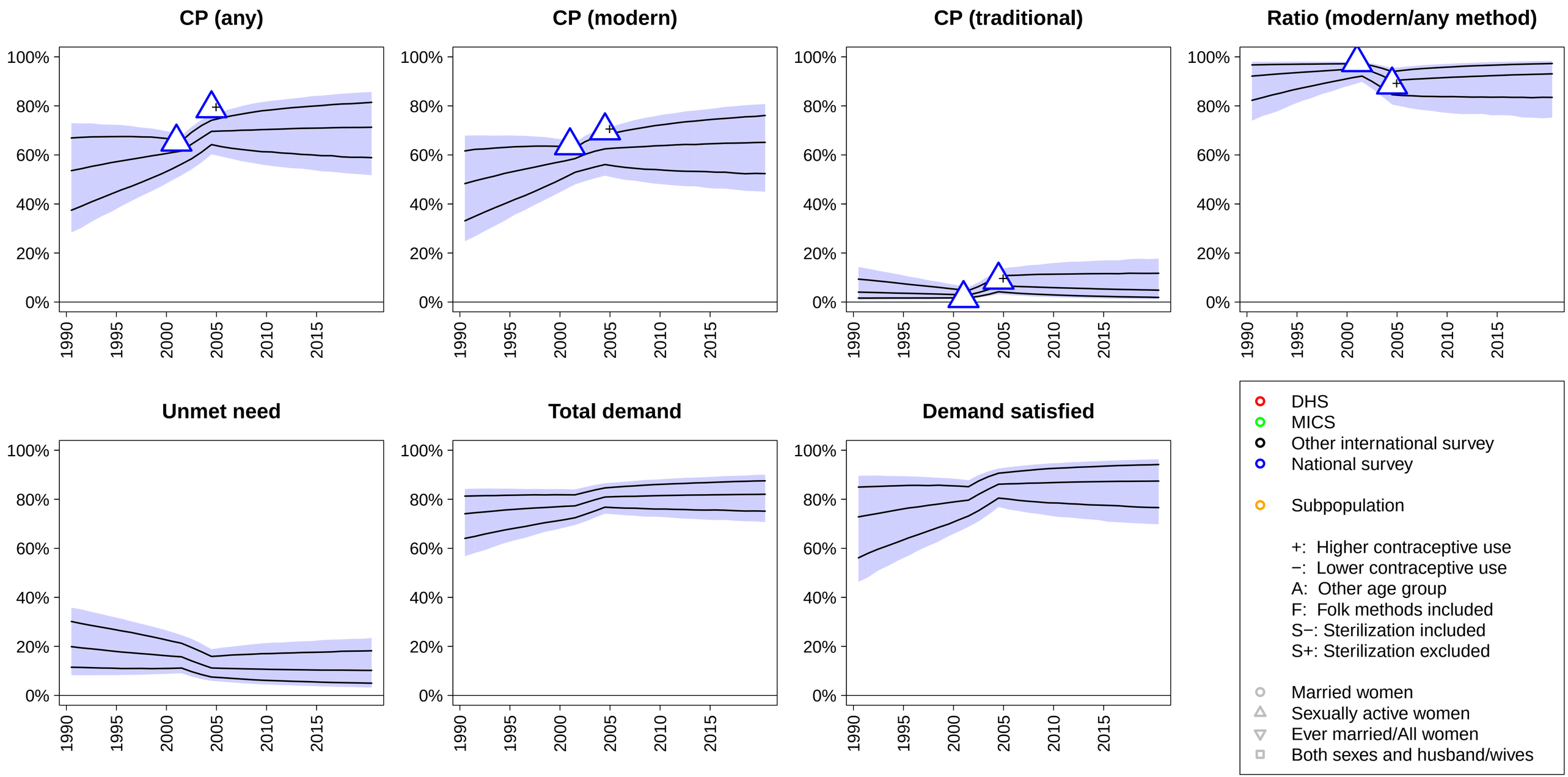
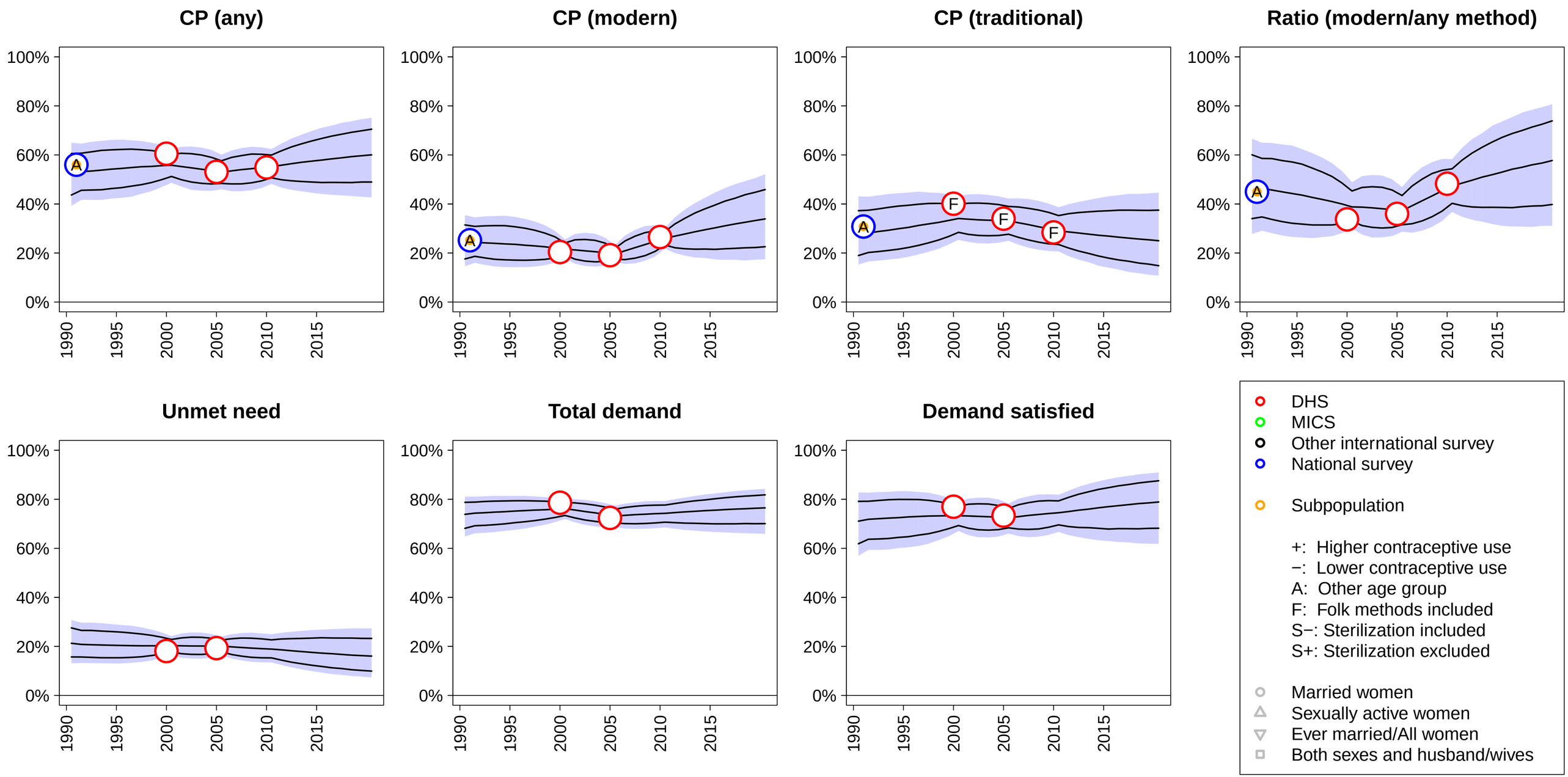
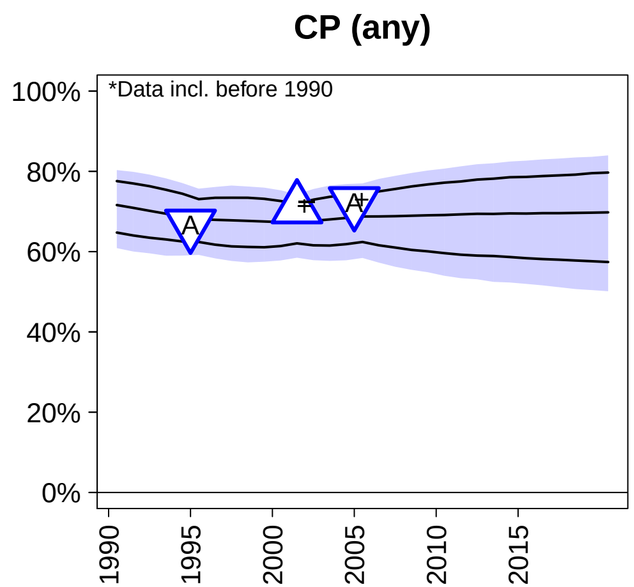
Argentina (South America)

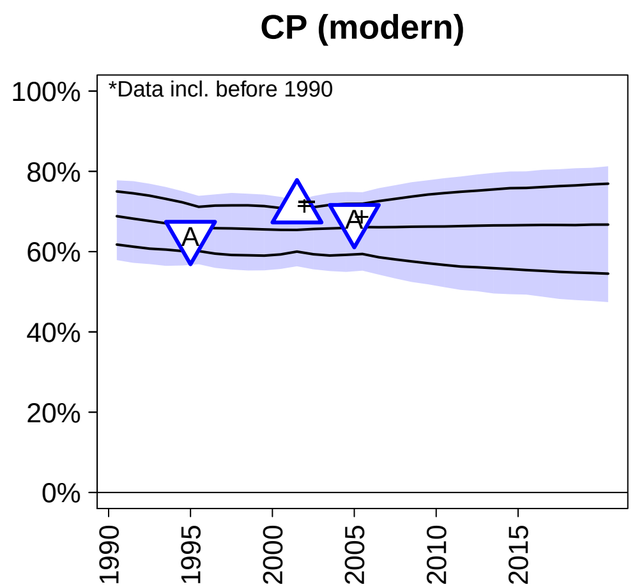


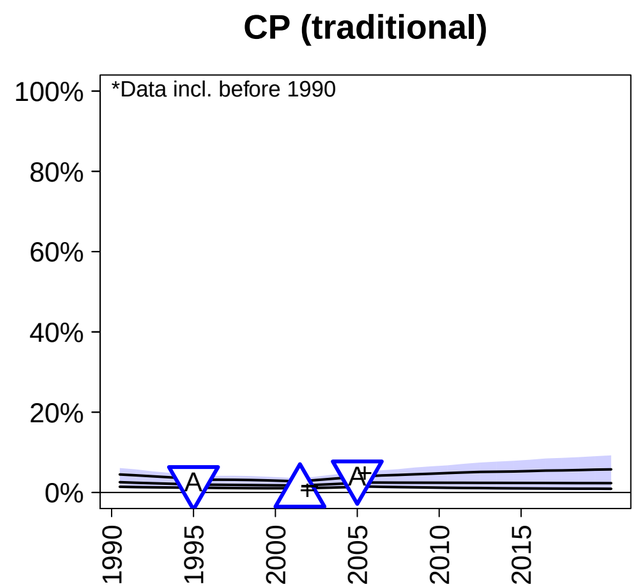
Armenia (Western Asia)

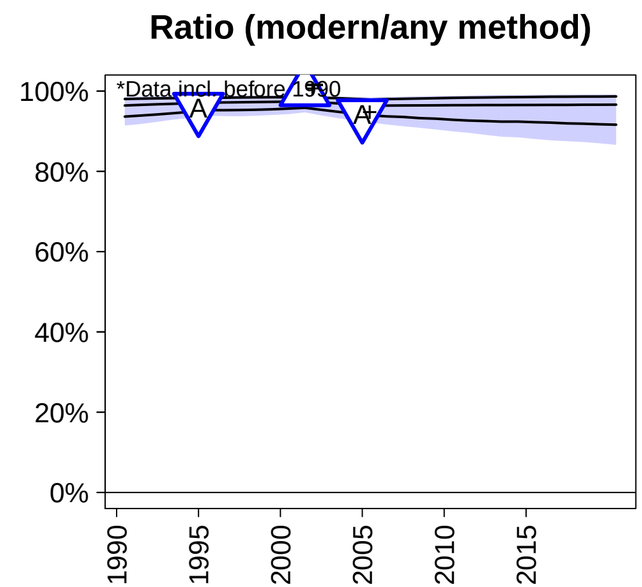


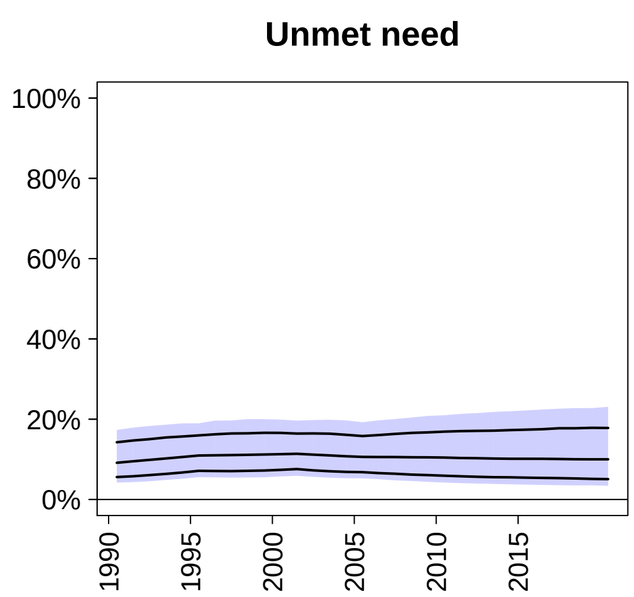
Australia (Australia and New Zealand)

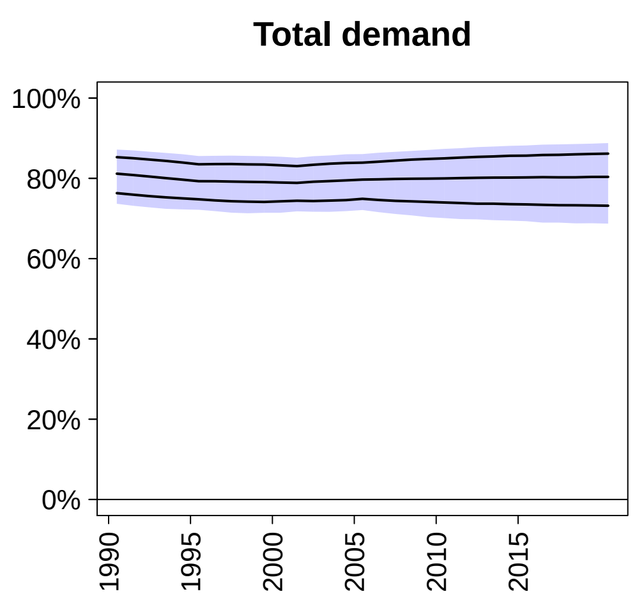


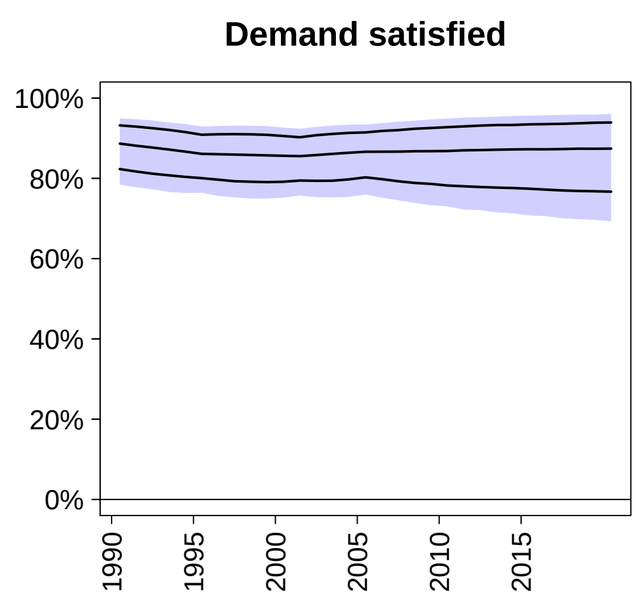












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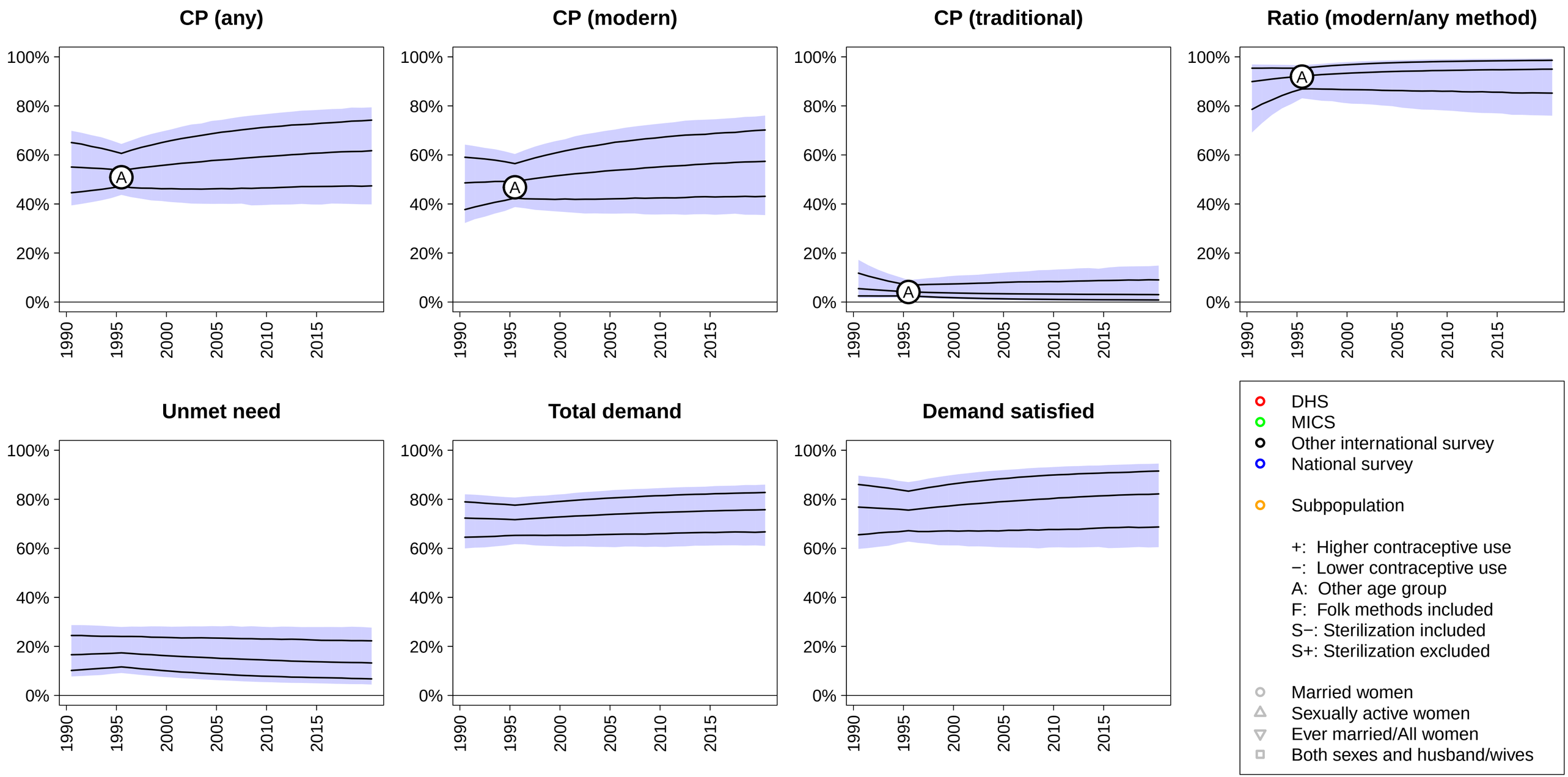
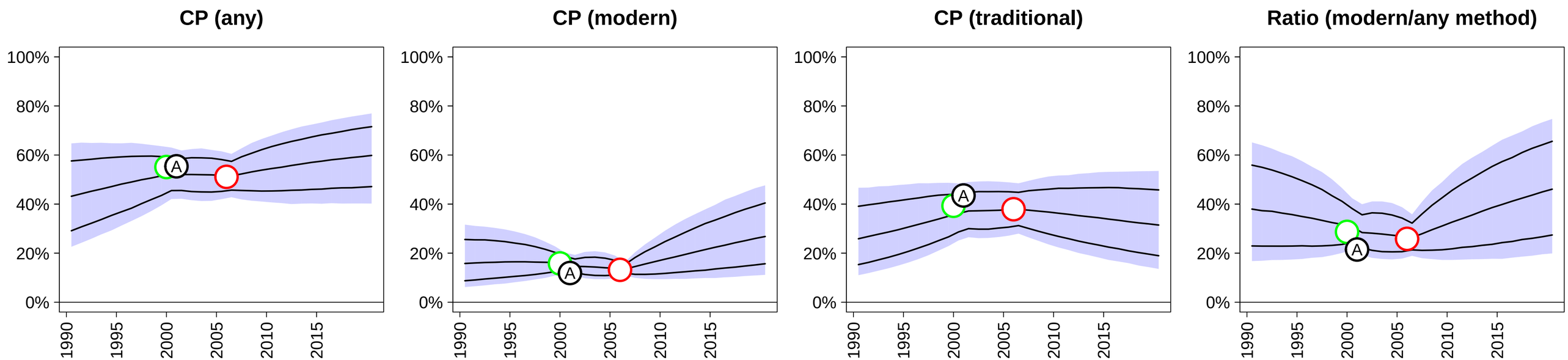
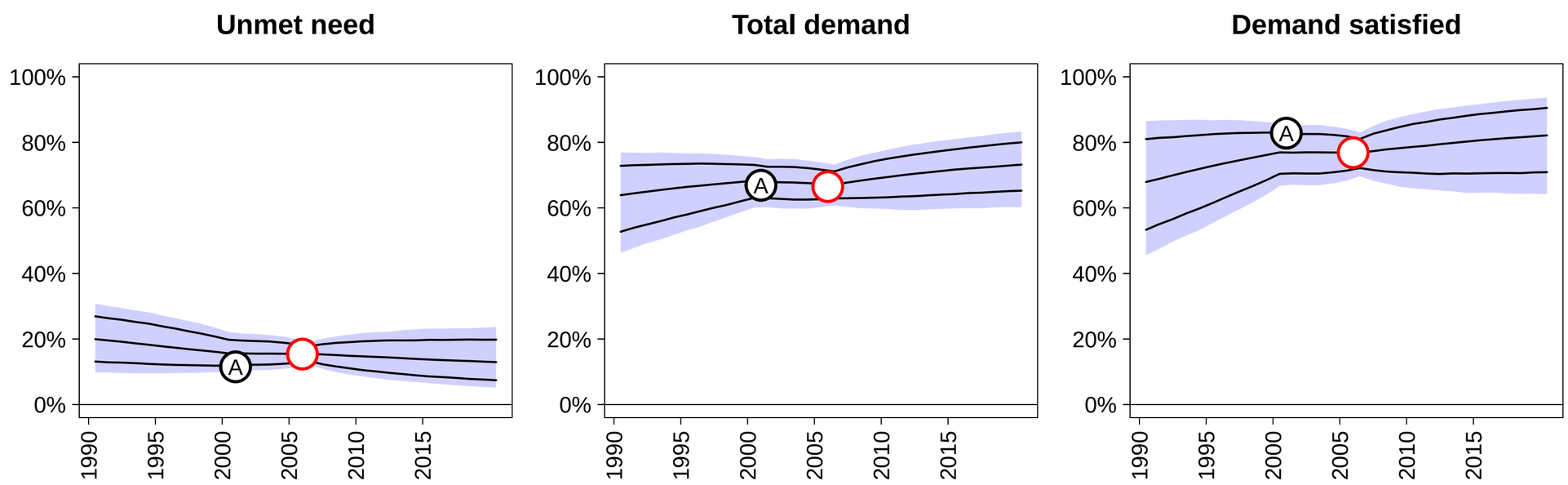
Austria (Western Europe)



Azerbaijan (Western Asia)





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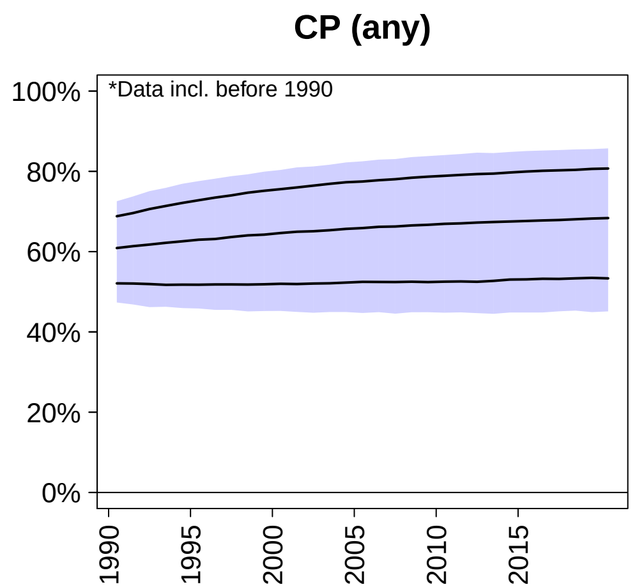
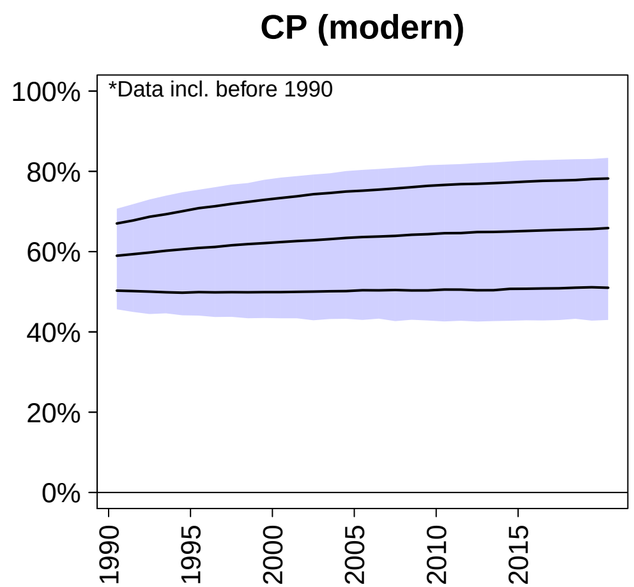
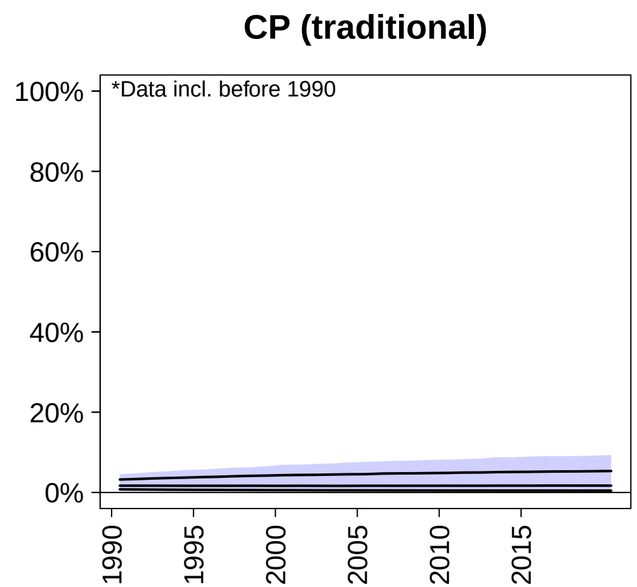
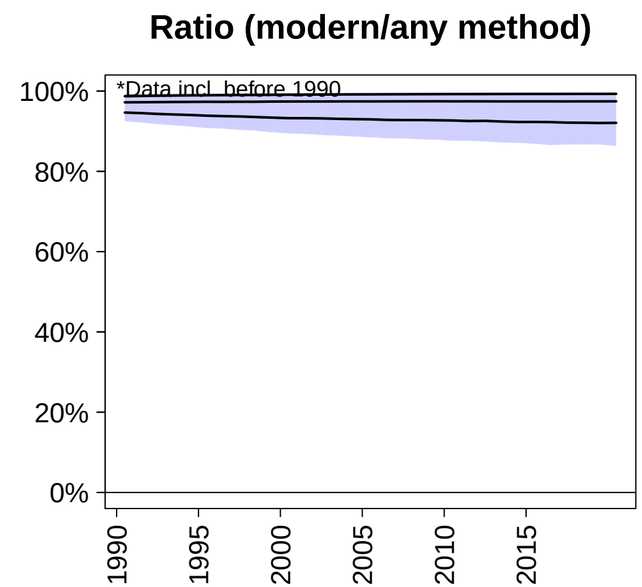
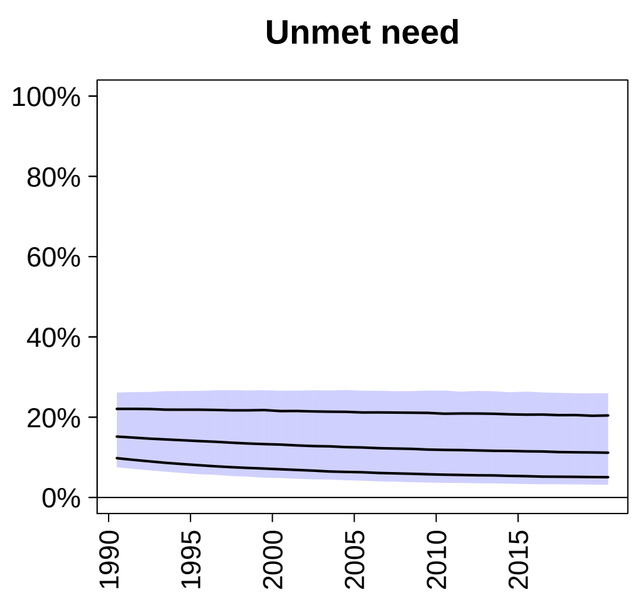
Bahamas (Caribbean)

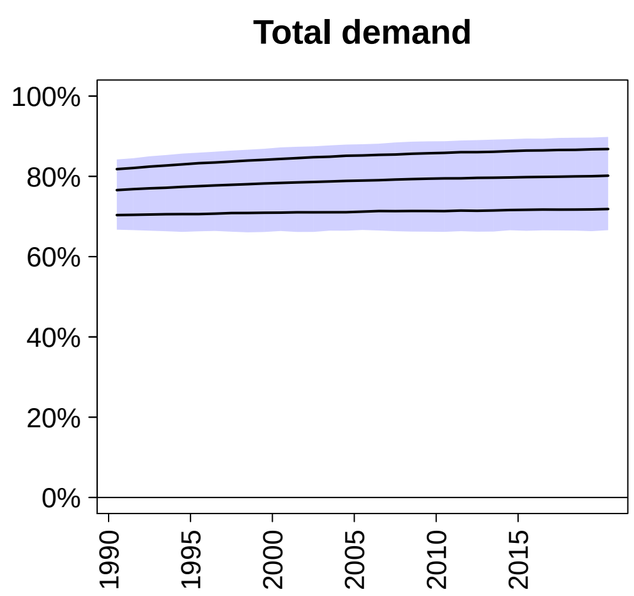


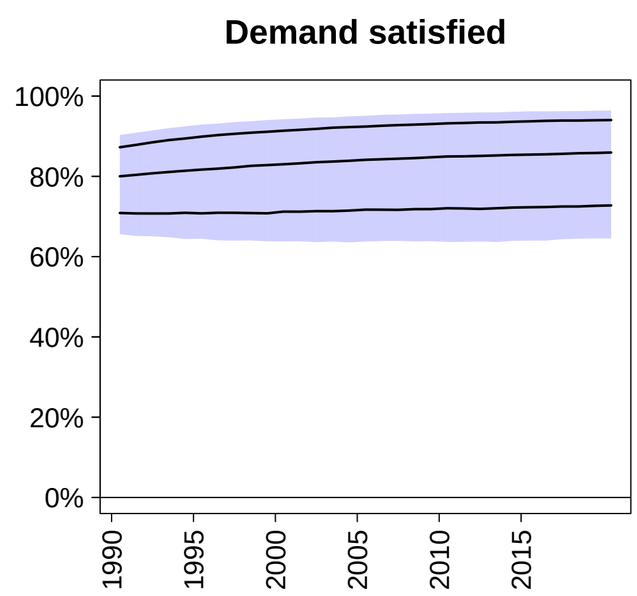












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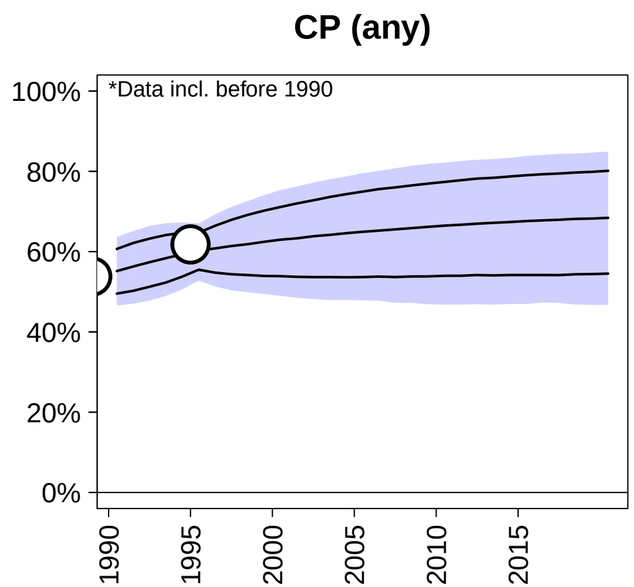
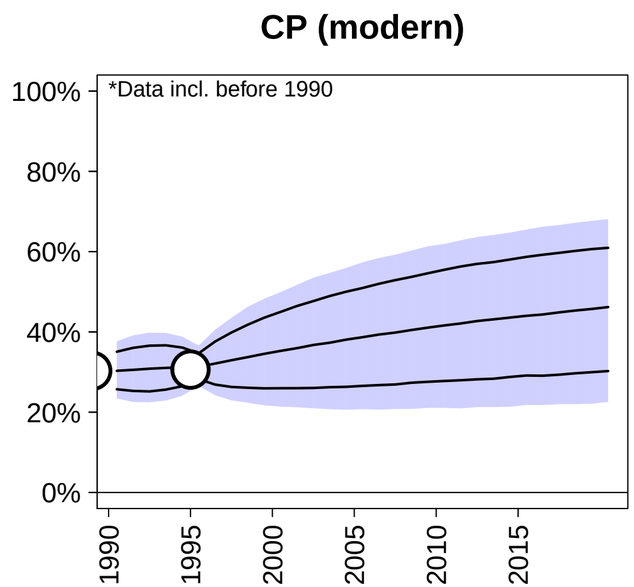
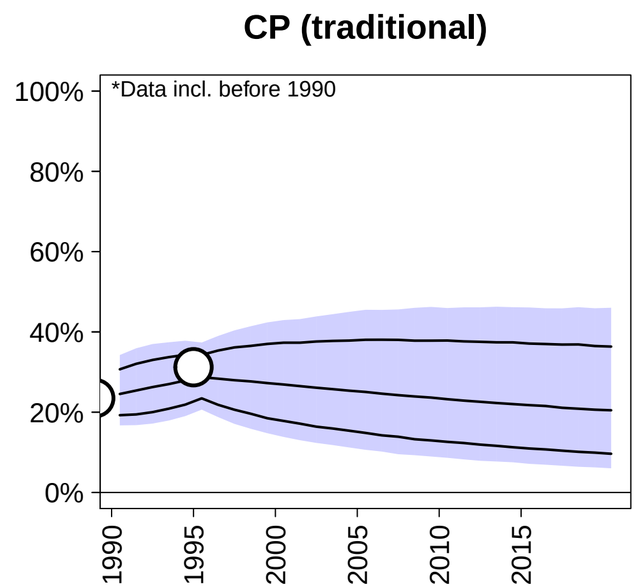
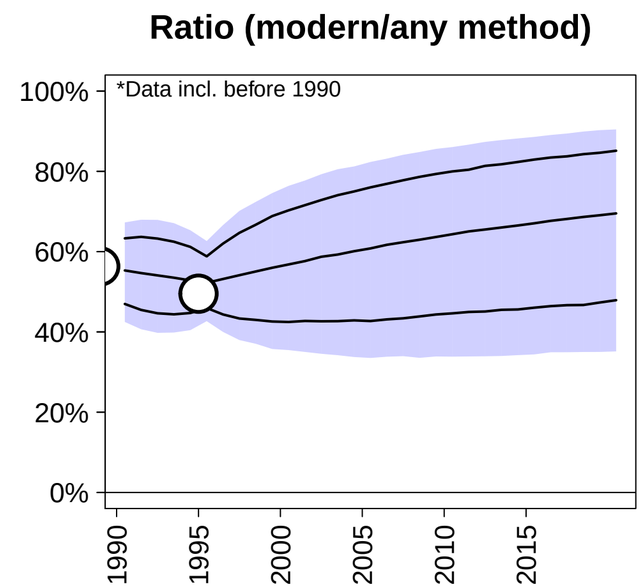
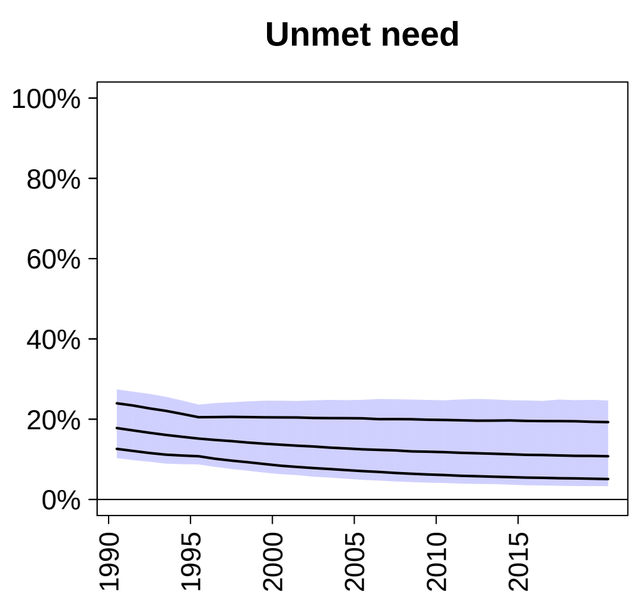
Bahrain (Western Asia)

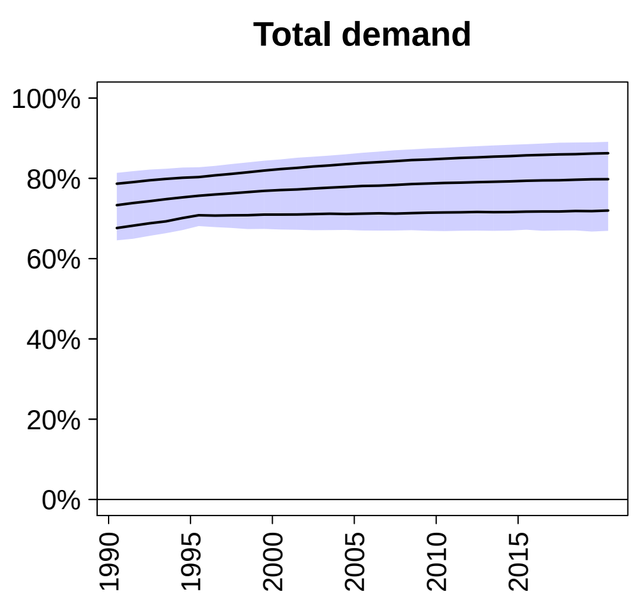


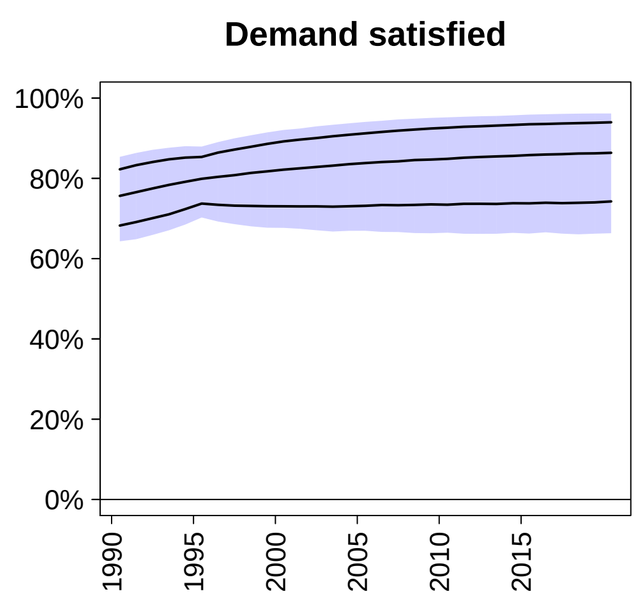












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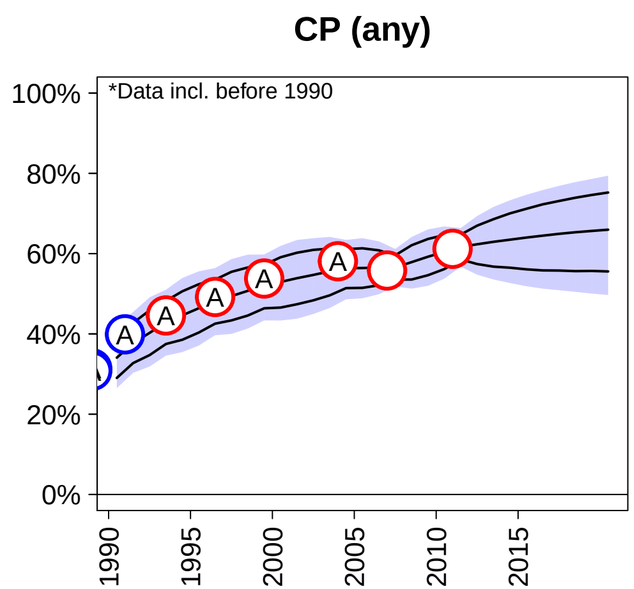
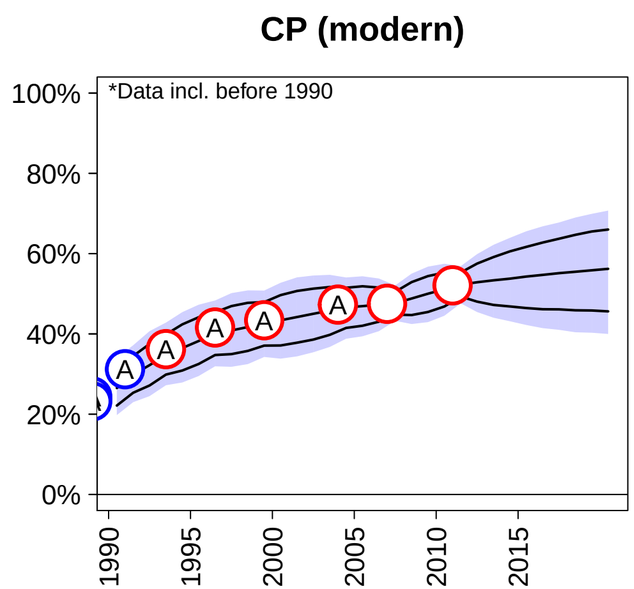
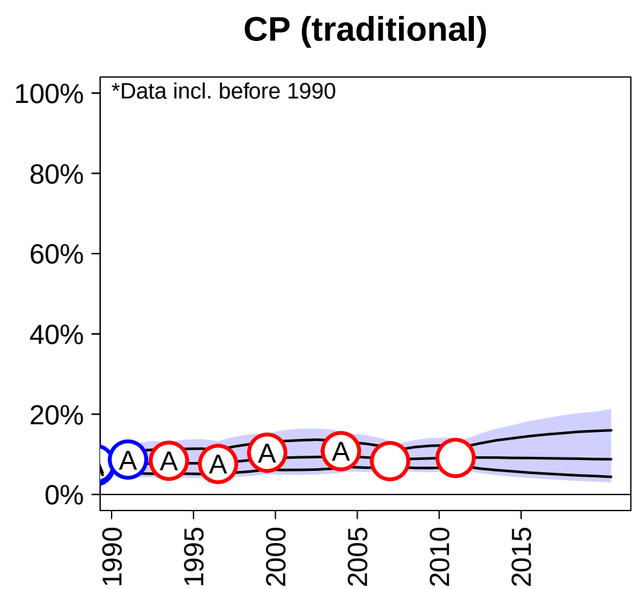
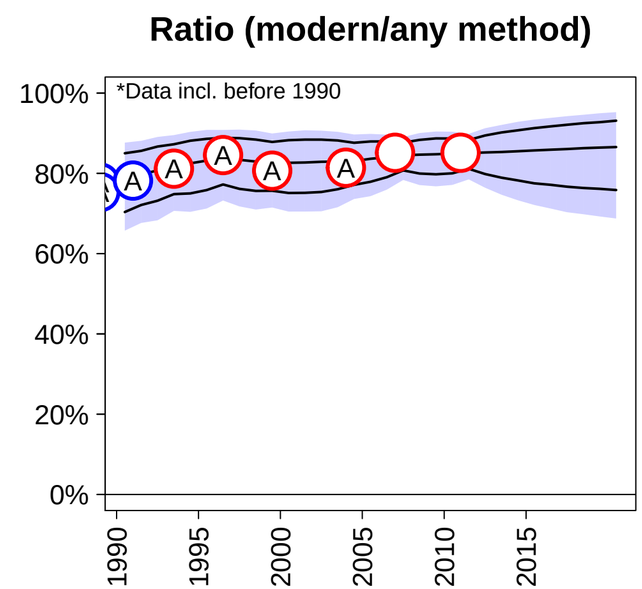
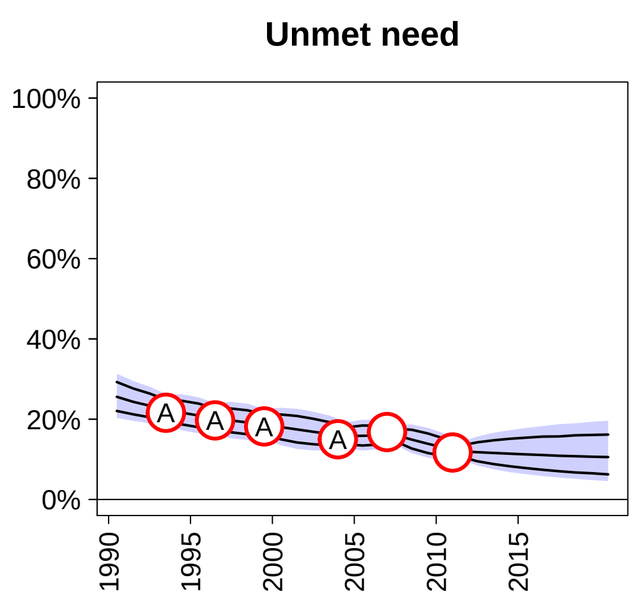
Bangladesh (Southern Asia)

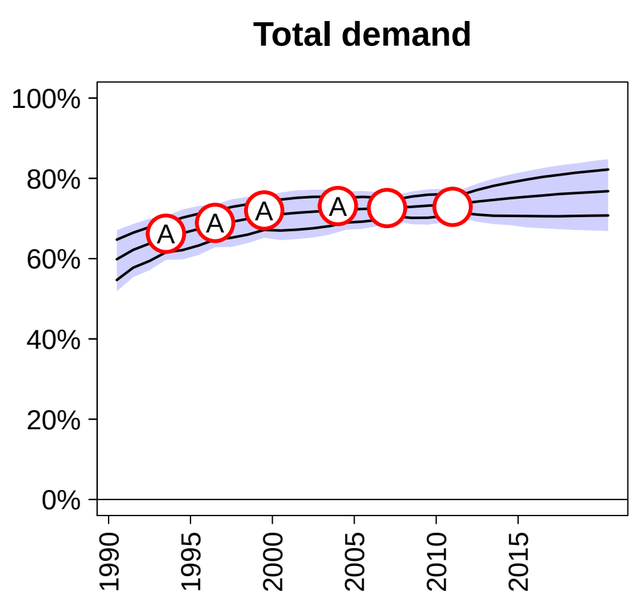


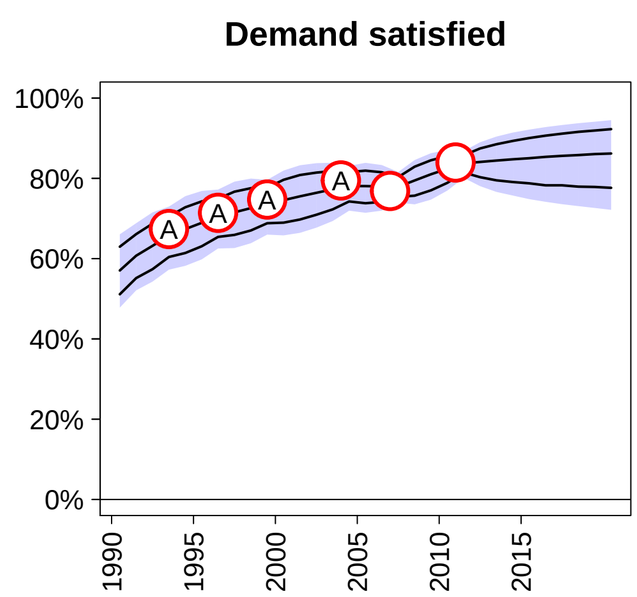












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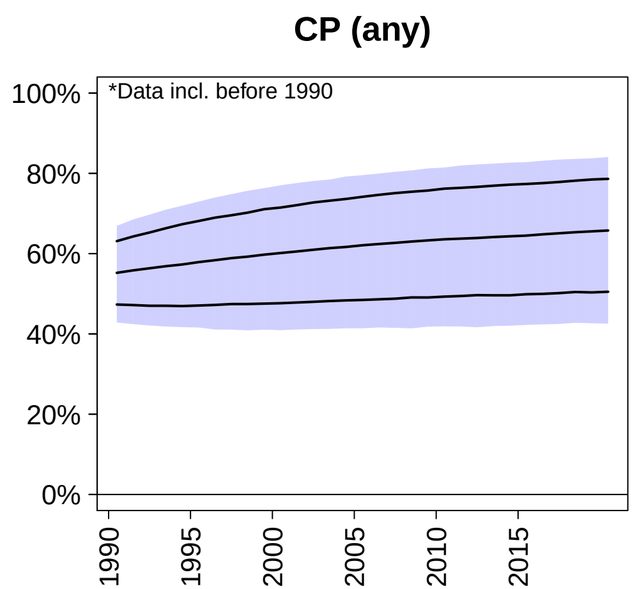
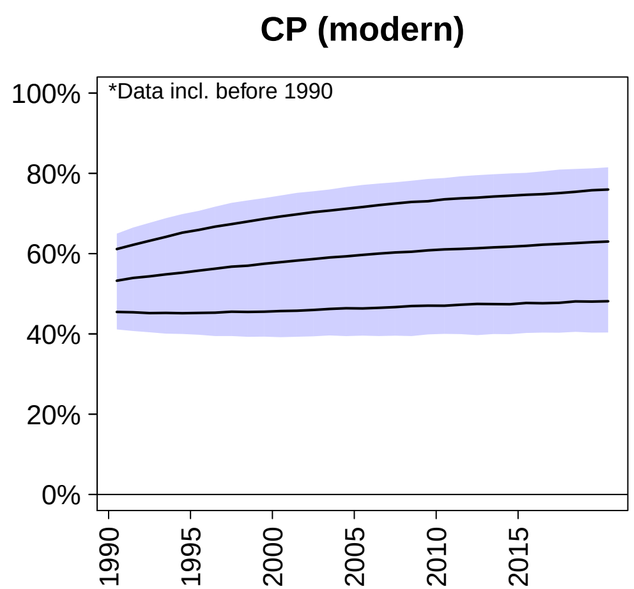
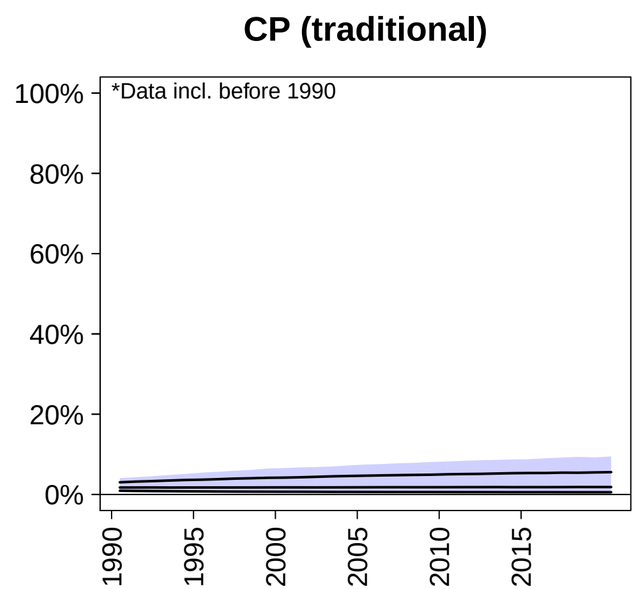
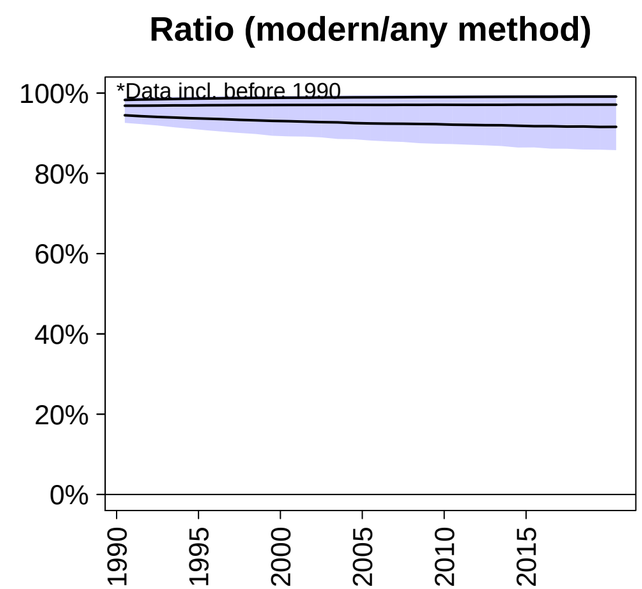
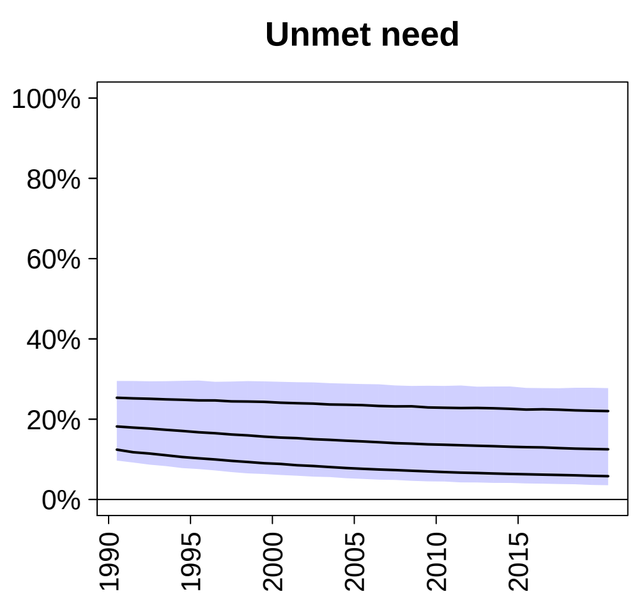
Barbados (Caribbean)

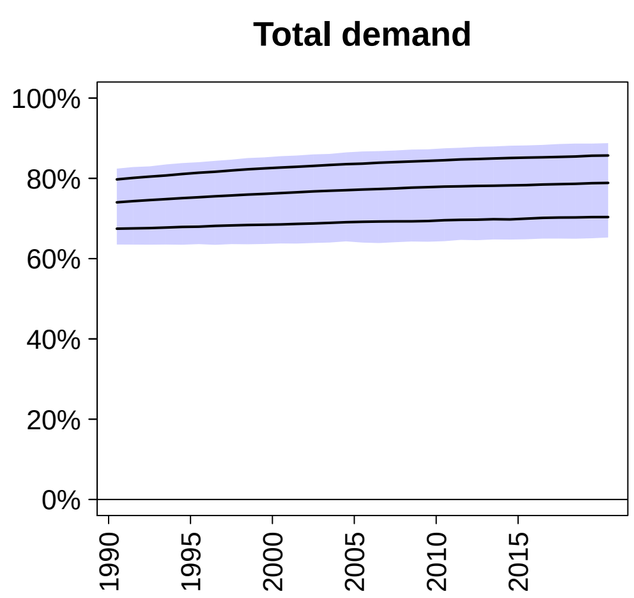


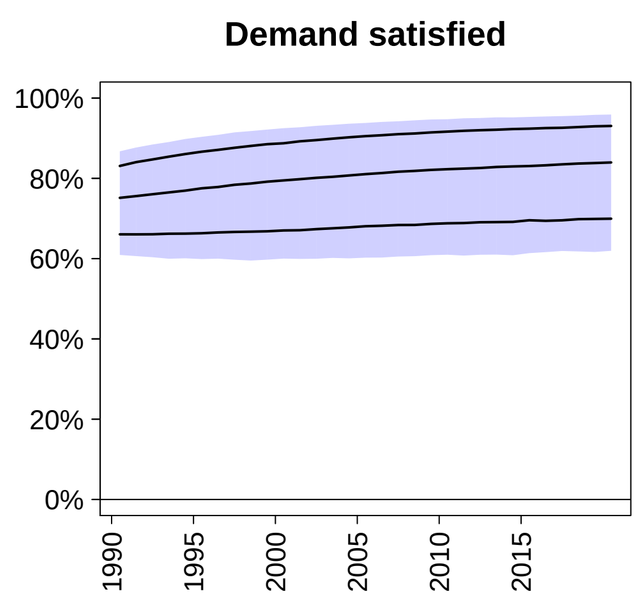












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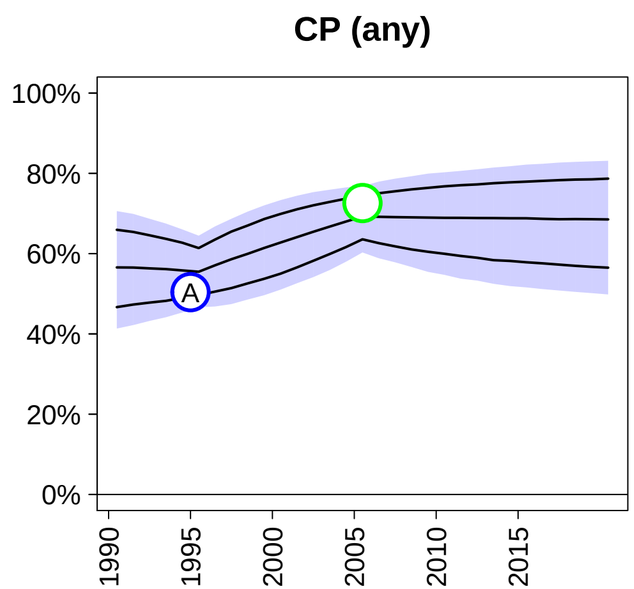
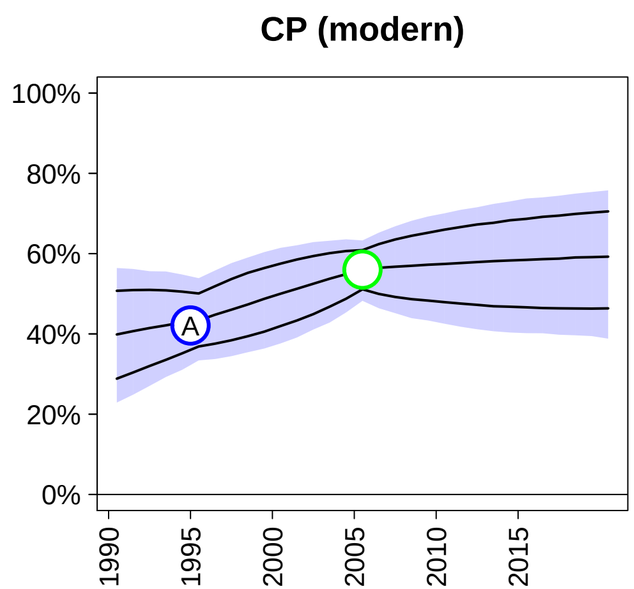
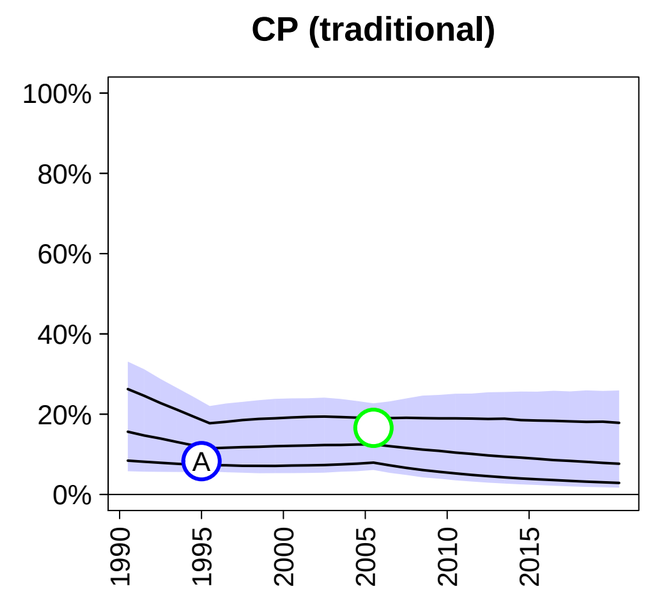
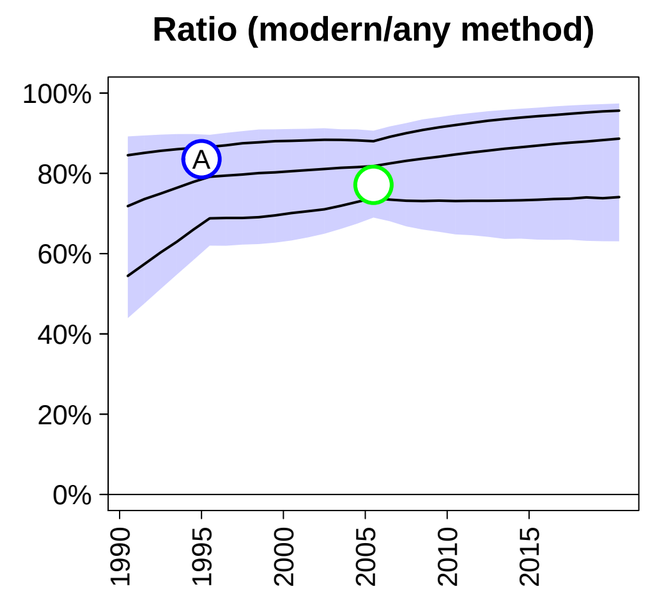
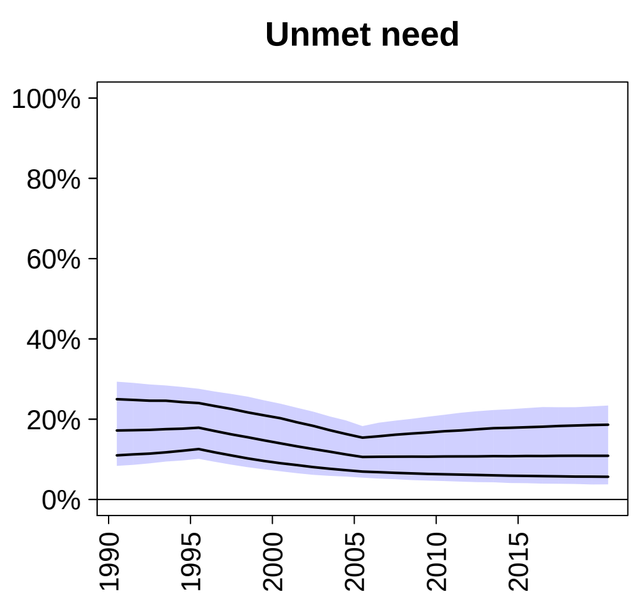
Belarus (Eastern Europe)

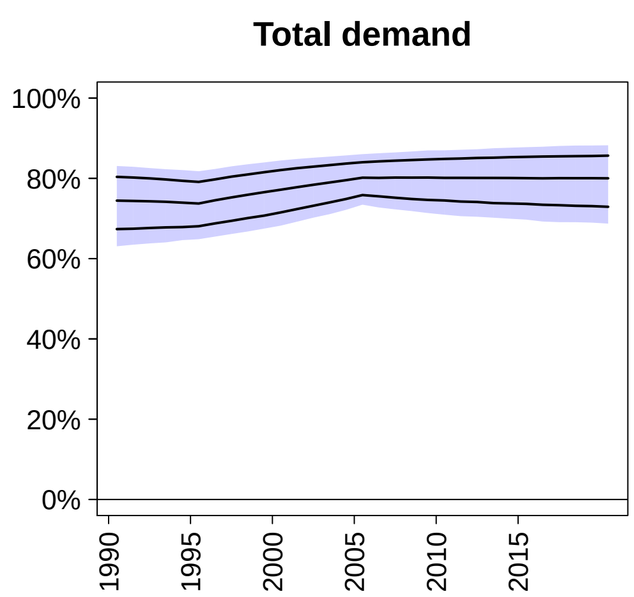


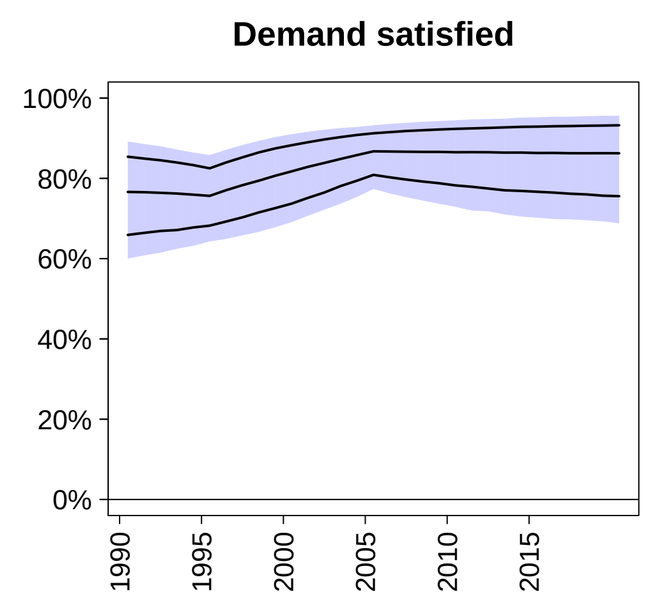












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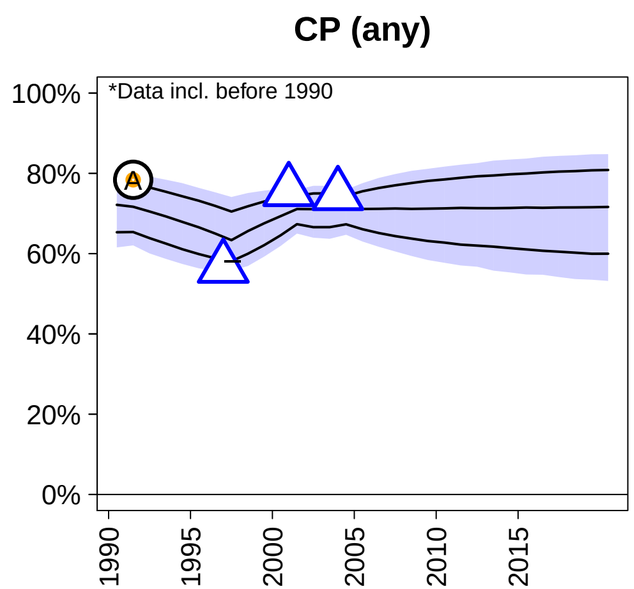
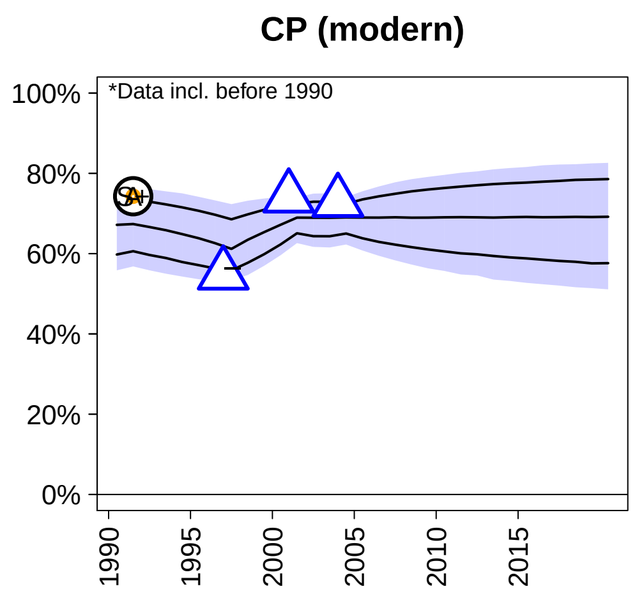
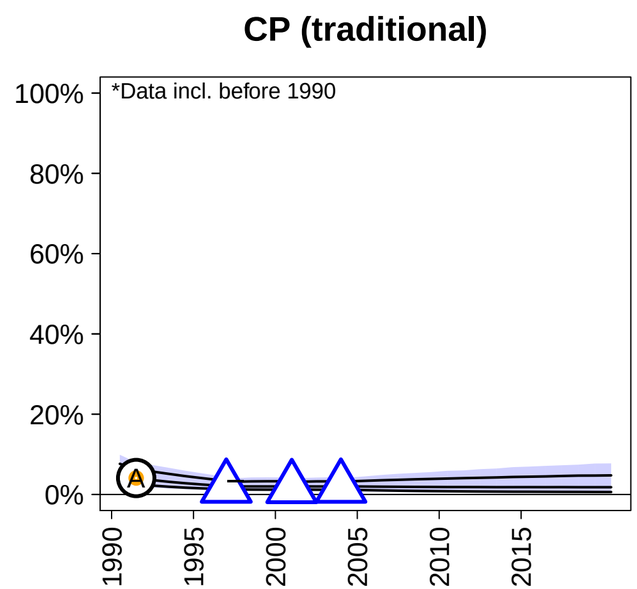
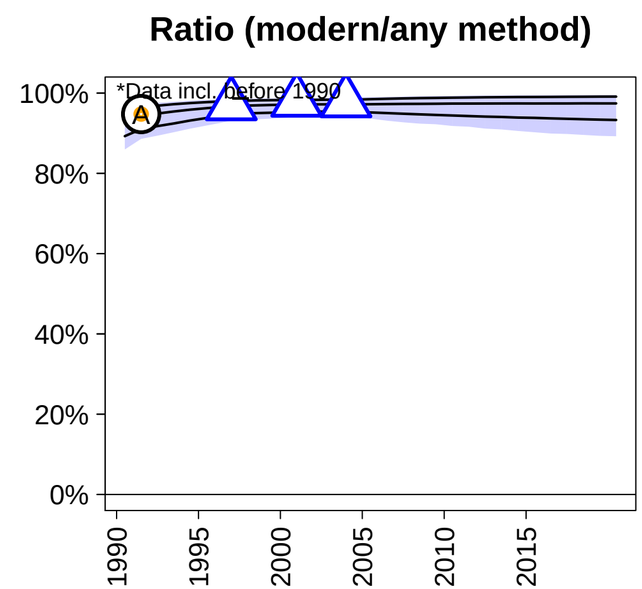
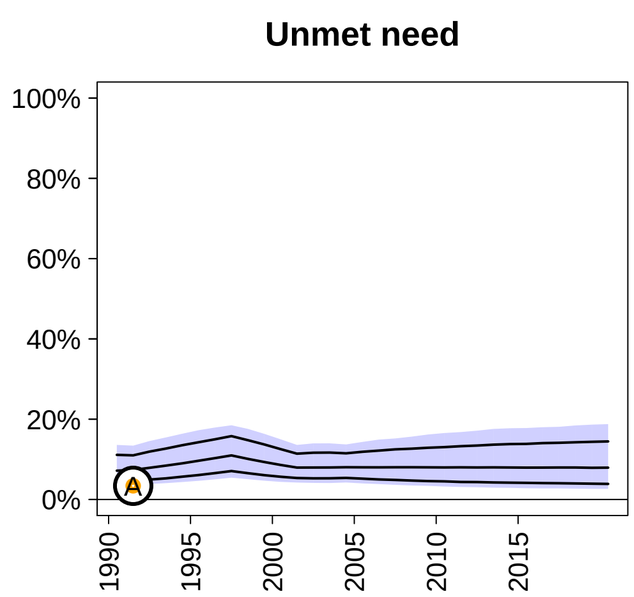
Belgium (Western Europe)

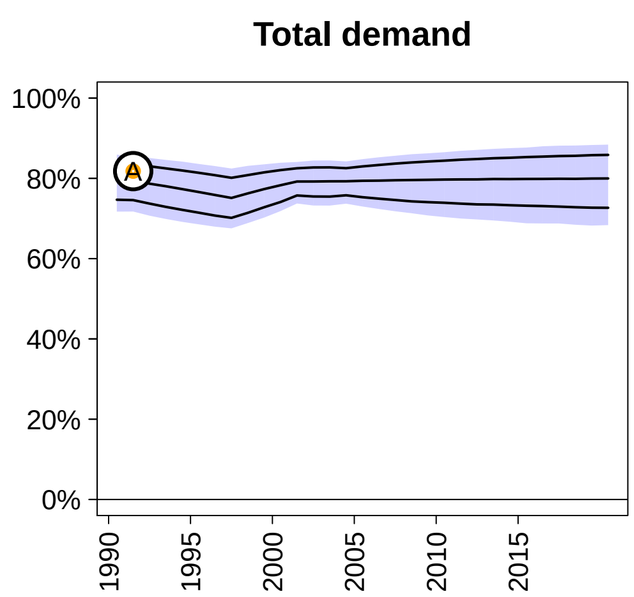


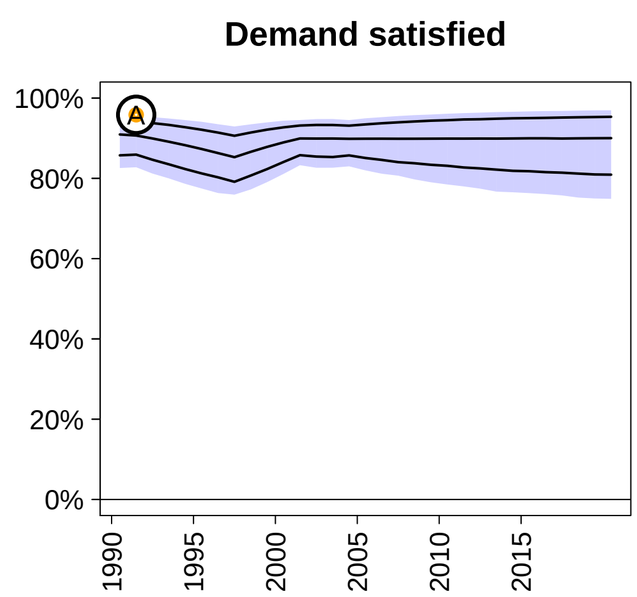












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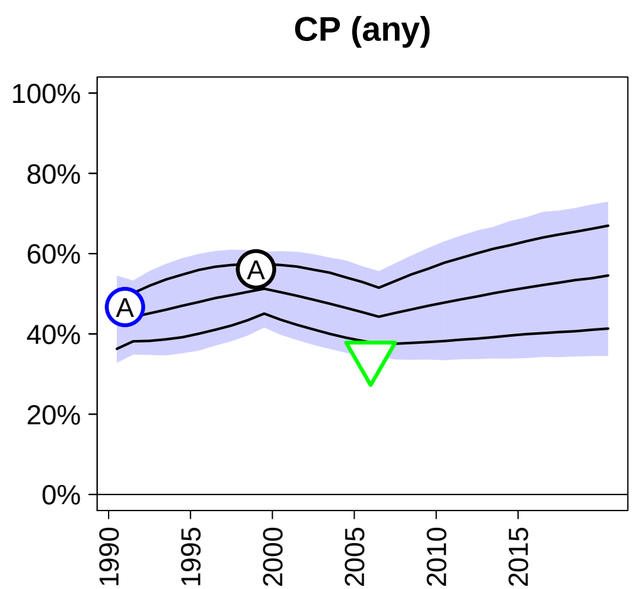
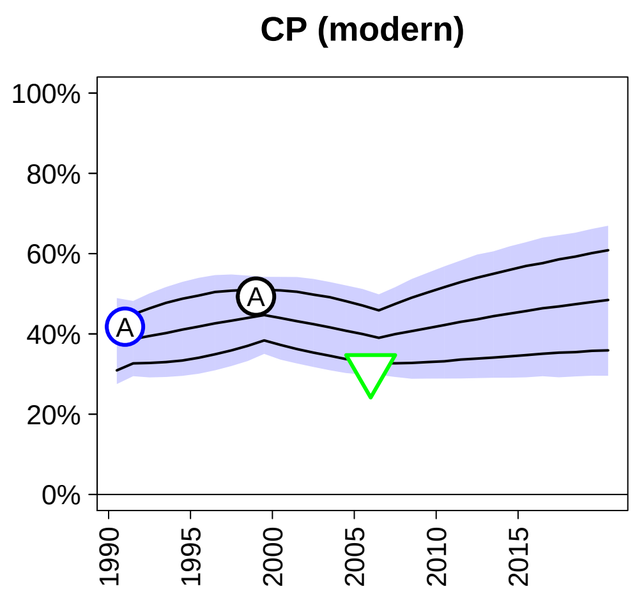
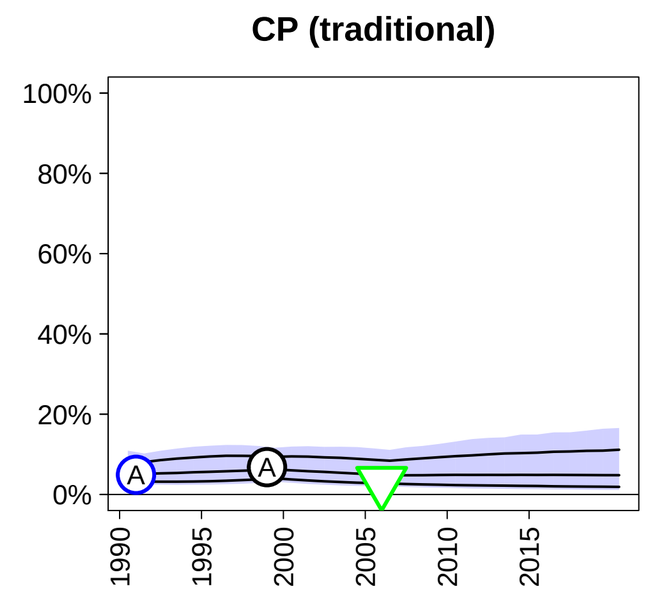
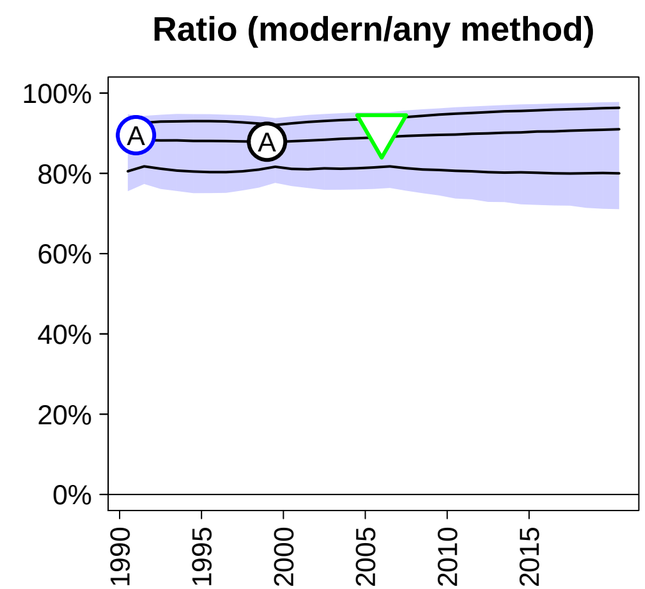
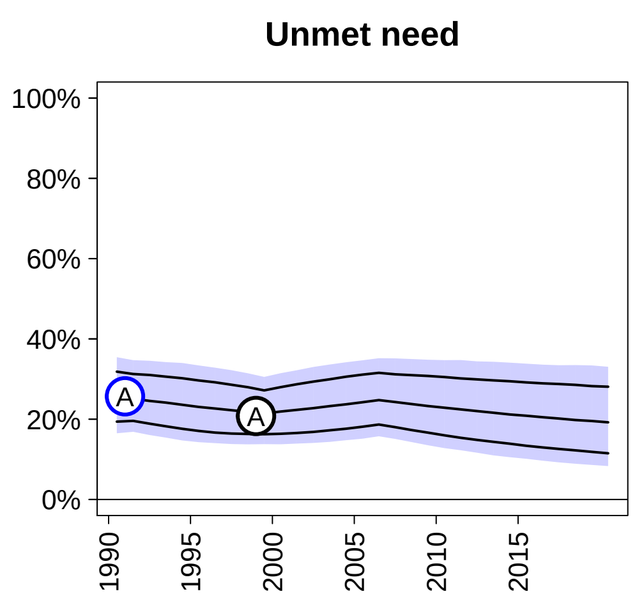
Belize (Central America)

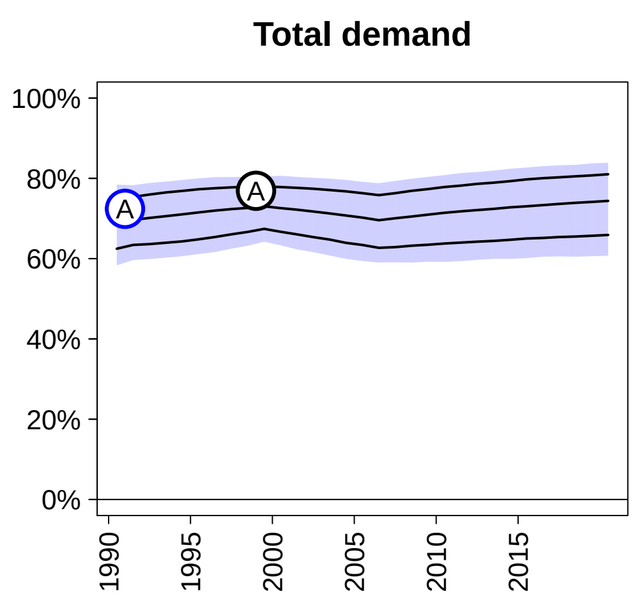


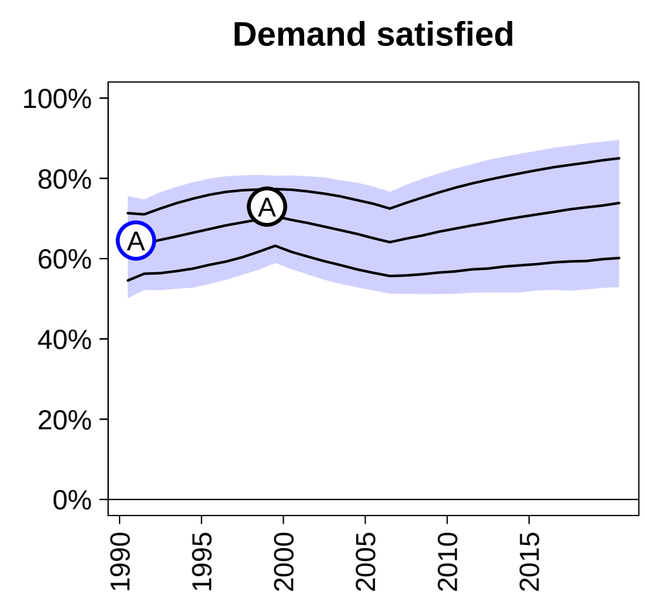












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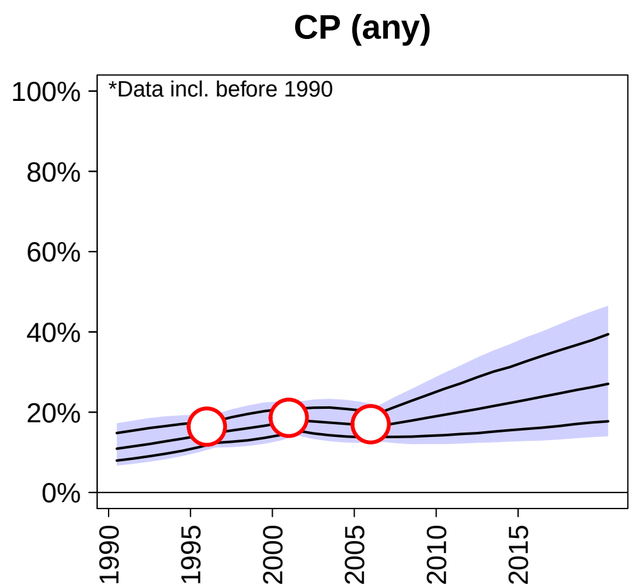
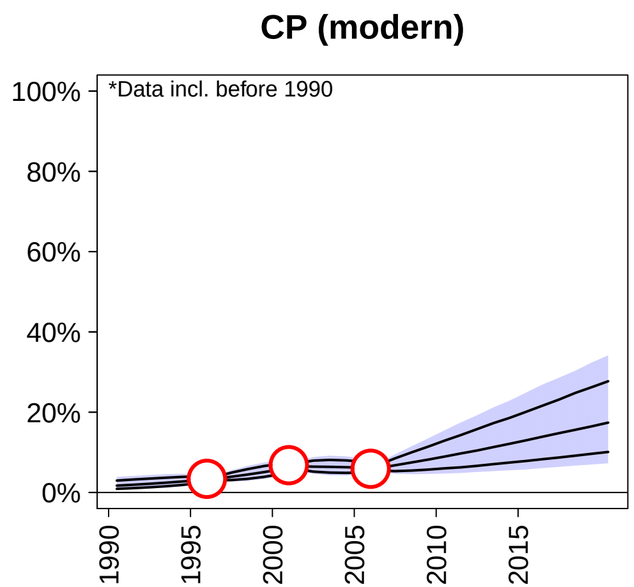
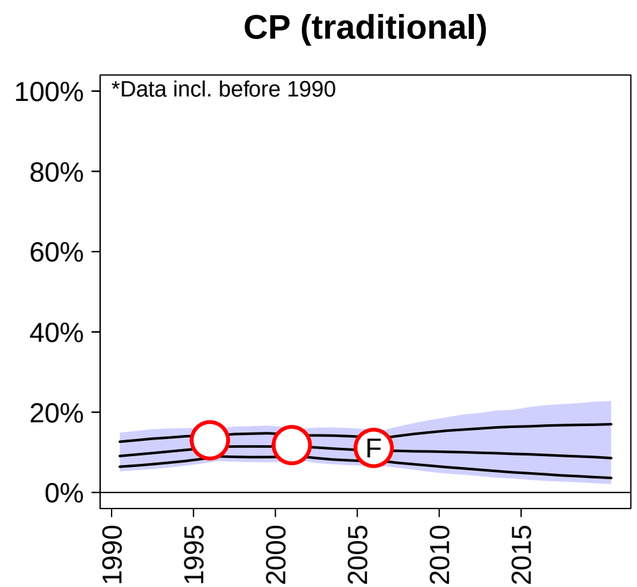
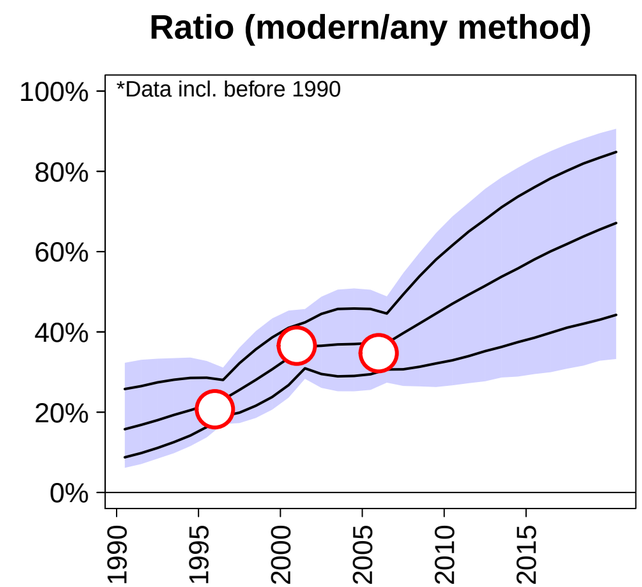
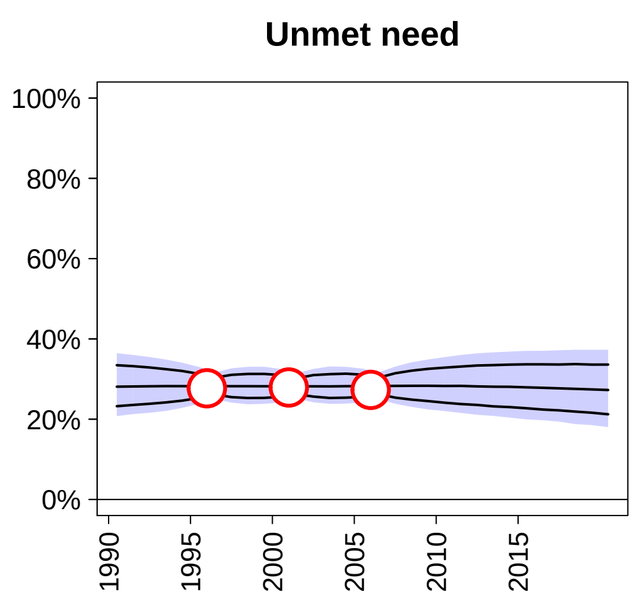
Benin (Western Africa)

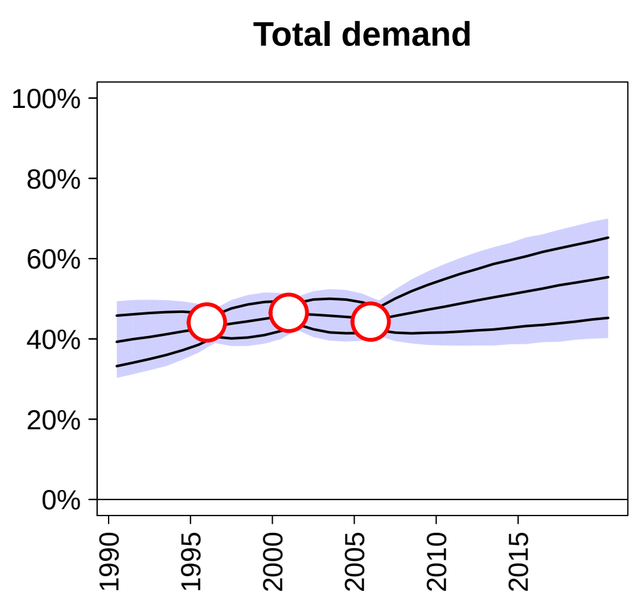


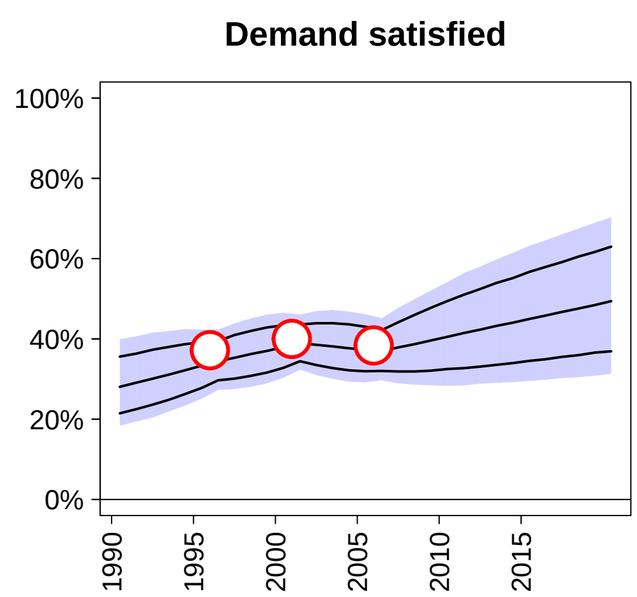












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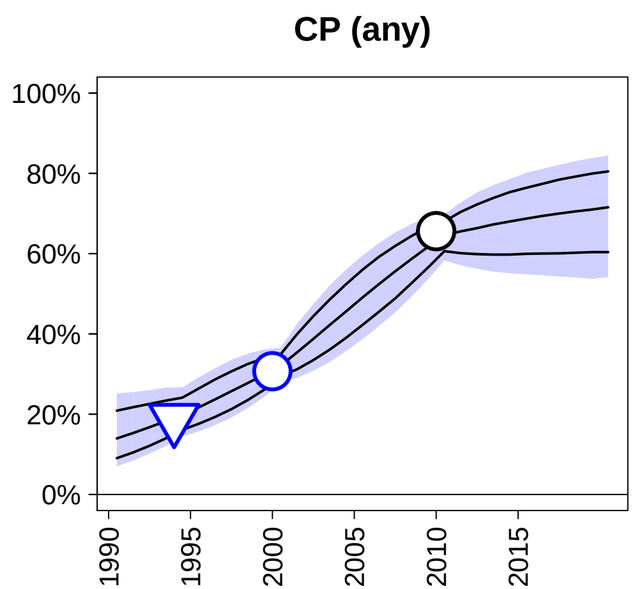
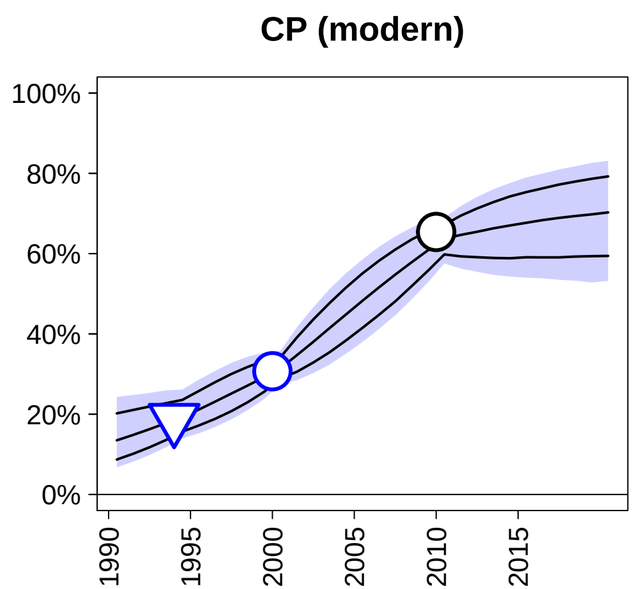
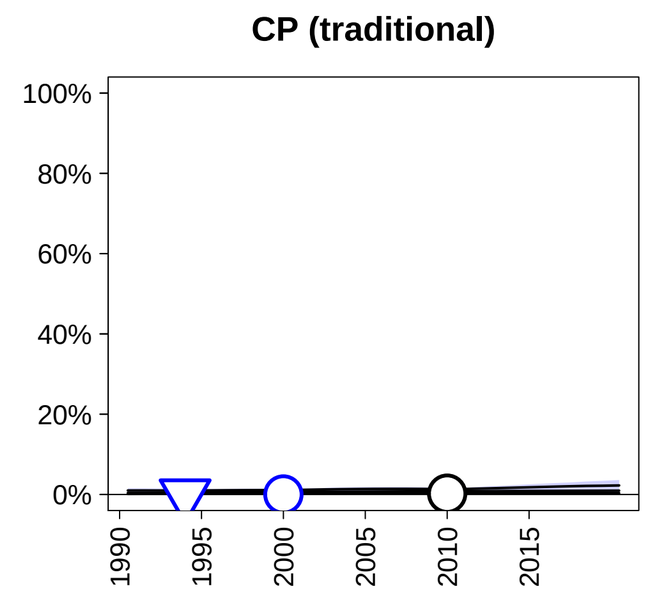
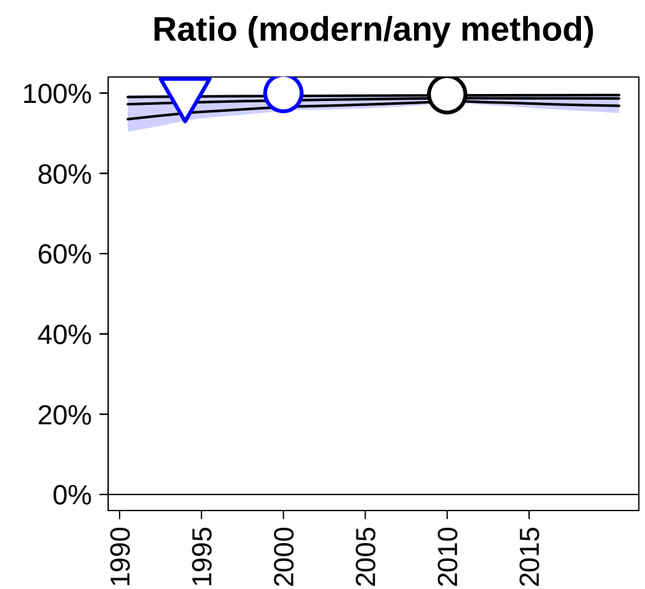
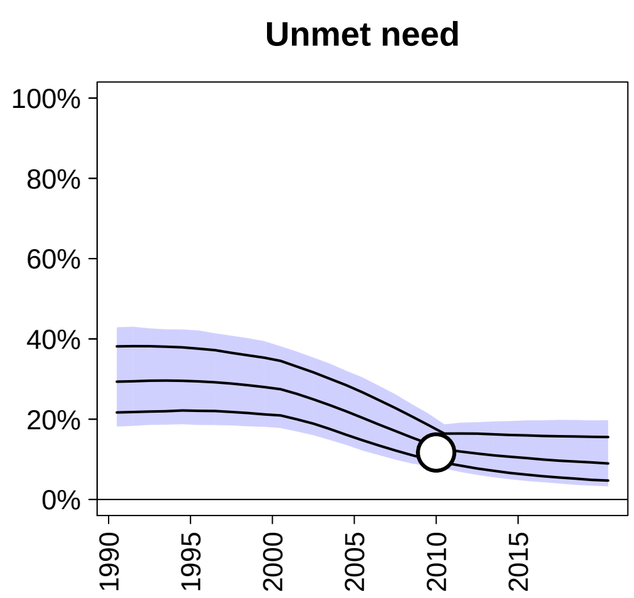
Bhutan (Southern Asia)

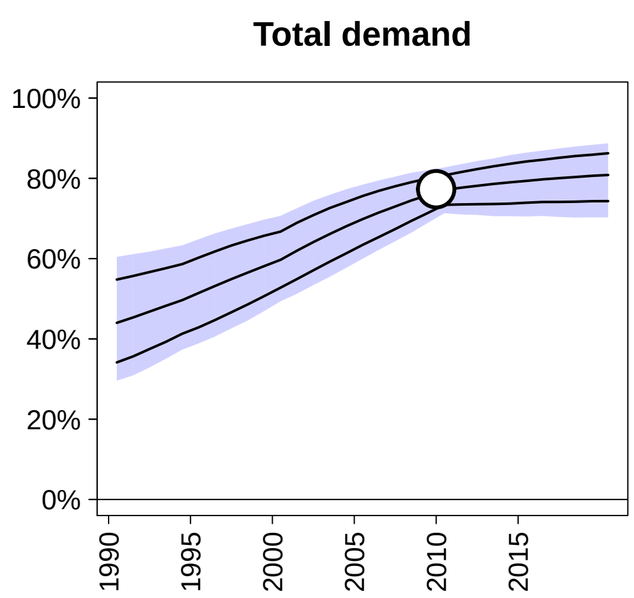


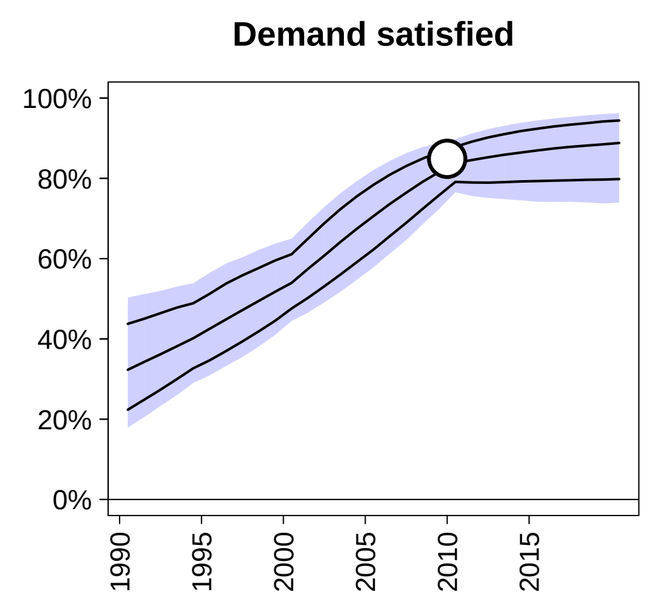












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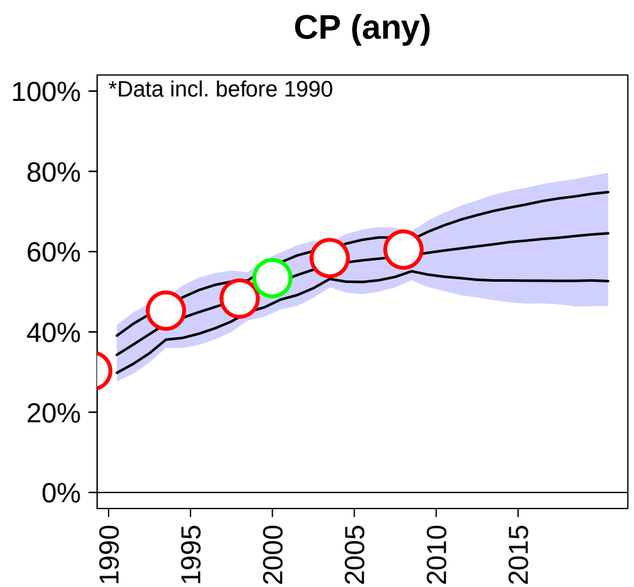
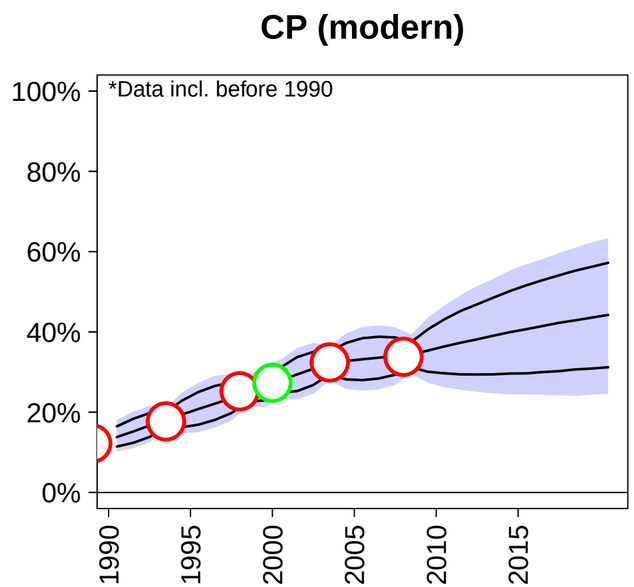
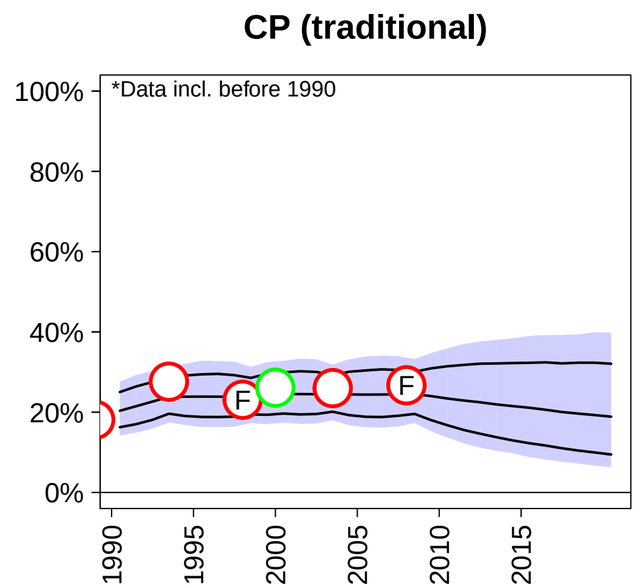
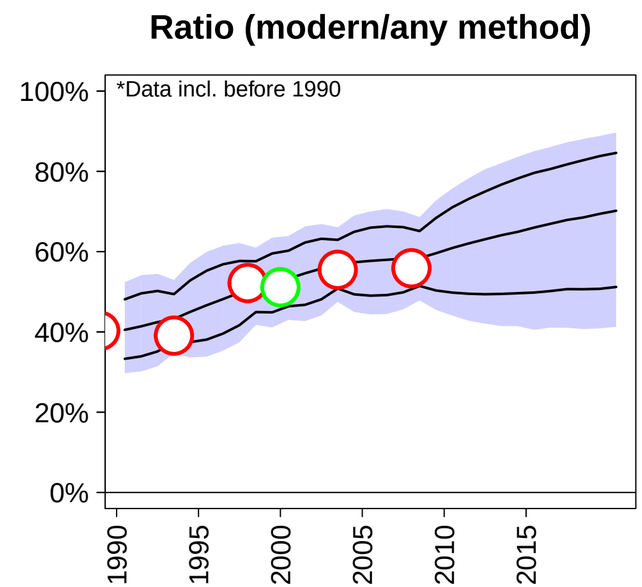
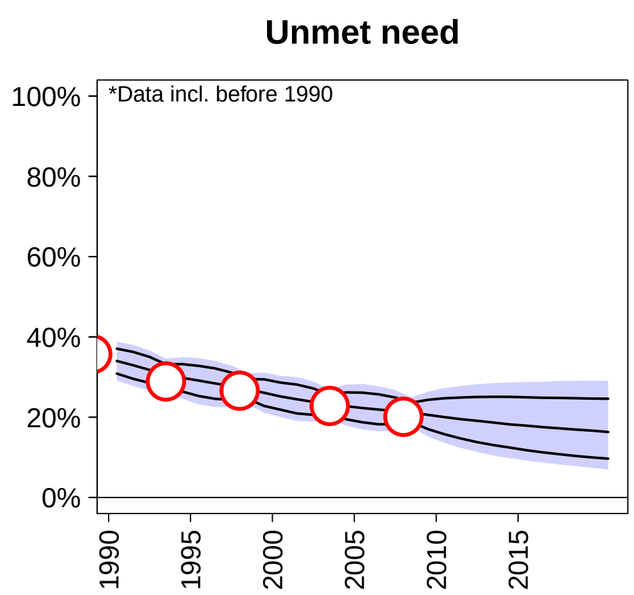
Bolivia (Plurinational State of) (South America)

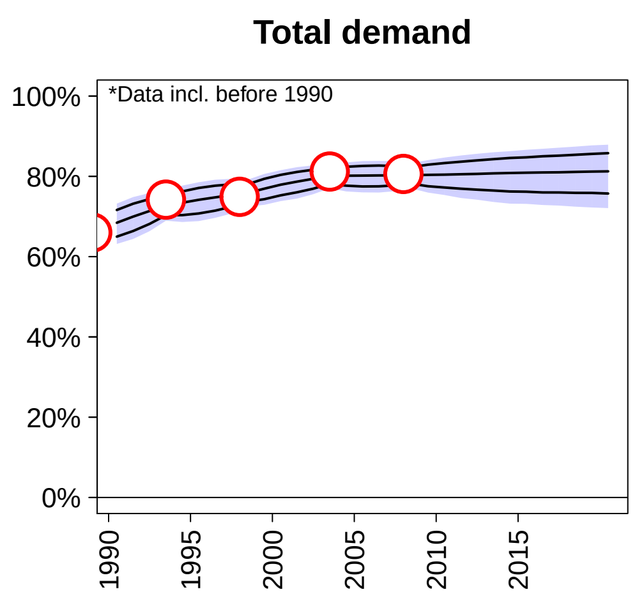


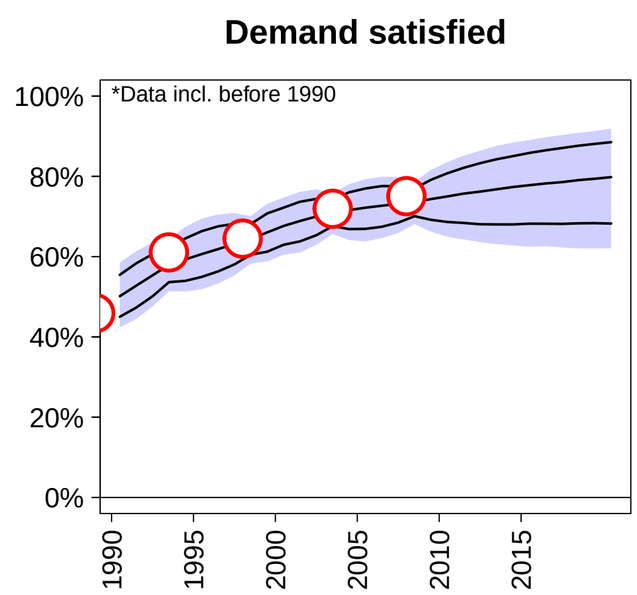












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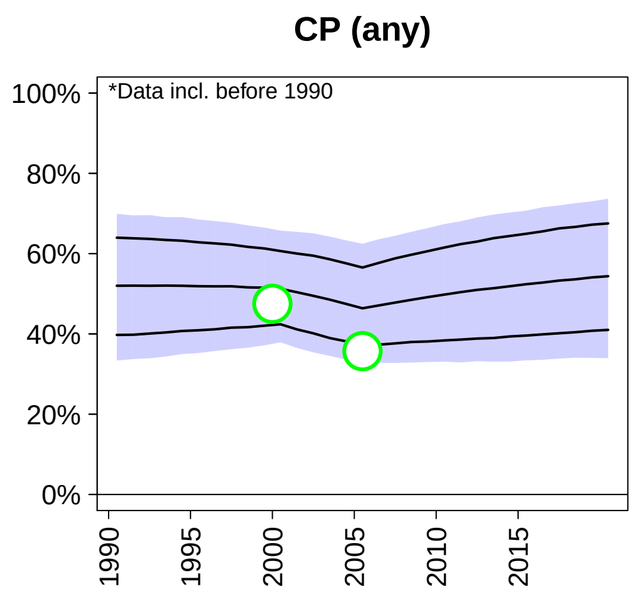
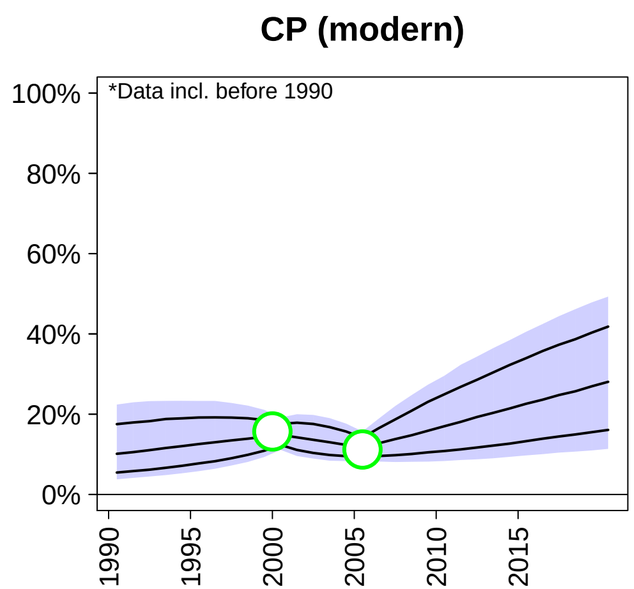
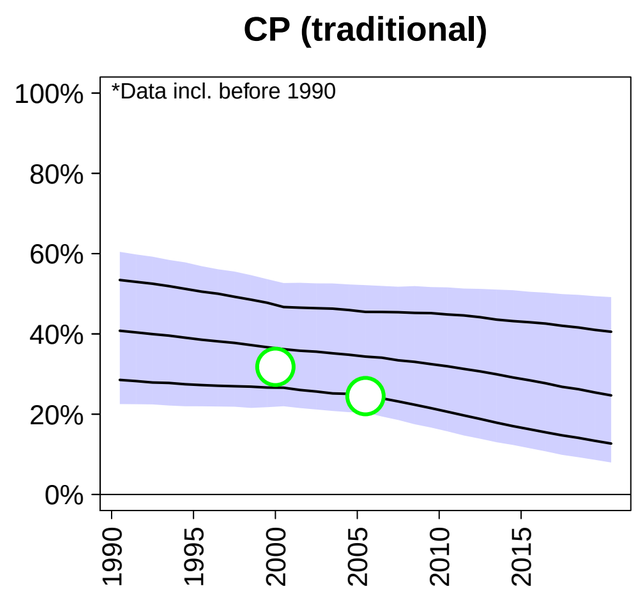
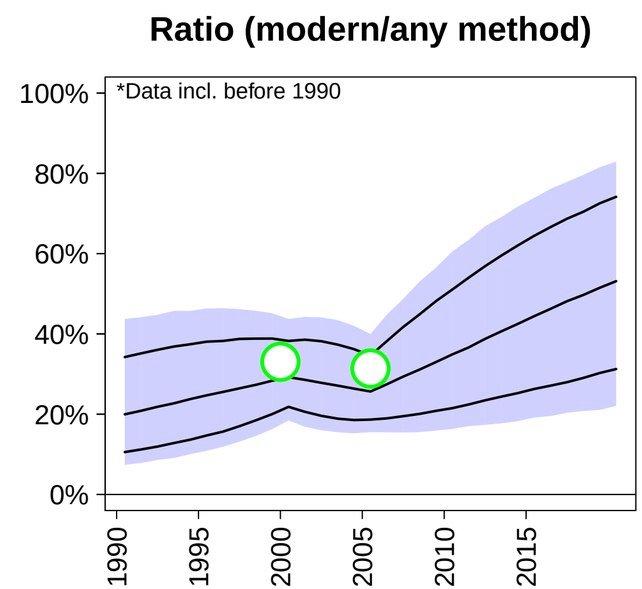
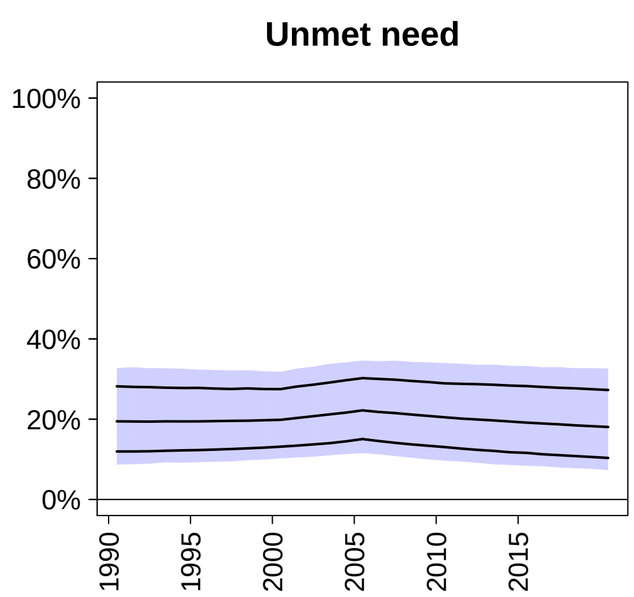
Bosnia and Herzegovina (Southern Europe)

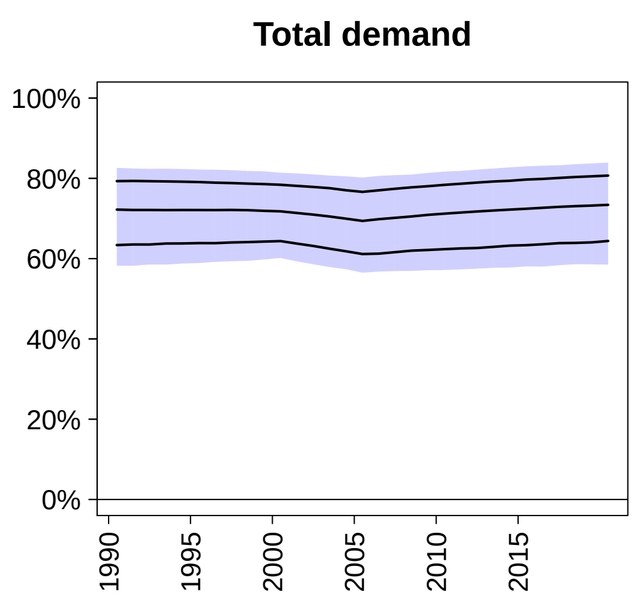


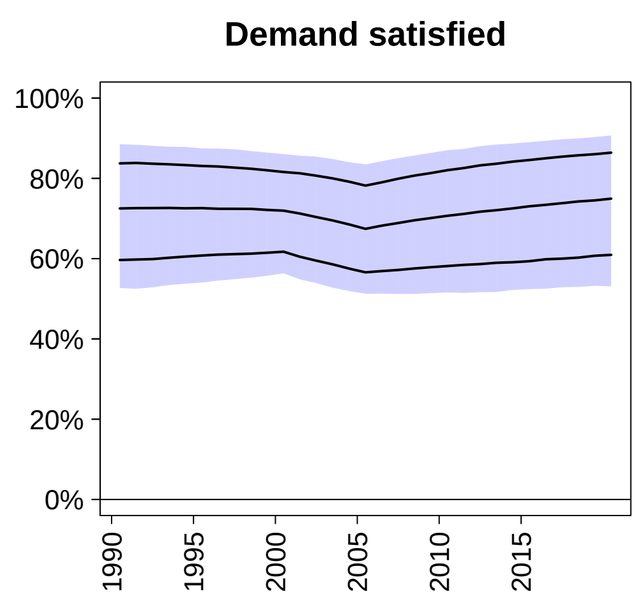












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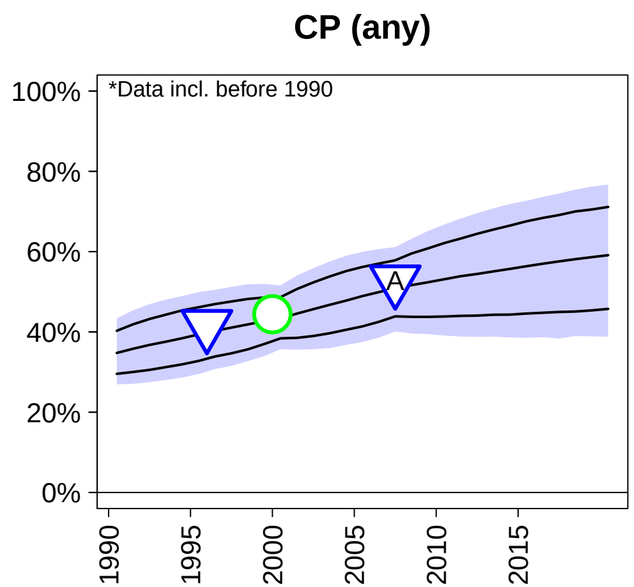
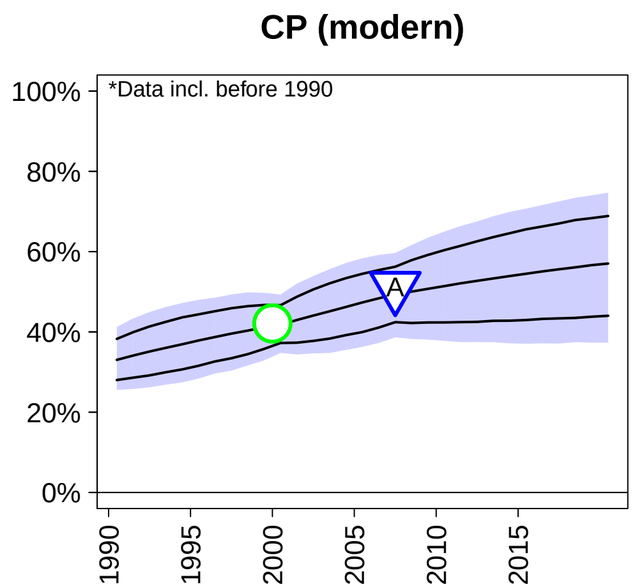
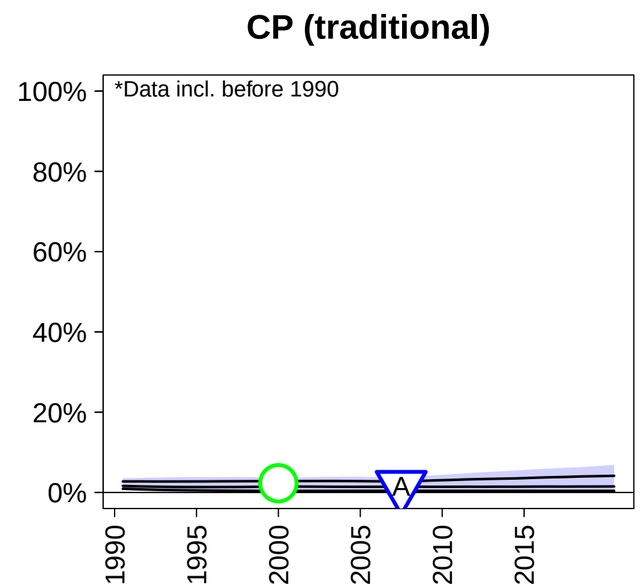
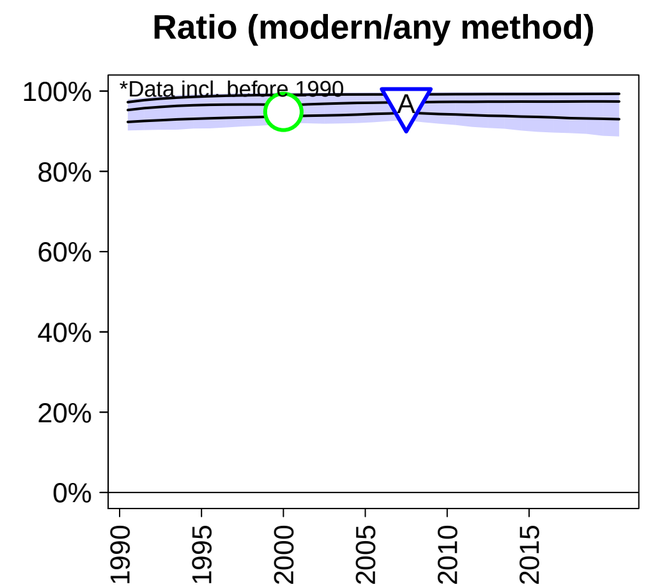
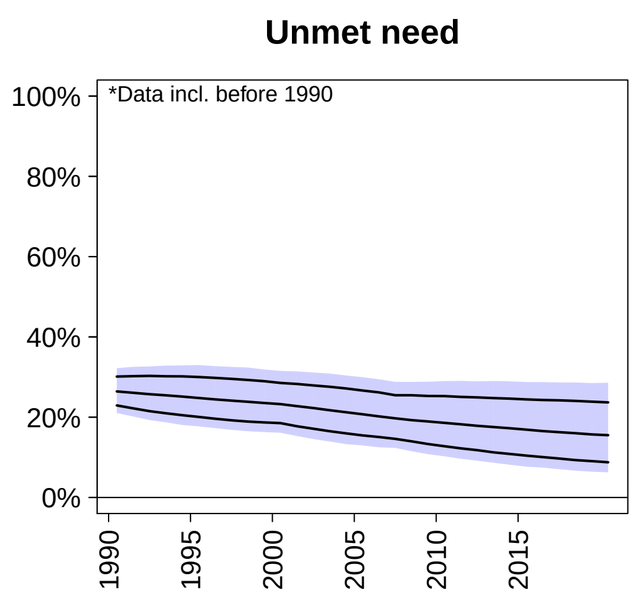
Botswana (Southern Africa)

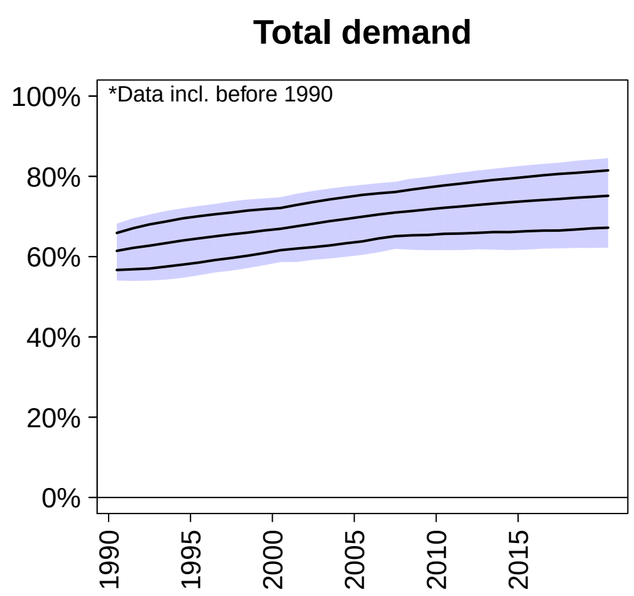


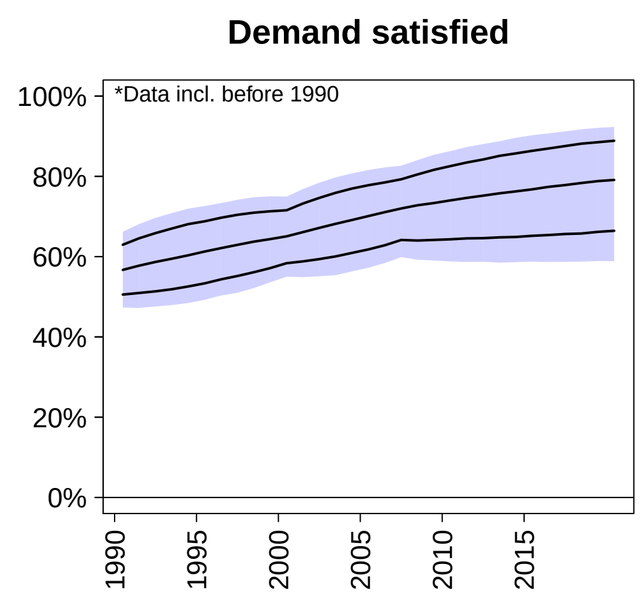












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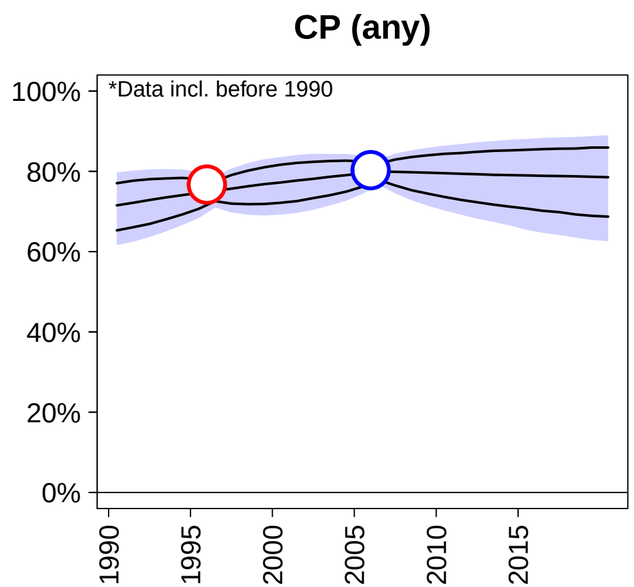
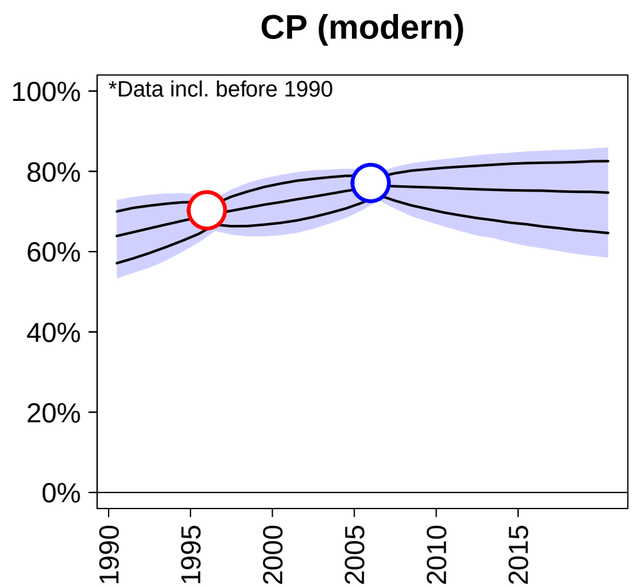
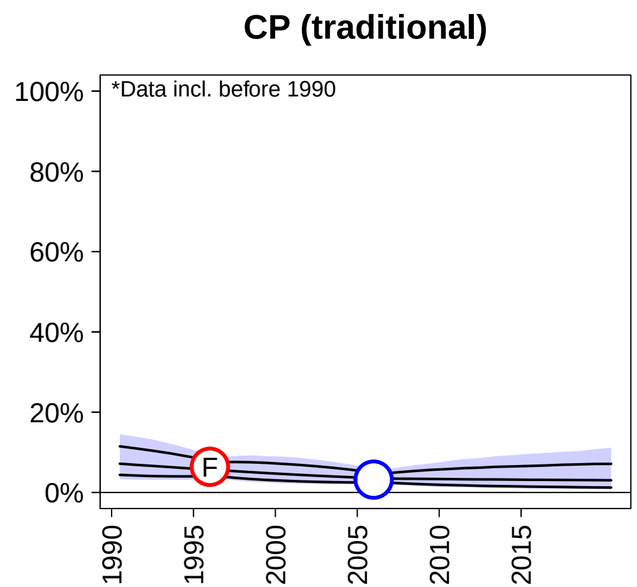
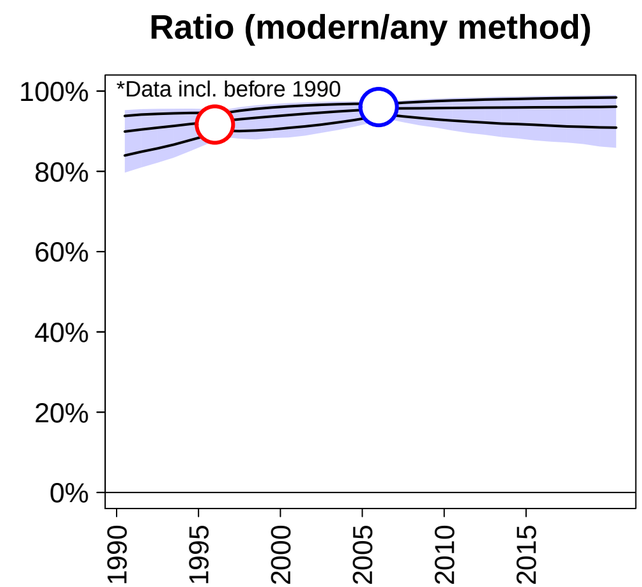
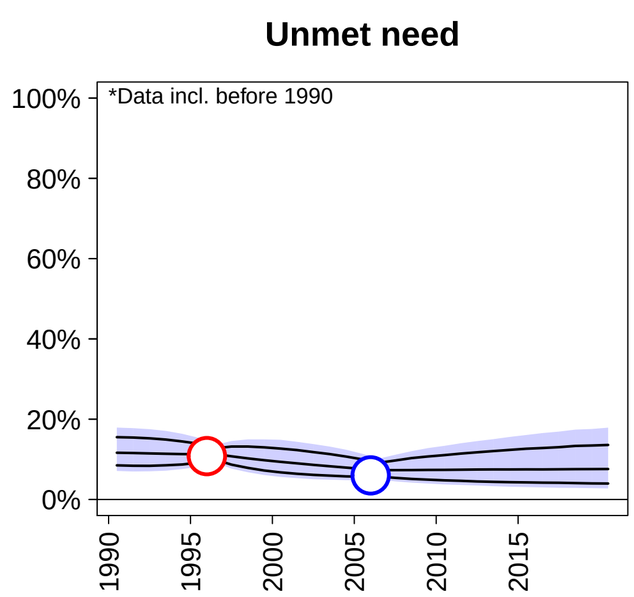
Brazil (South America)

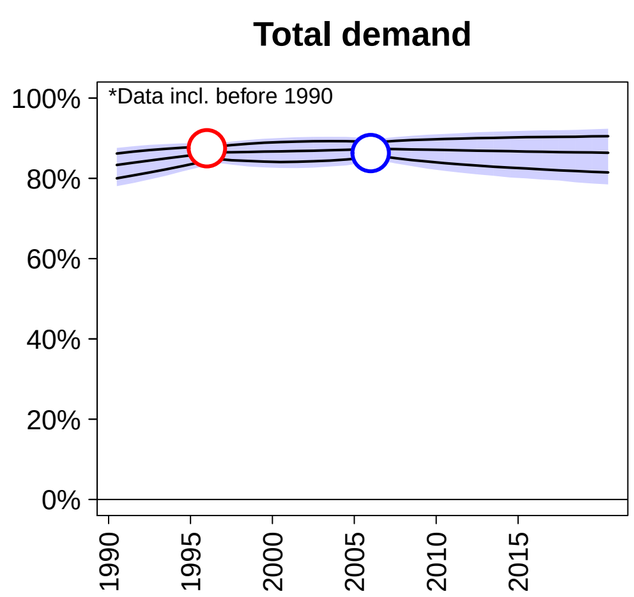


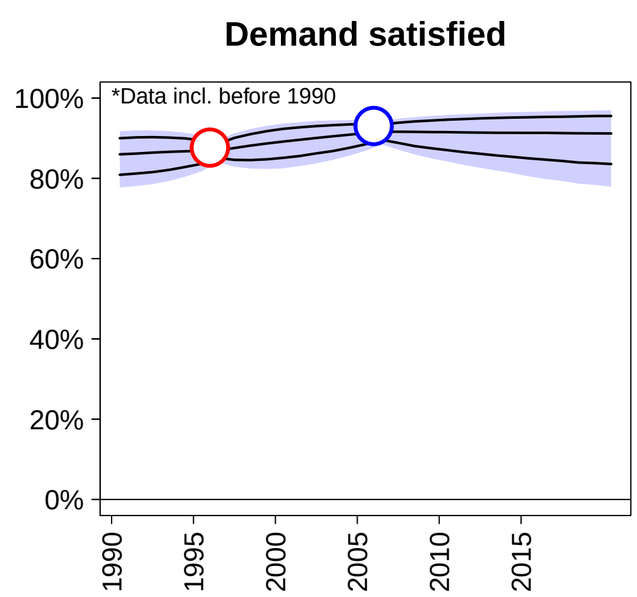












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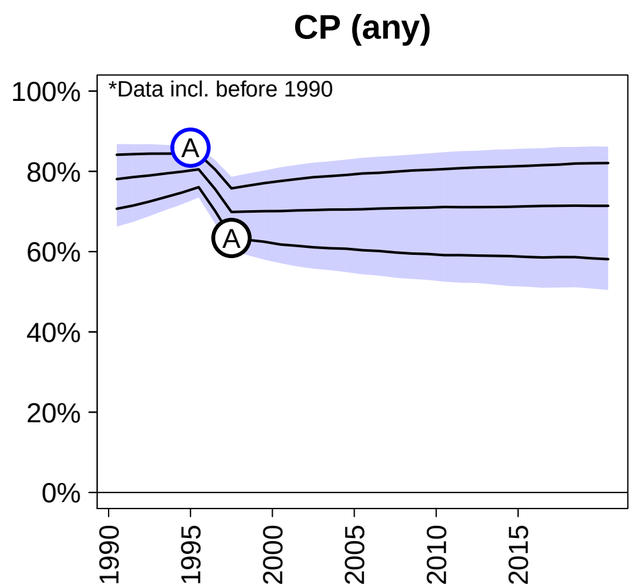
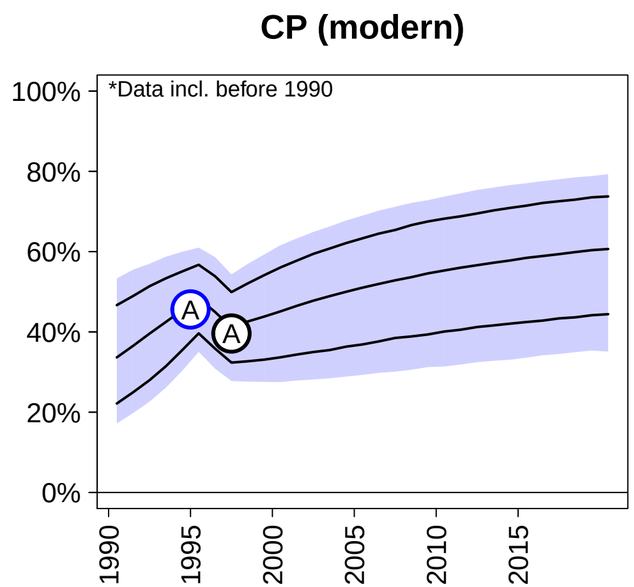
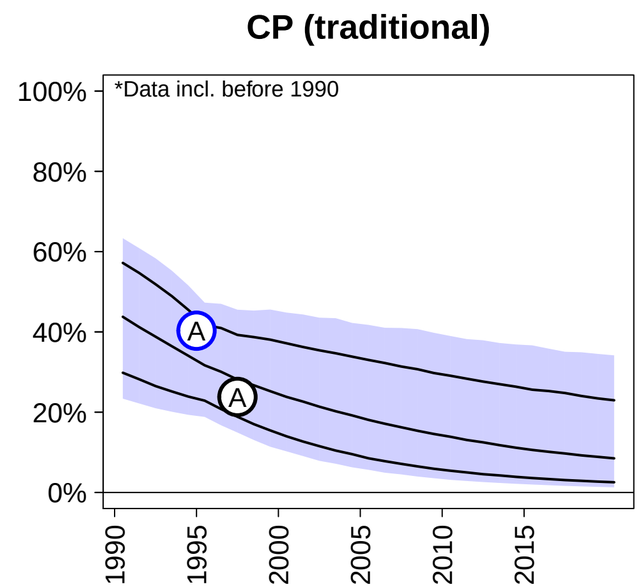
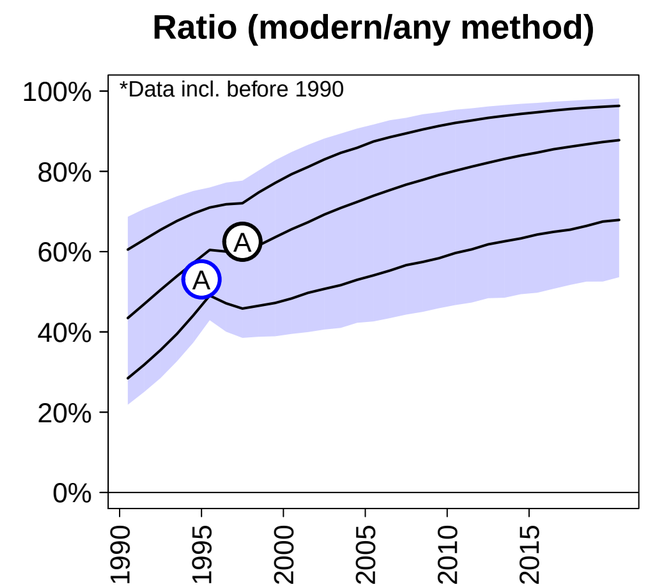
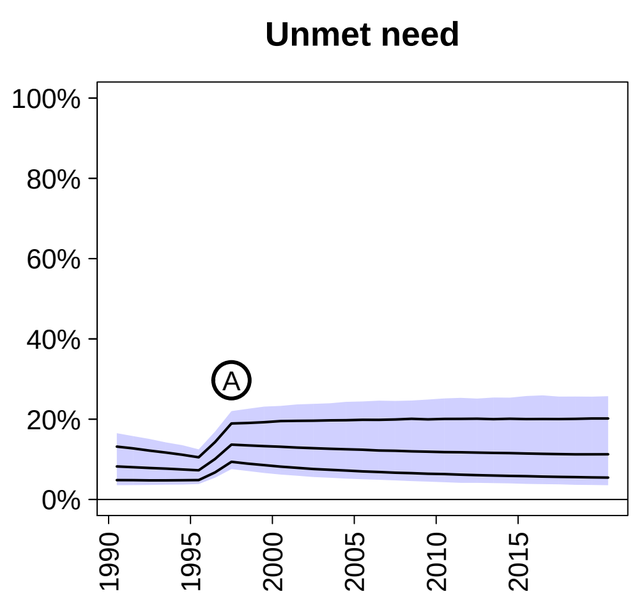
Bulgaria (Eastern Europe)

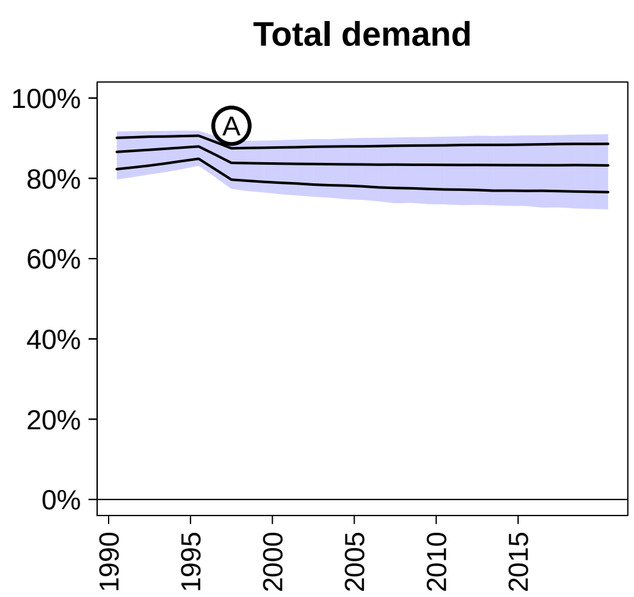


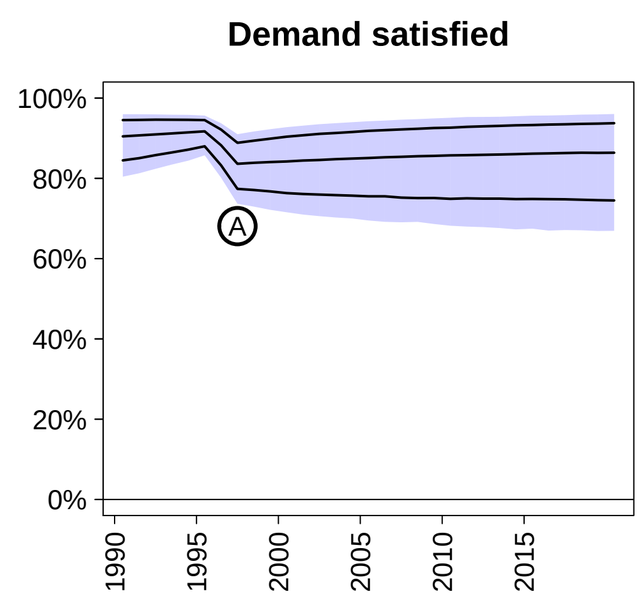












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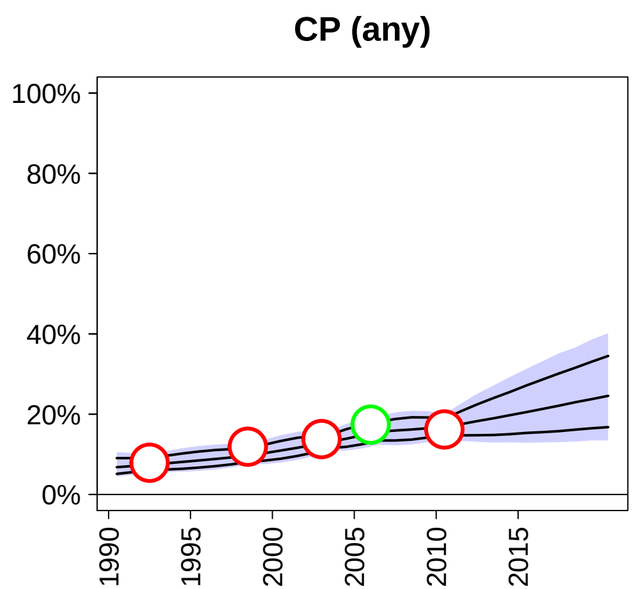
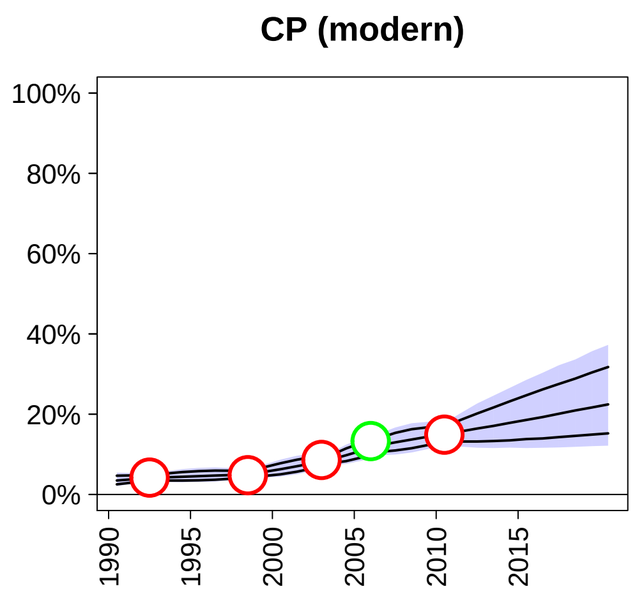
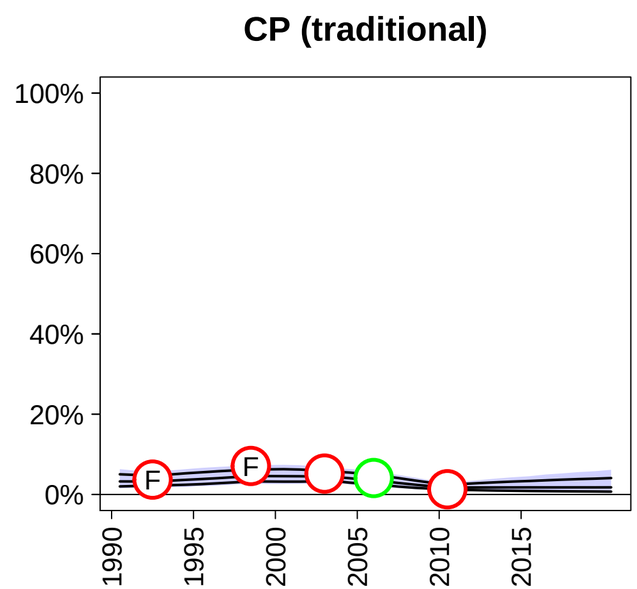
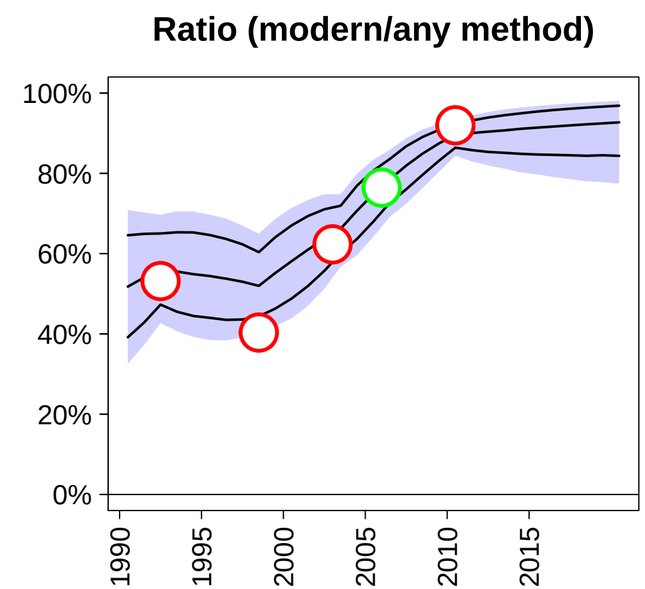
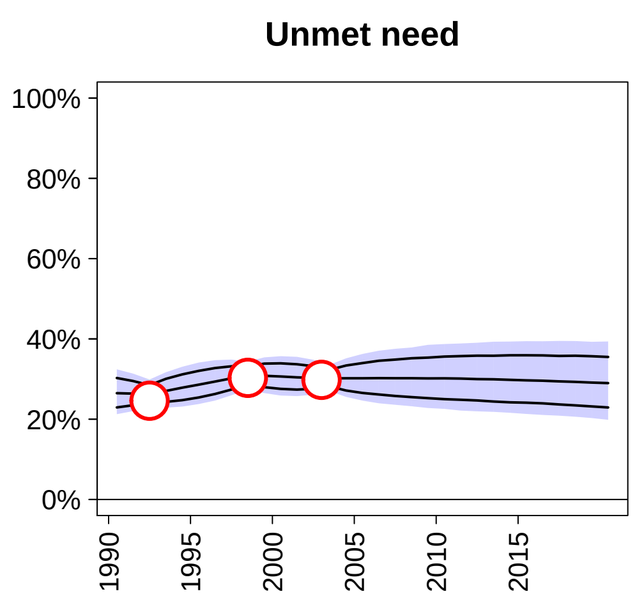
Burkina Faso (Western Africa)

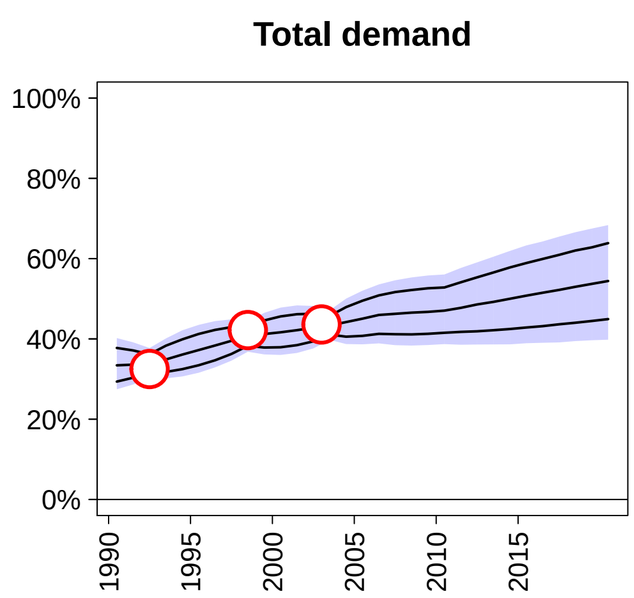


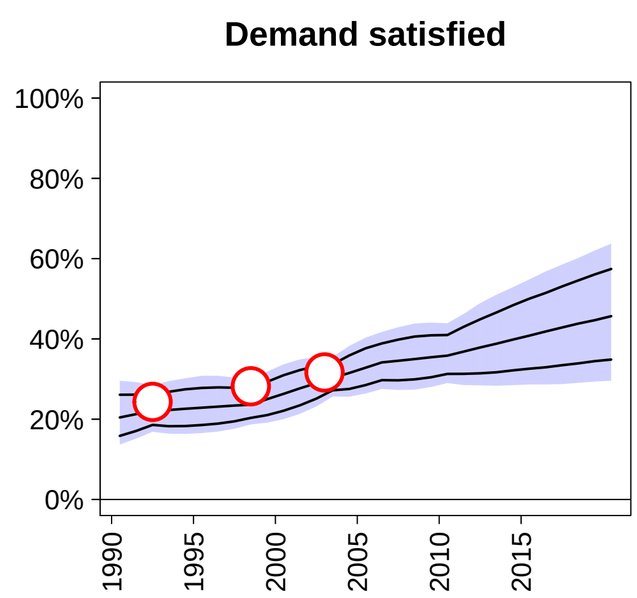












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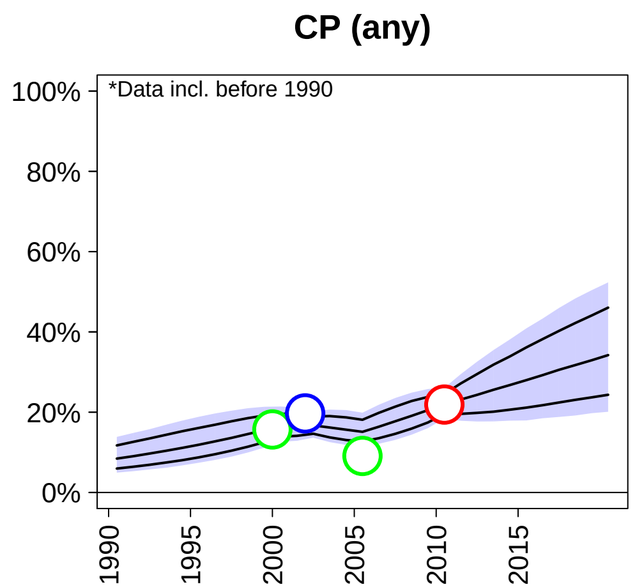
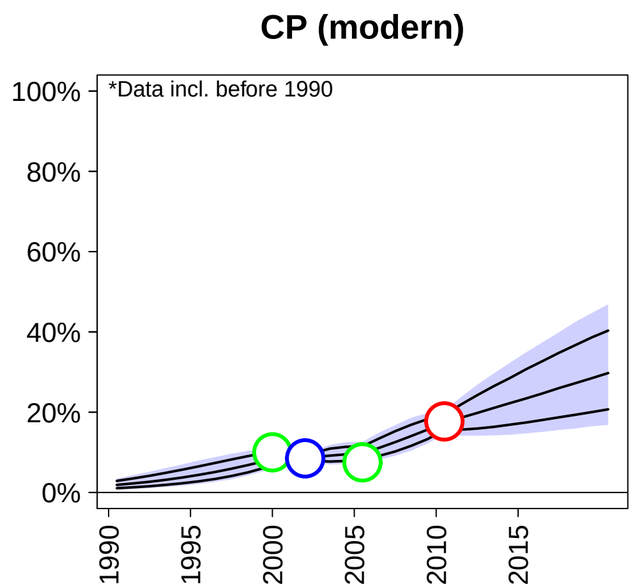
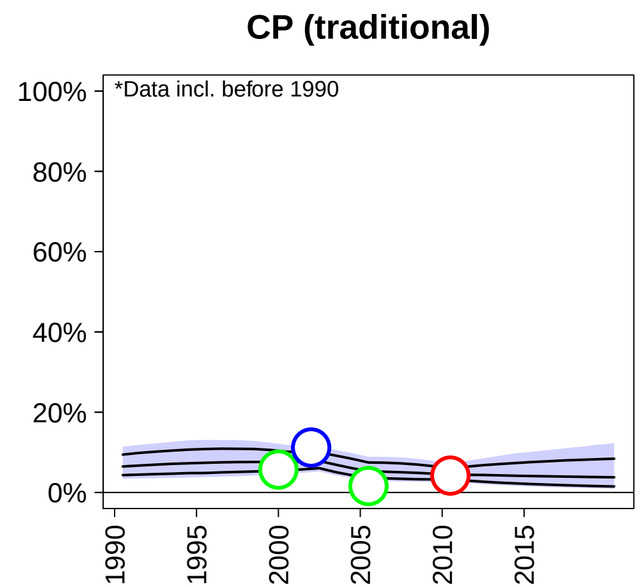
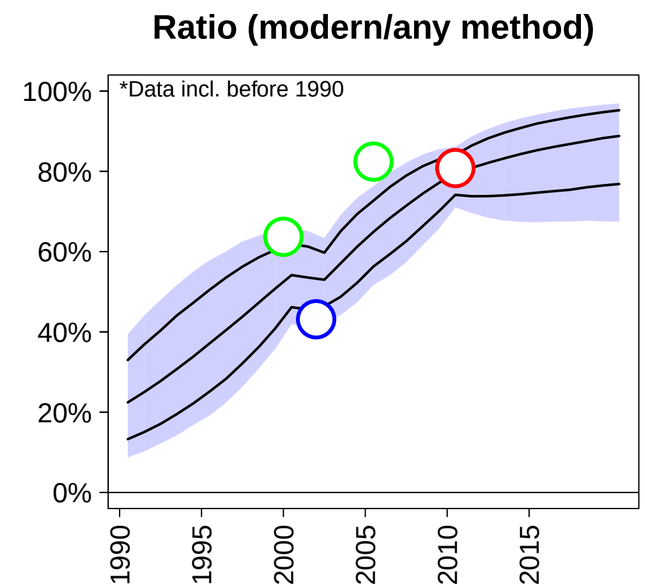
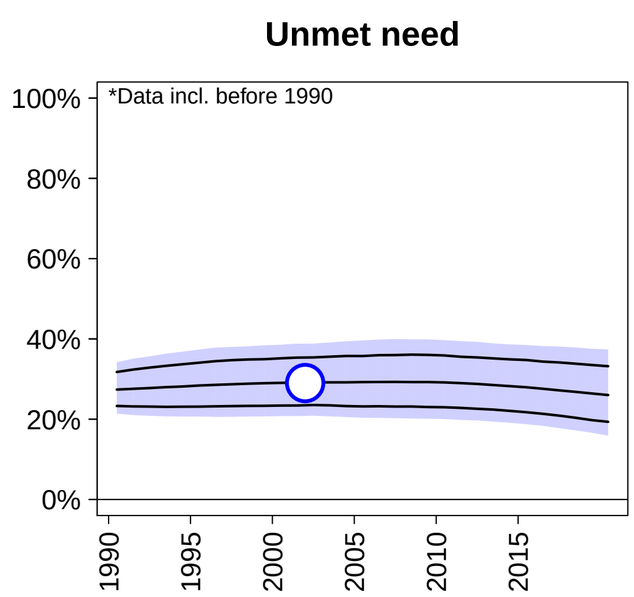
Burundi (Eastern Africa)

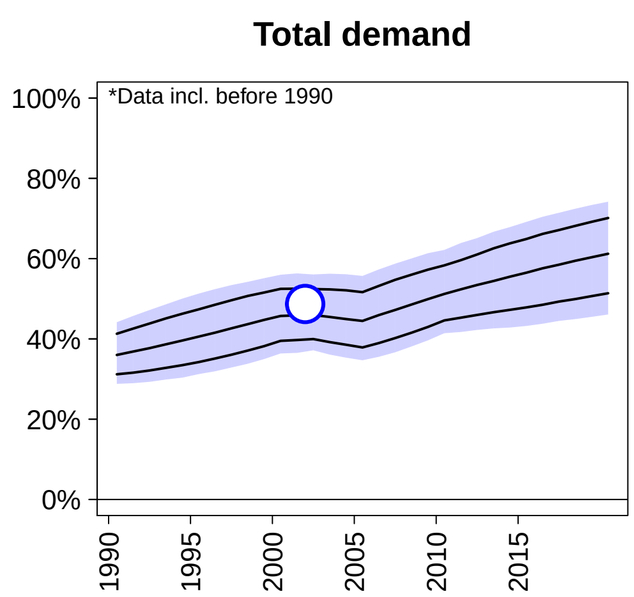


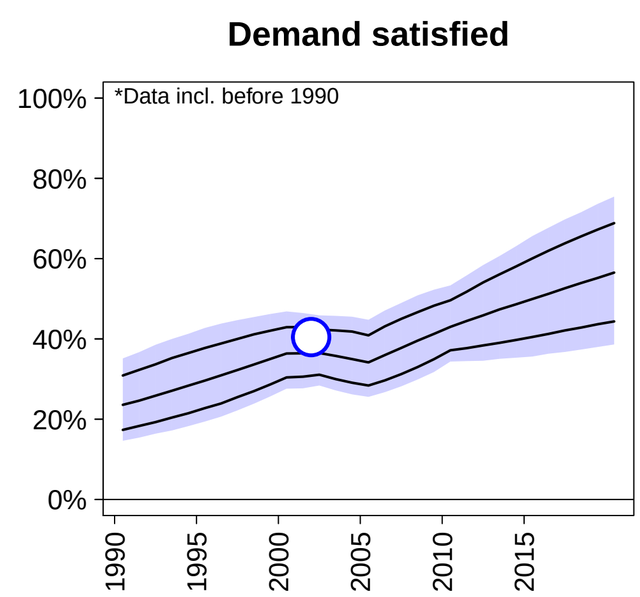












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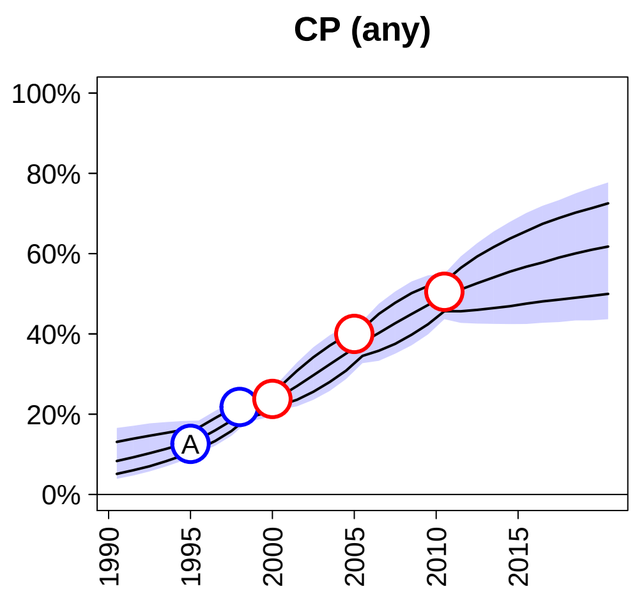
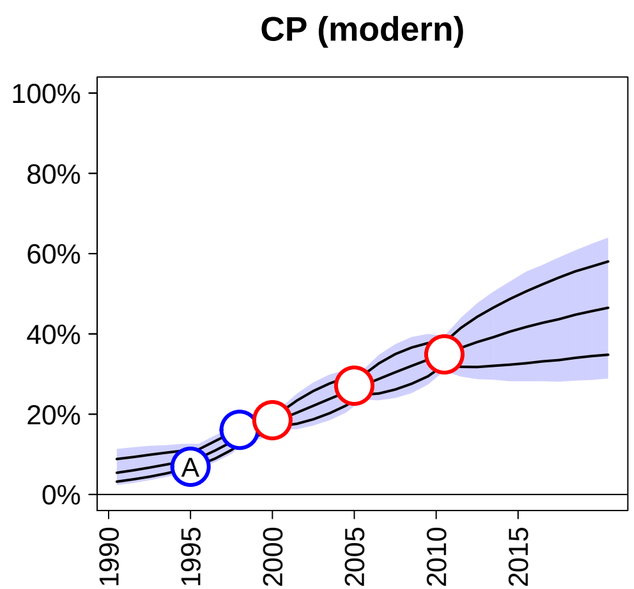
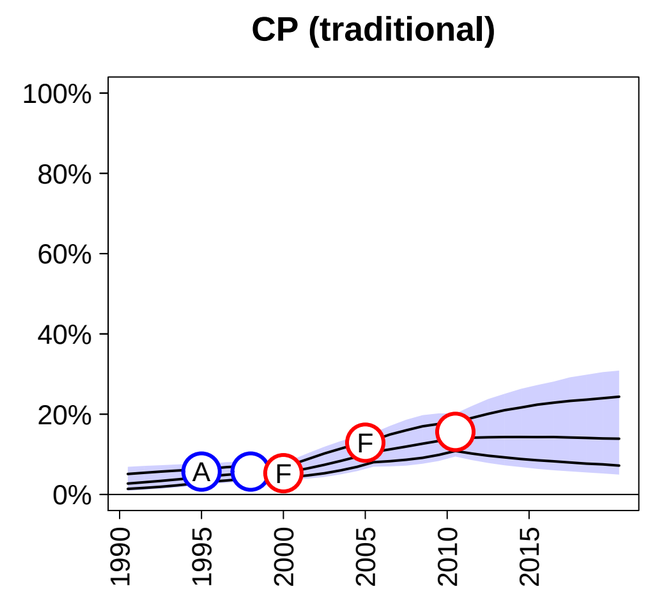
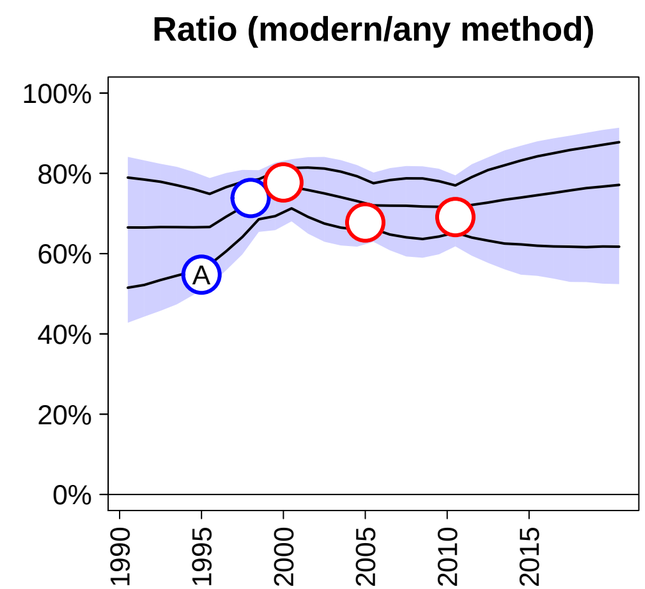
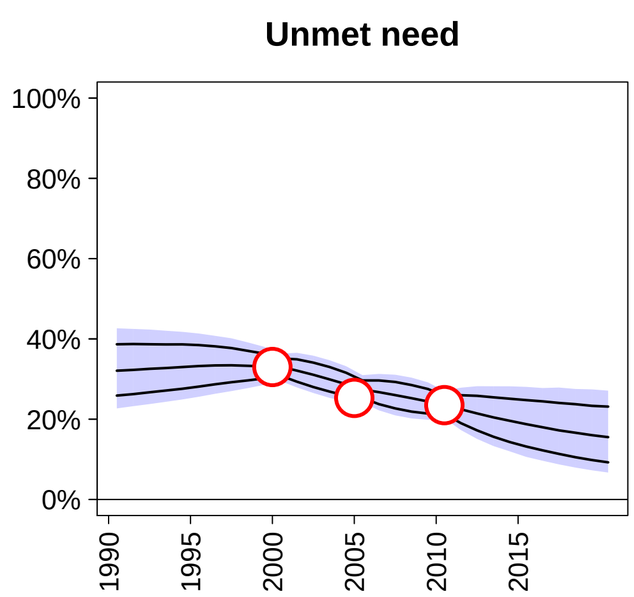
Cambodia (South−Eastern Asia)

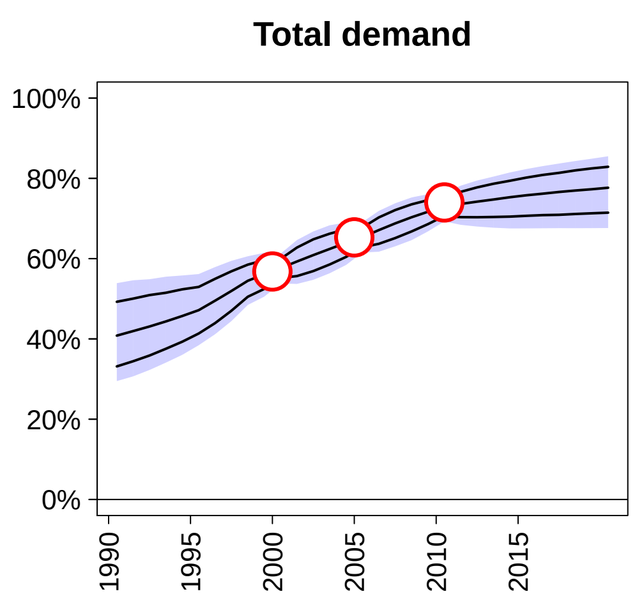


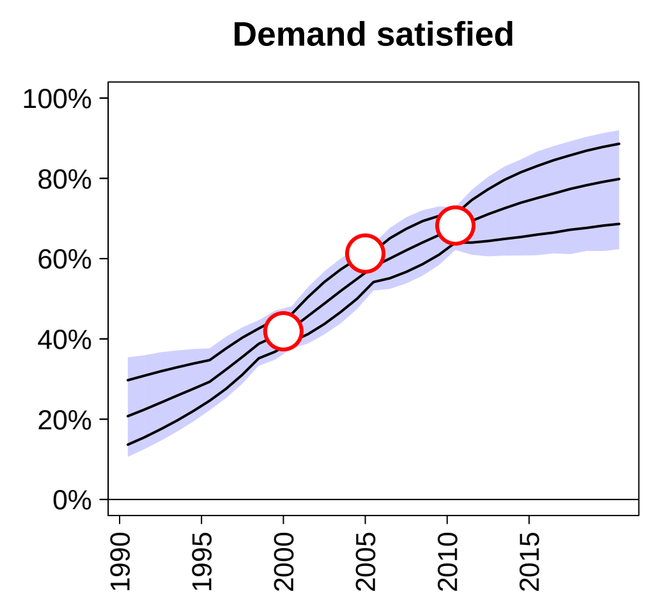












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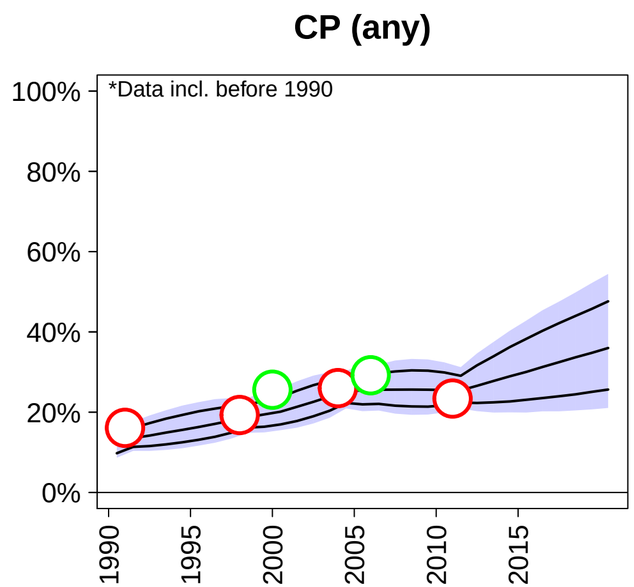
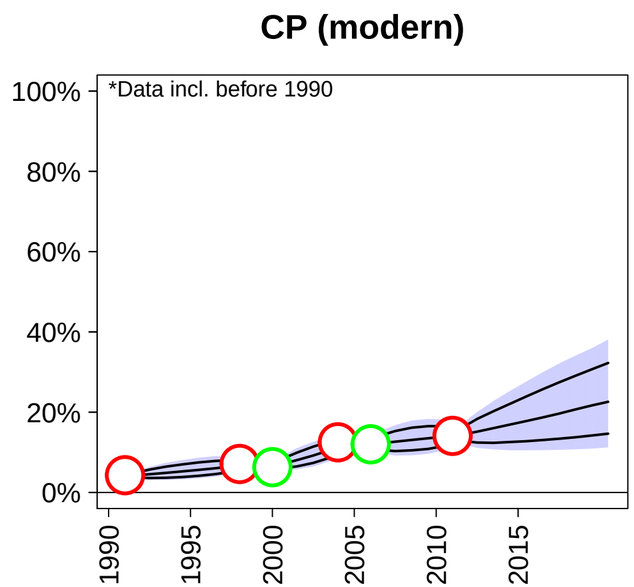
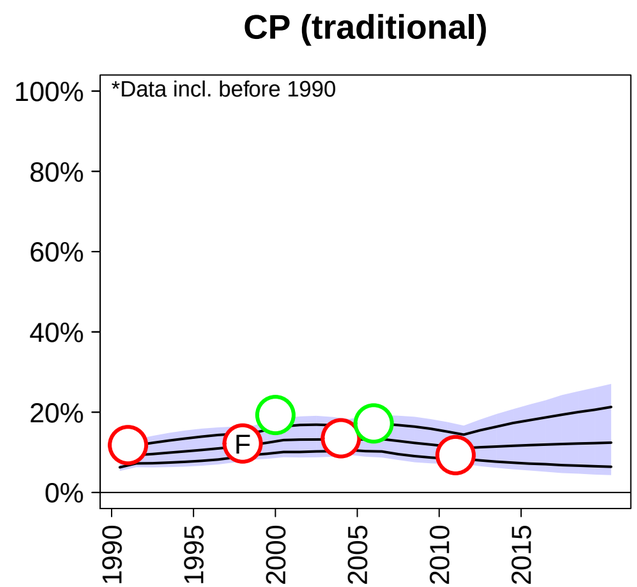
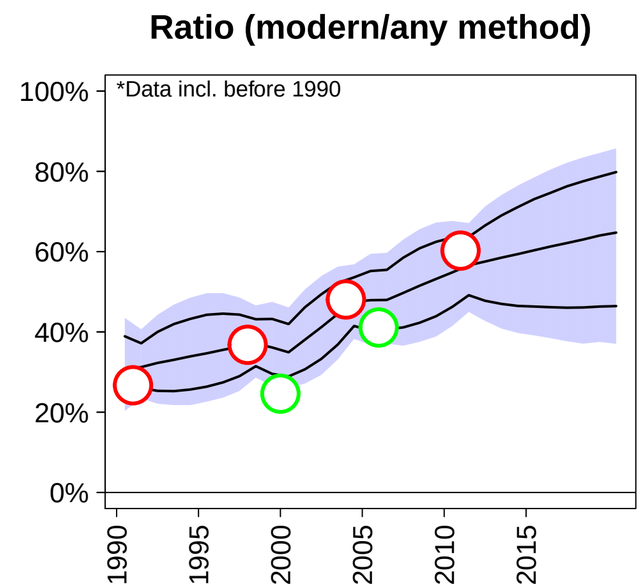
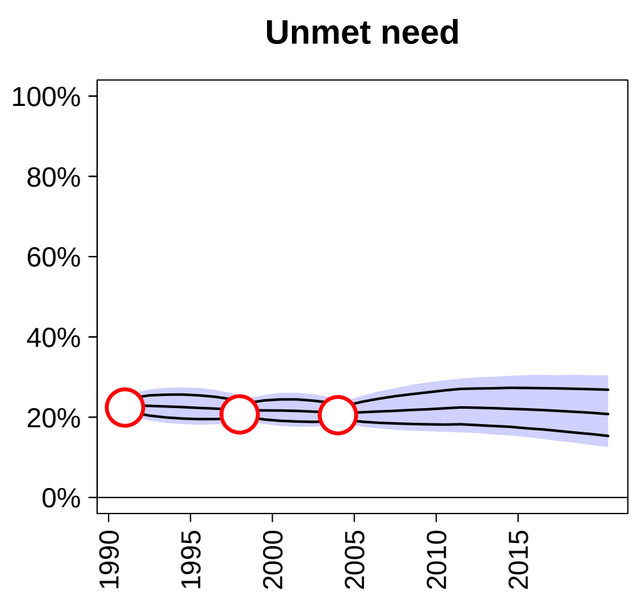
Cameroon (Middle Africa)

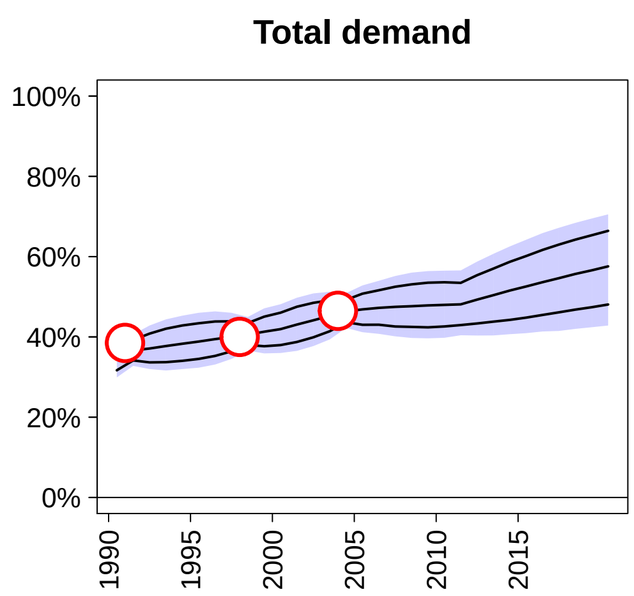


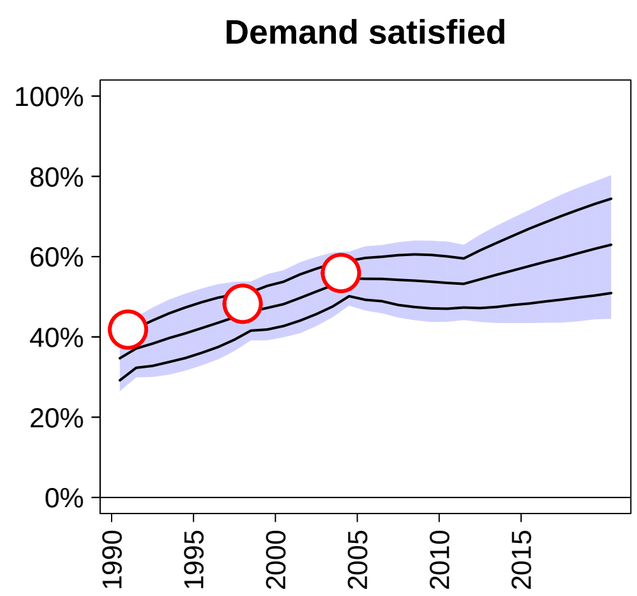












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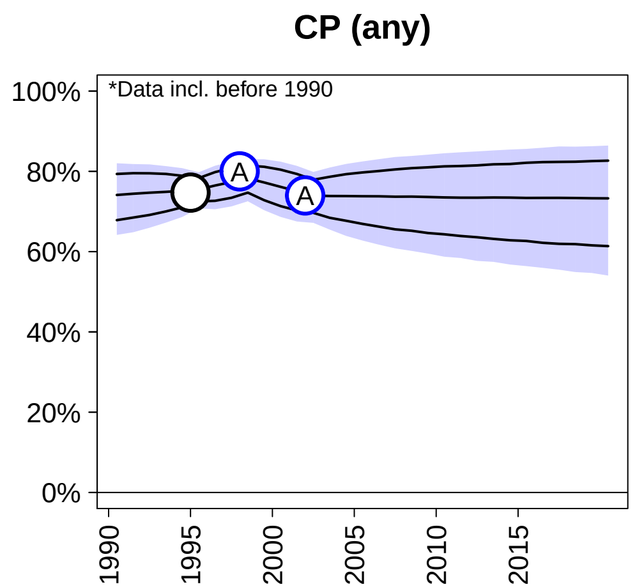
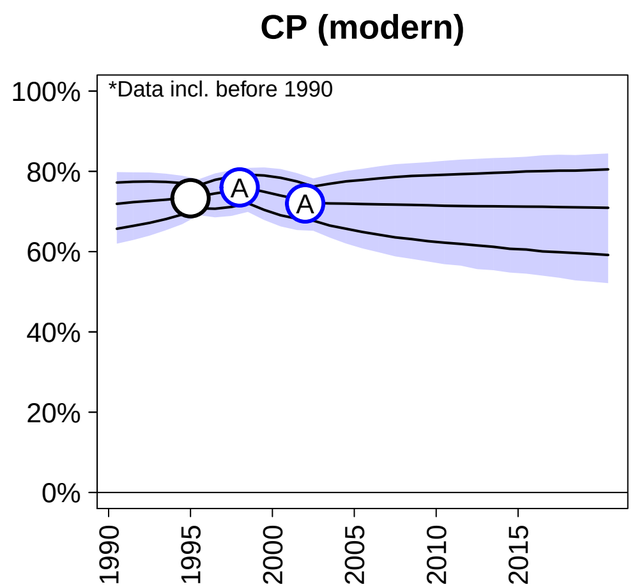
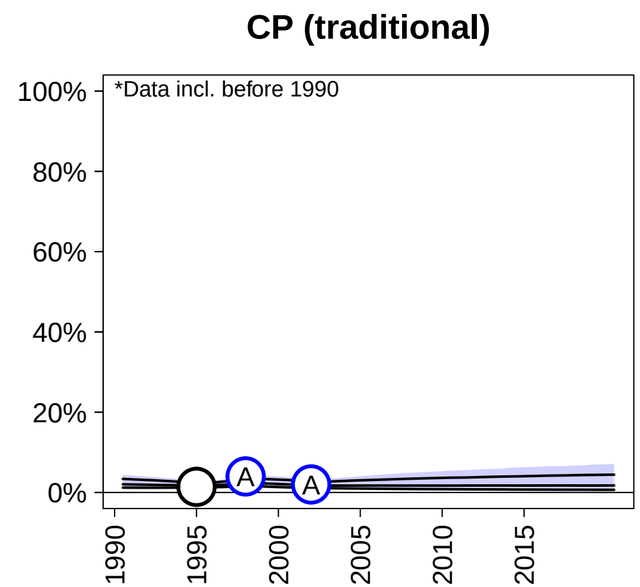
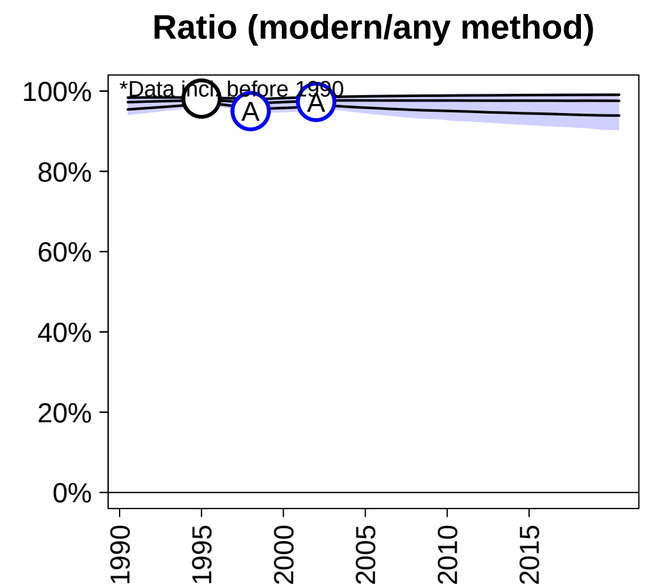
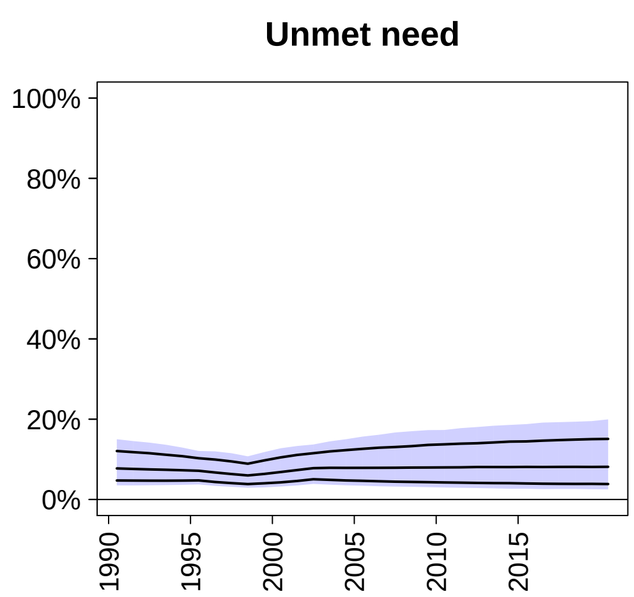
Canada (Northern America)

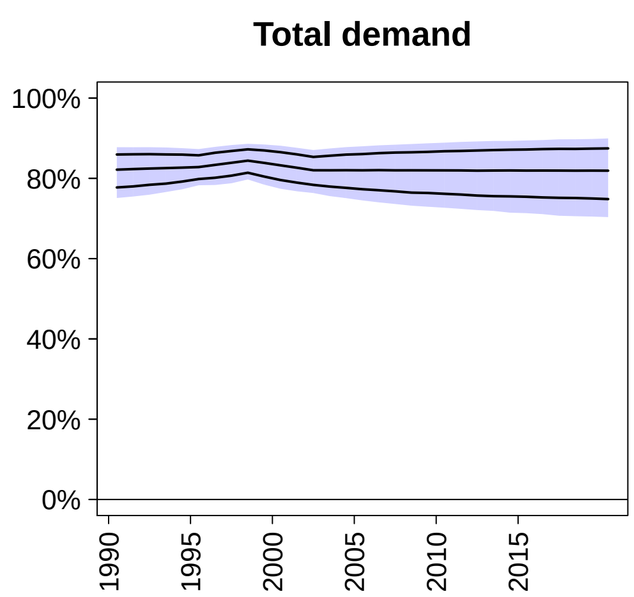


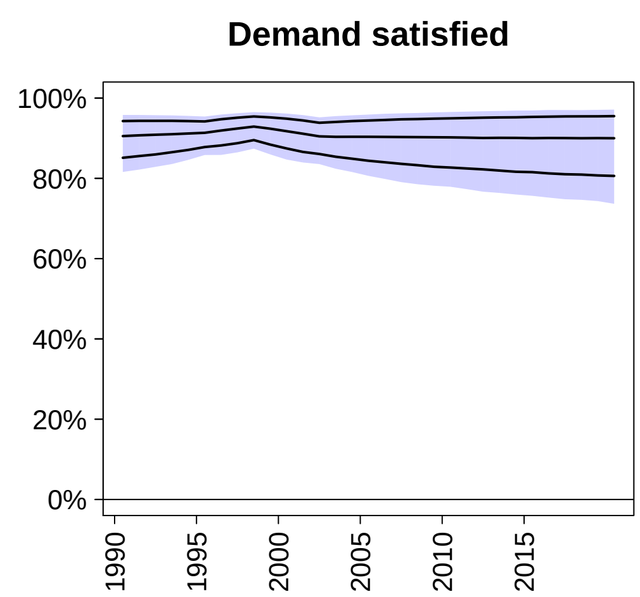












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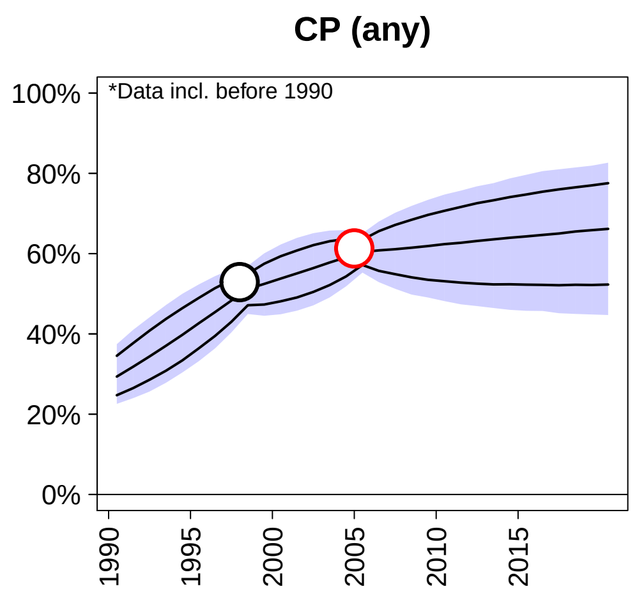
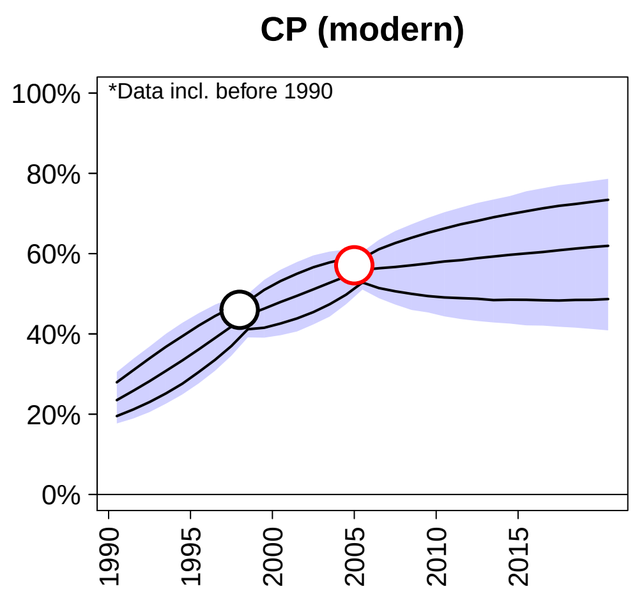
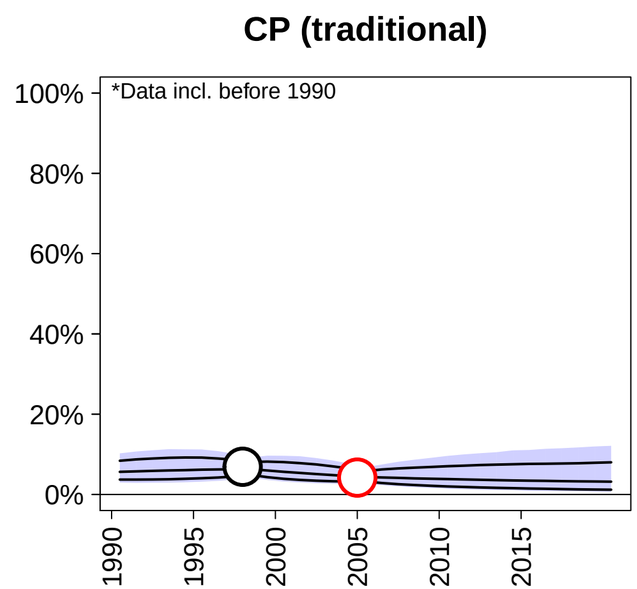
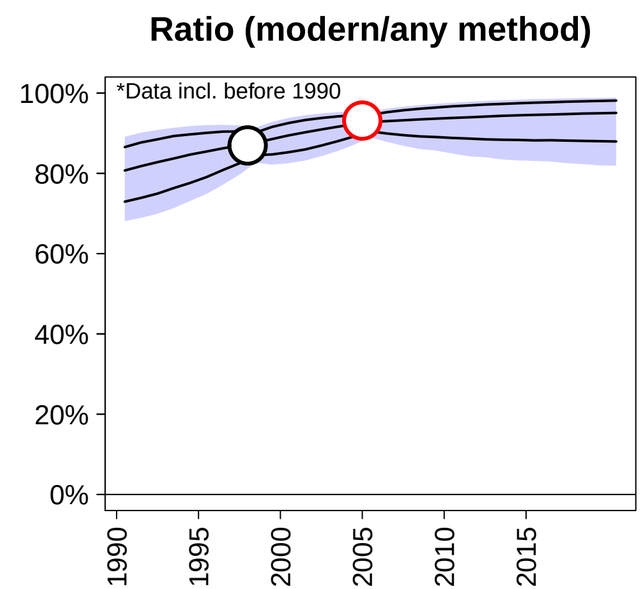
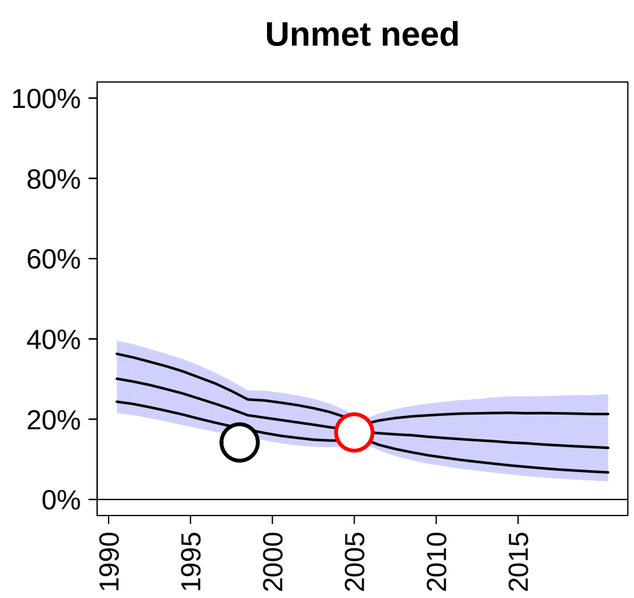
Cape Verde (Western Africa)

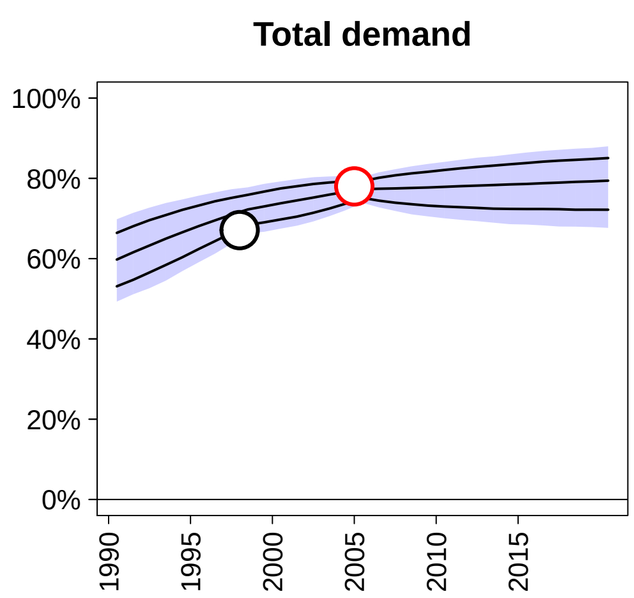


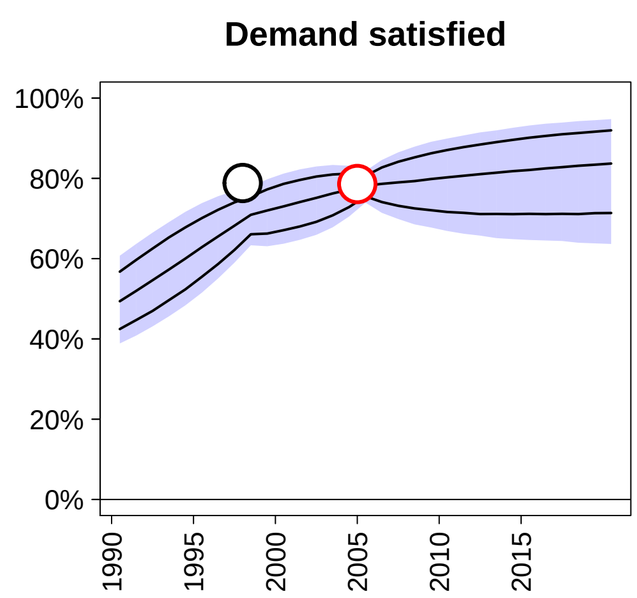












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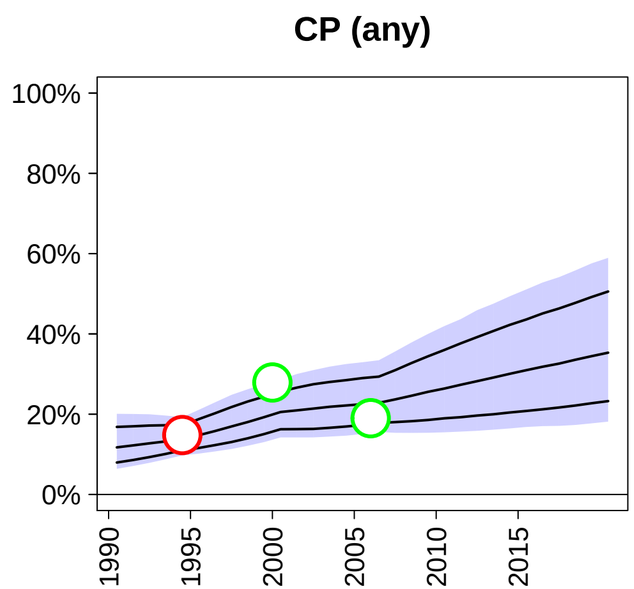
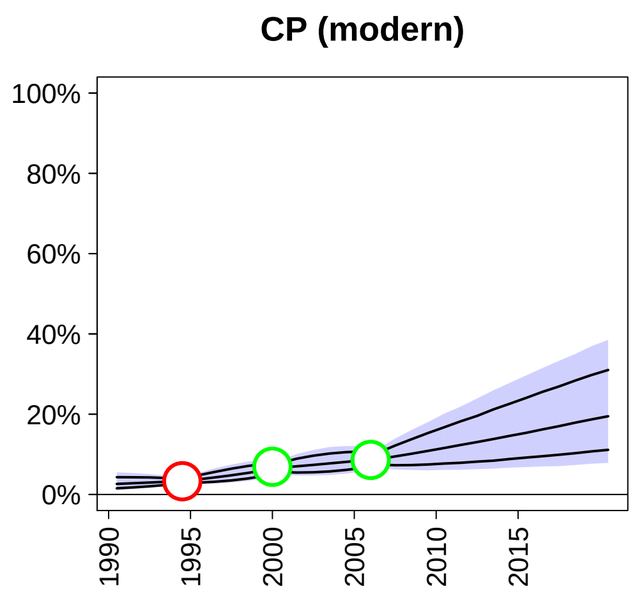
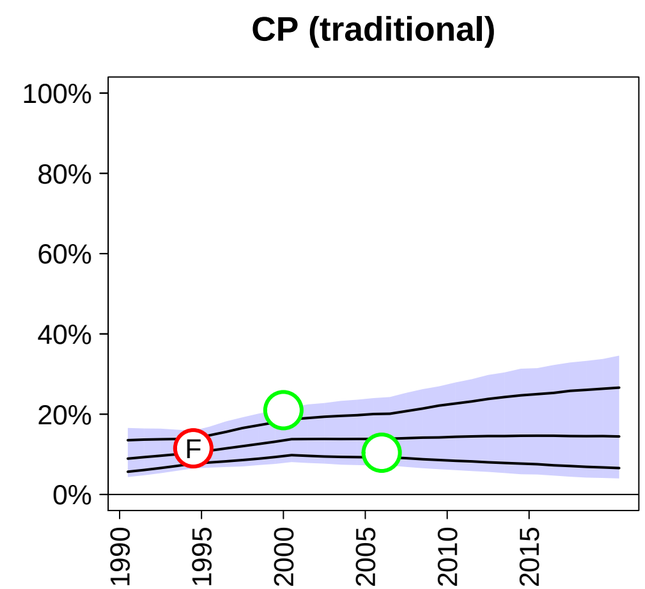
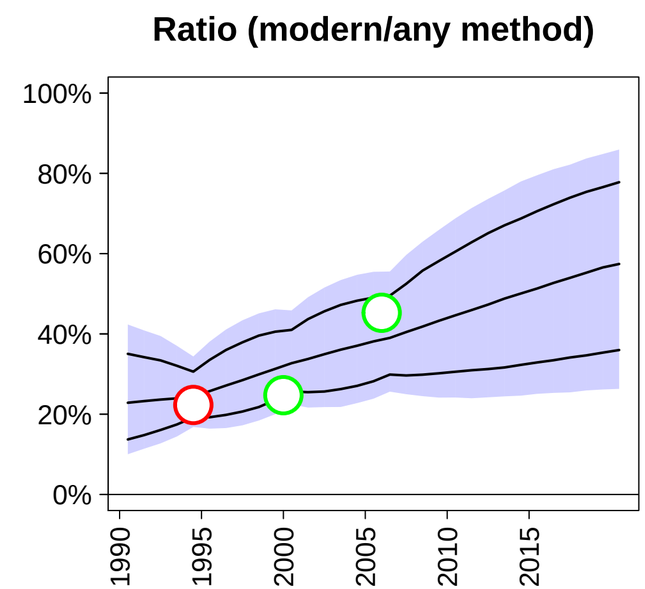
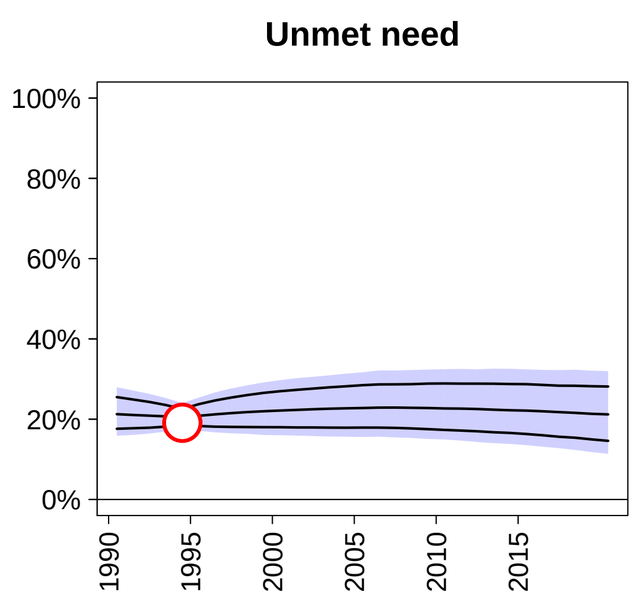
Central African Republic (Middle Africa)

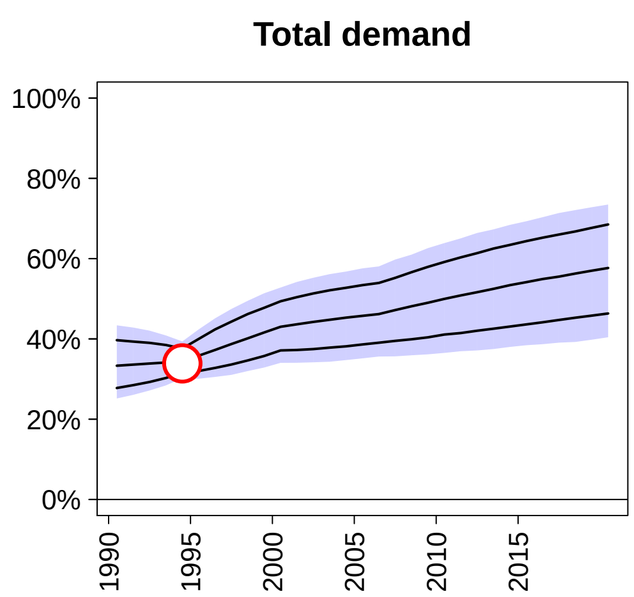


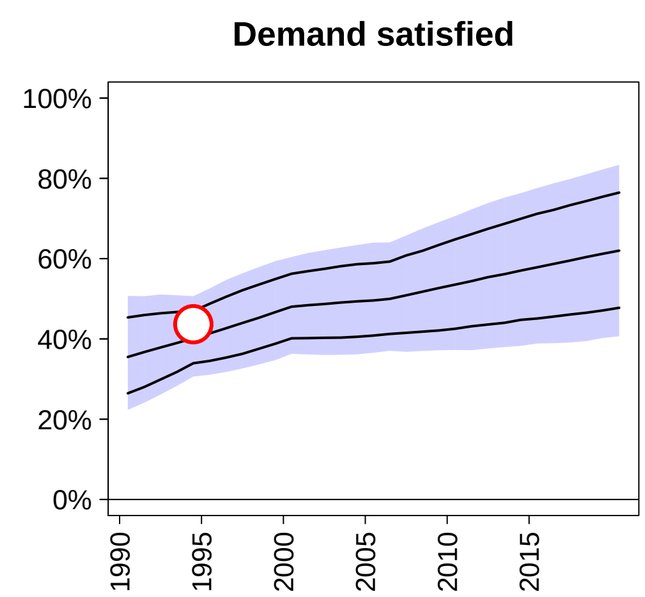












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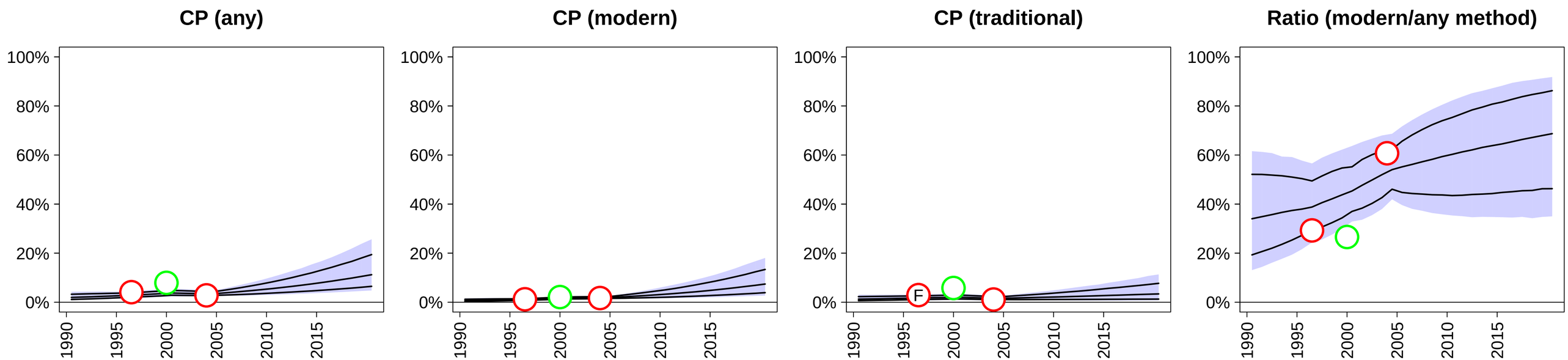
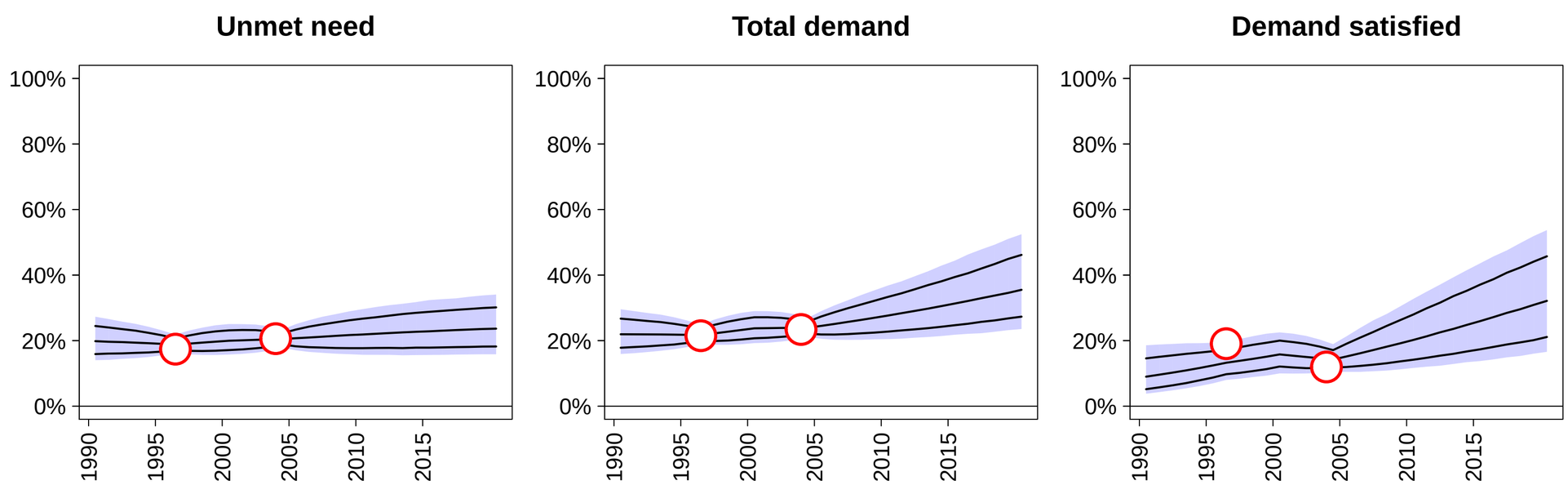
Chad (Middle Africa)





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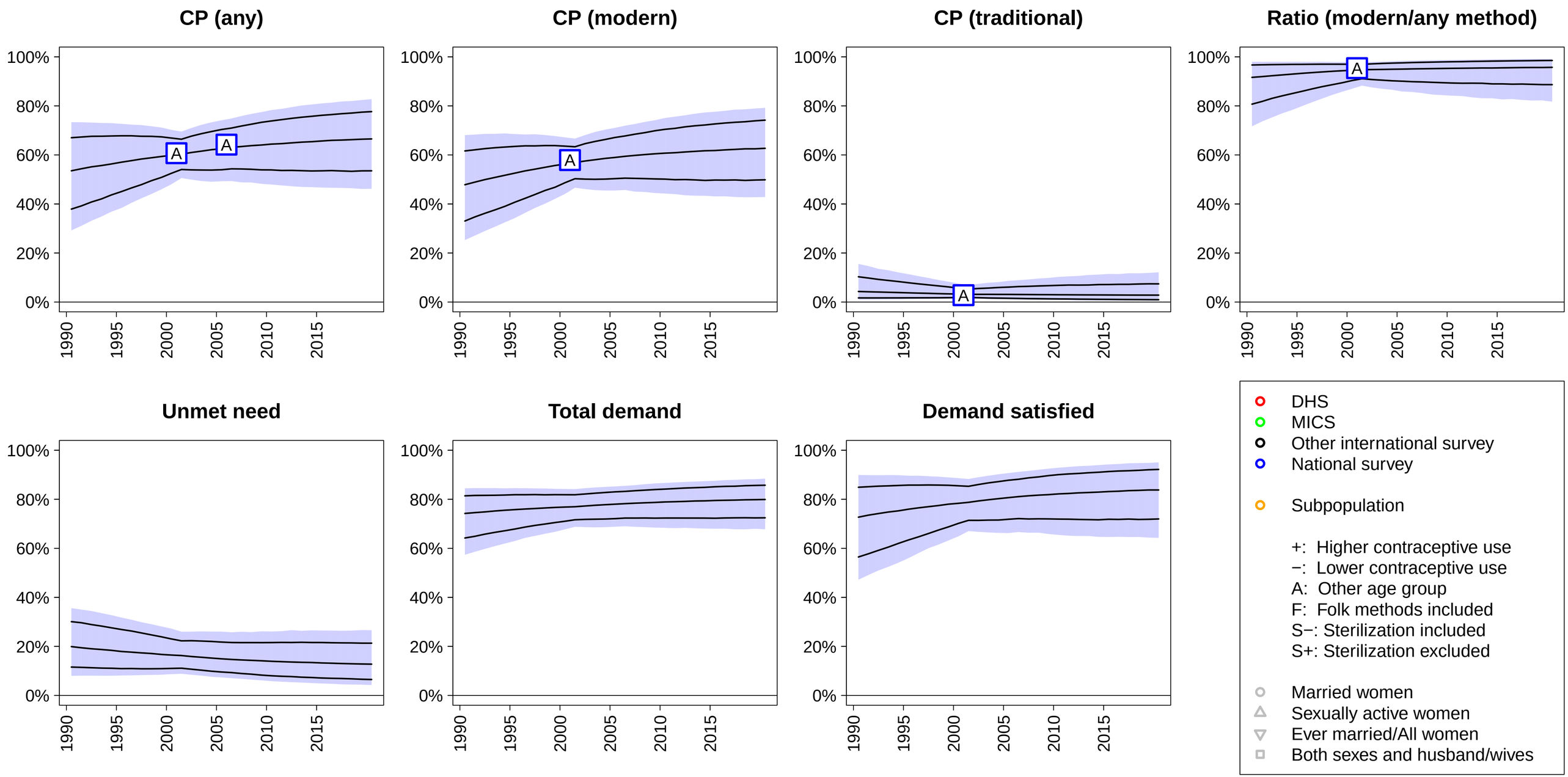
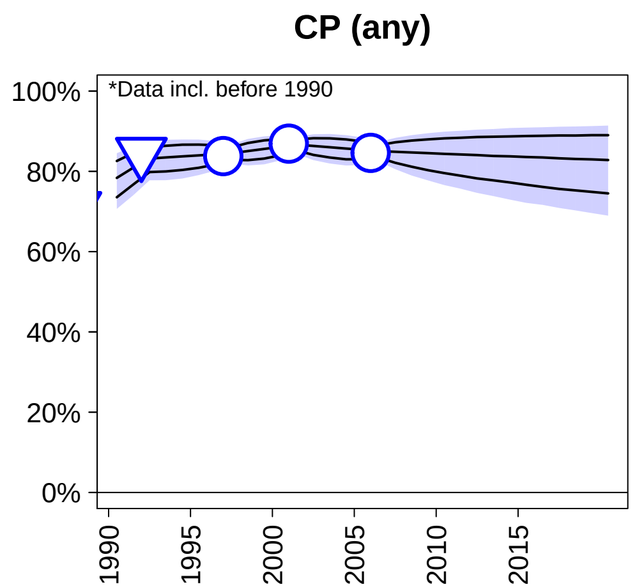
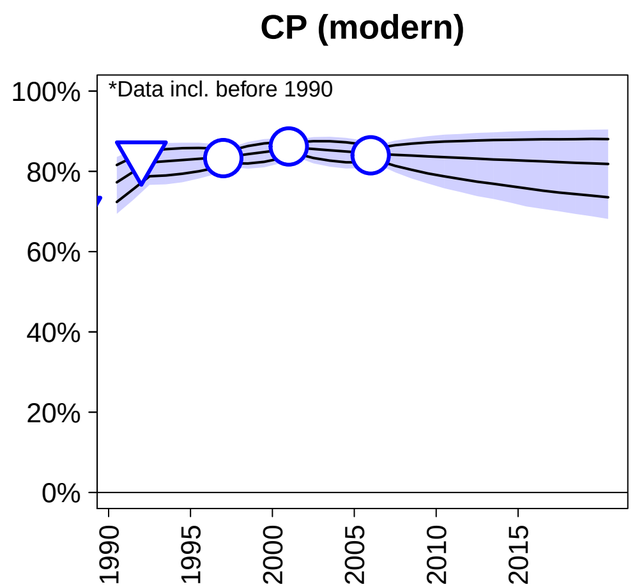
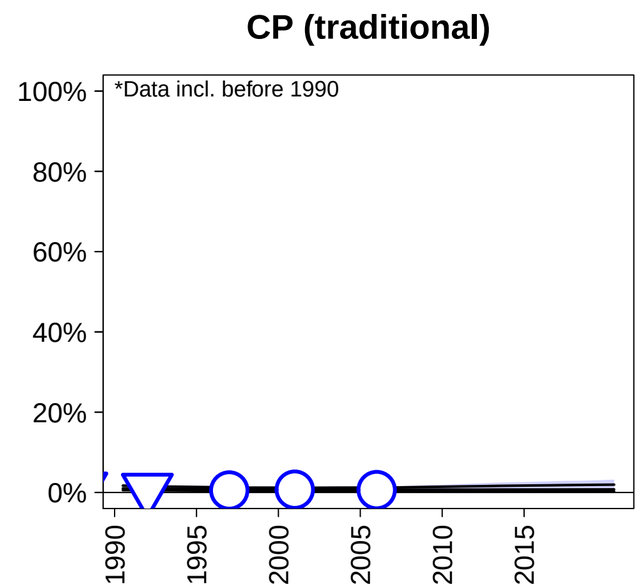
Chile (South America)

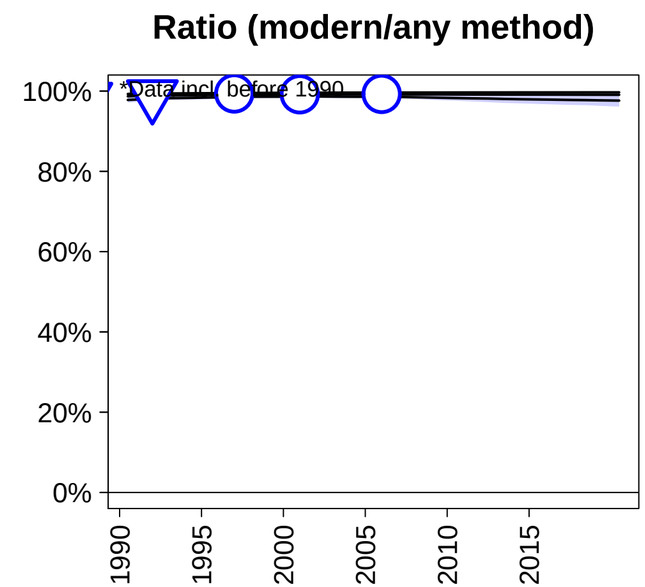


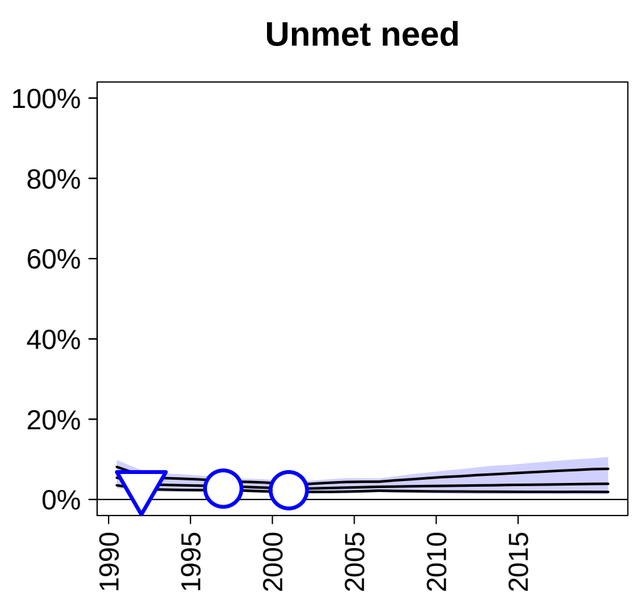
China (Eastern Asia)

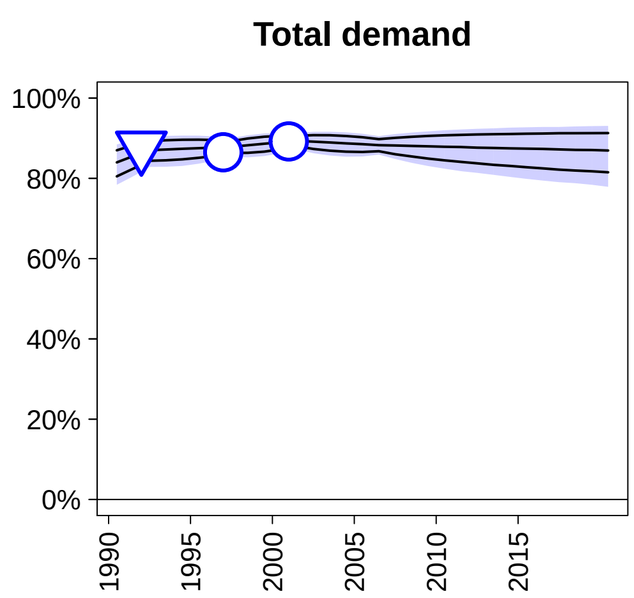


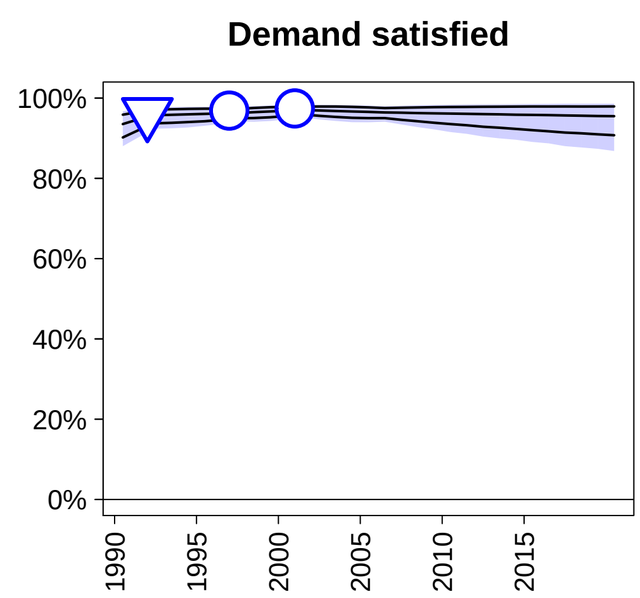












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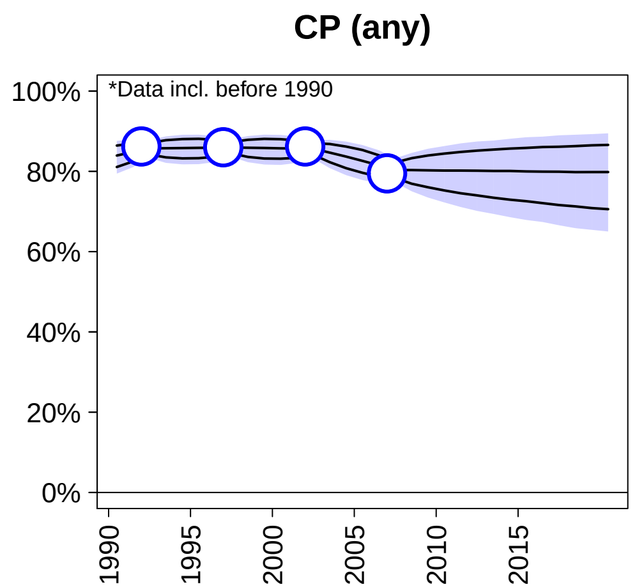
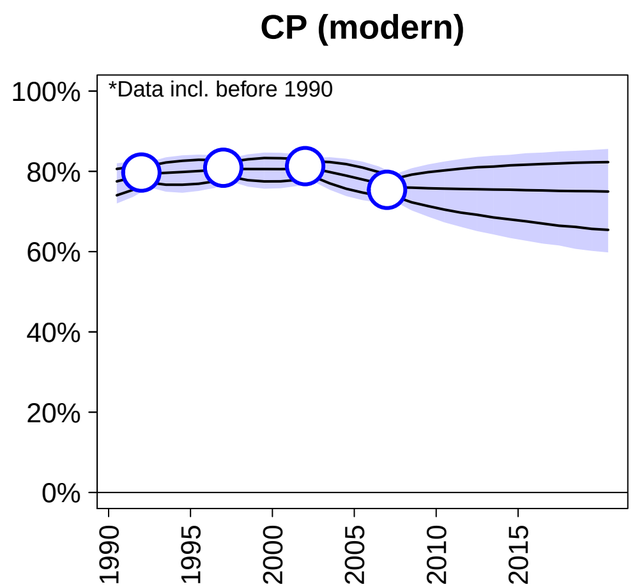
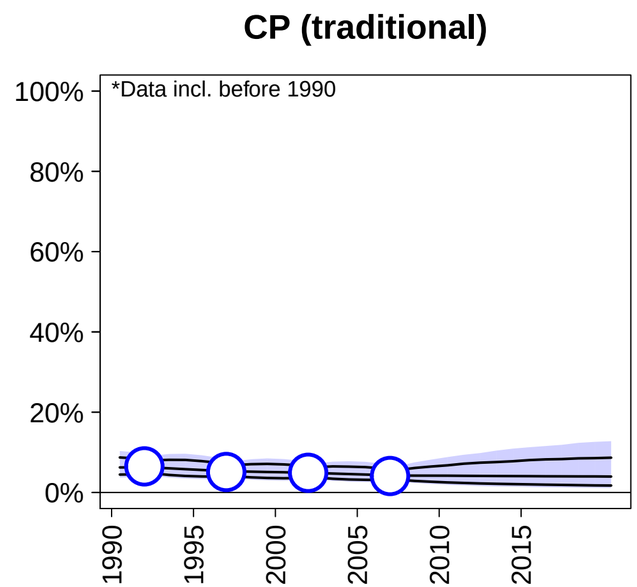
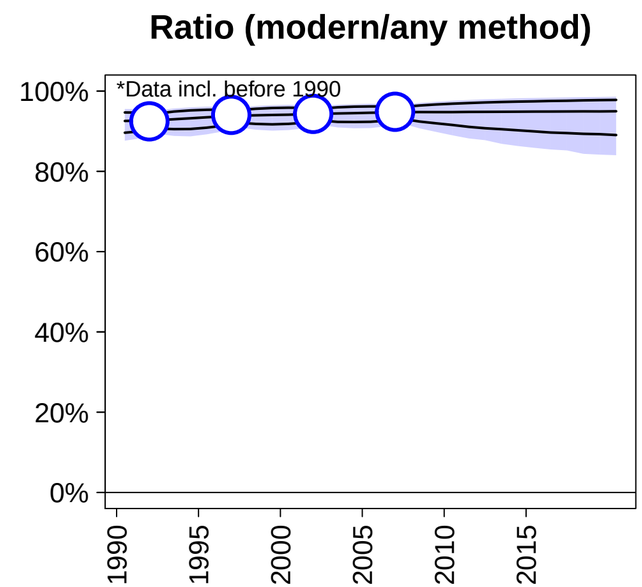
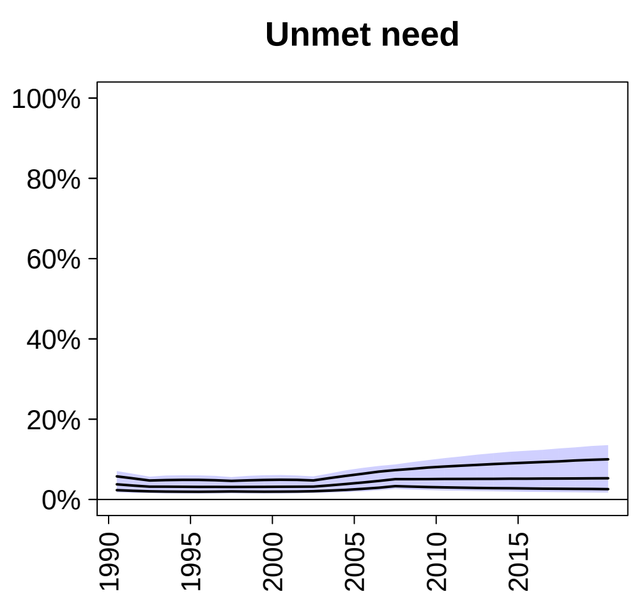
China, Hong Kong SAR (Eastern Asia)

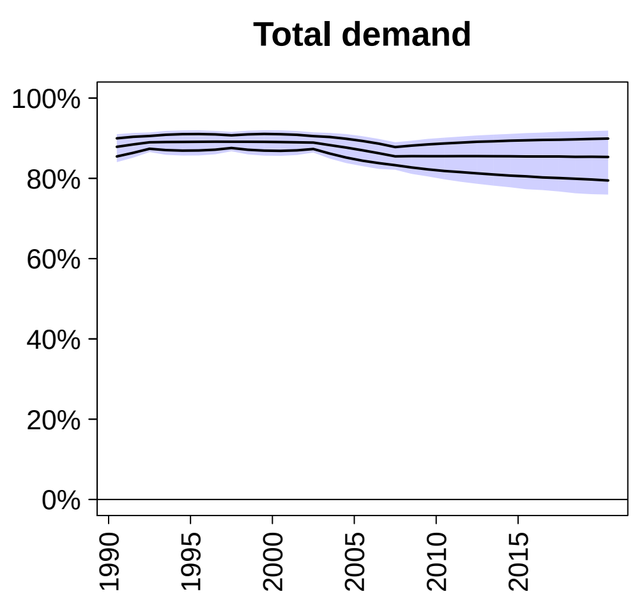


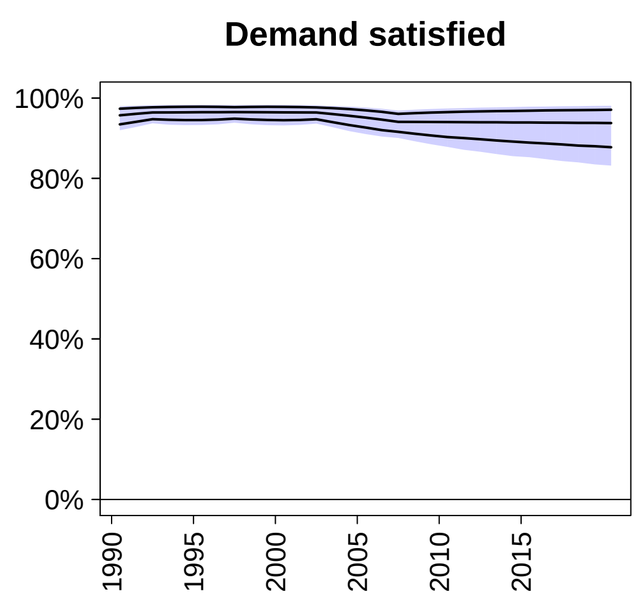












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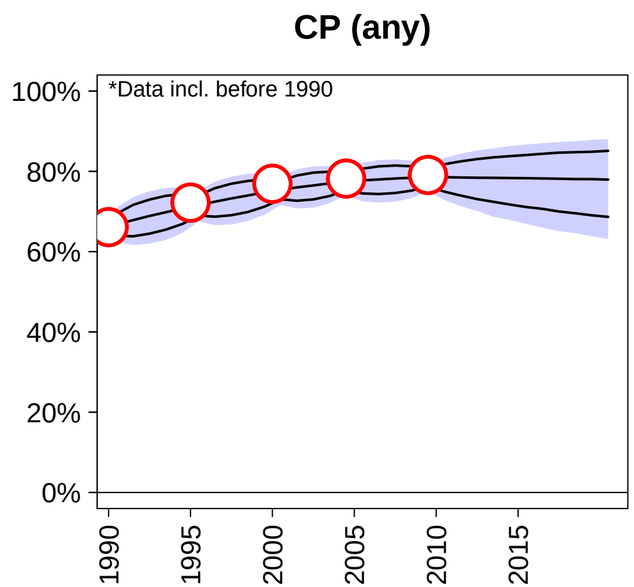
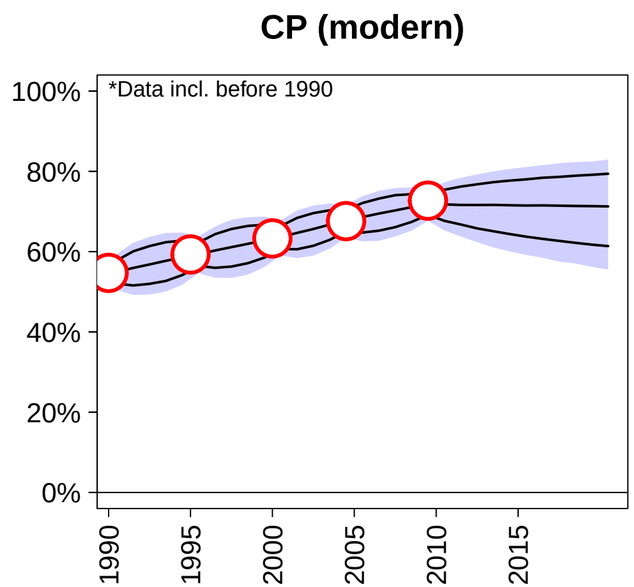
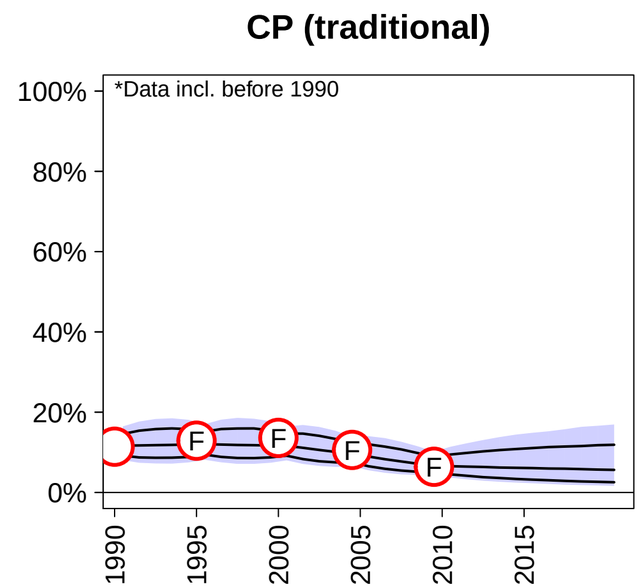
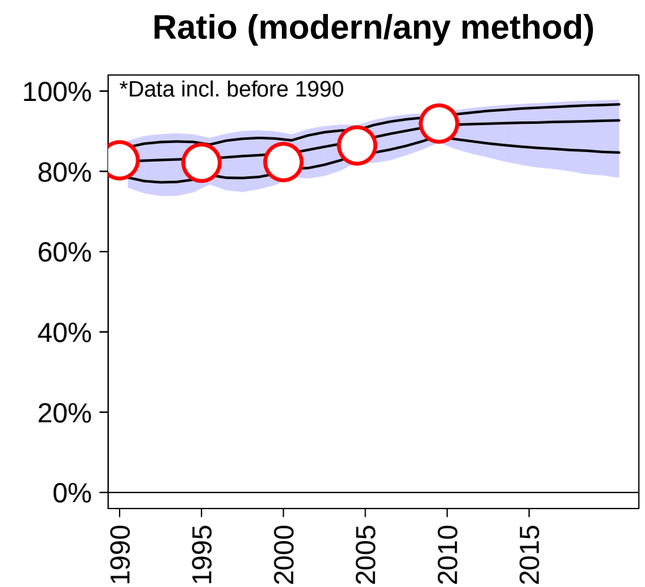
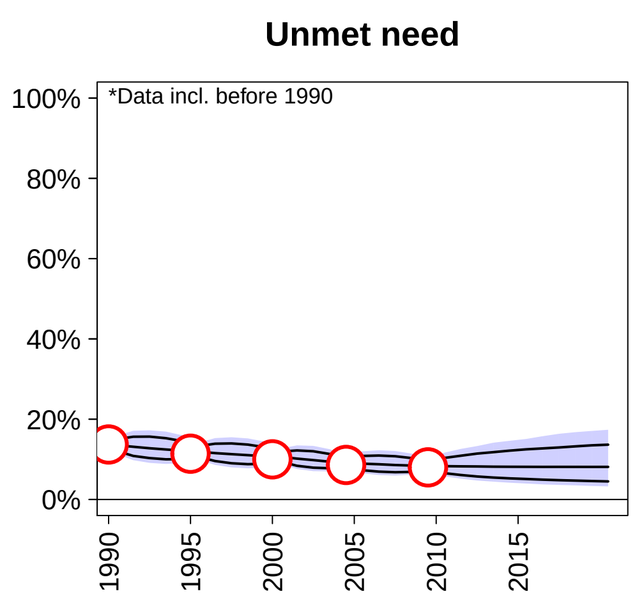
Colombia (South America)

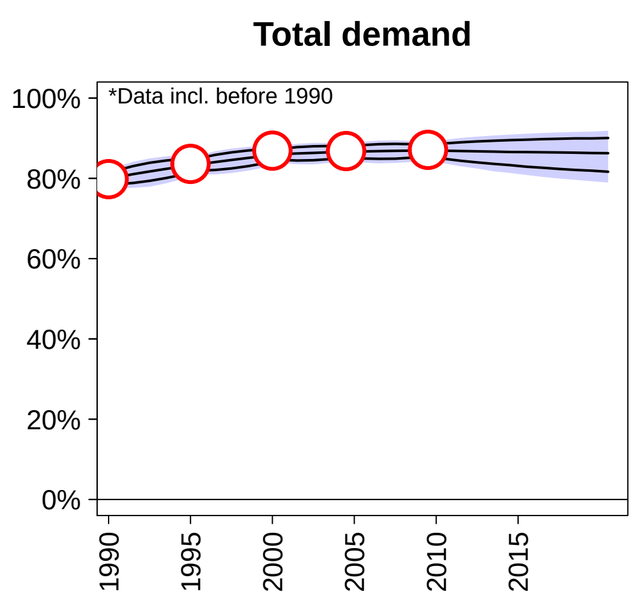


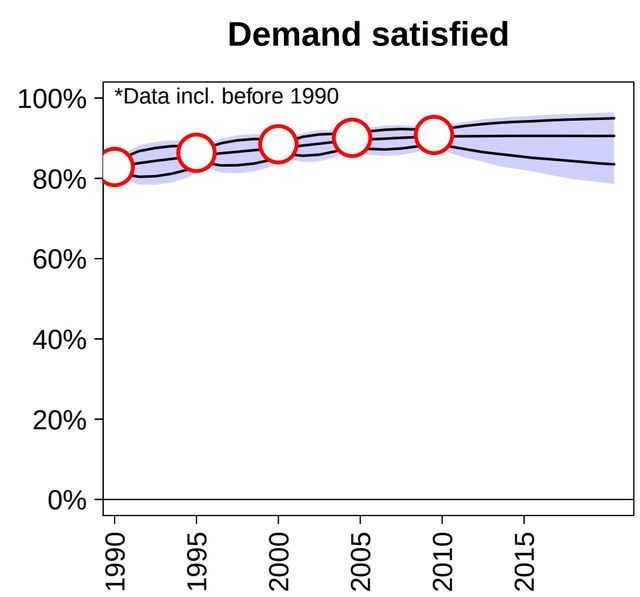












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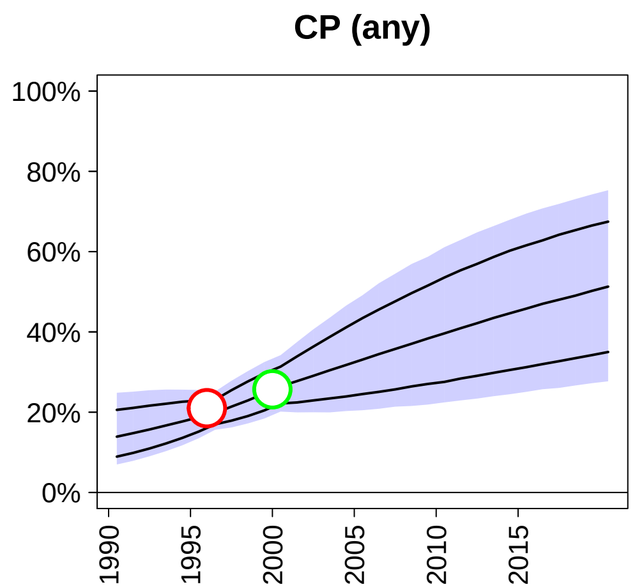
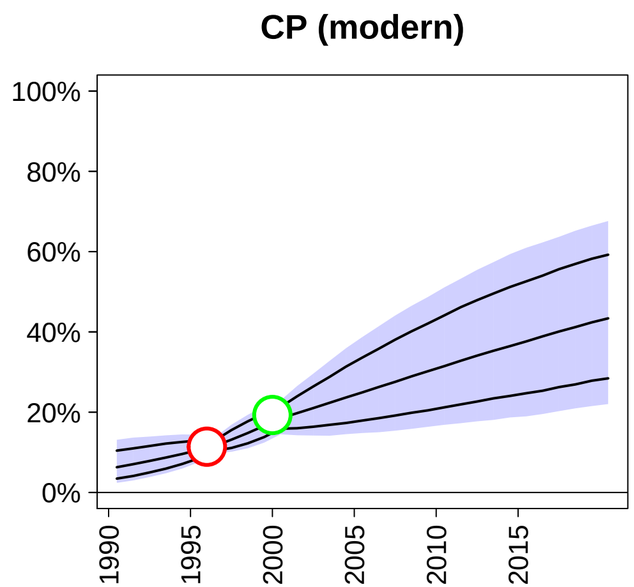
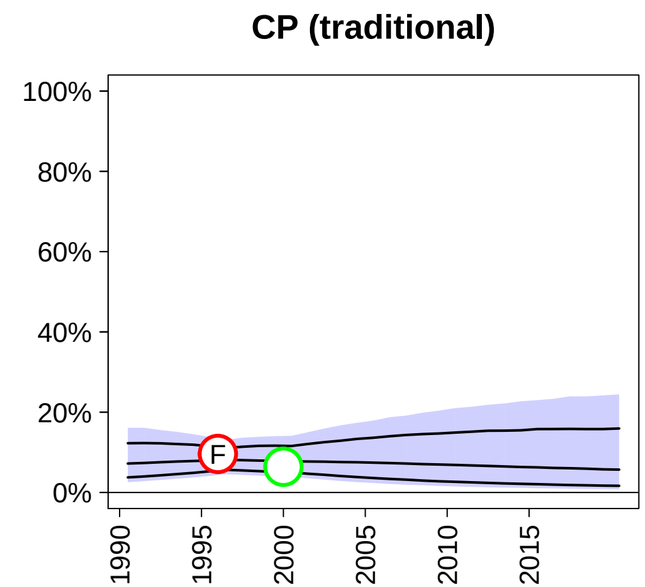
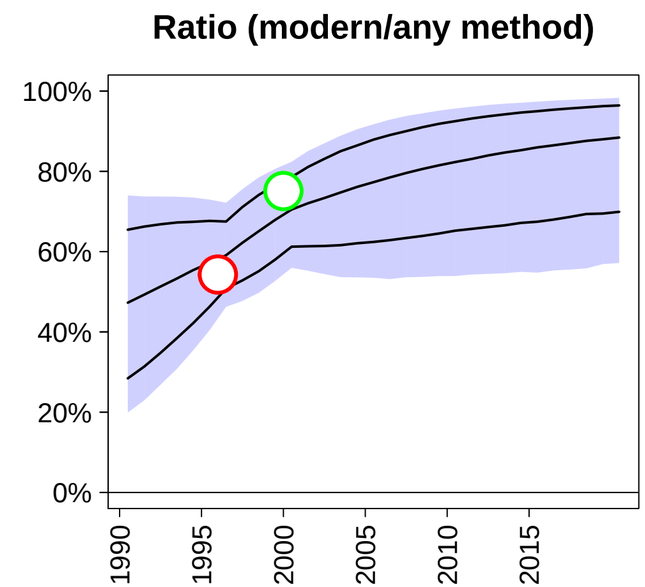
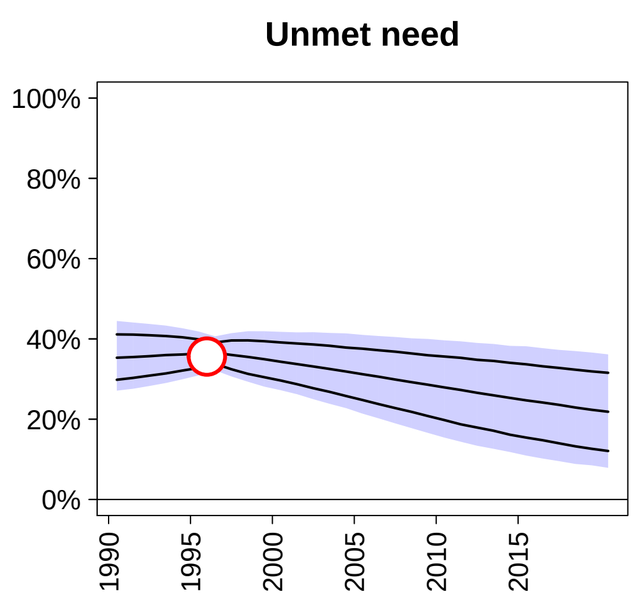
Comoros (Eastern Africa)

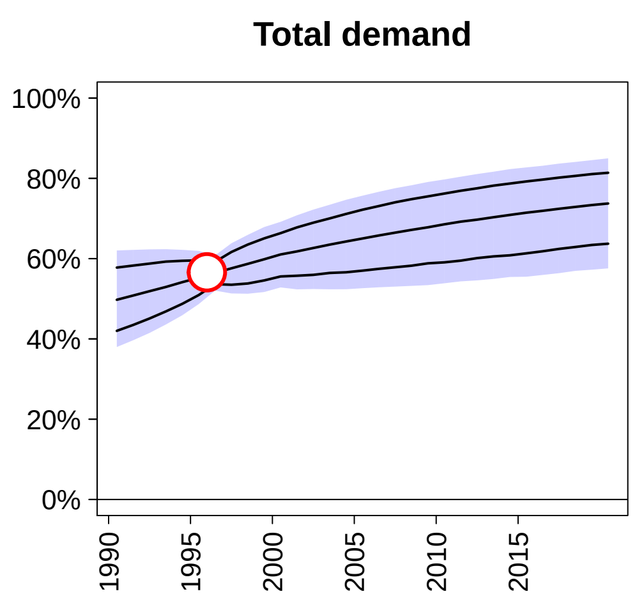


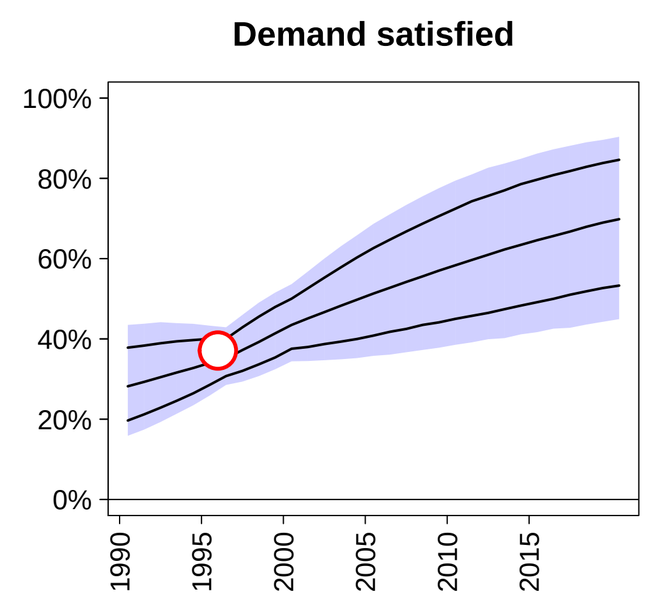












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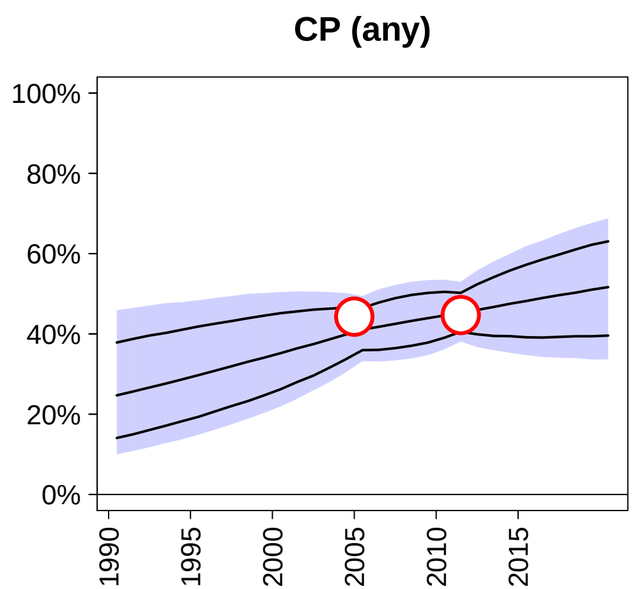
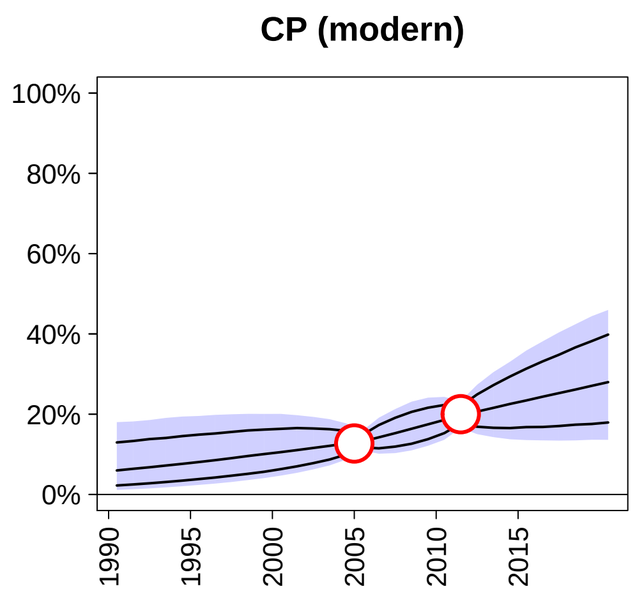
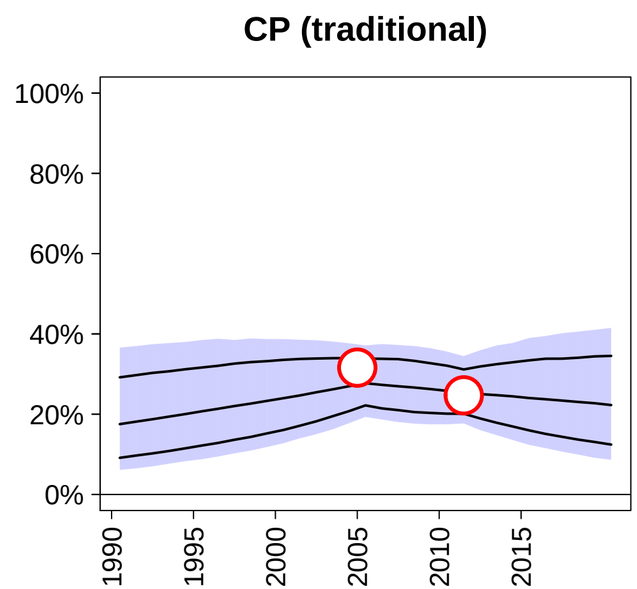
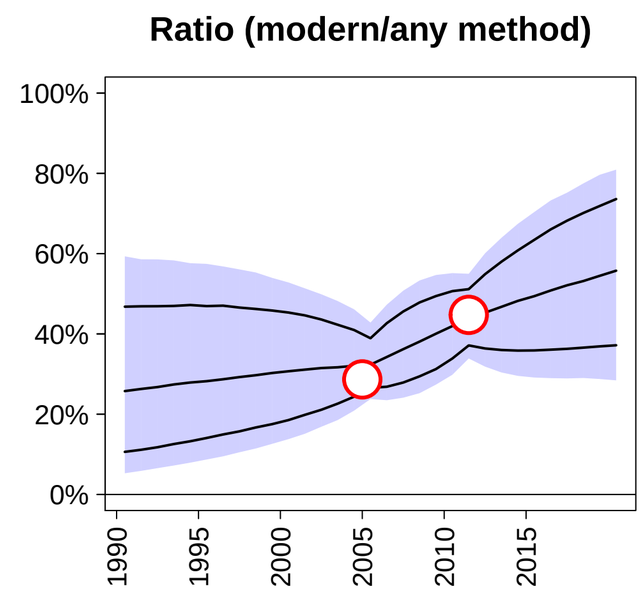
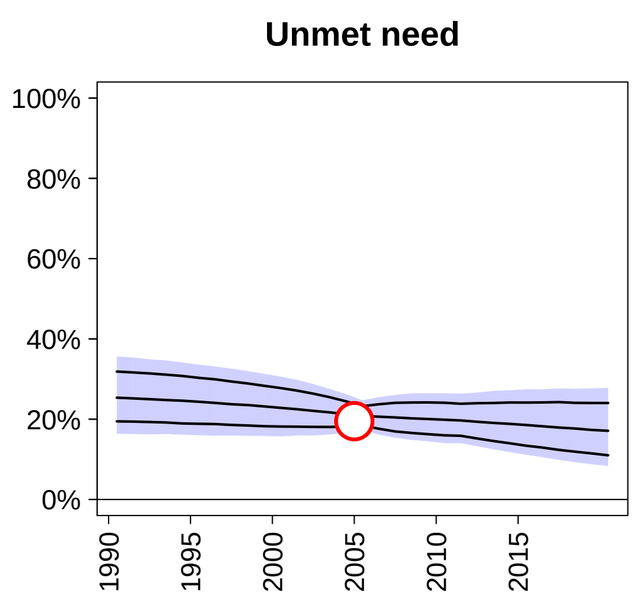
Congo (Middle Africa)

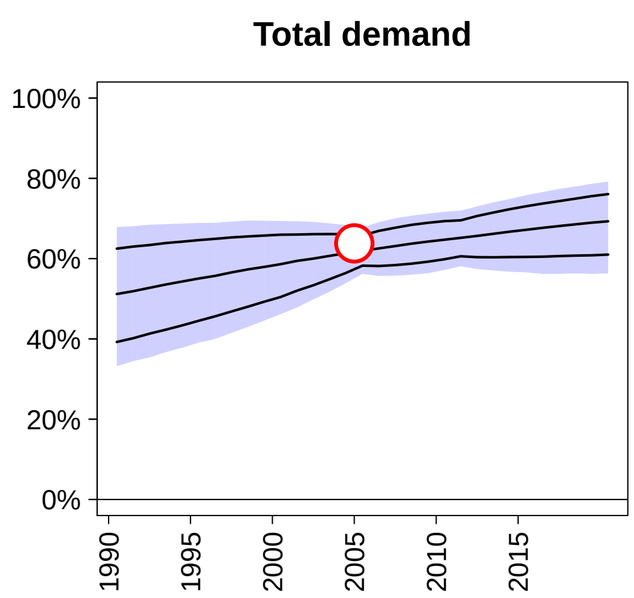


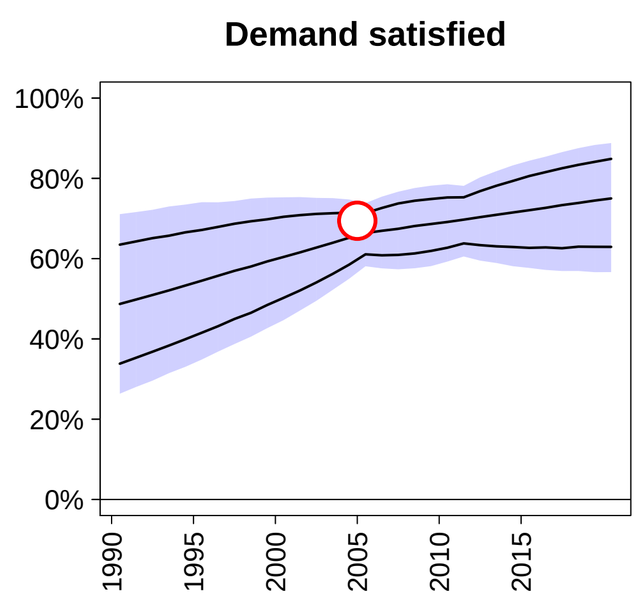












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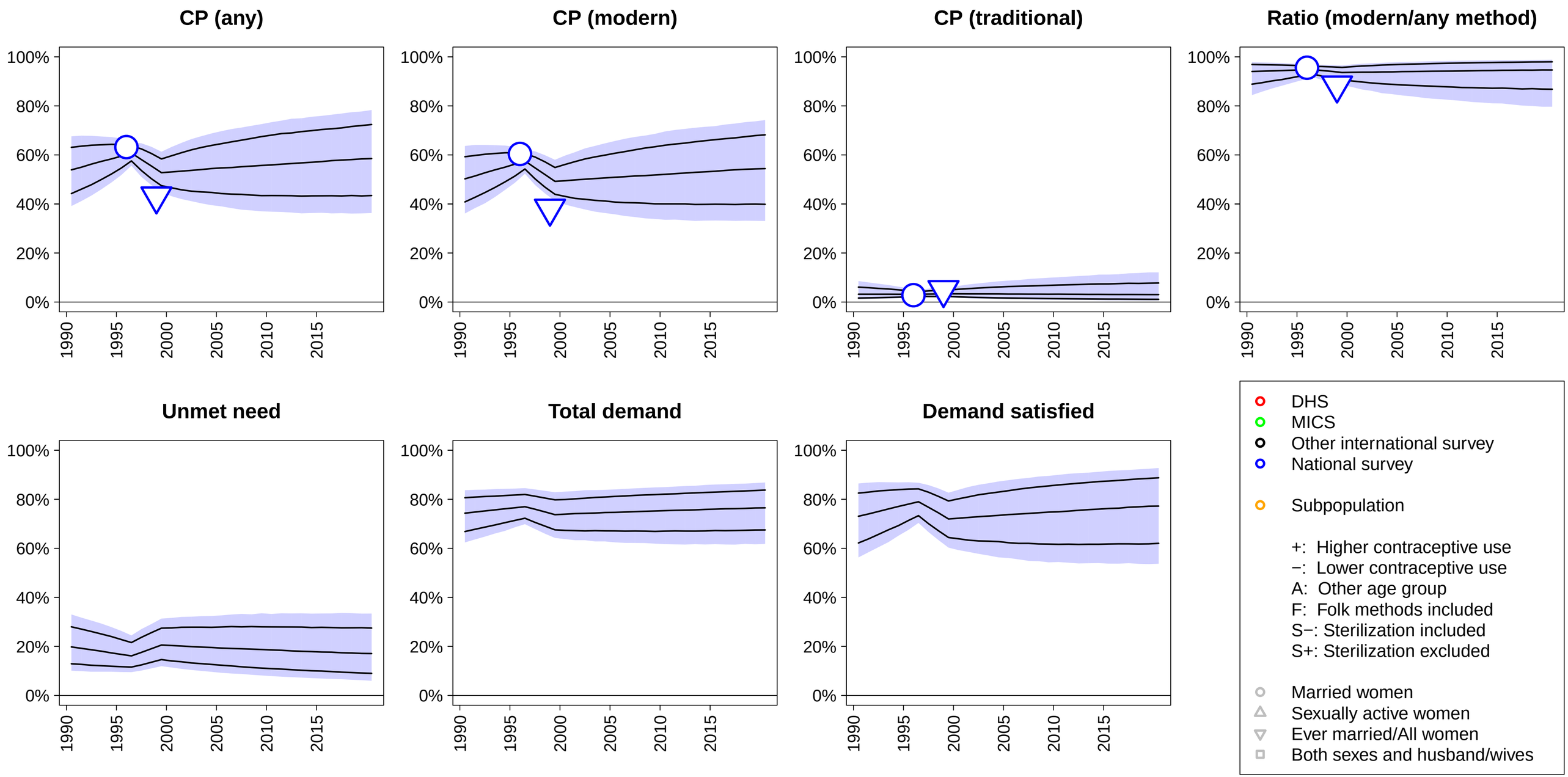
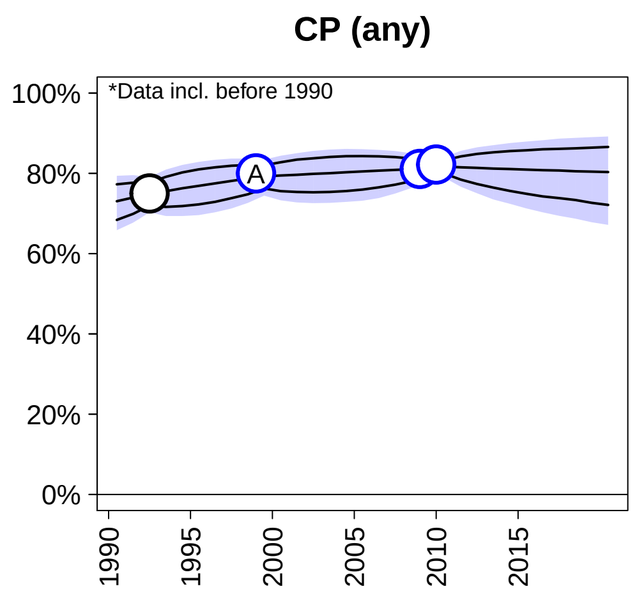
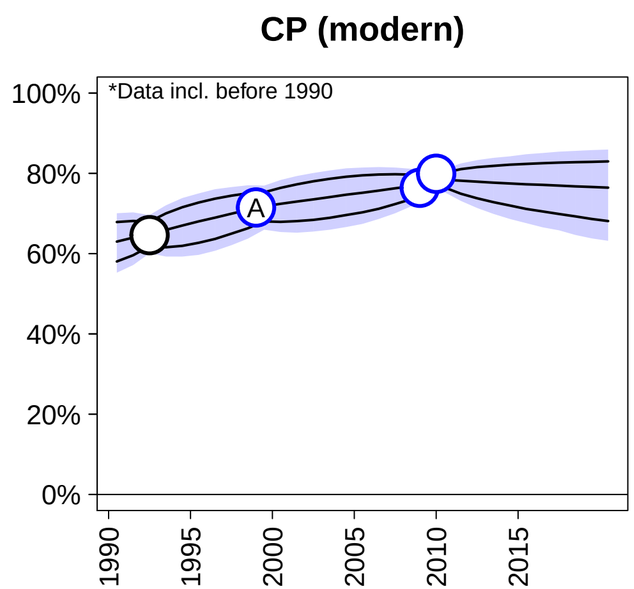
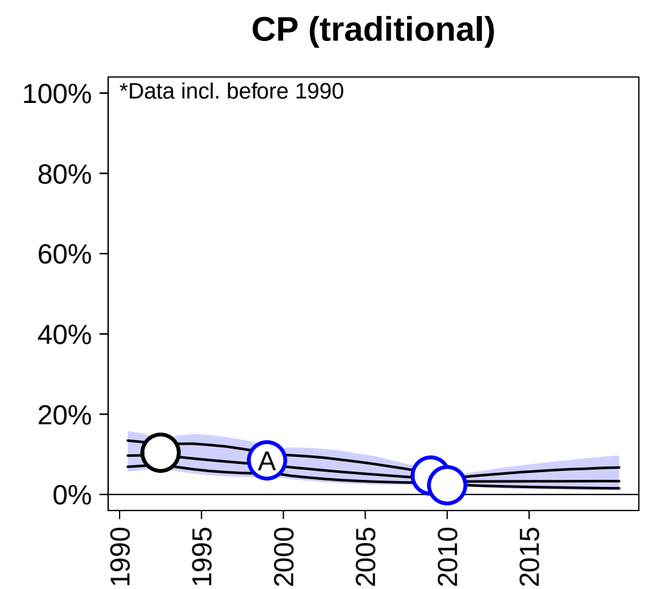
Cook Islands (Polynesia)

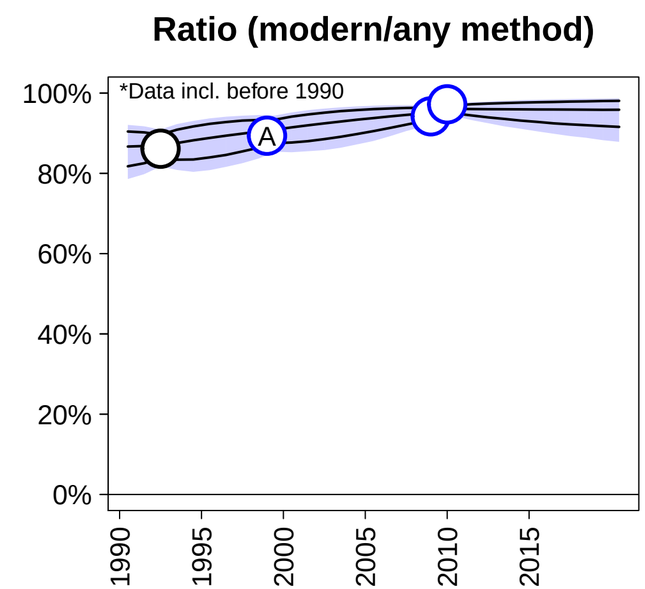


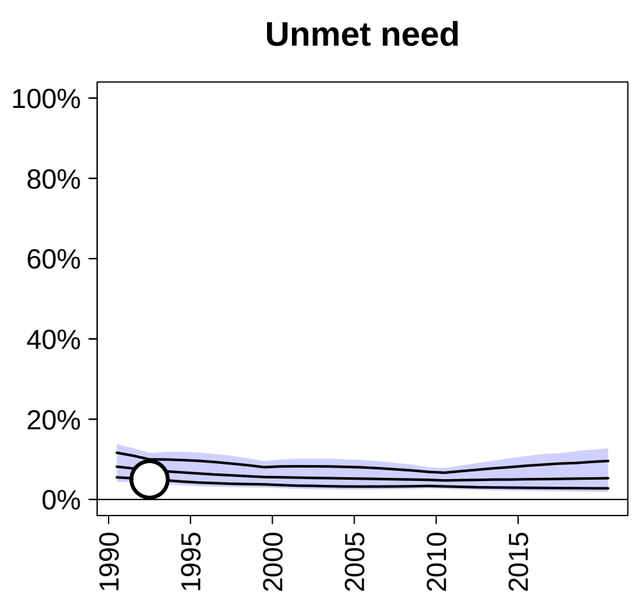
Costa Rica (Central America)

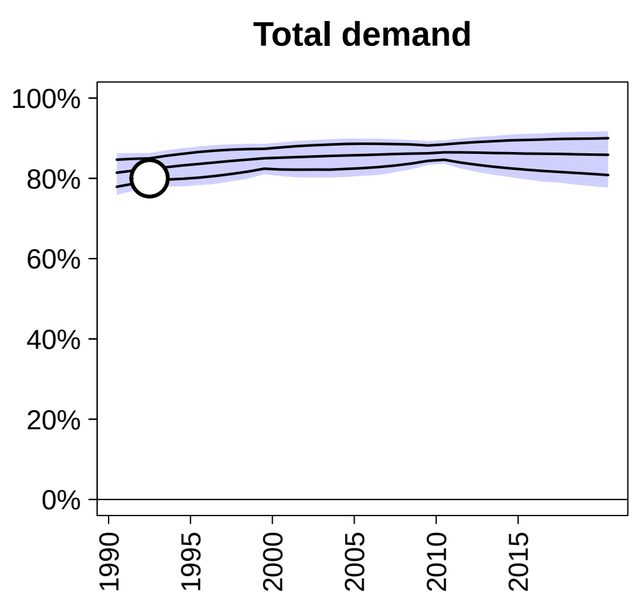


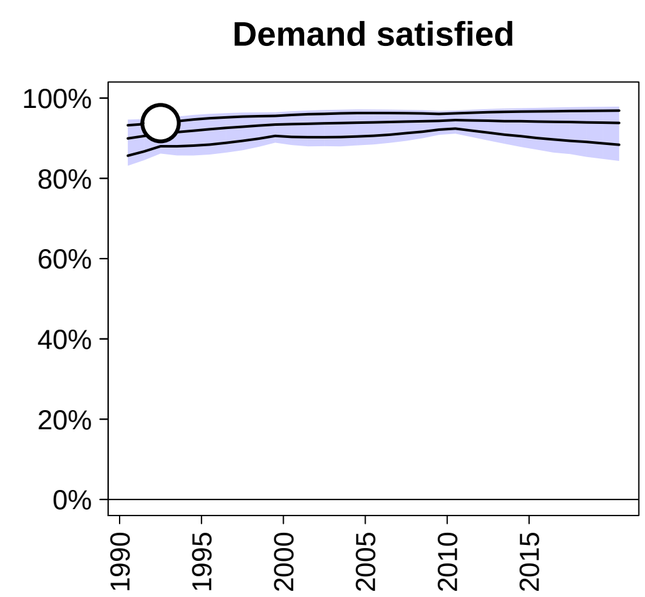












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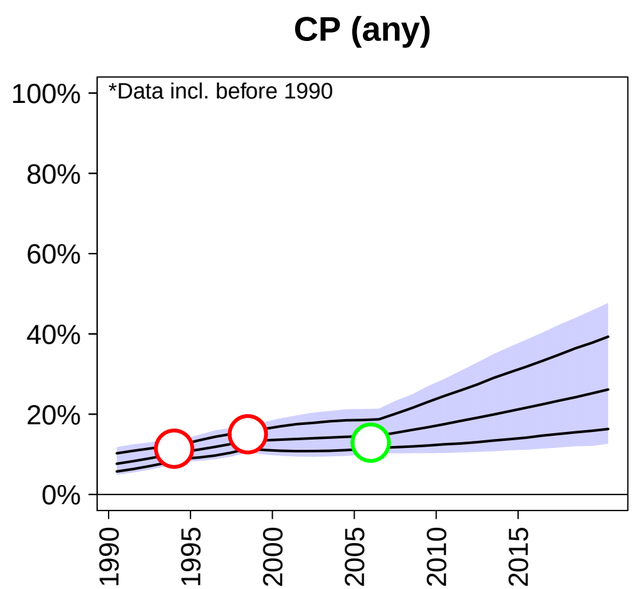
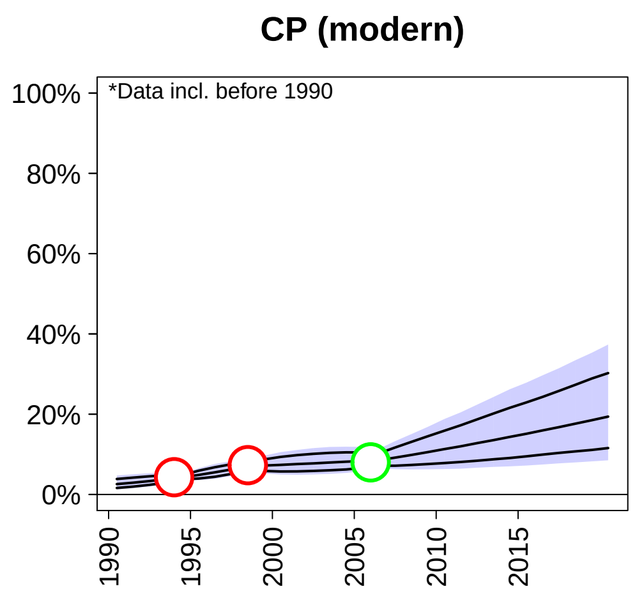
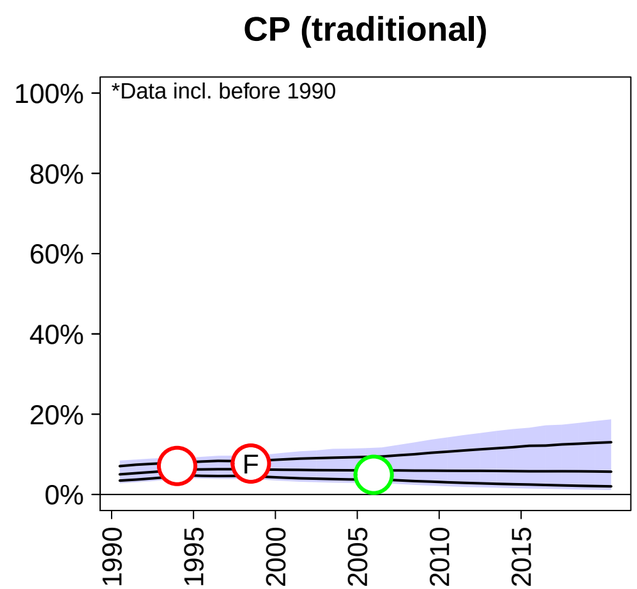
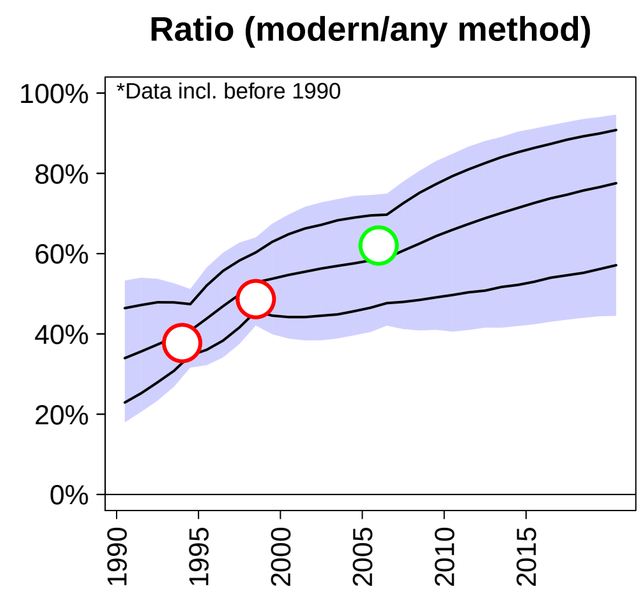
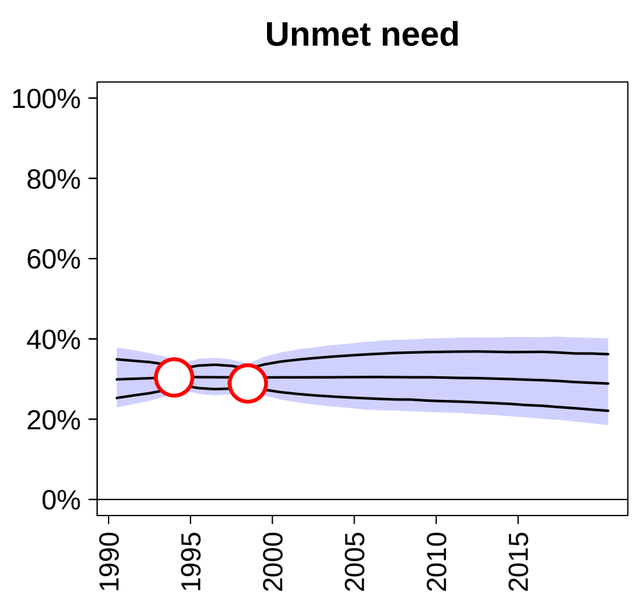
Cote d'Ivoire (Western Africa)

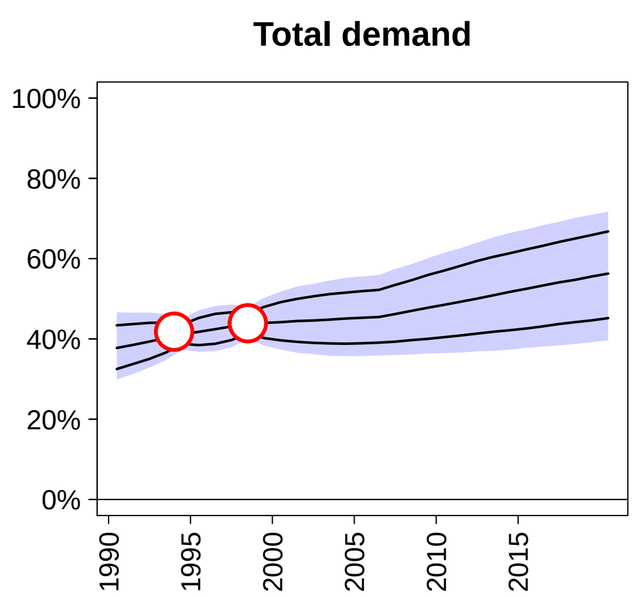


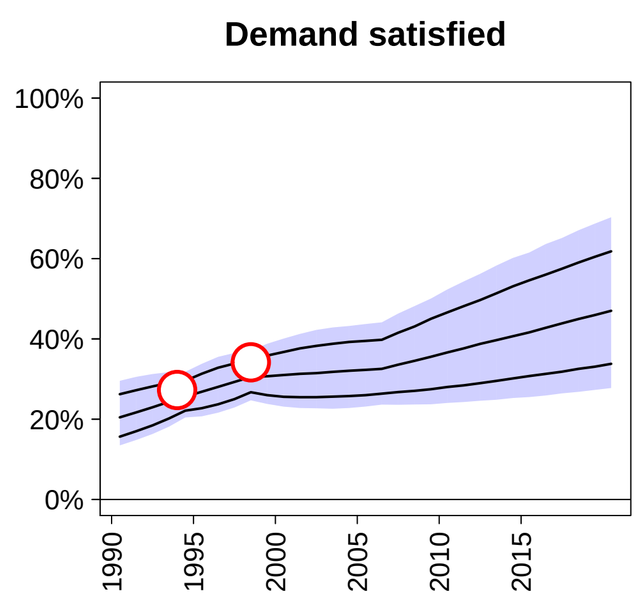












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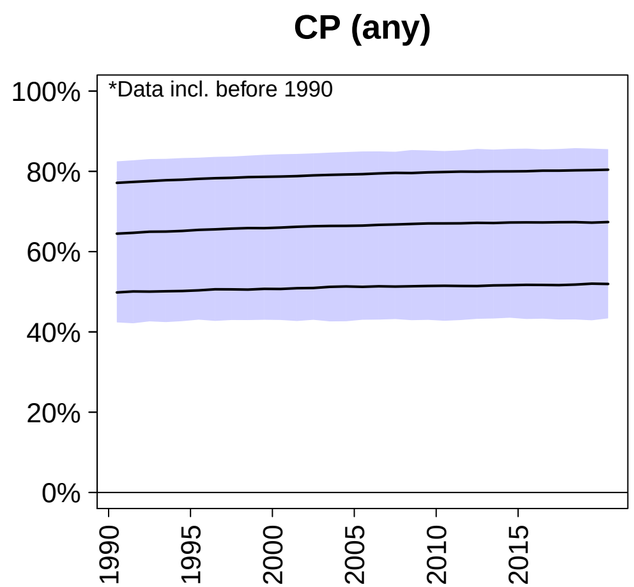
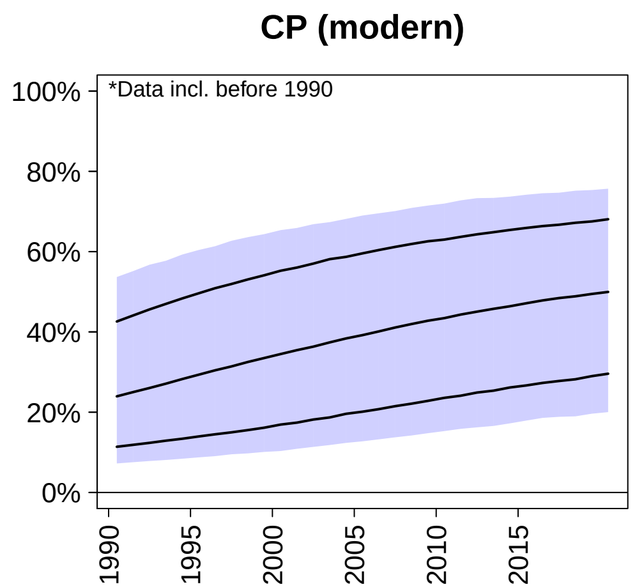
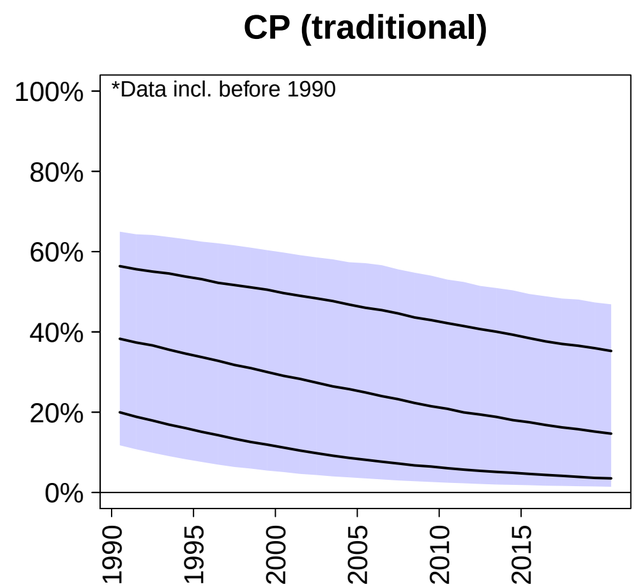
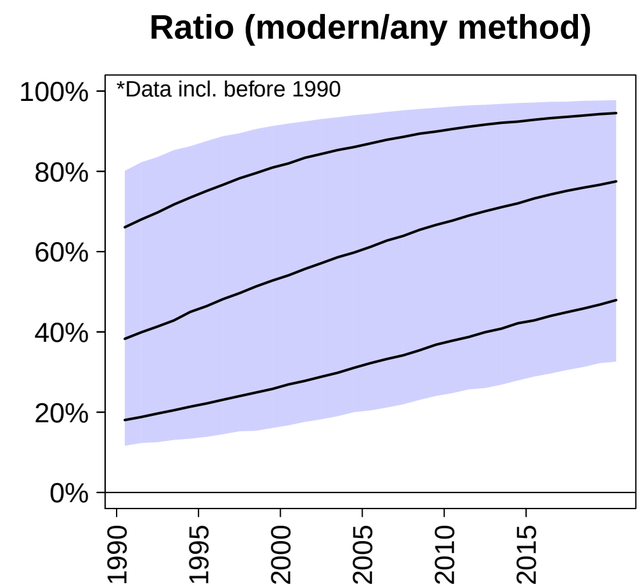
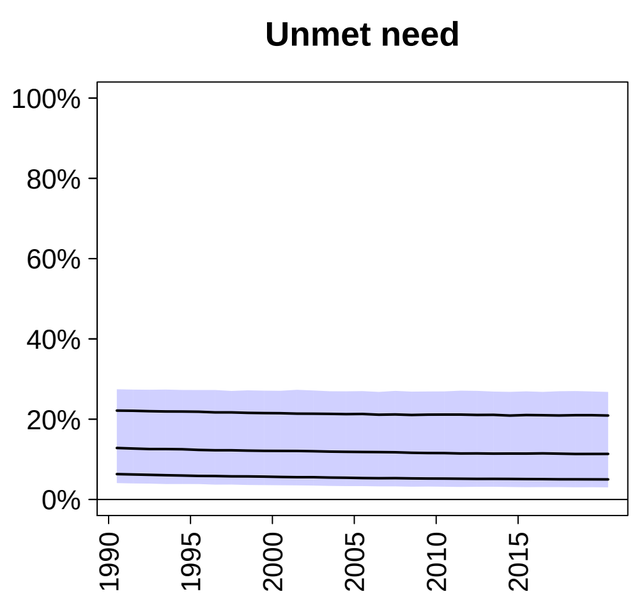
Croatia (Southern Europe)

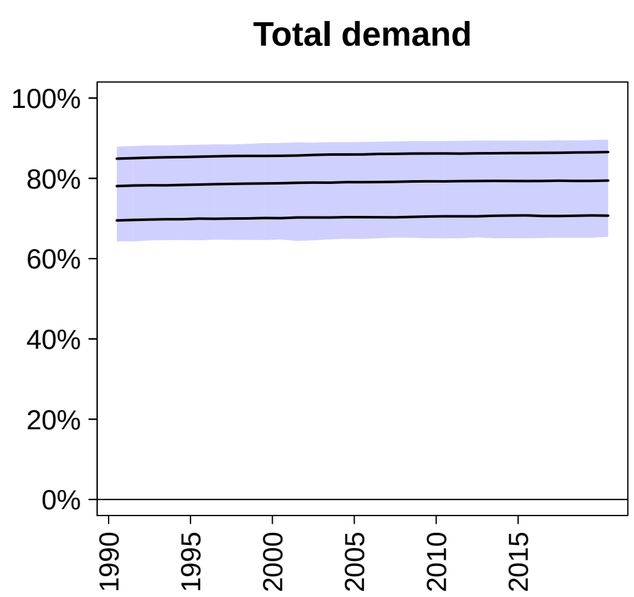


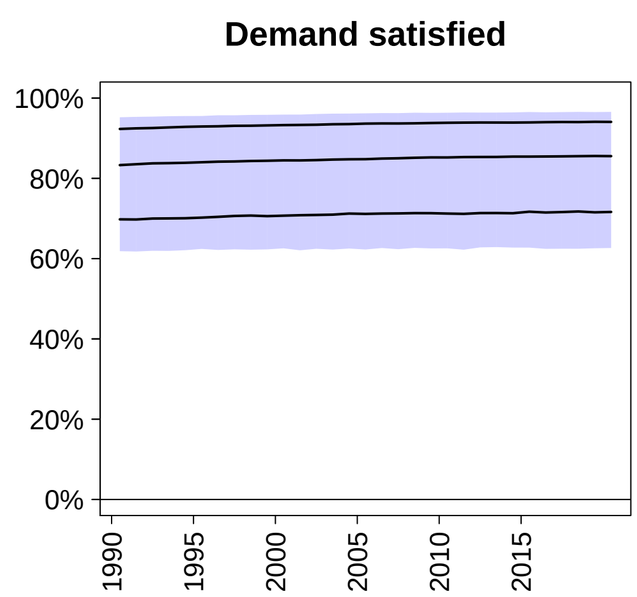












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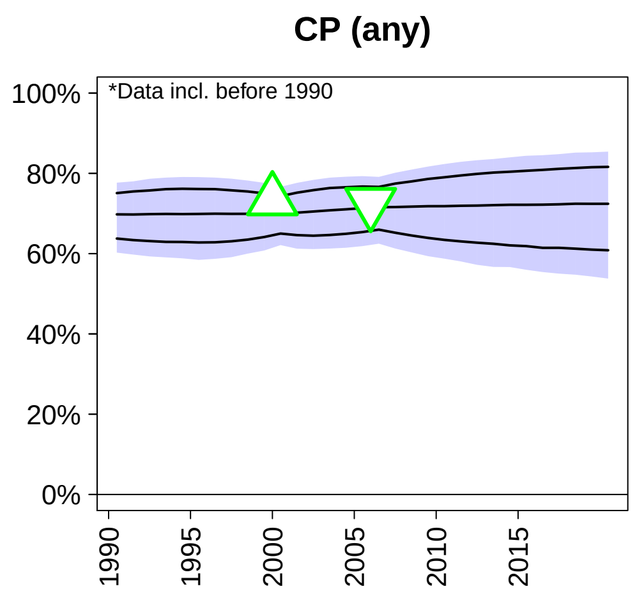
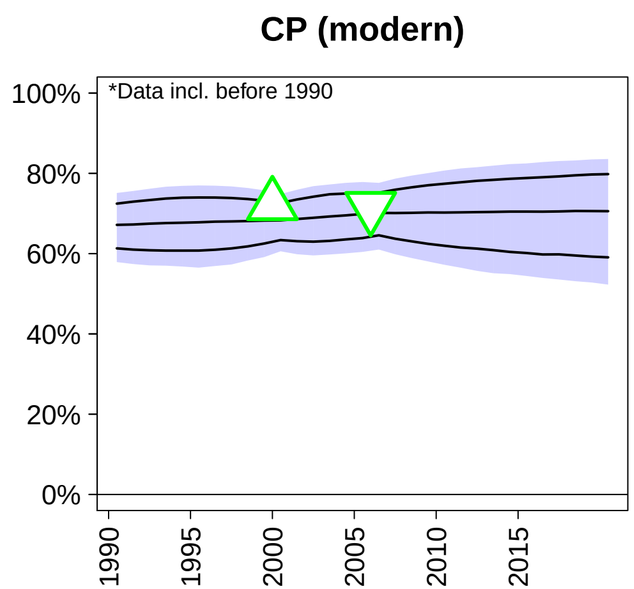
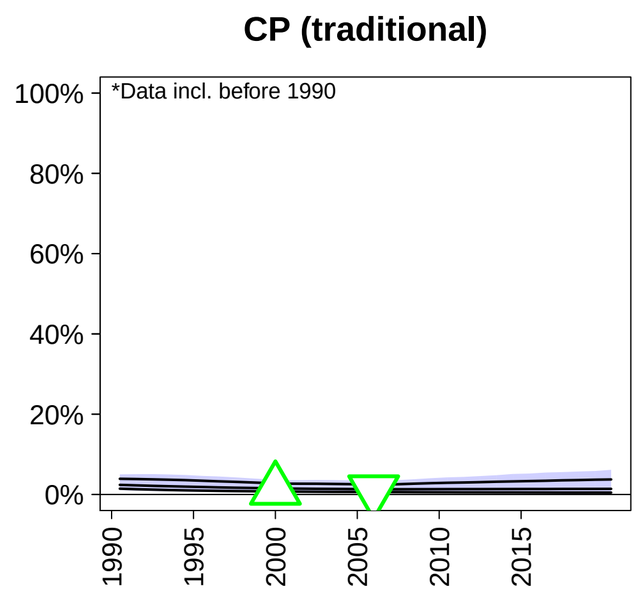
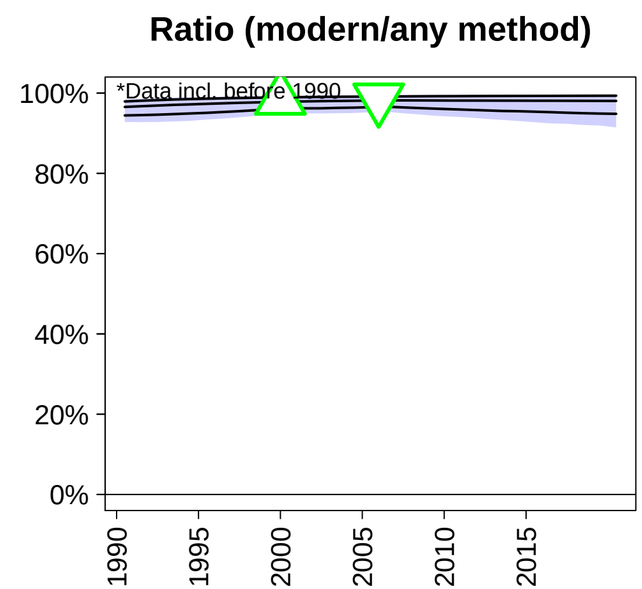
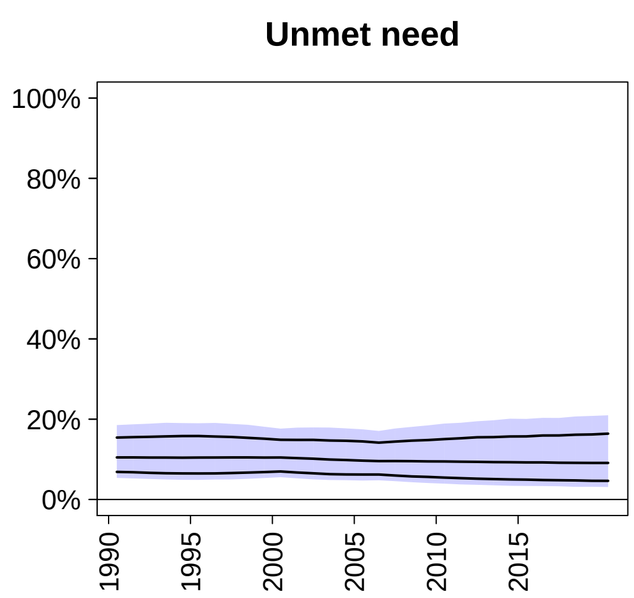
Cuba (Caribbean)

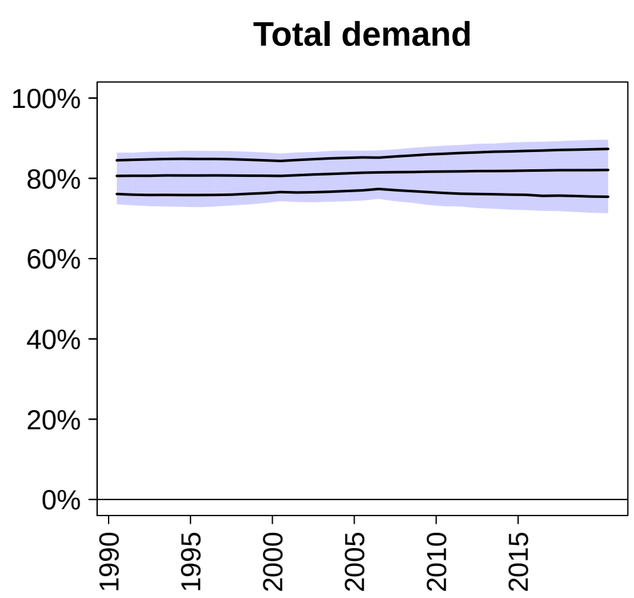


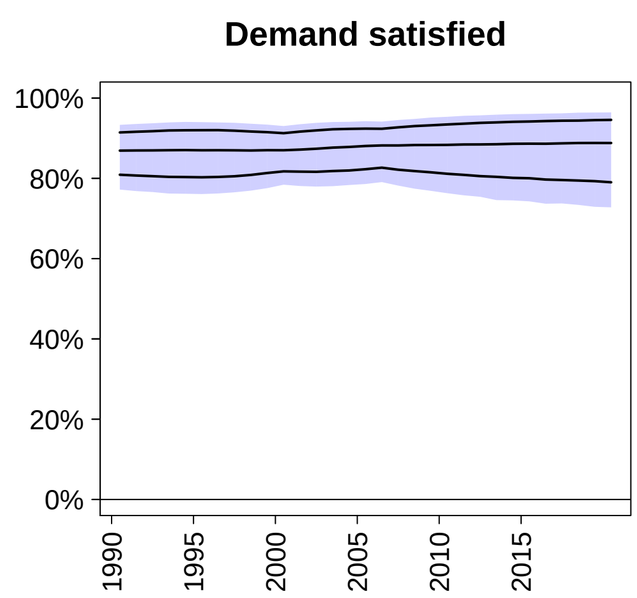












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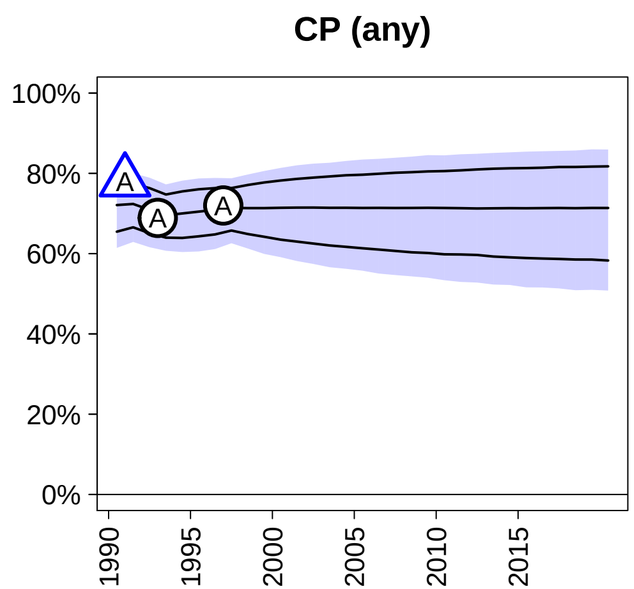
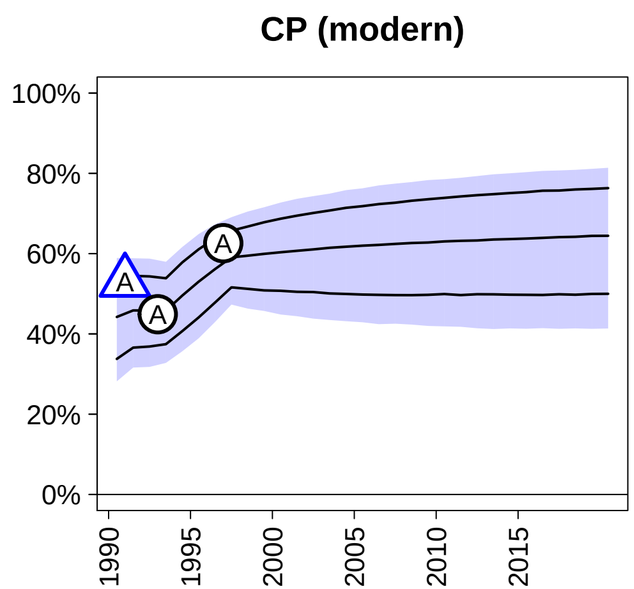
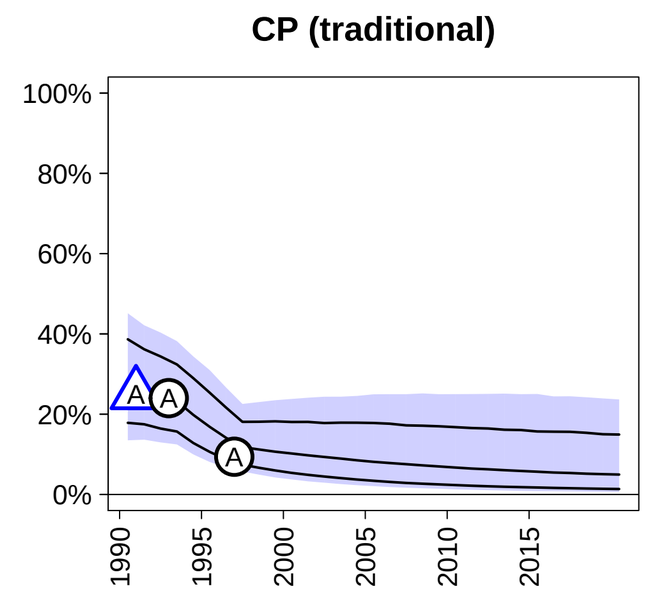
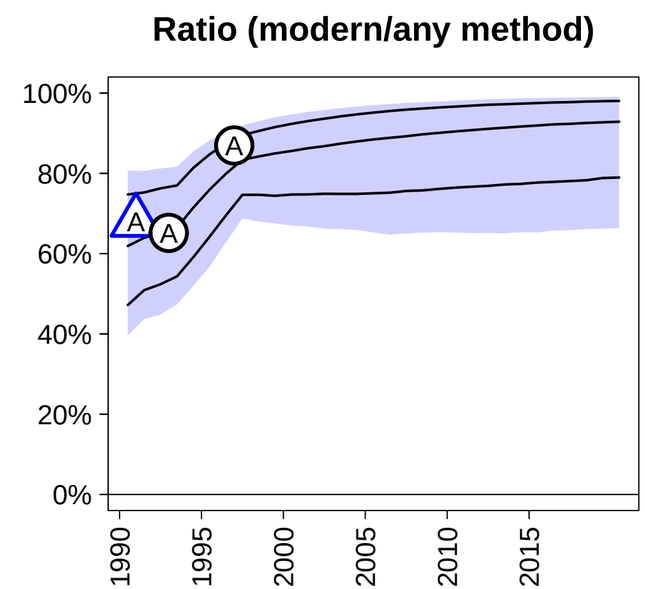
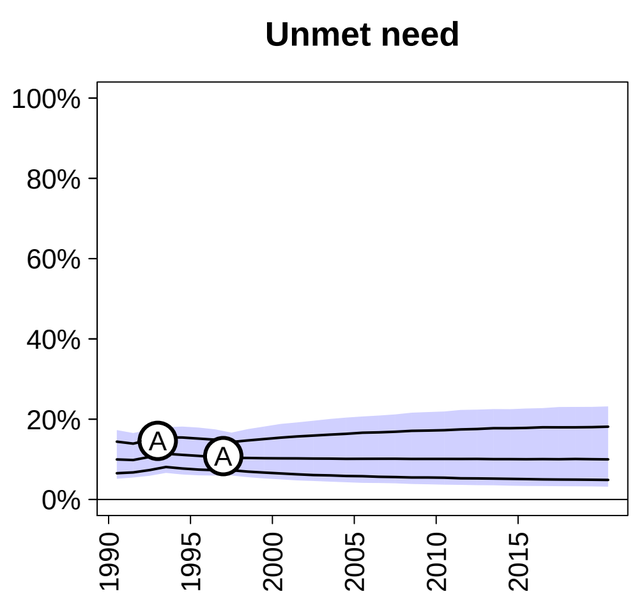
Czech Republic (Eastern Europe)

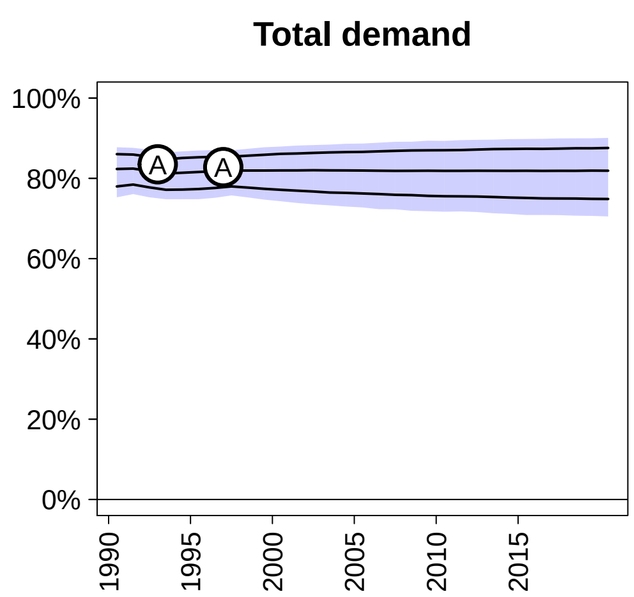


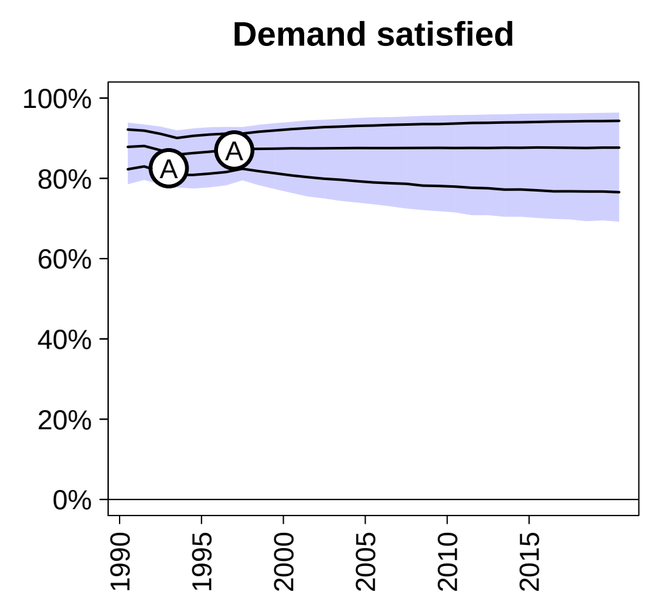












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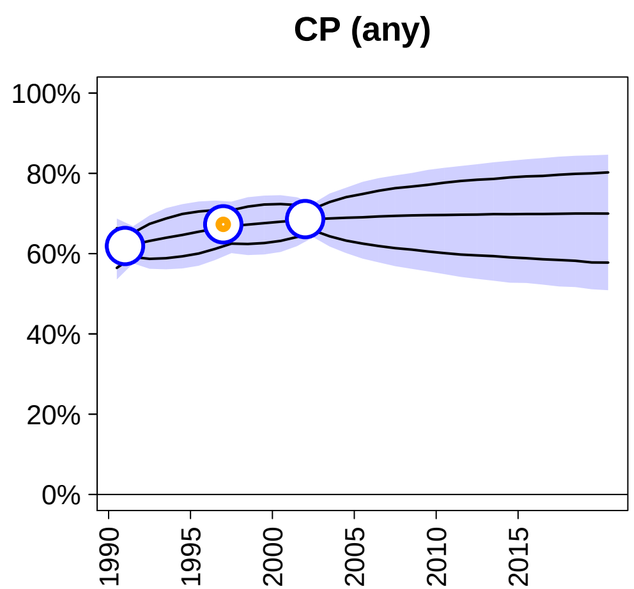
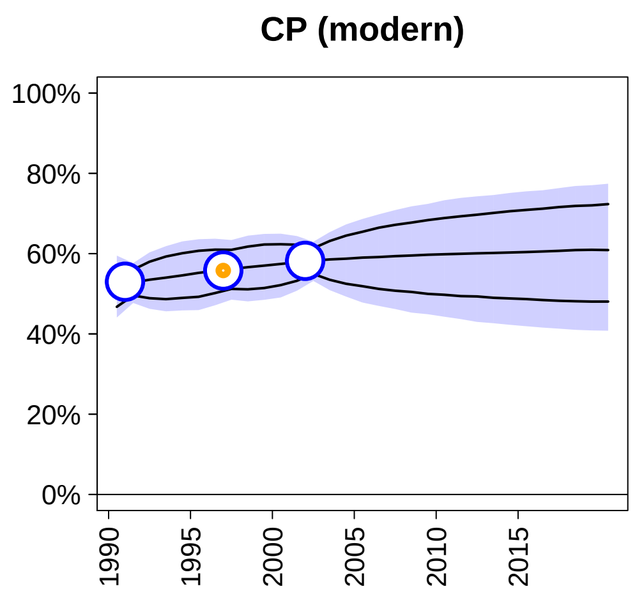
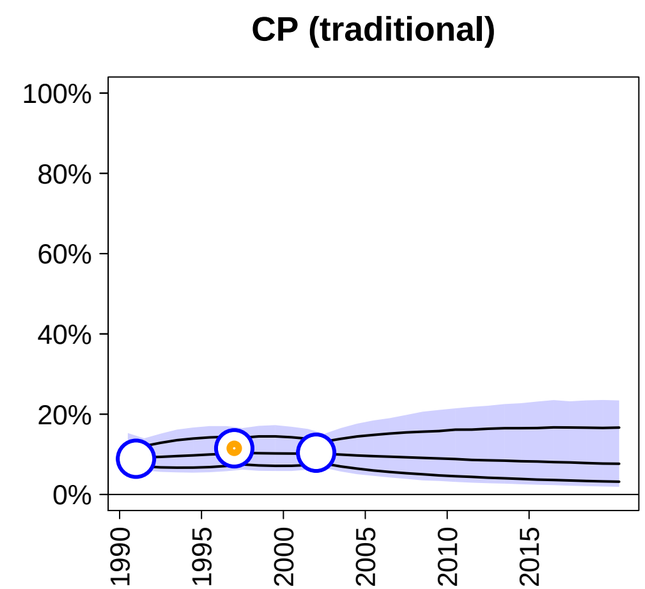
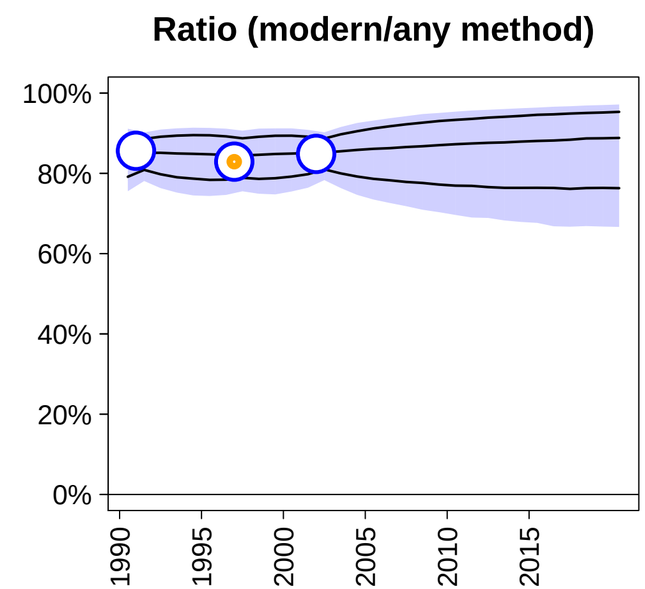
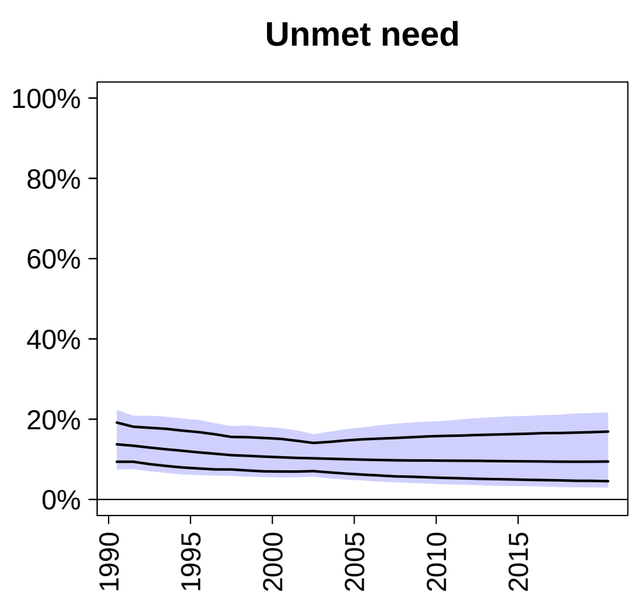
Democratic People's Republic of Korea (Eastern Asia)

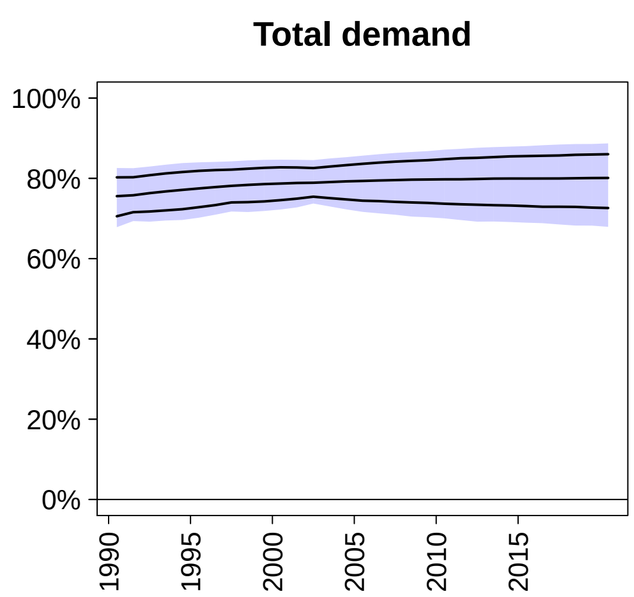


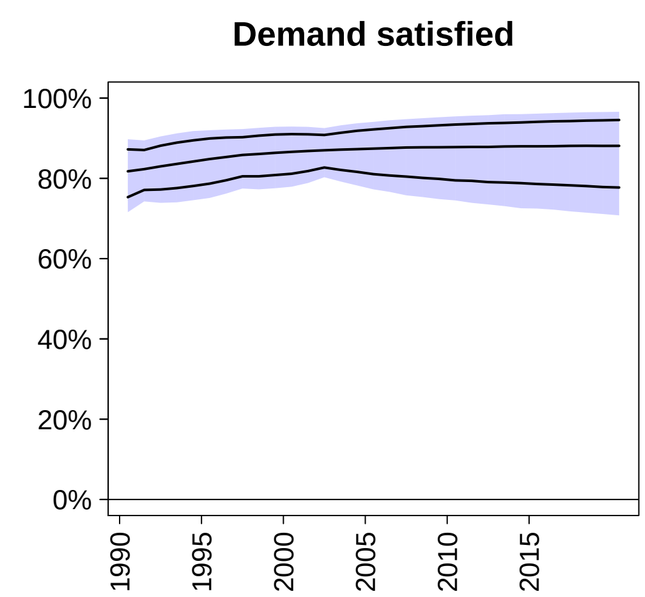












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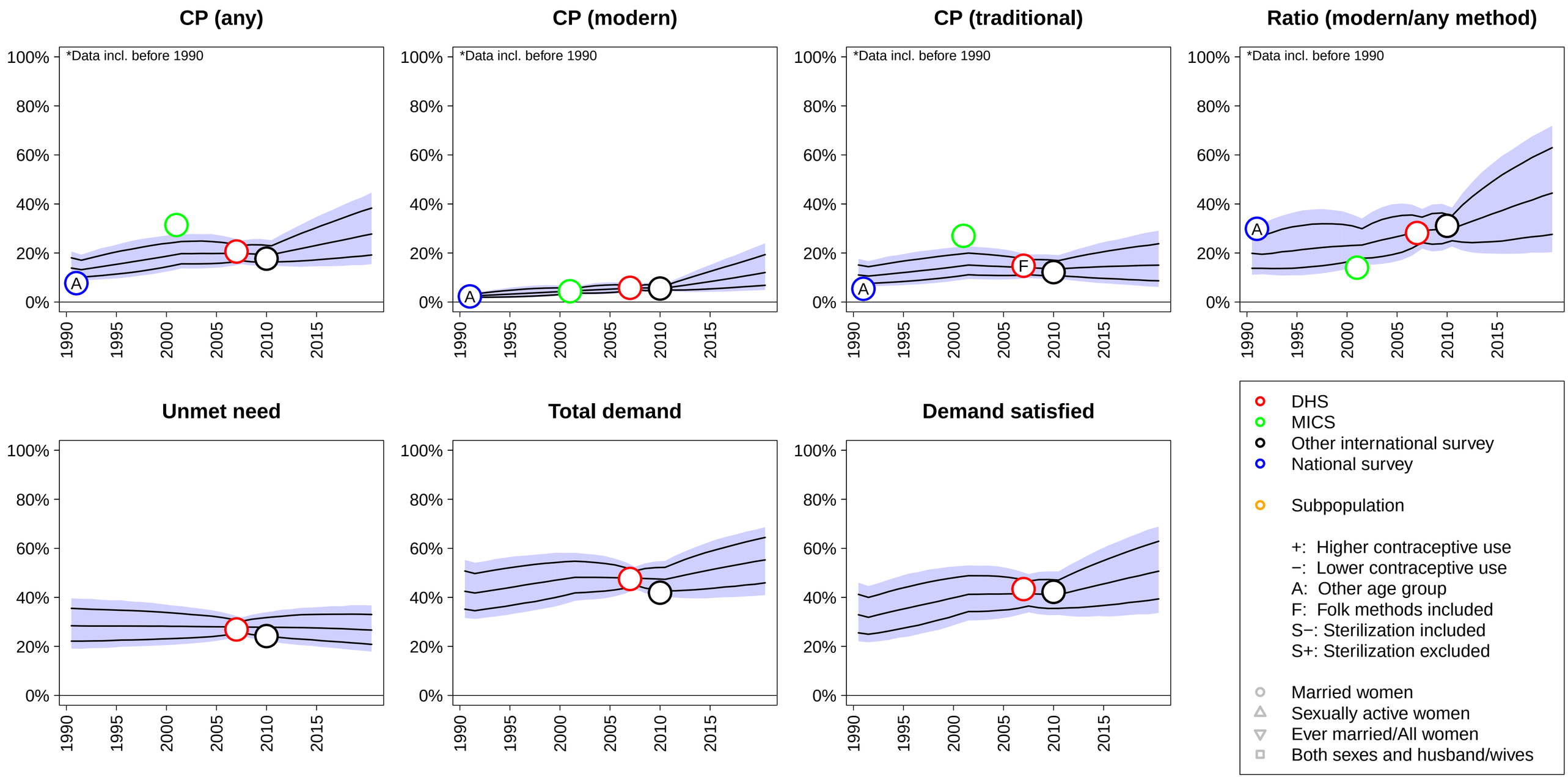
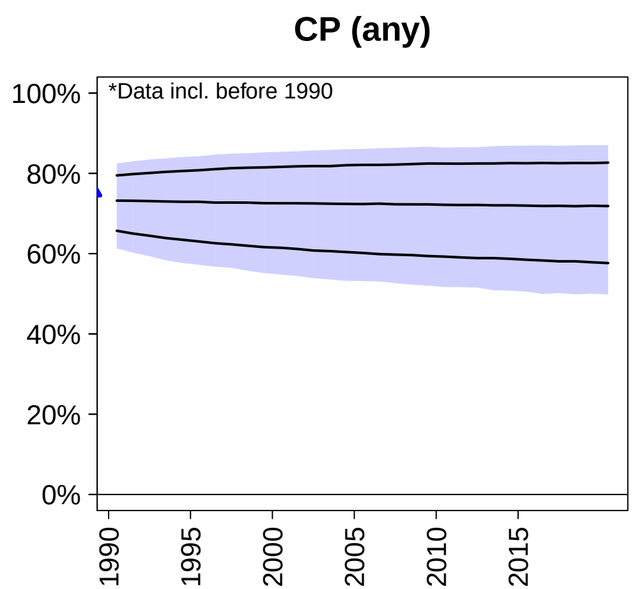
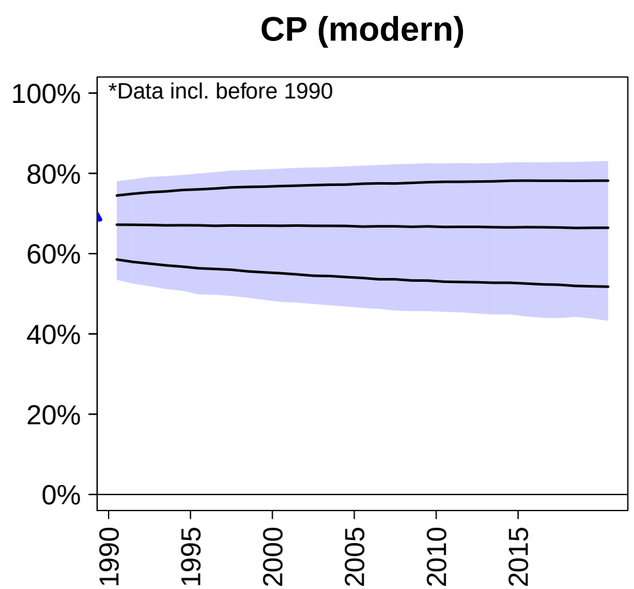
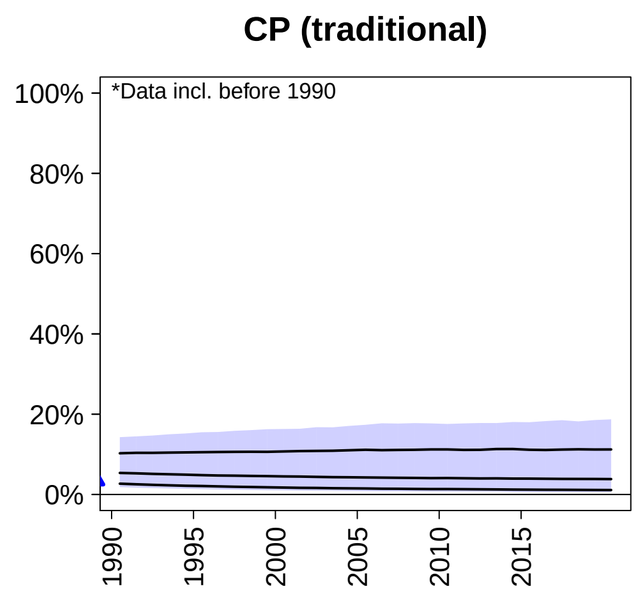
Democratic Republic of the Congo (Middle Africa)

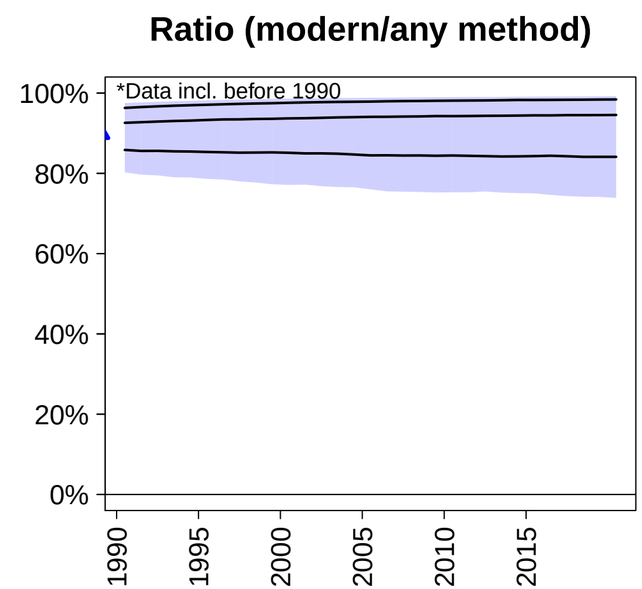


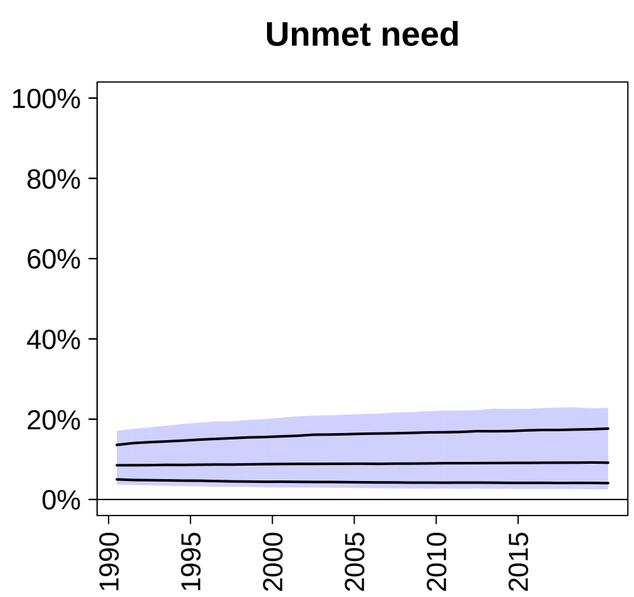
Denmark (Northern Europe)

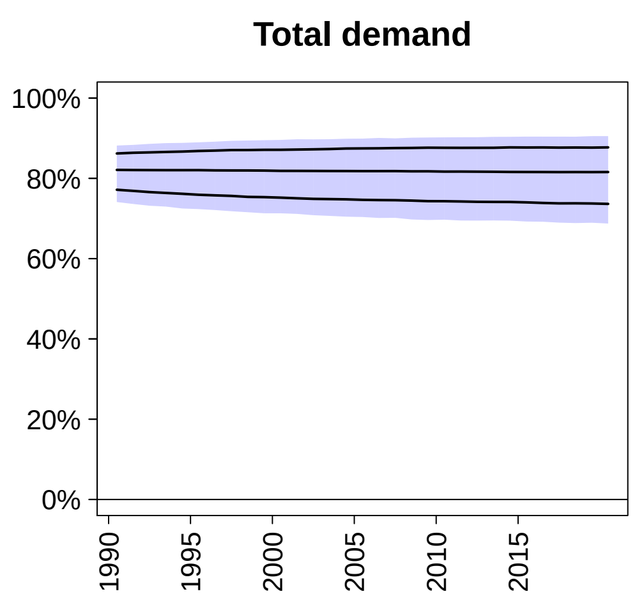


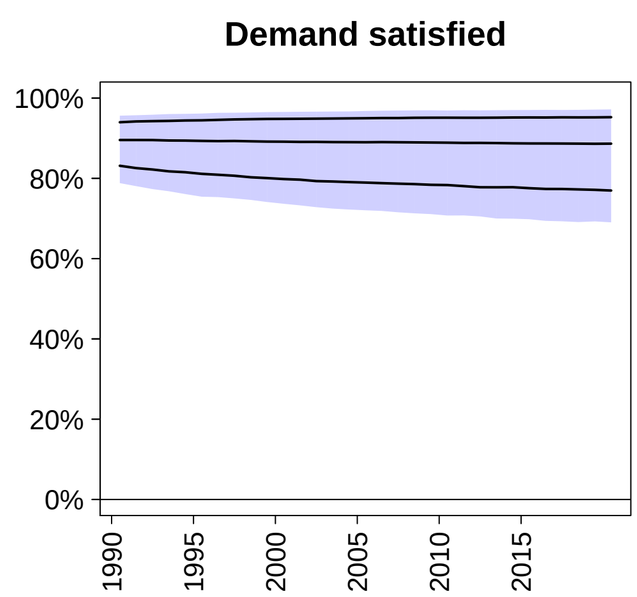












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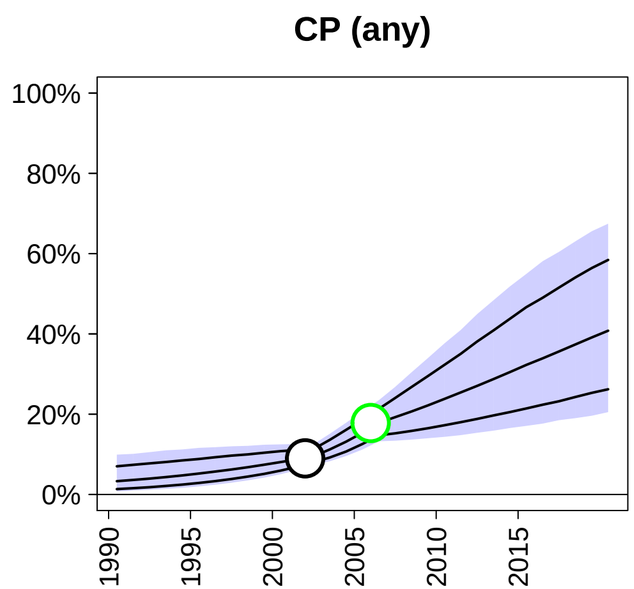
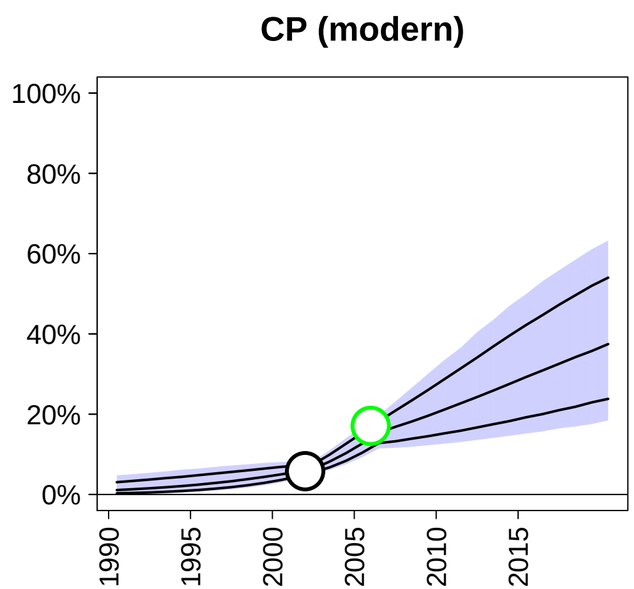
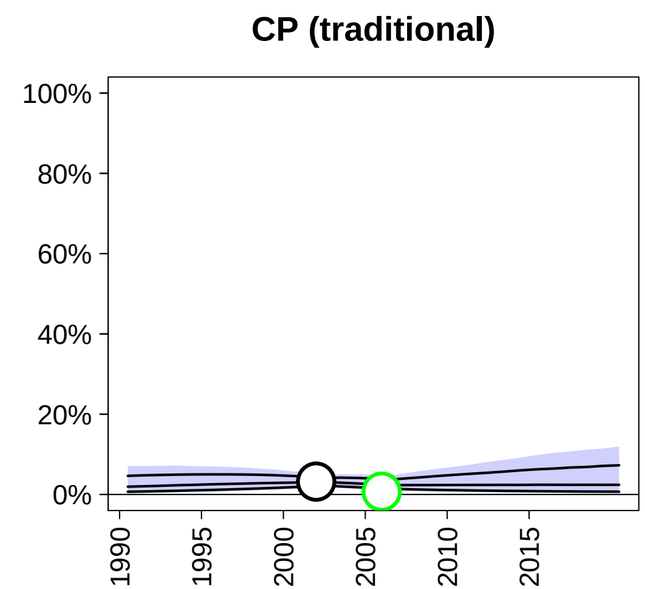
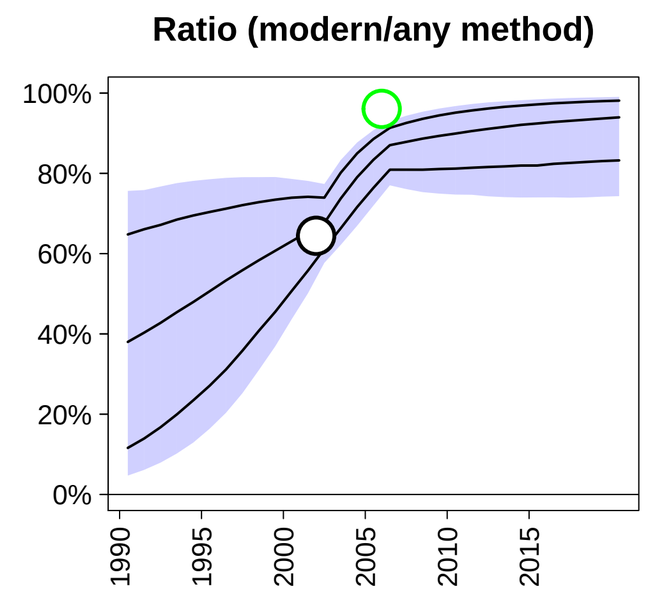
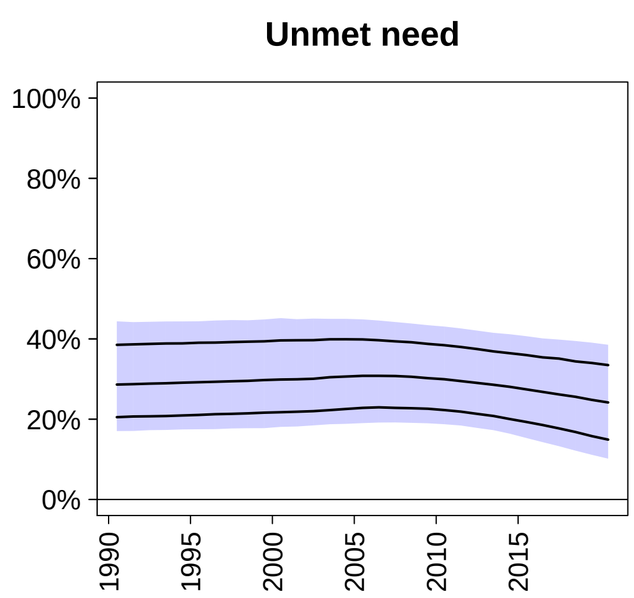
Djibouti (Eastern Africa)

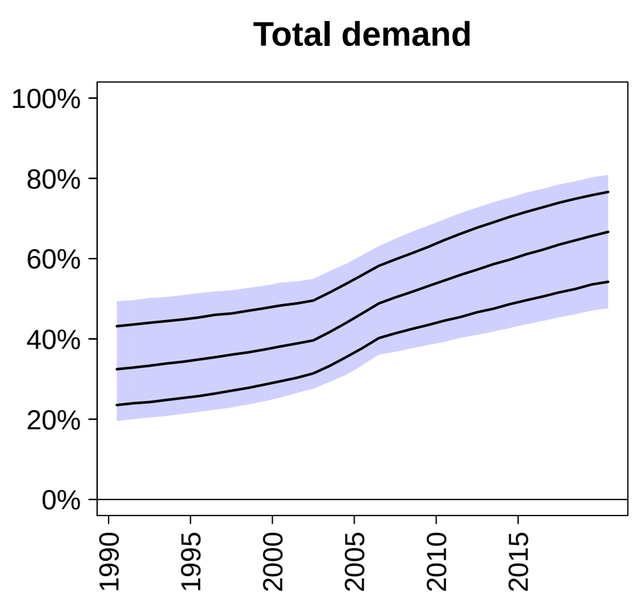


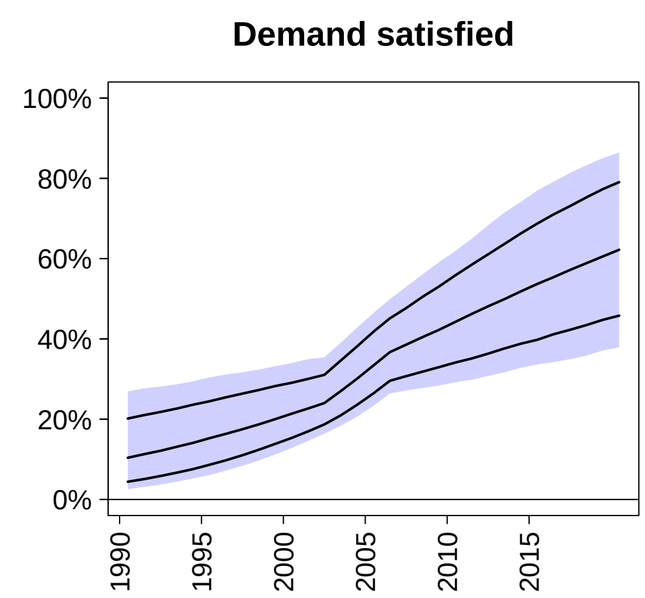












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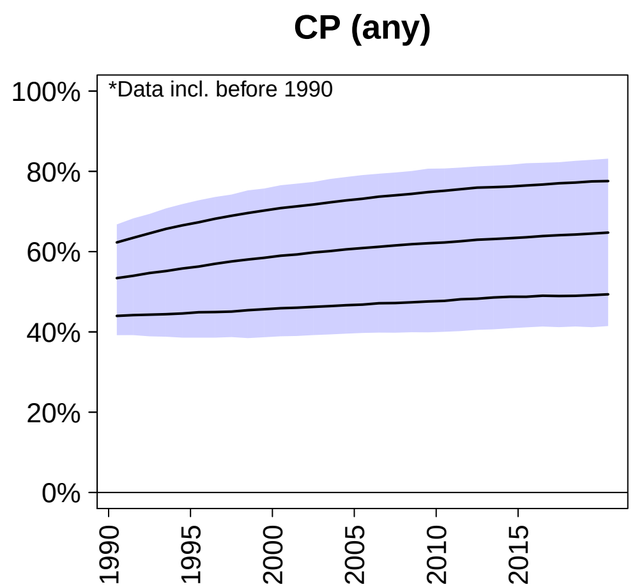
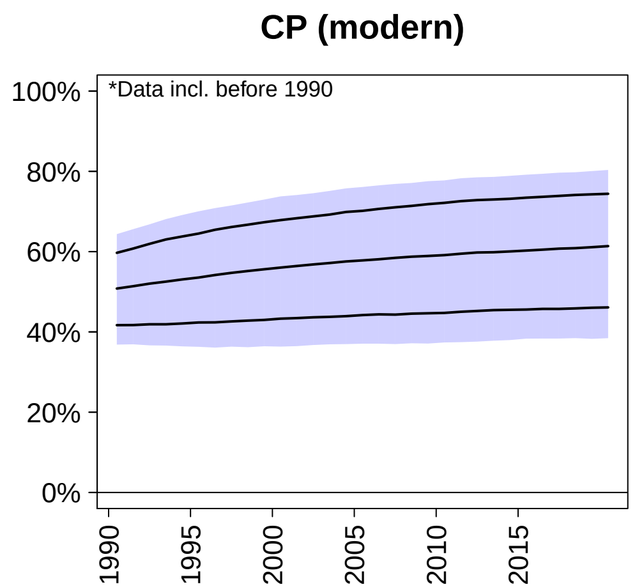
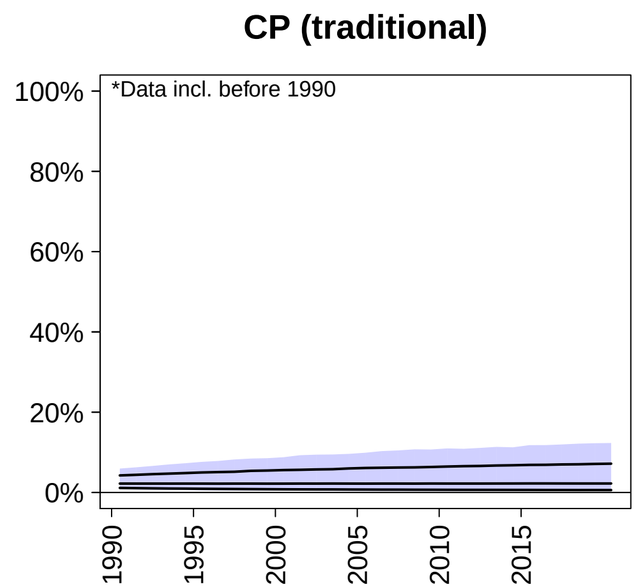
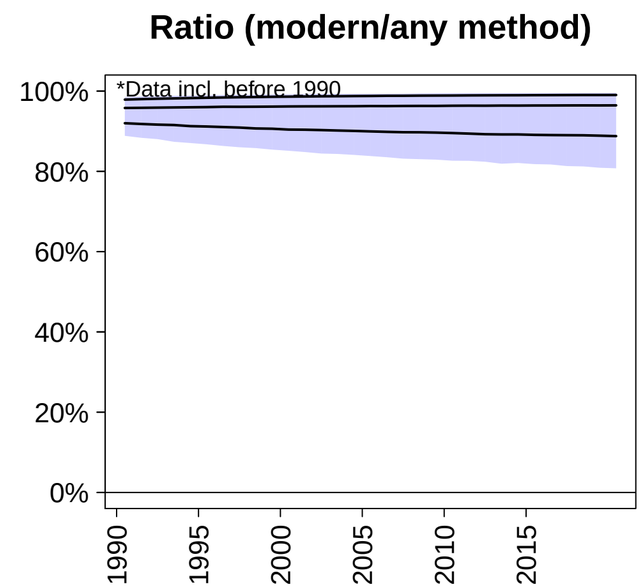
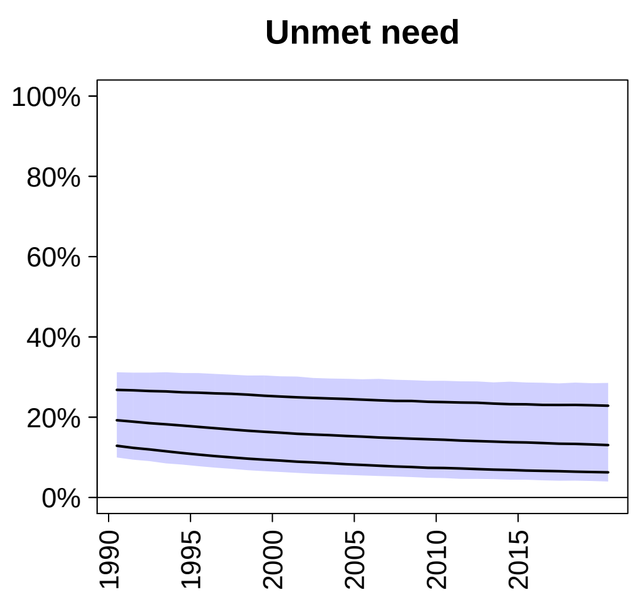
Dominica (Caribbean)

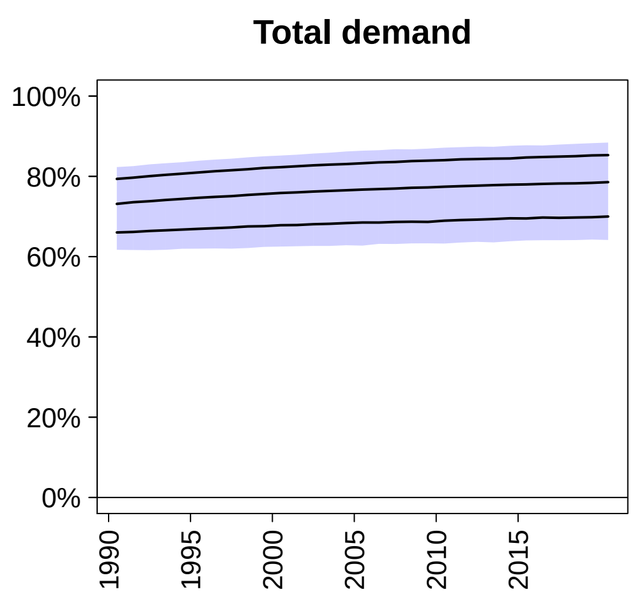


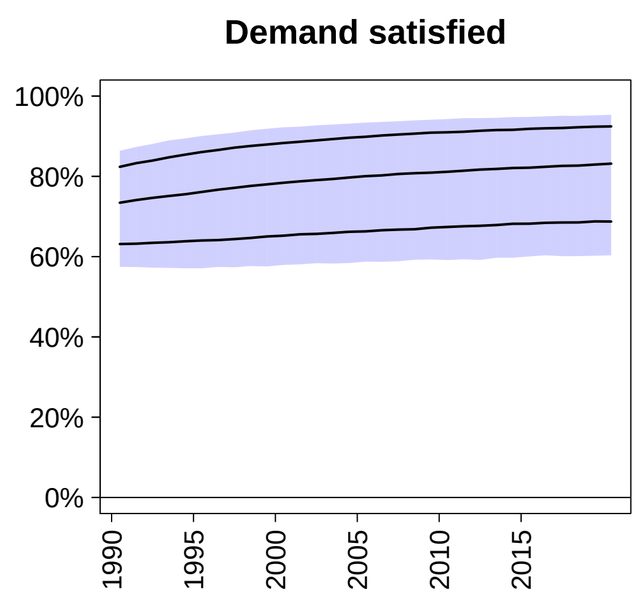












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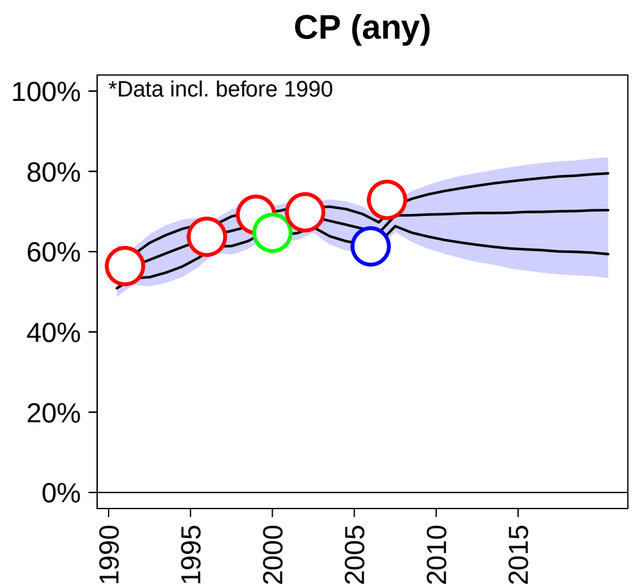
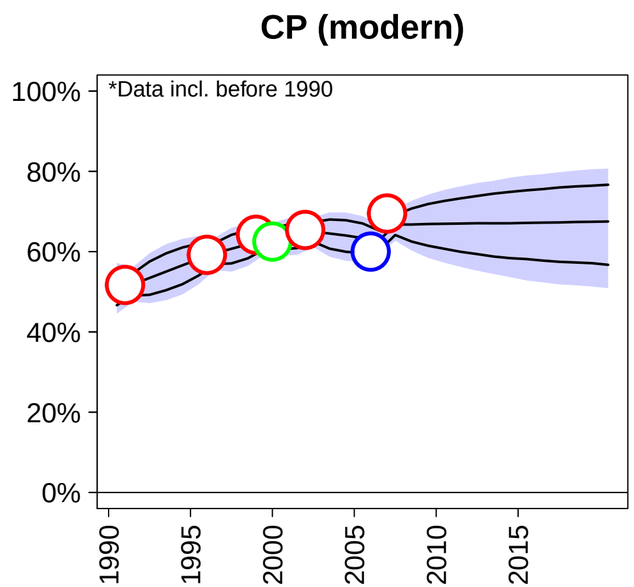
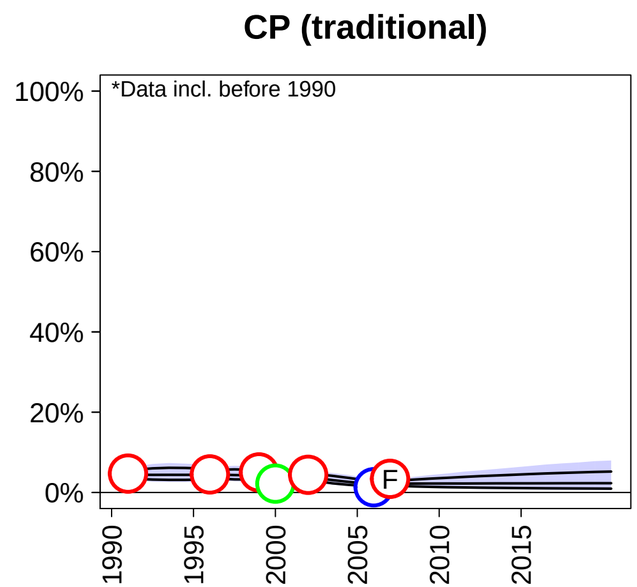
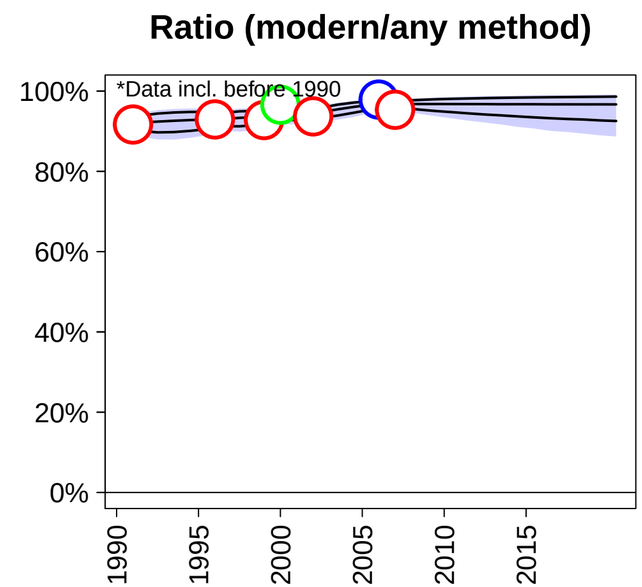
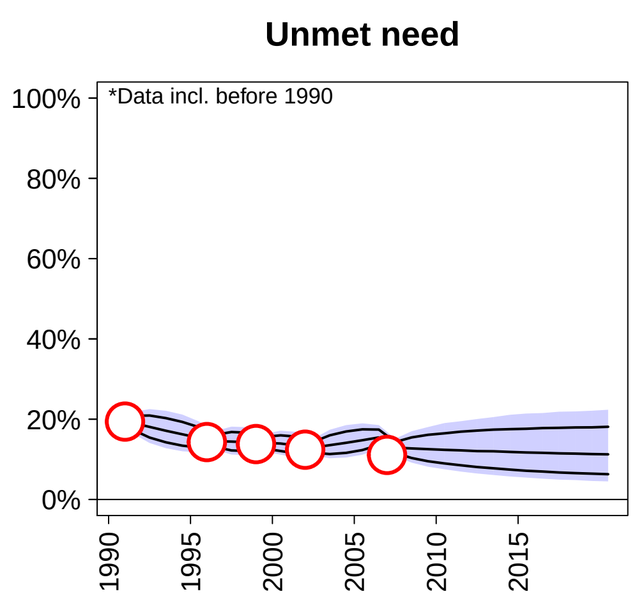
Dominican Republic (Caribbean)

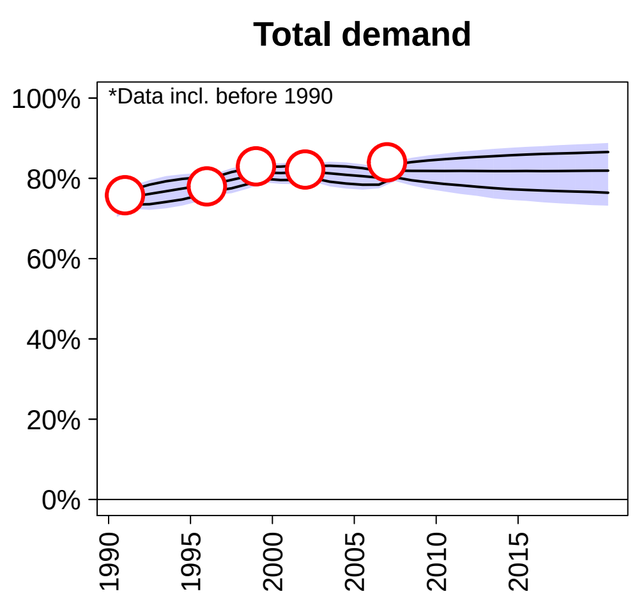


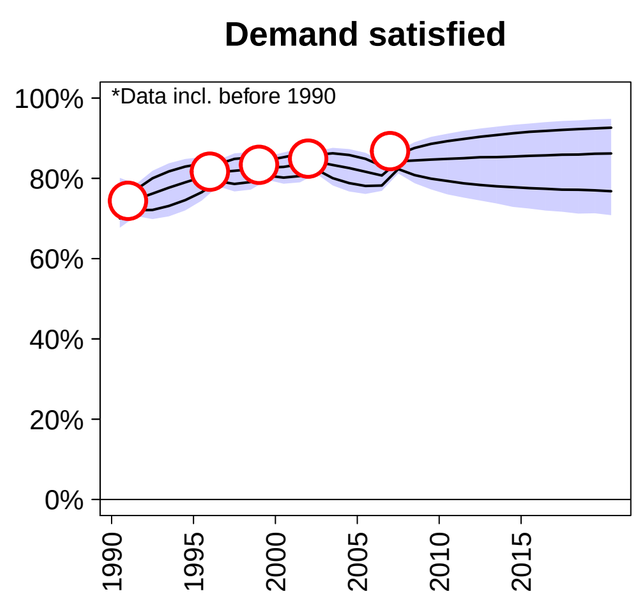












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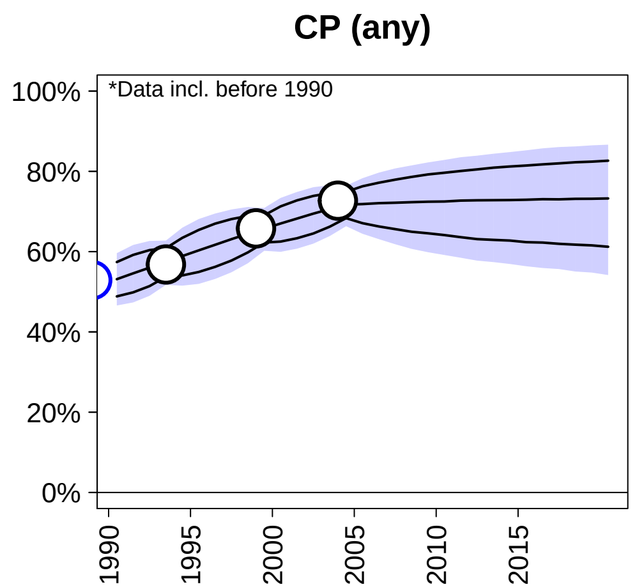
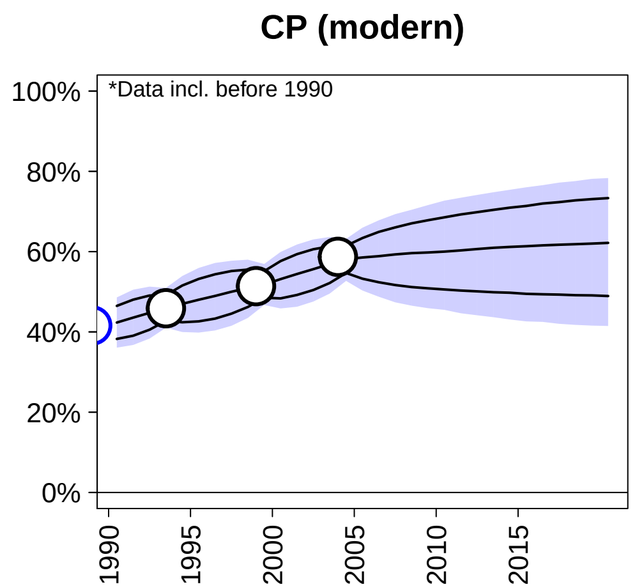
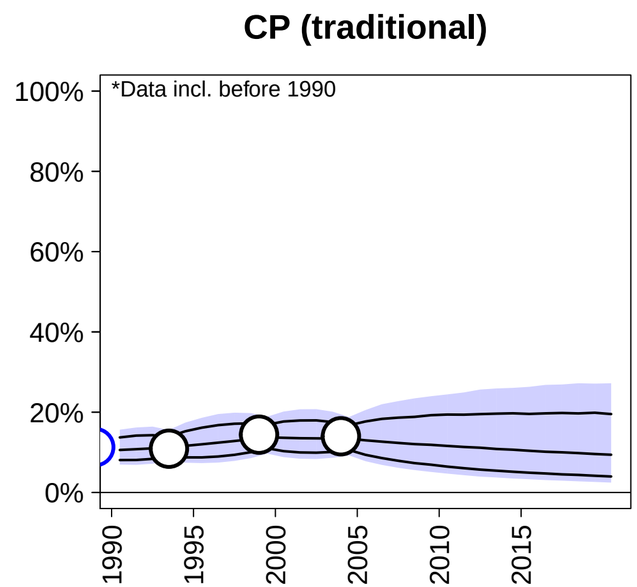
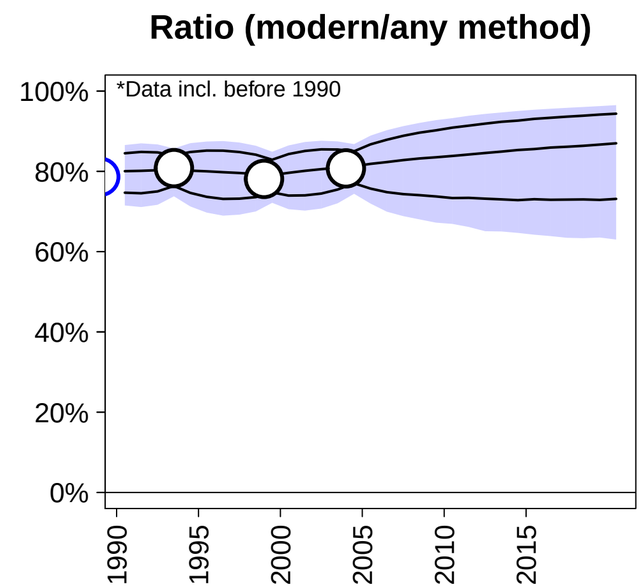
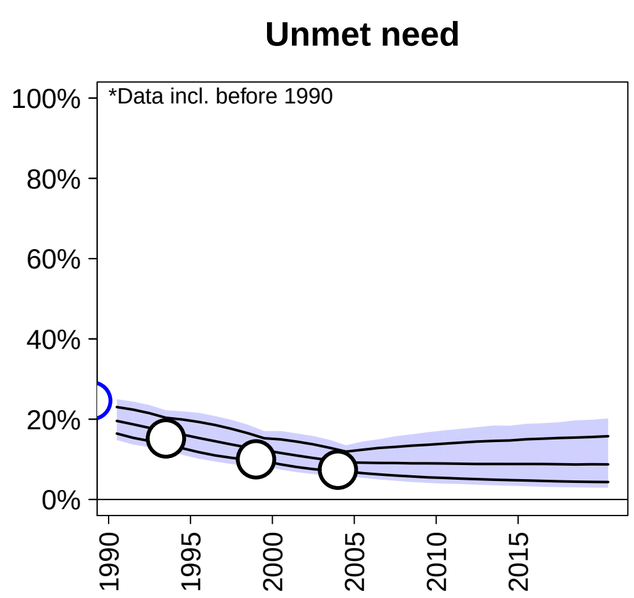
Ecuador (South America)

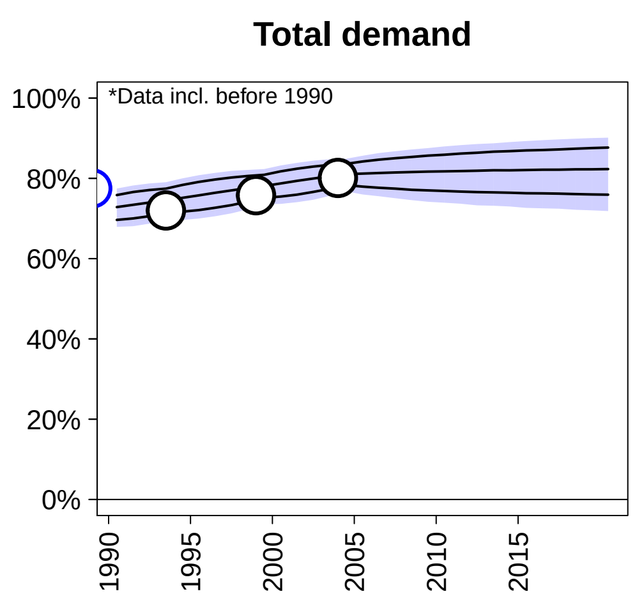


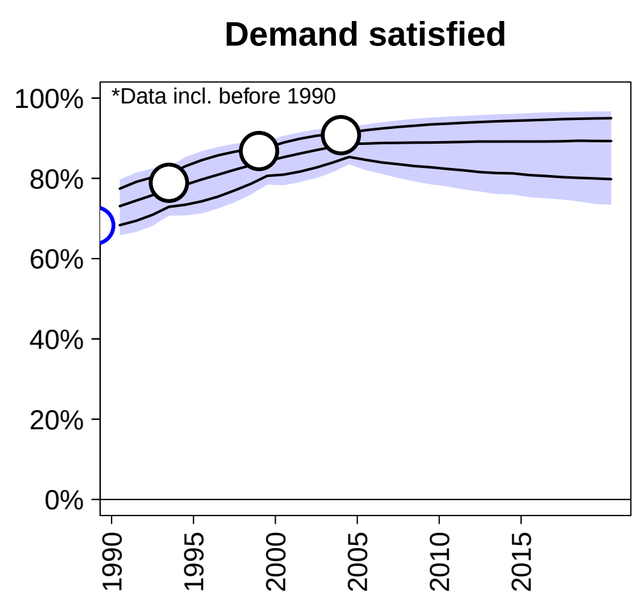












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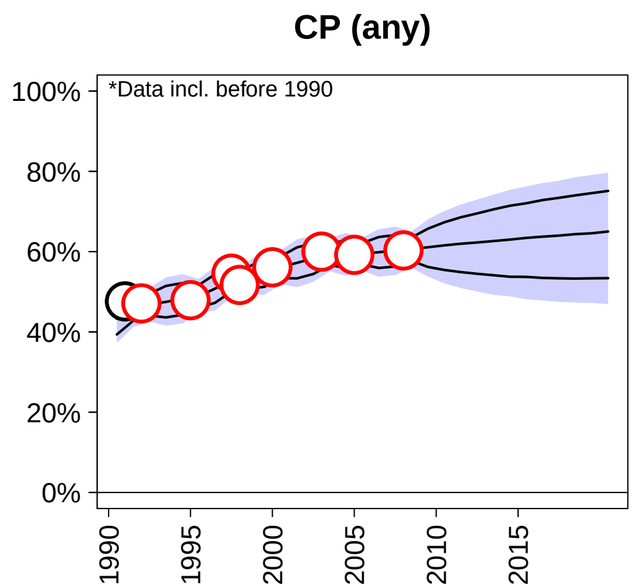
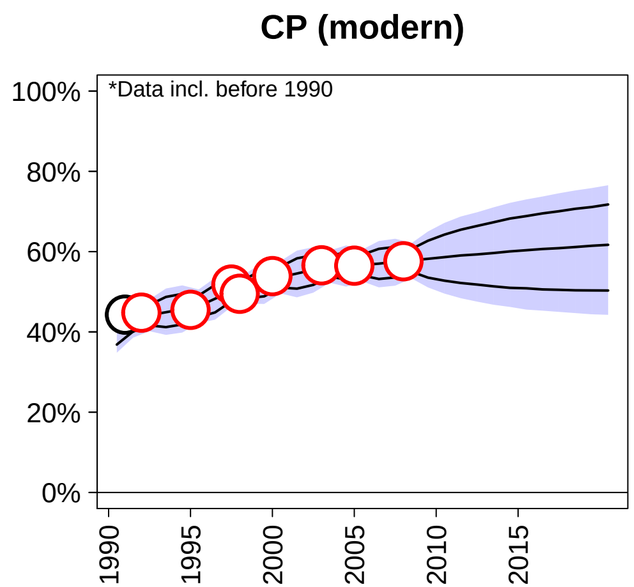
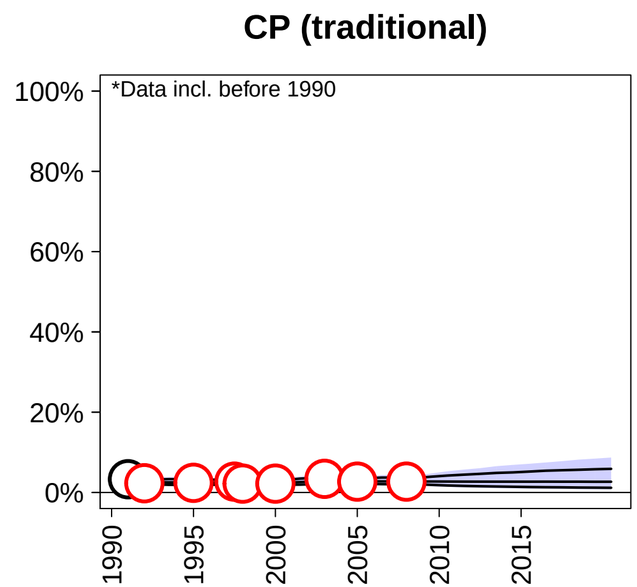
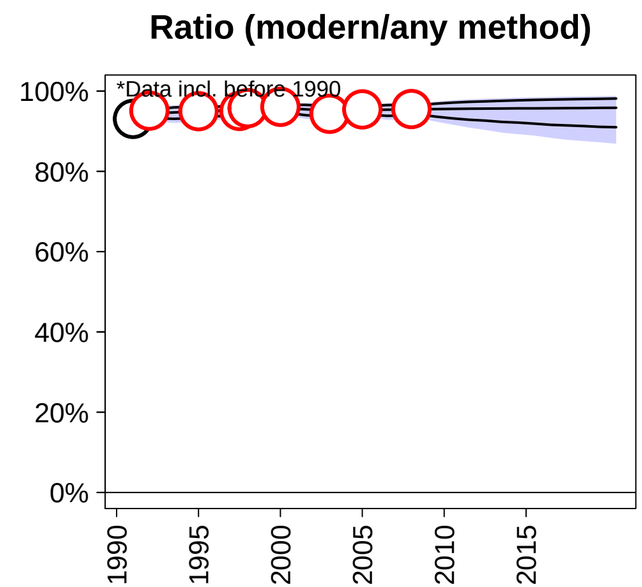
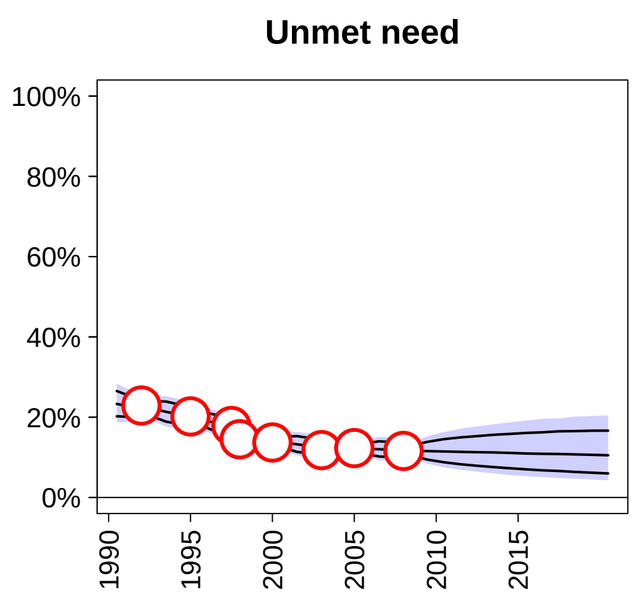
Egypt (Northern Africa)

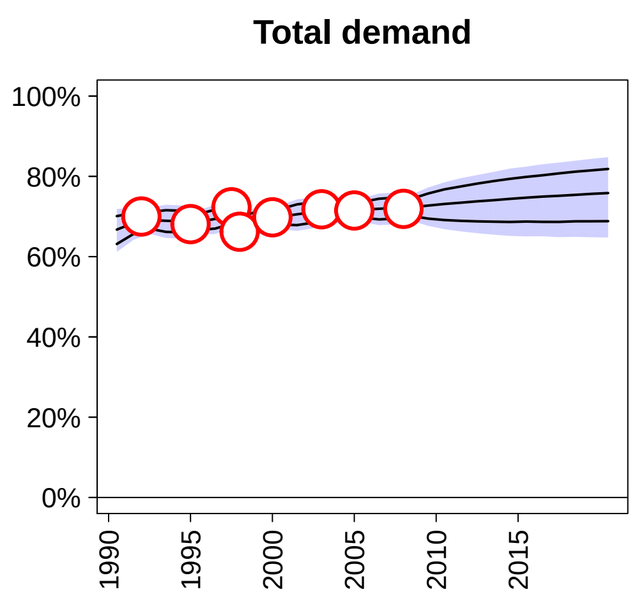


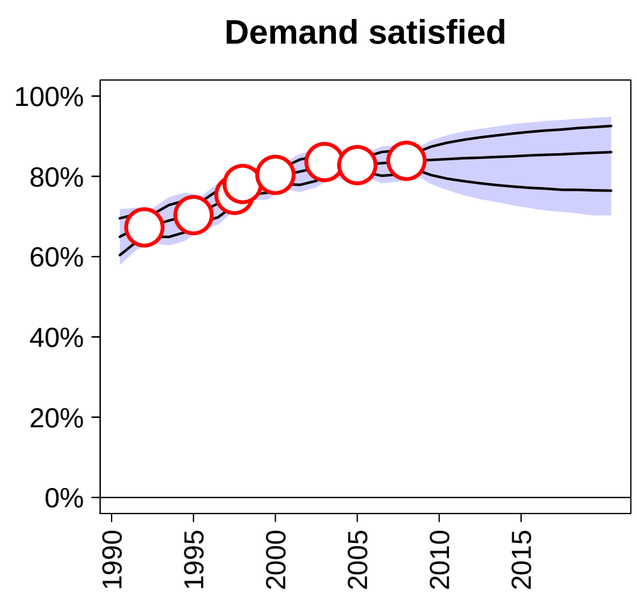












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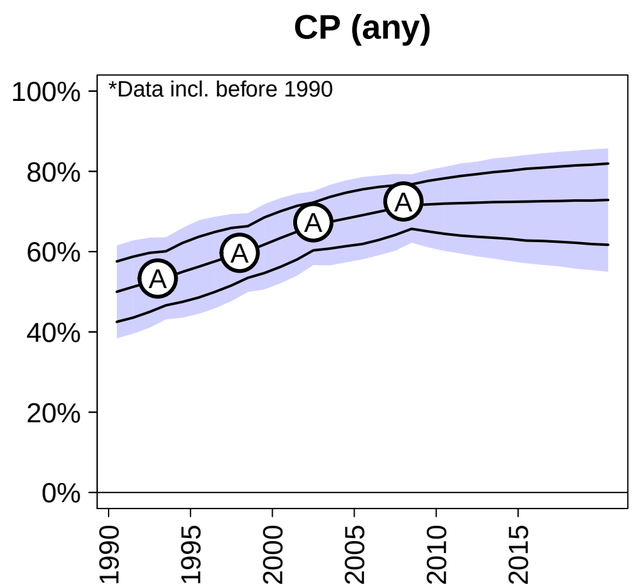
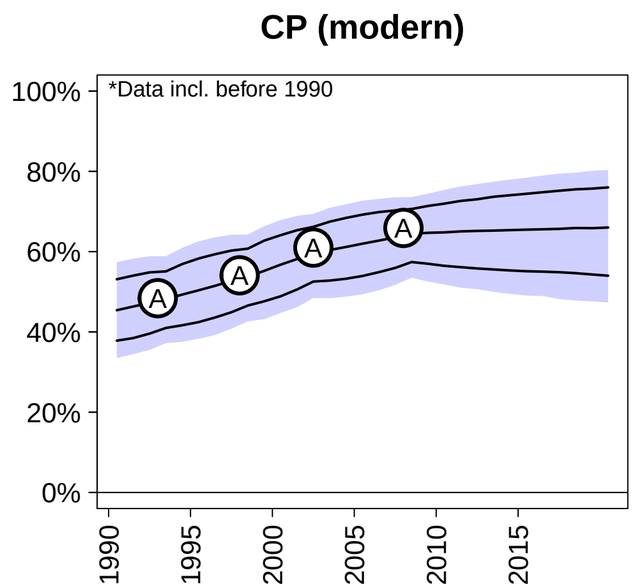
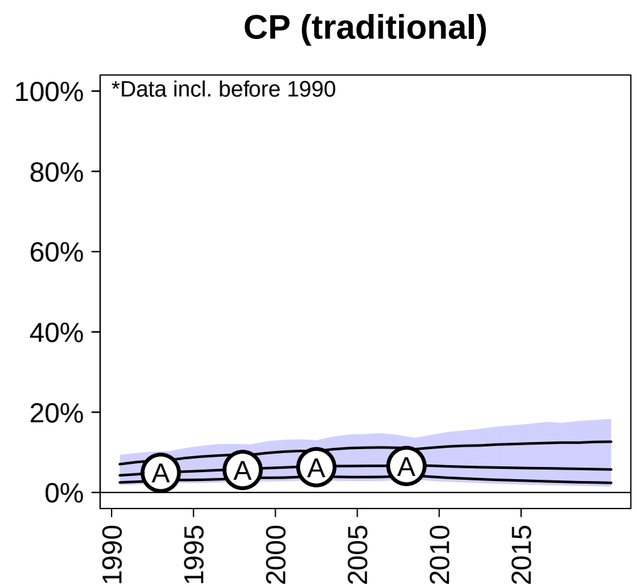
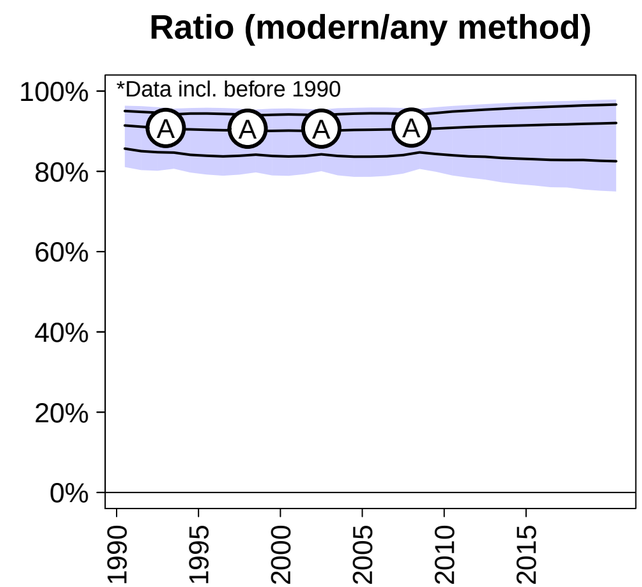
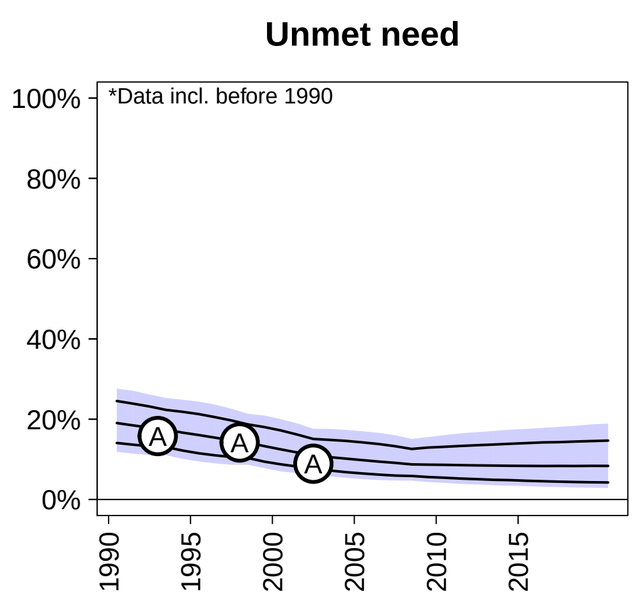
El Salvador (Central America)

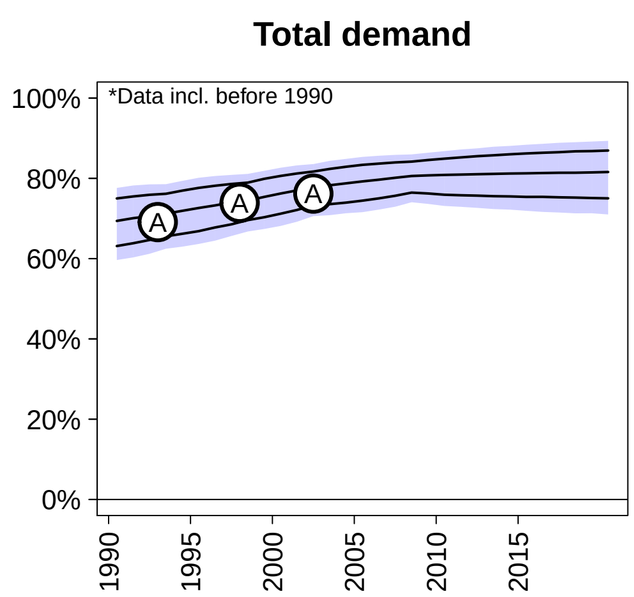


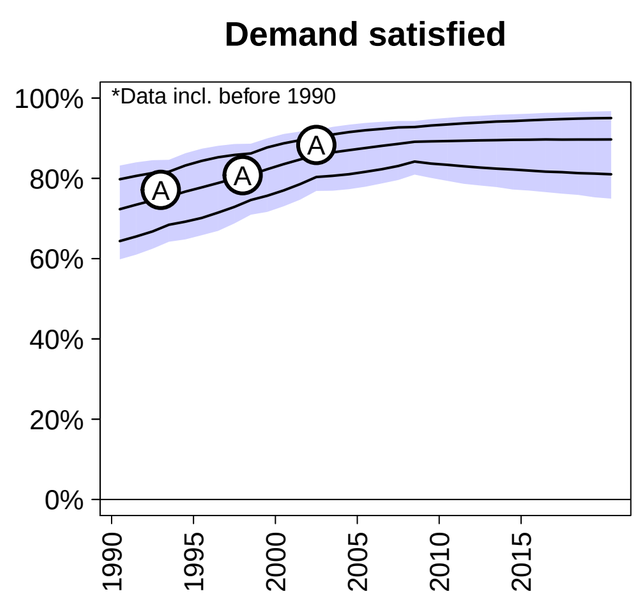












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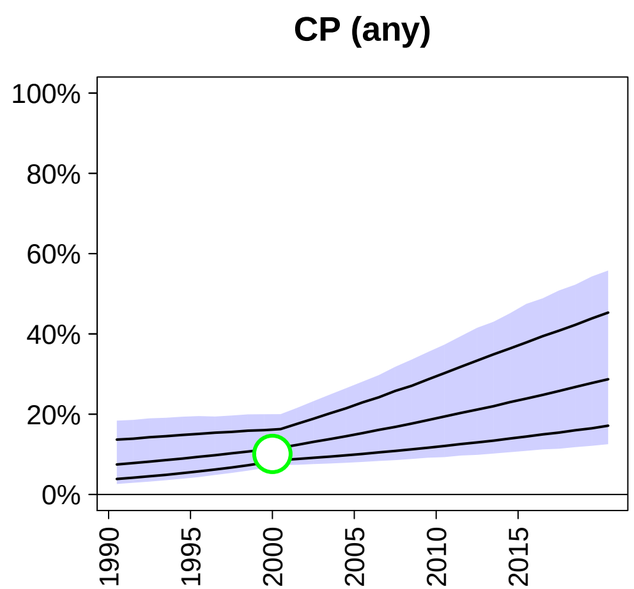
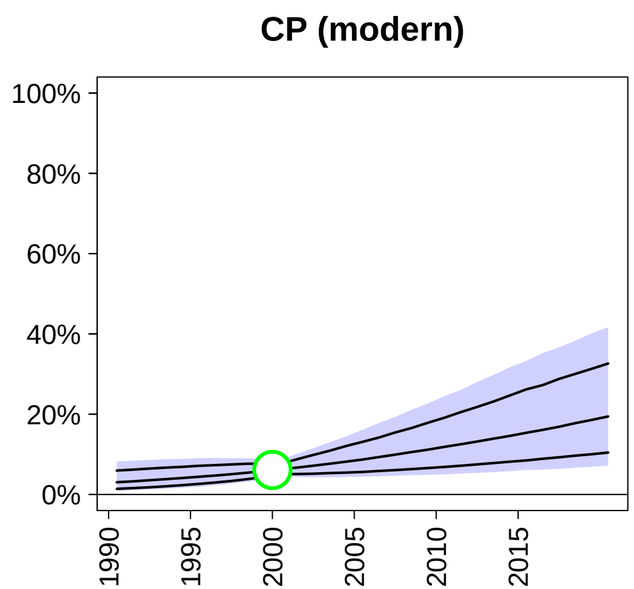
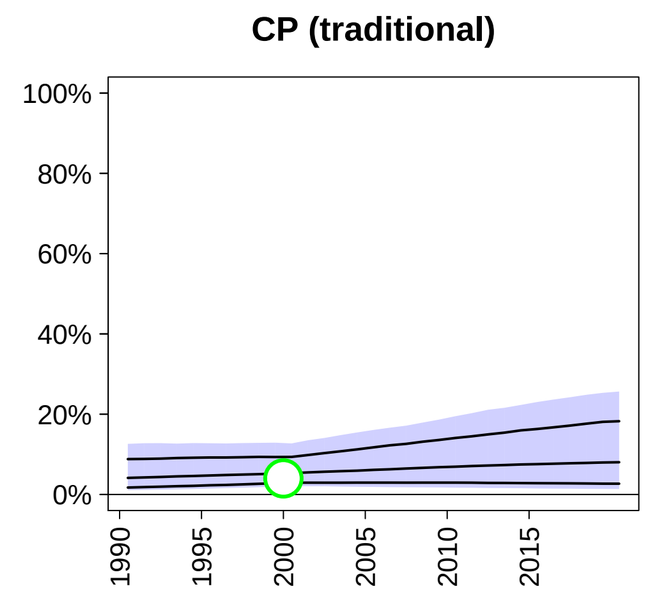
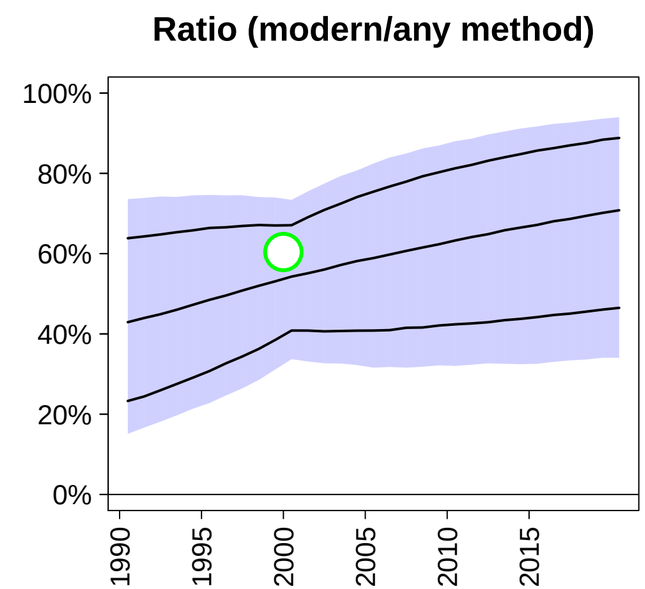
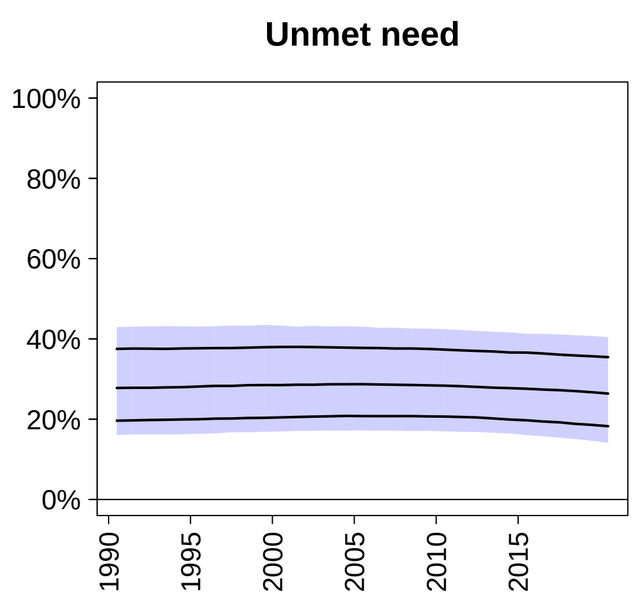
Equatorial Guinea (Middle Africa)

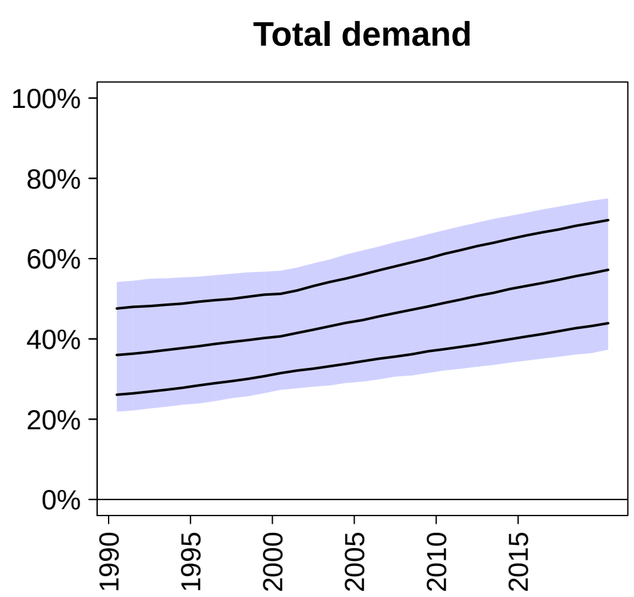


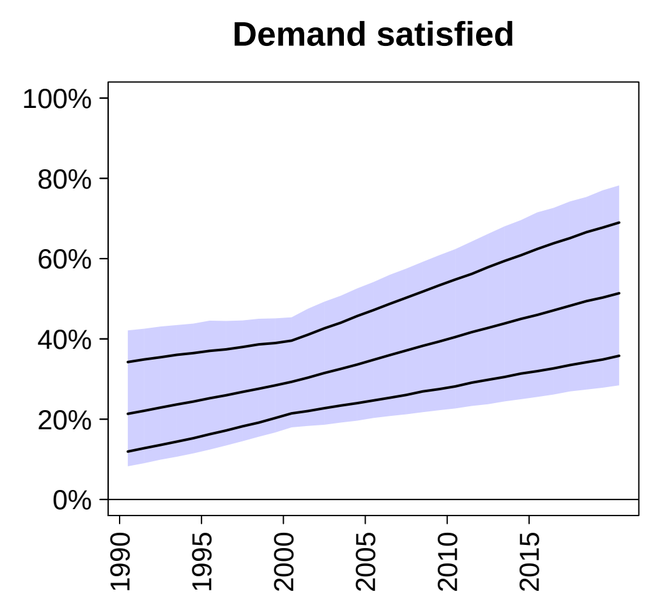












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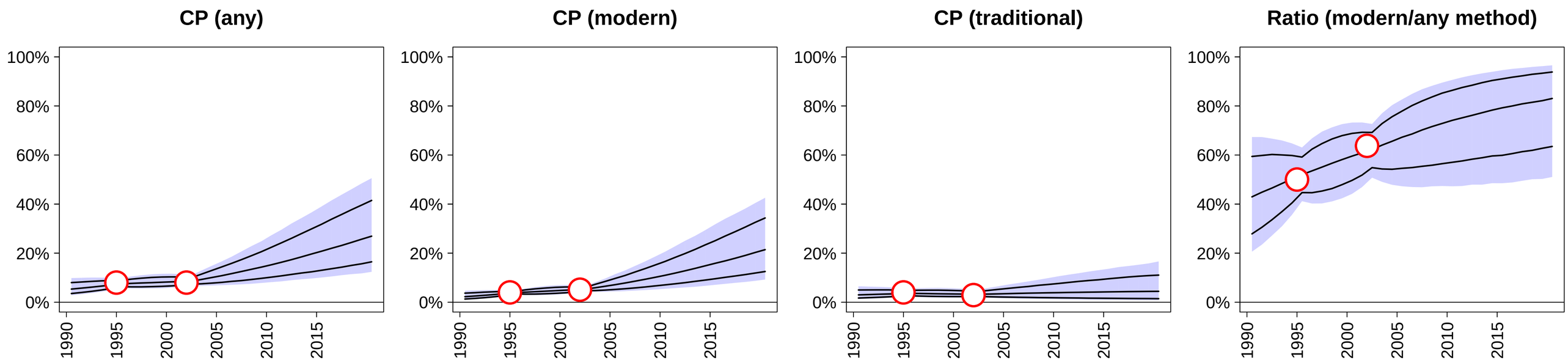
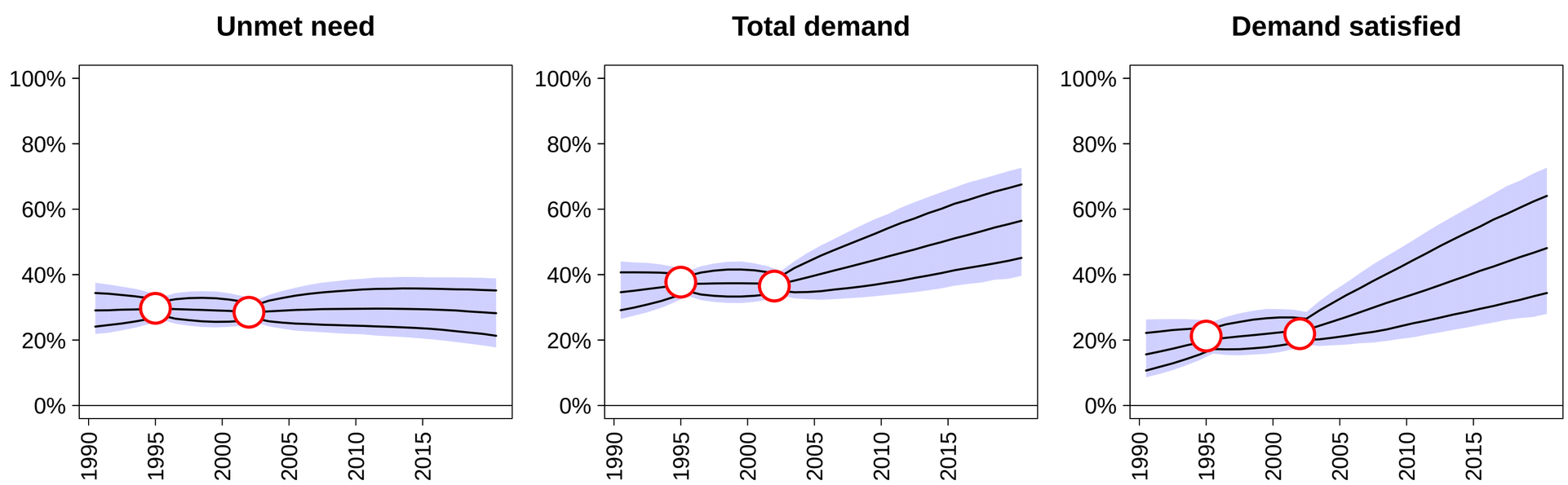
Eritrea (Eastern Africa)





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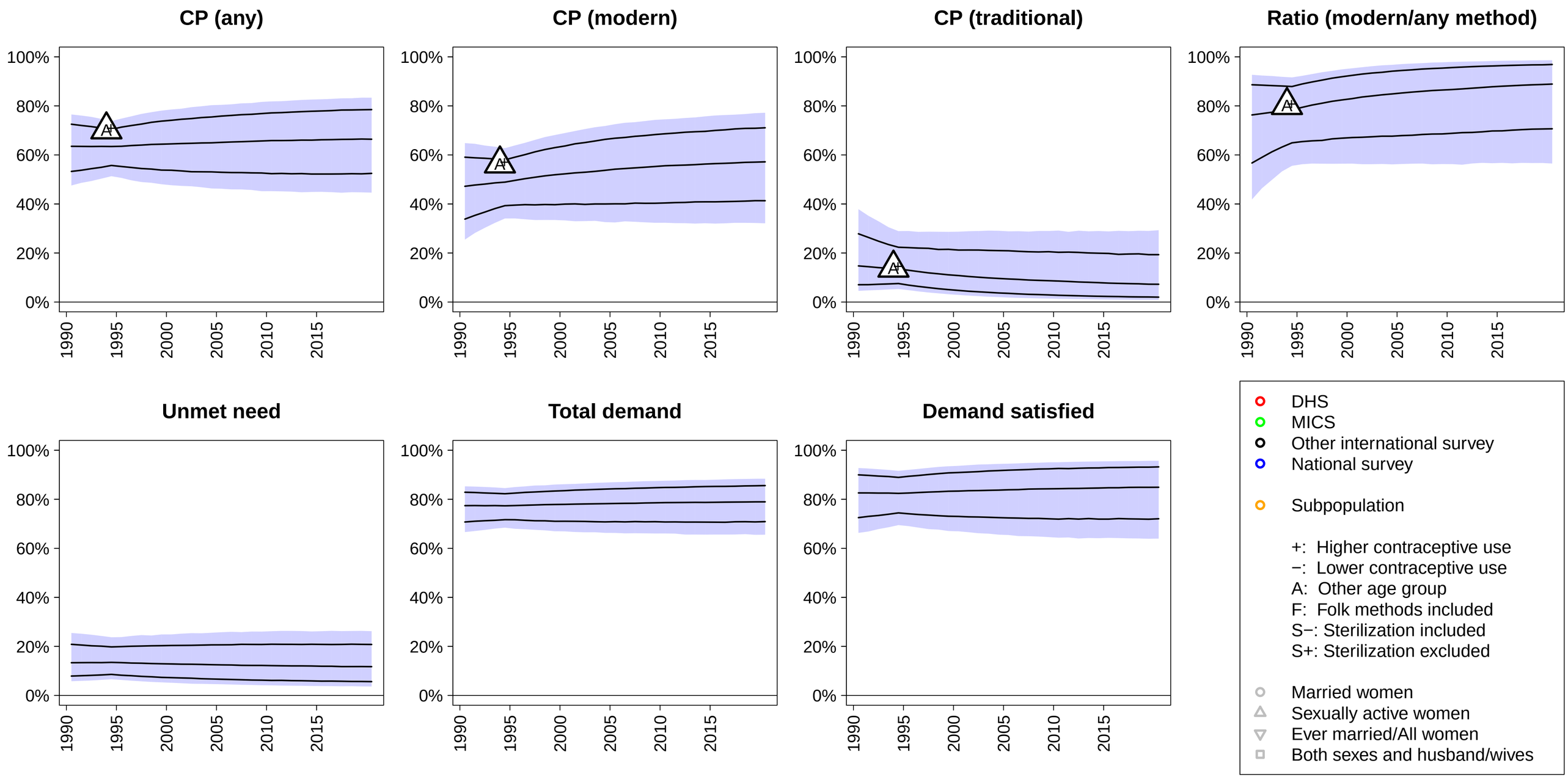
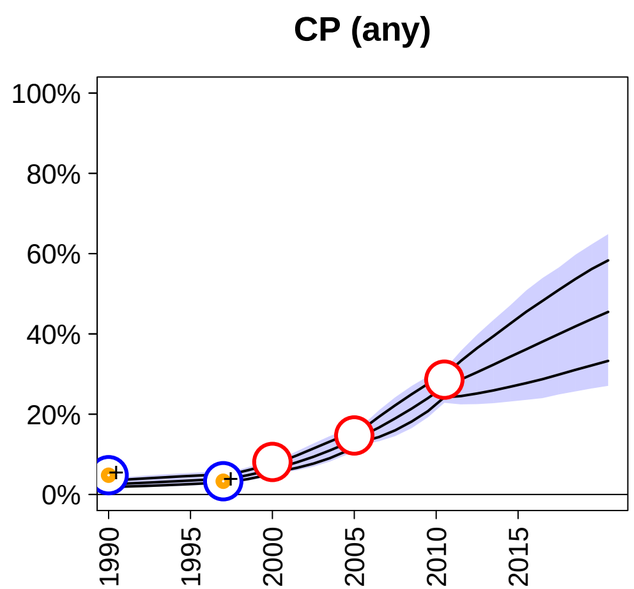
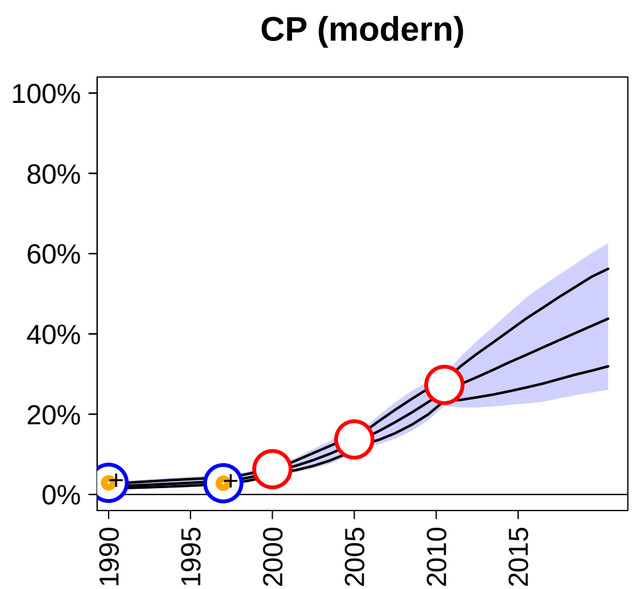
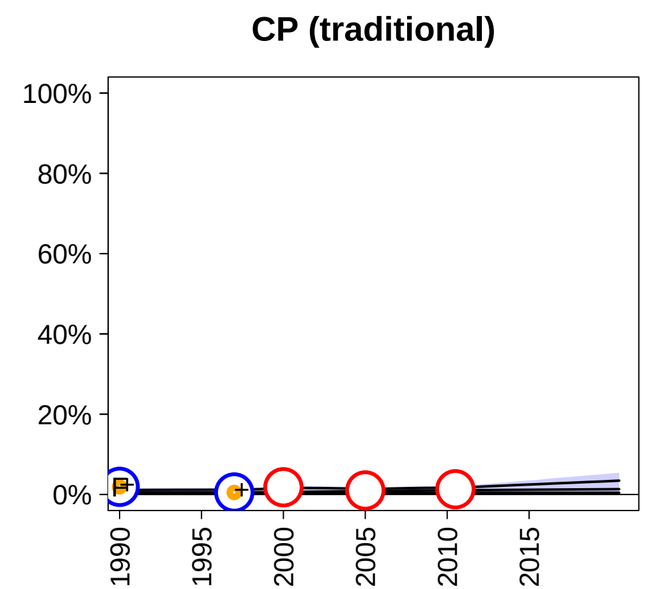
Estonia (Northern Europe)

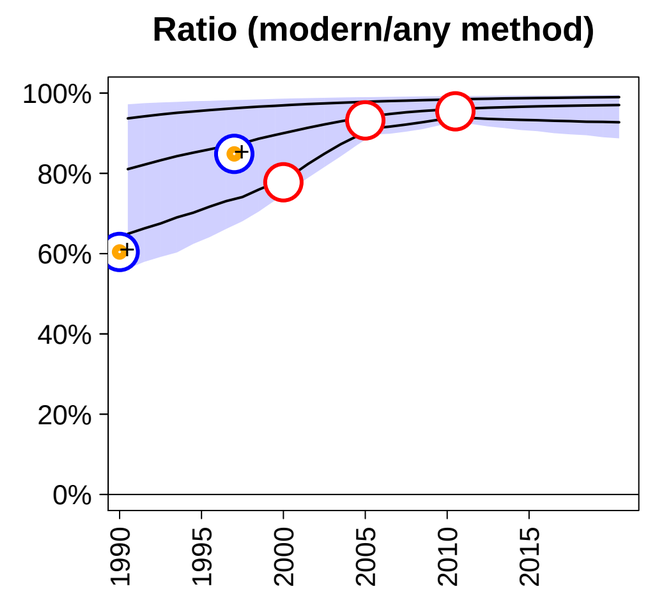


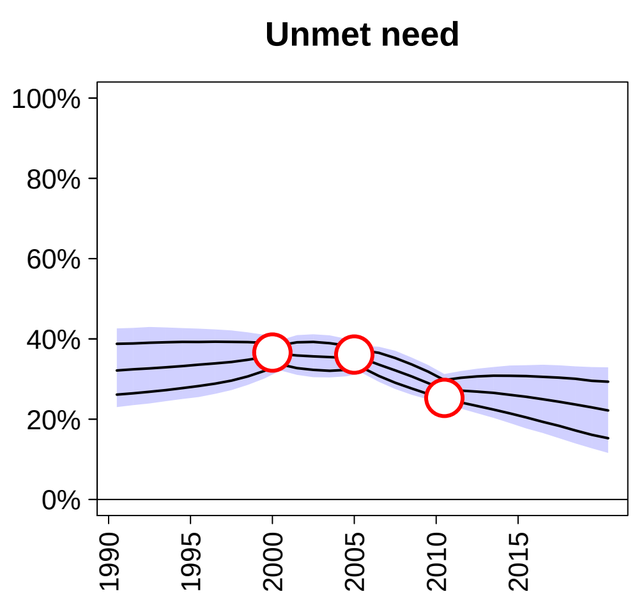
Ethiopia (Eastern Africa)

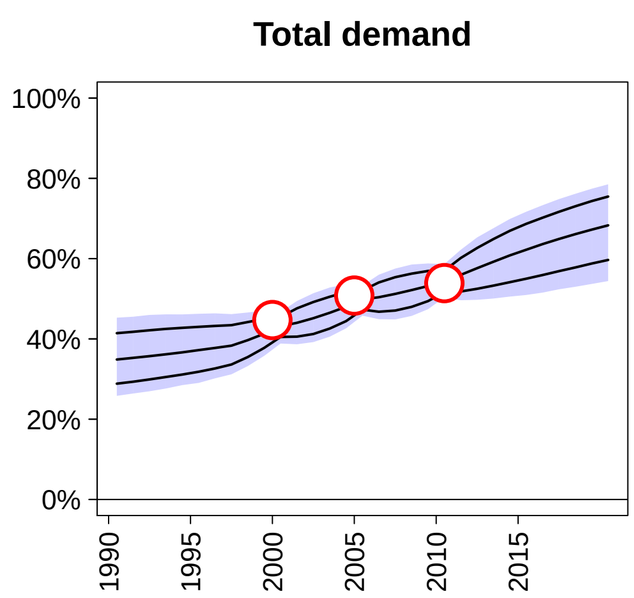


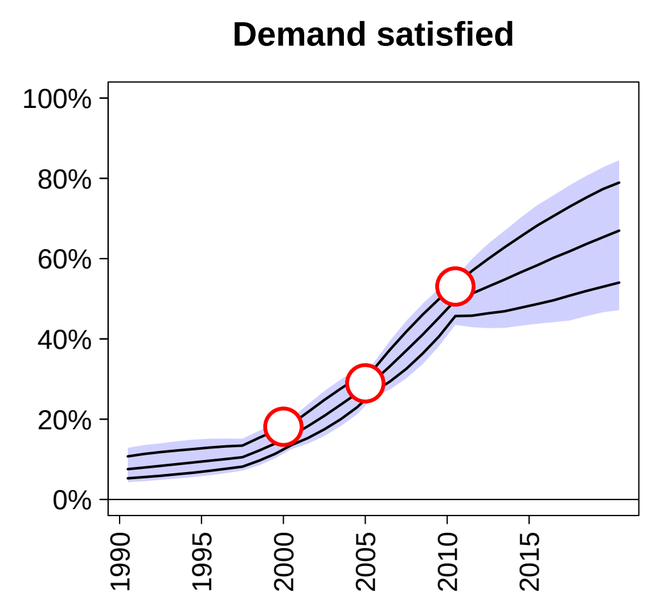












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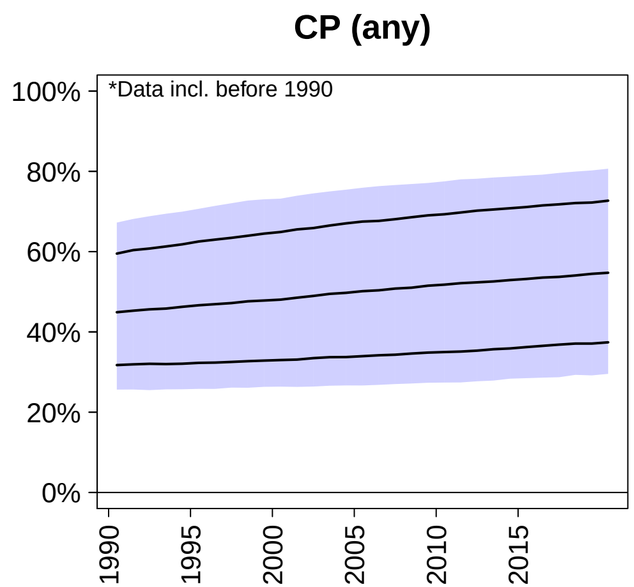
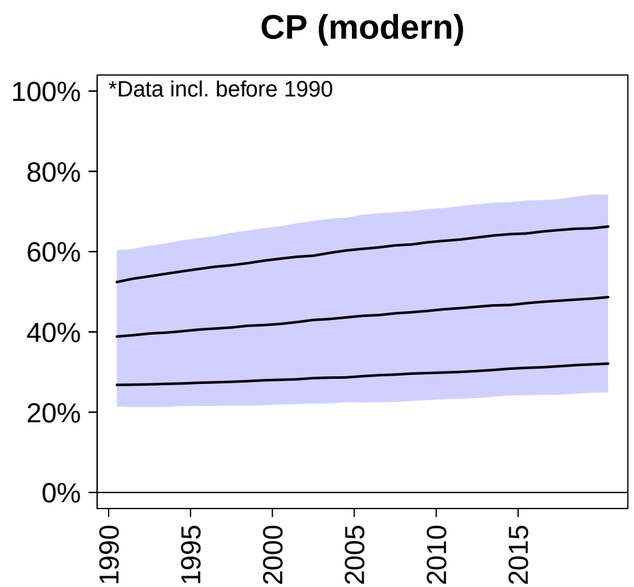
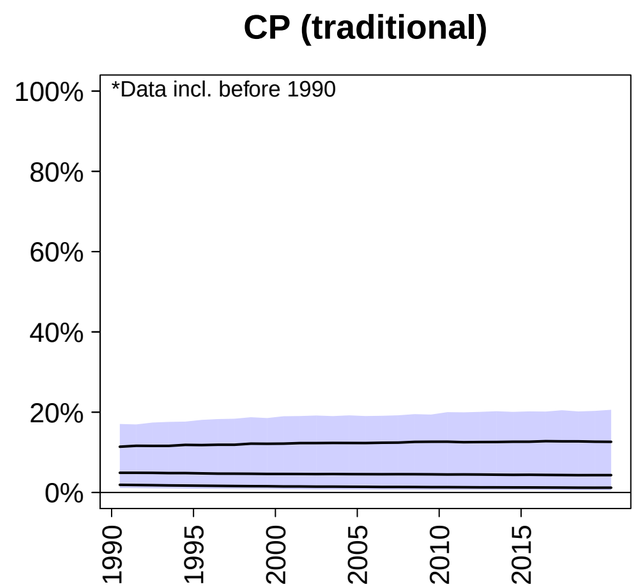
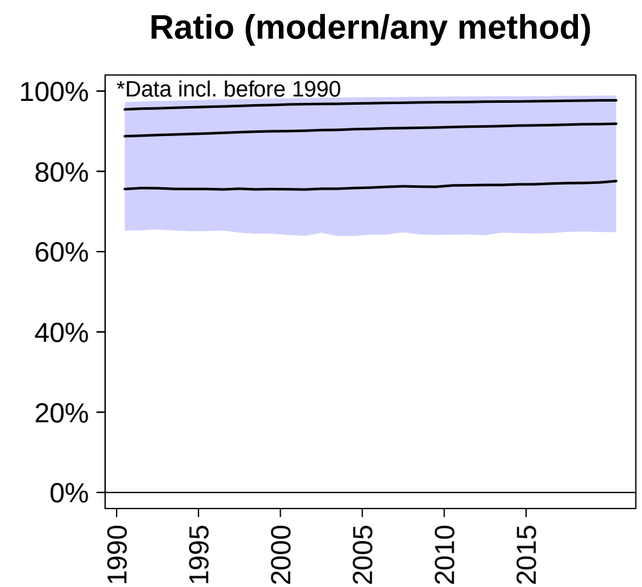
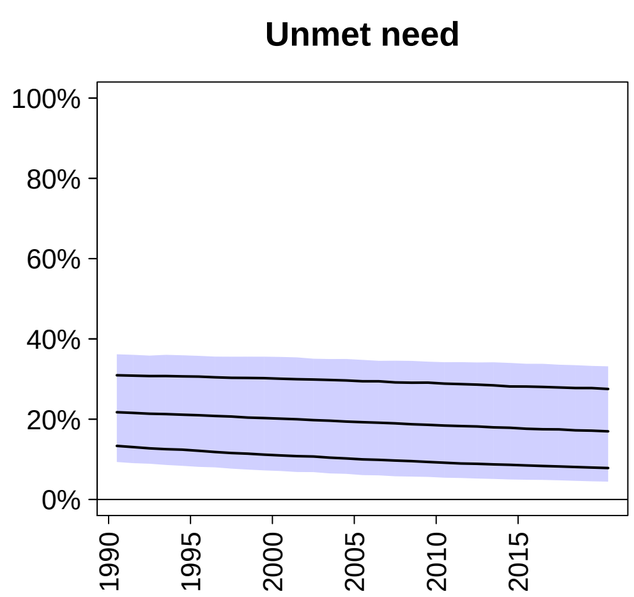
Fiji (Melanesia)

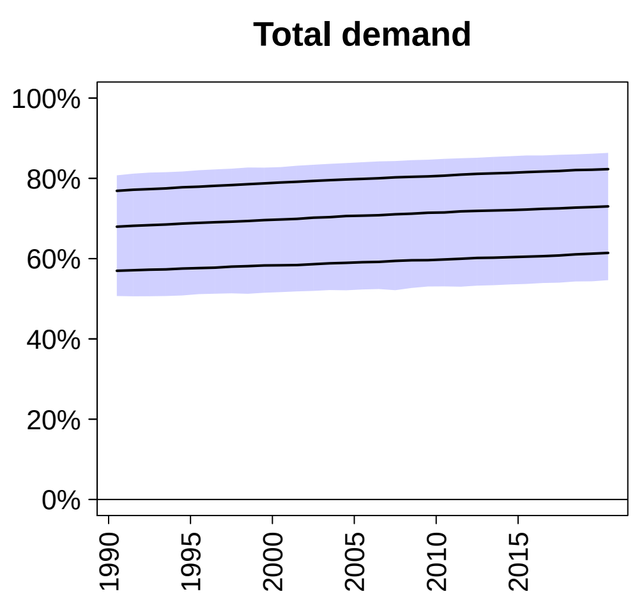


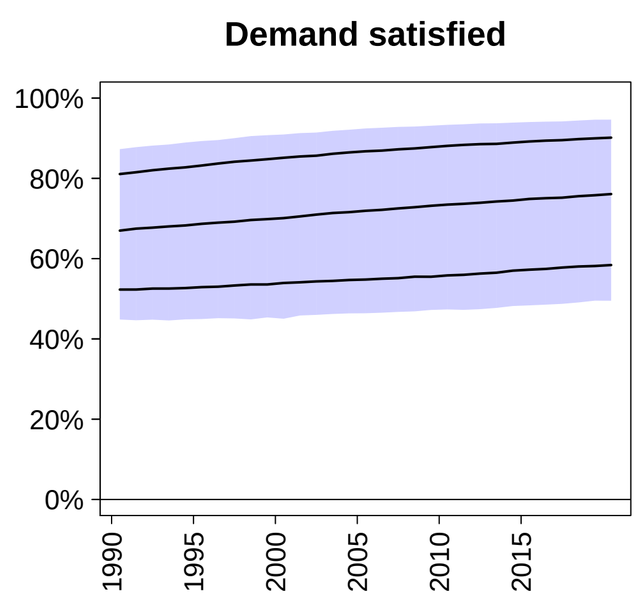












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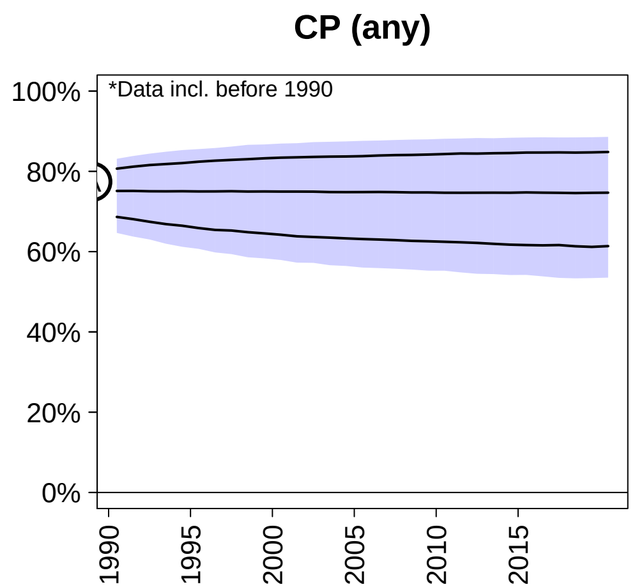
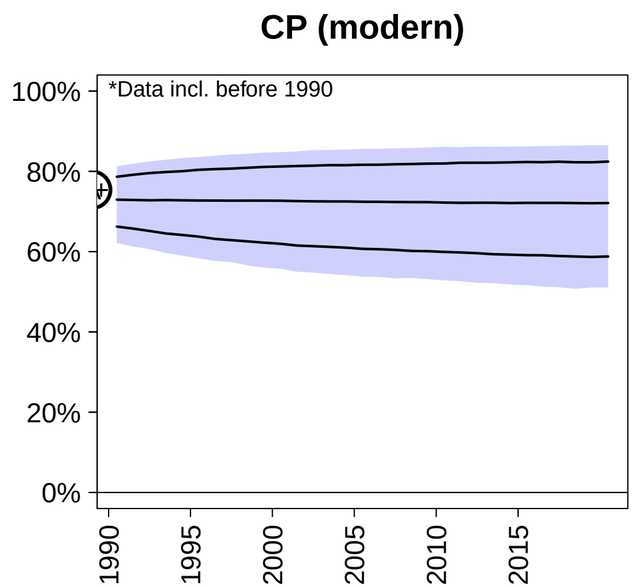
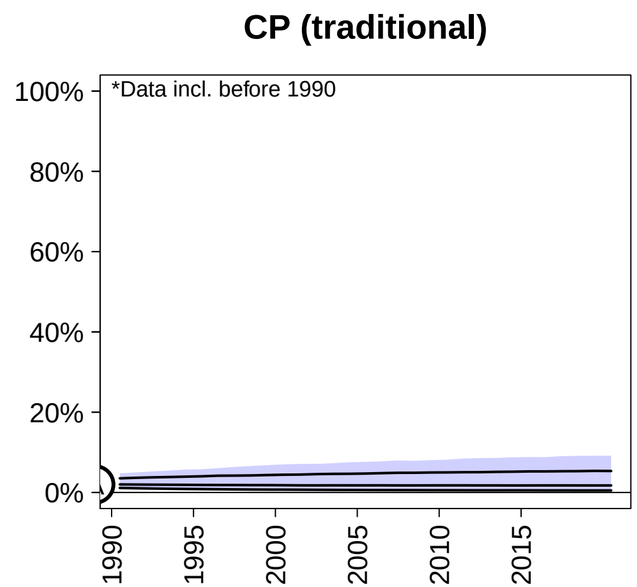
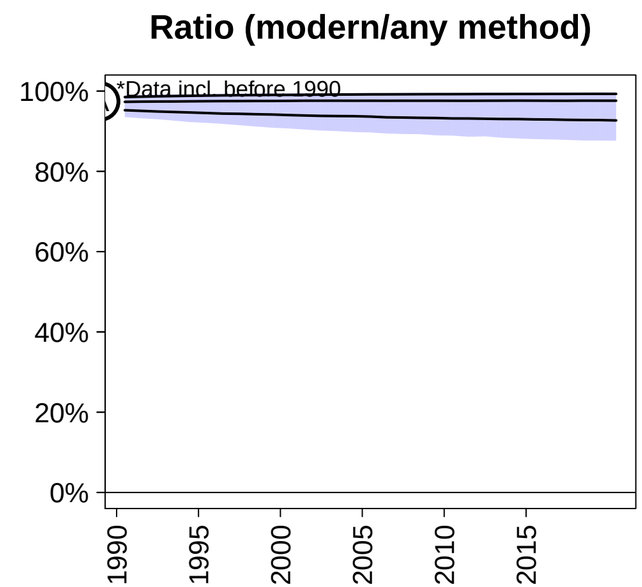
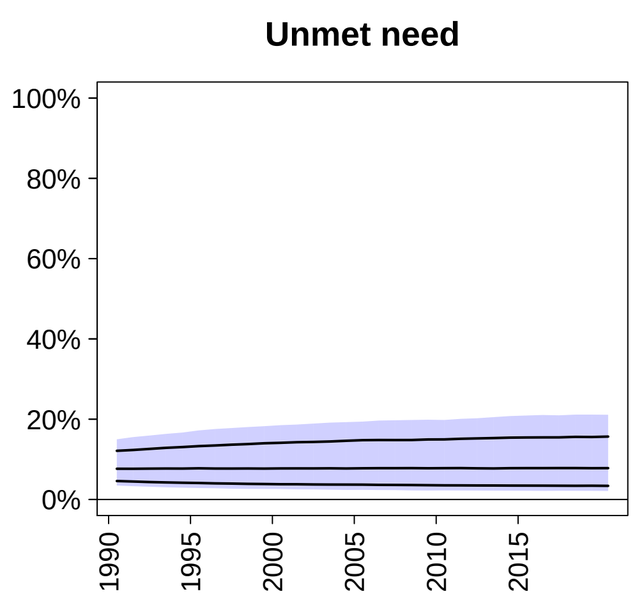
Finland (Northern Europe)

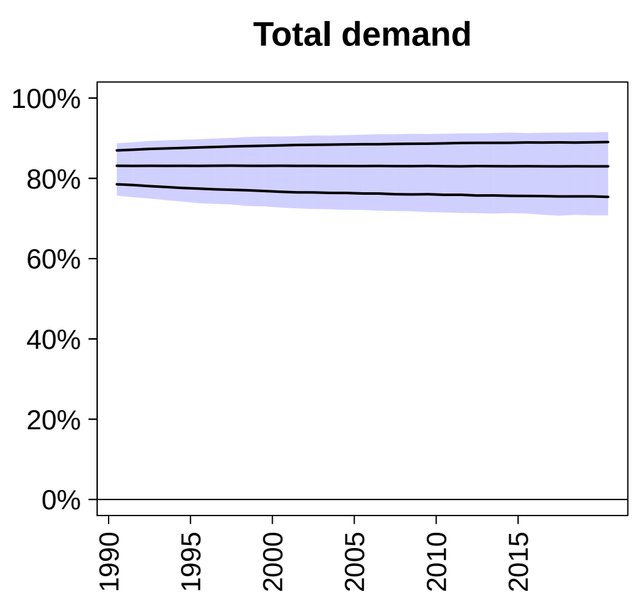


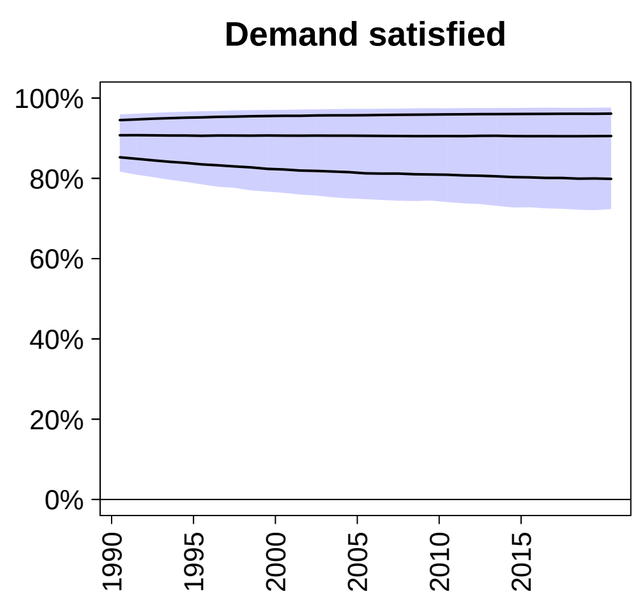












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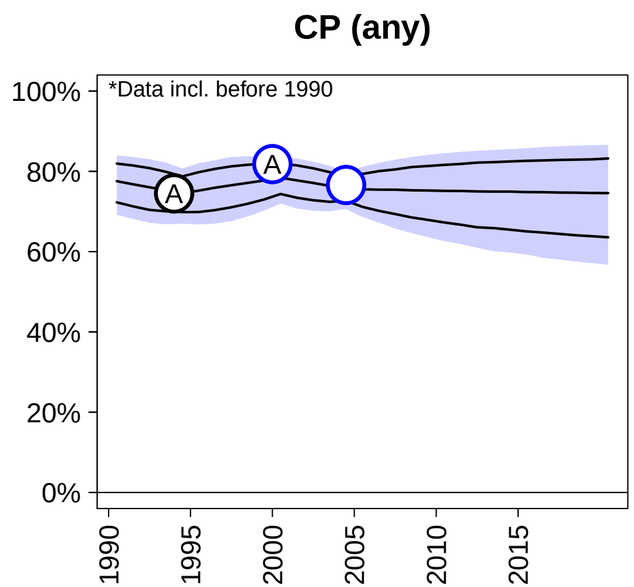
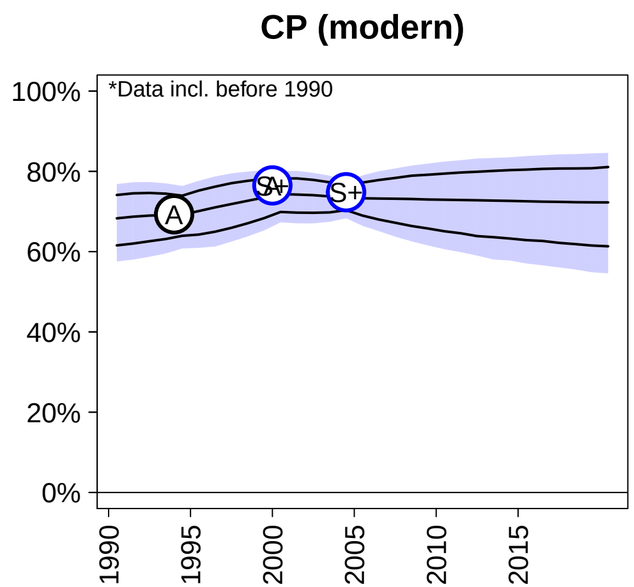
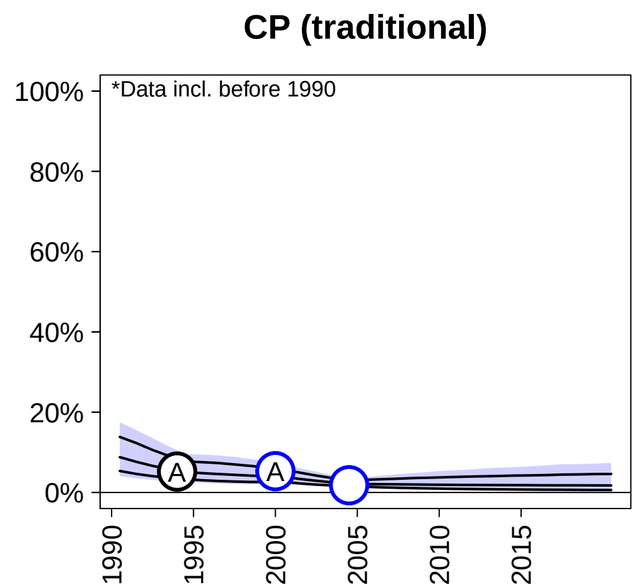
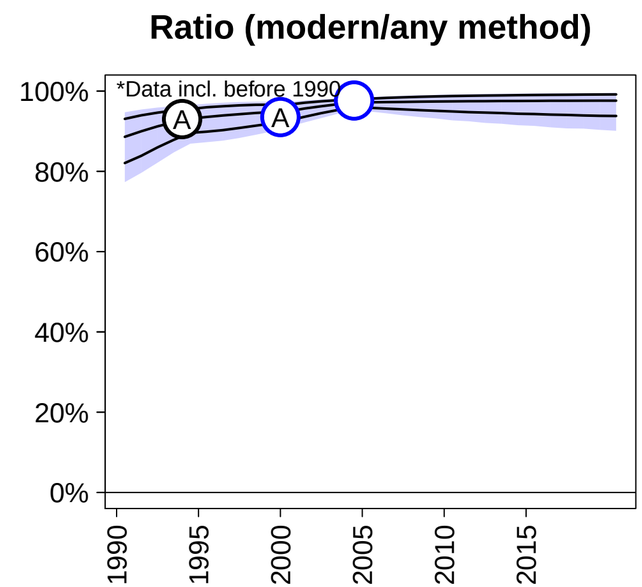
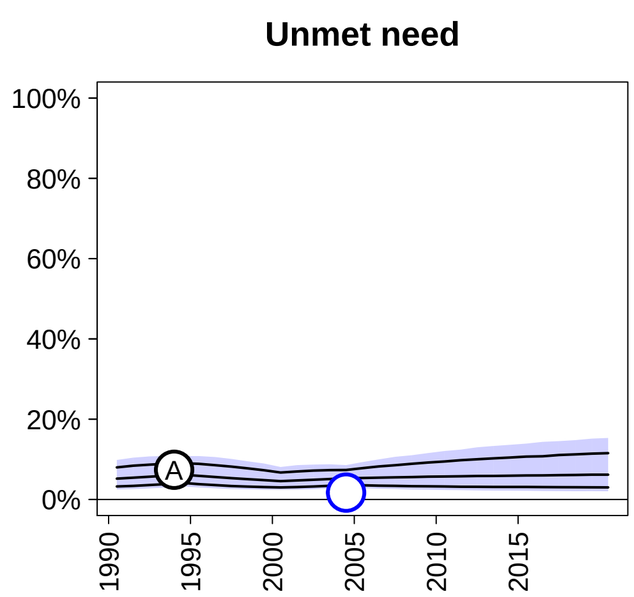
France (Western Europe)

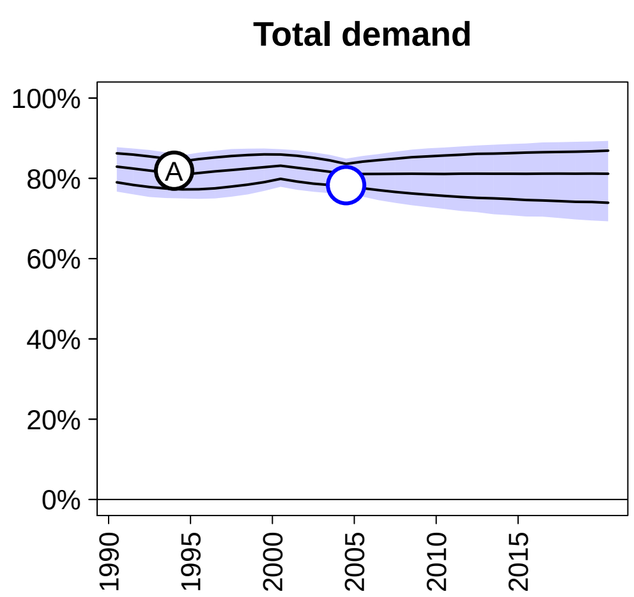


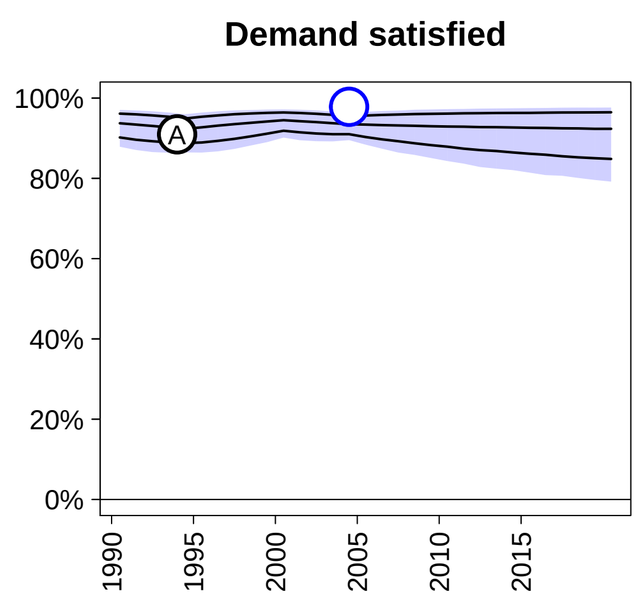












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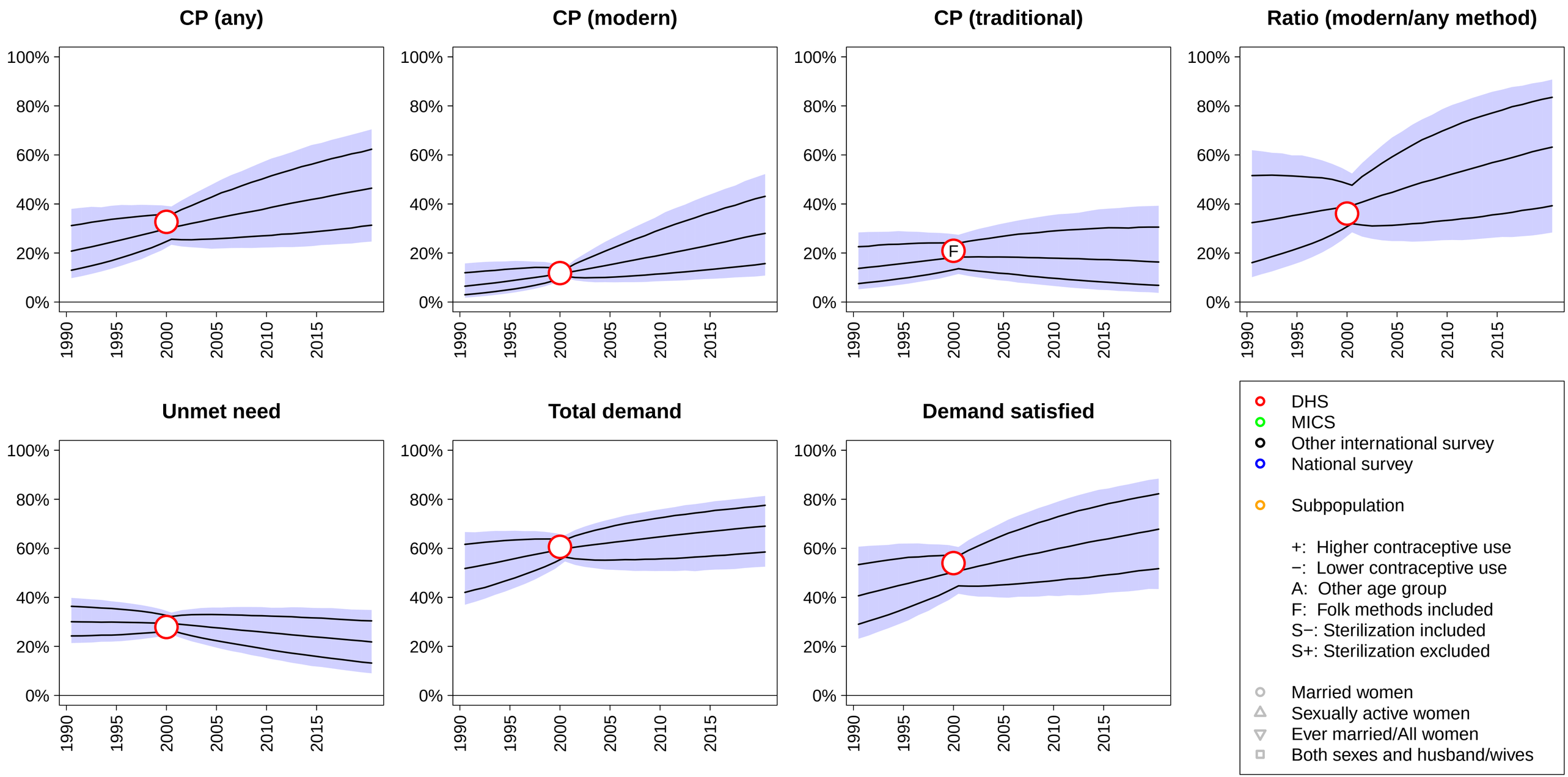
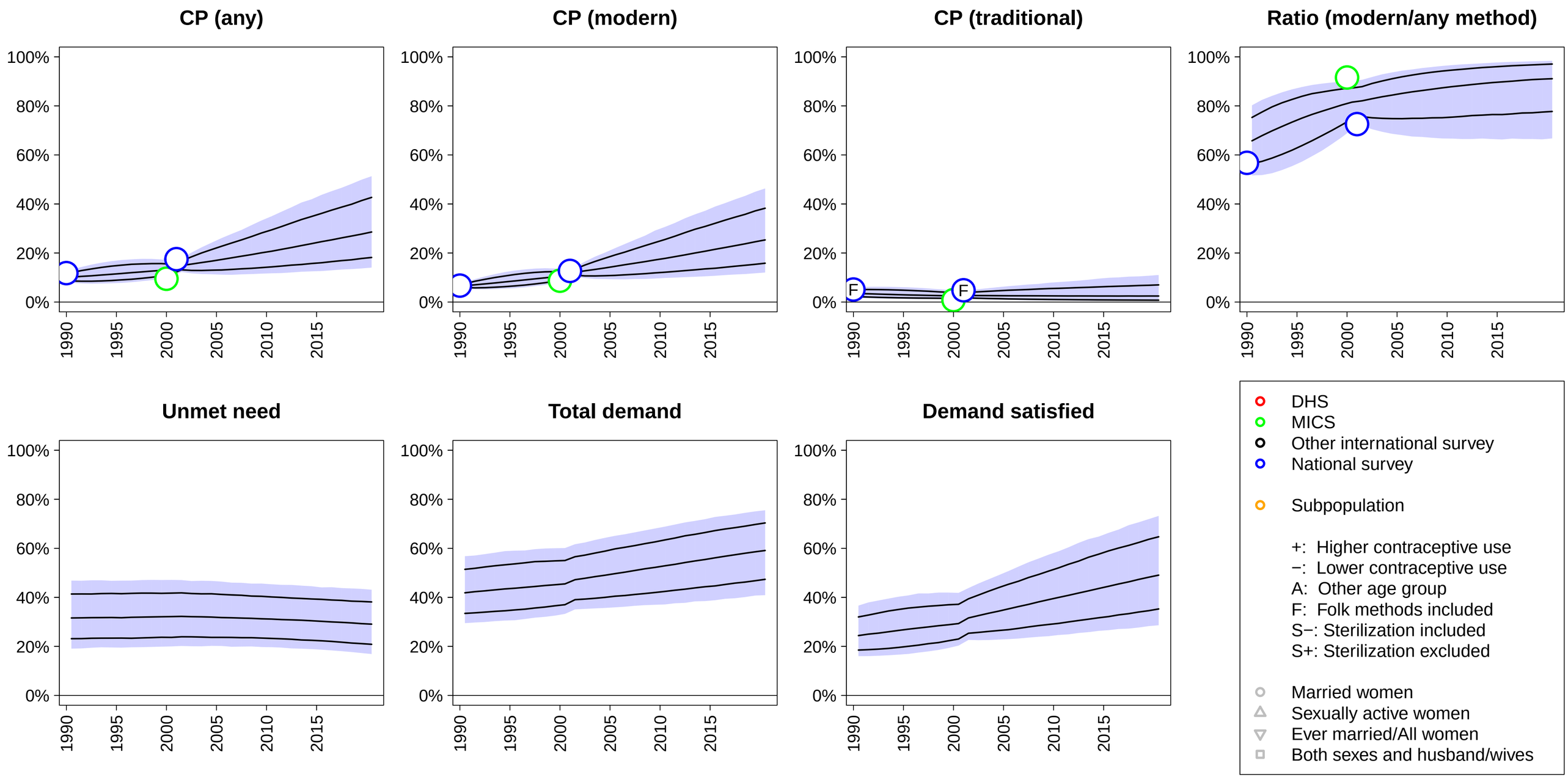
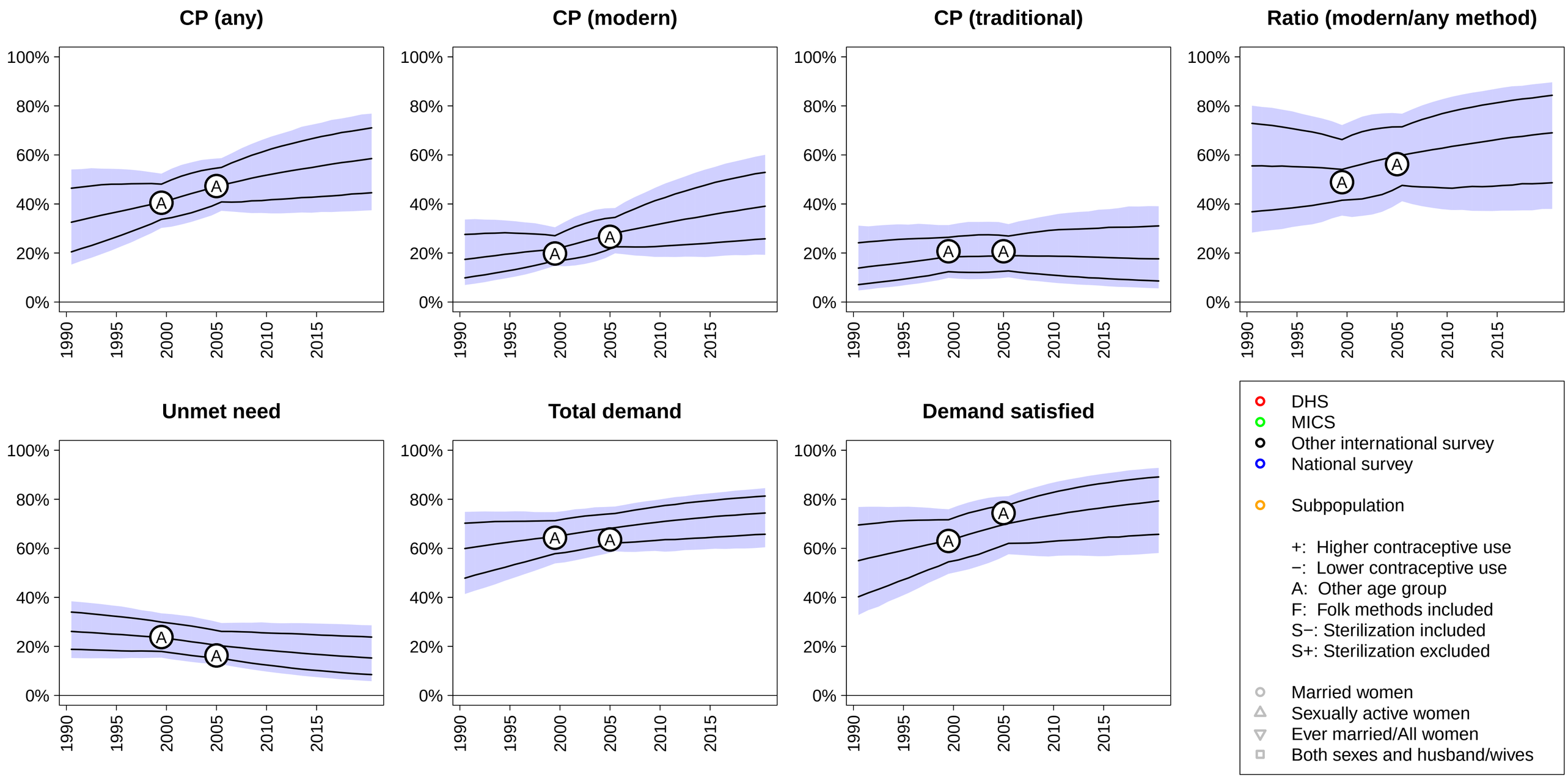
Gabon (Middle Africa)



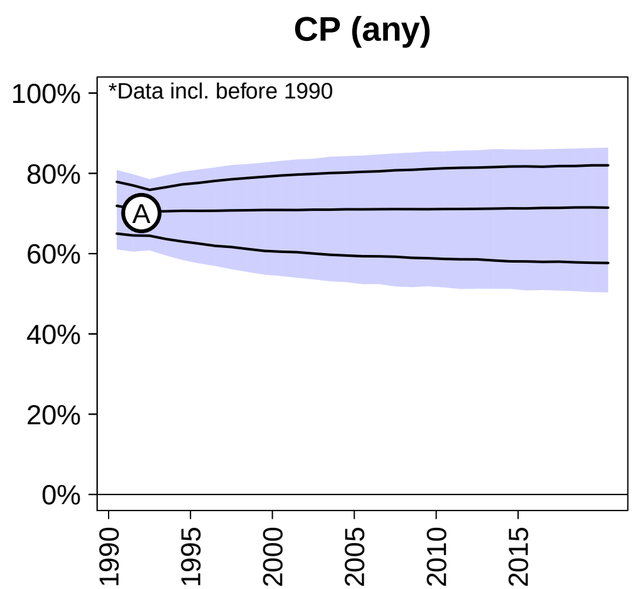
Gambia (Western Africa)

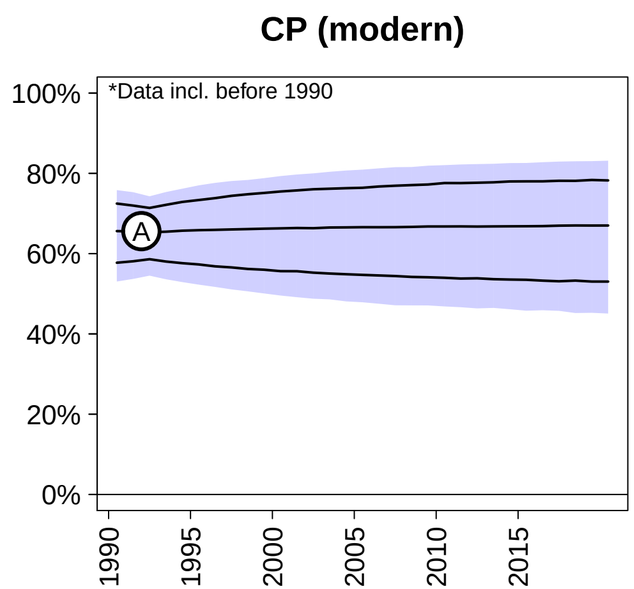


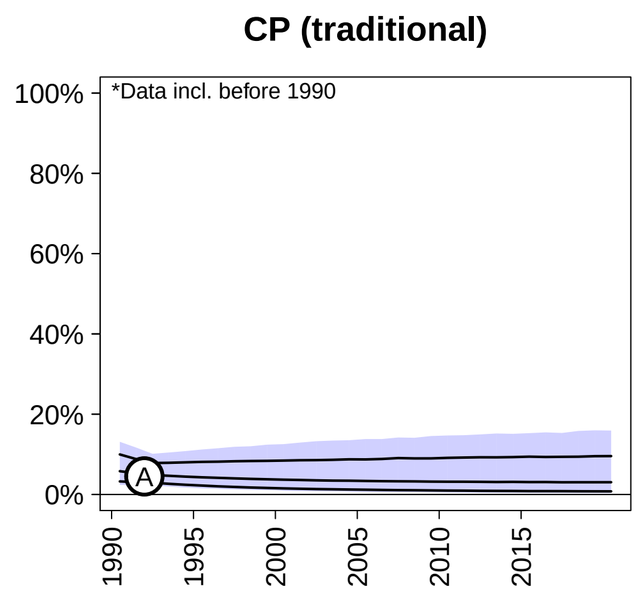
Georgia (Western Asia)

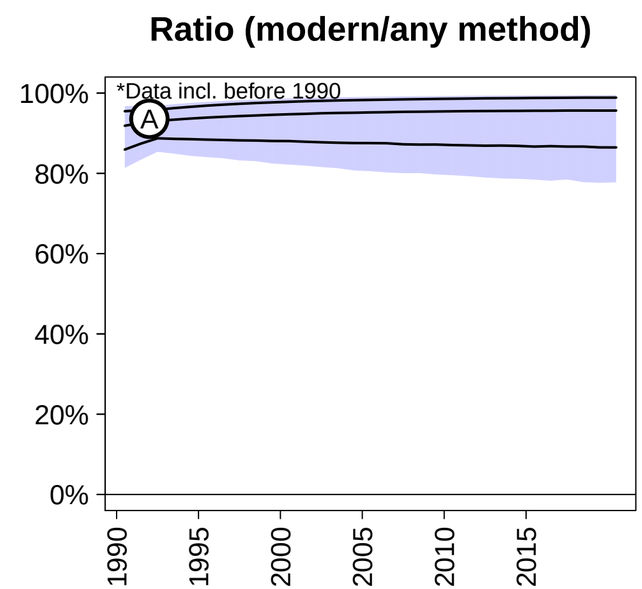


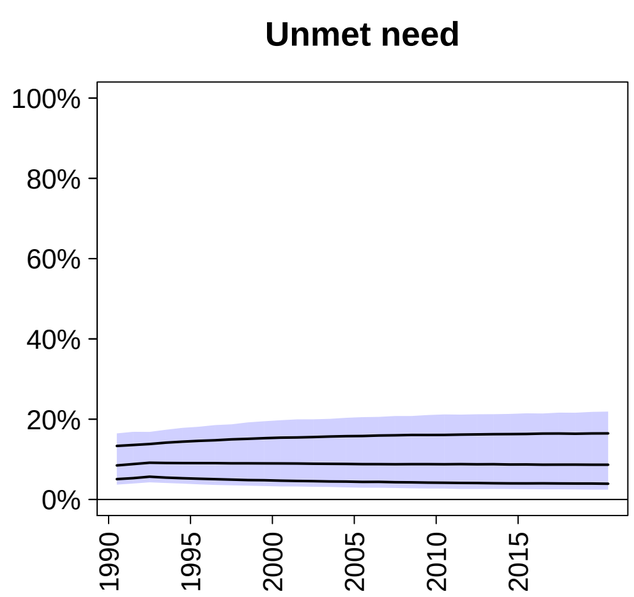
Germany (Western Europe)

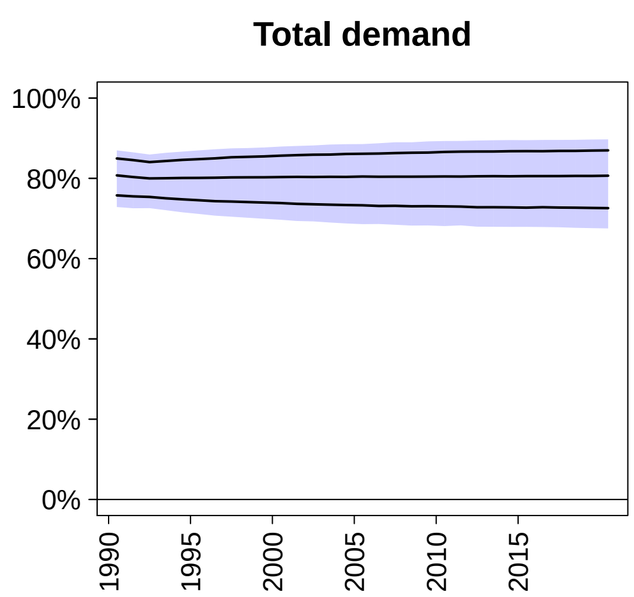


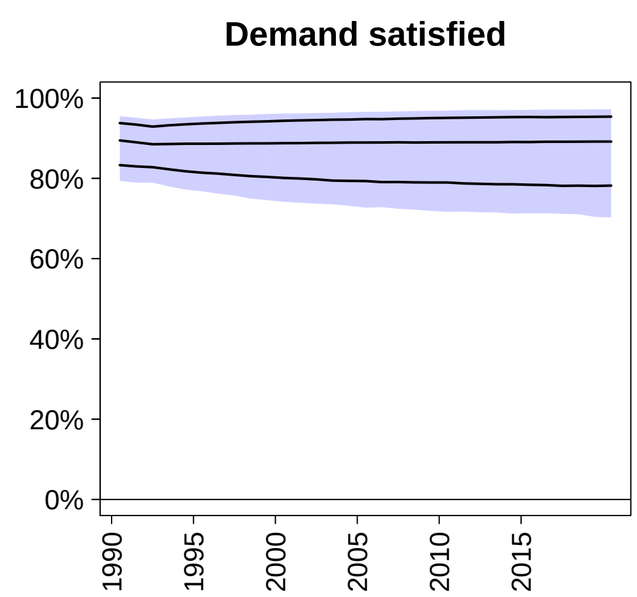












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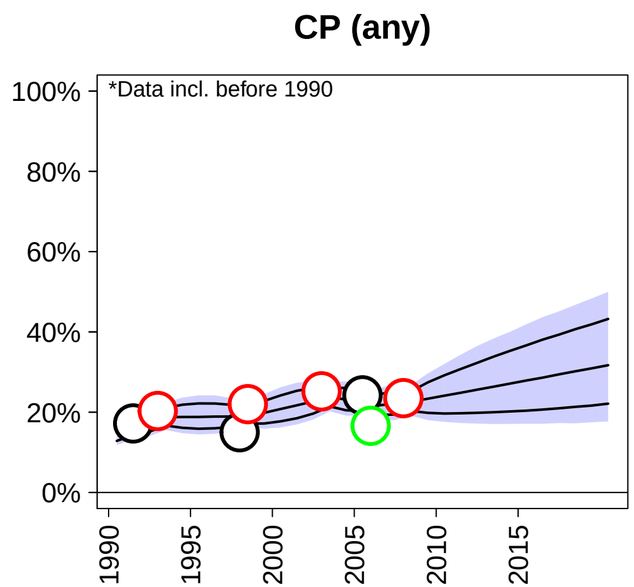
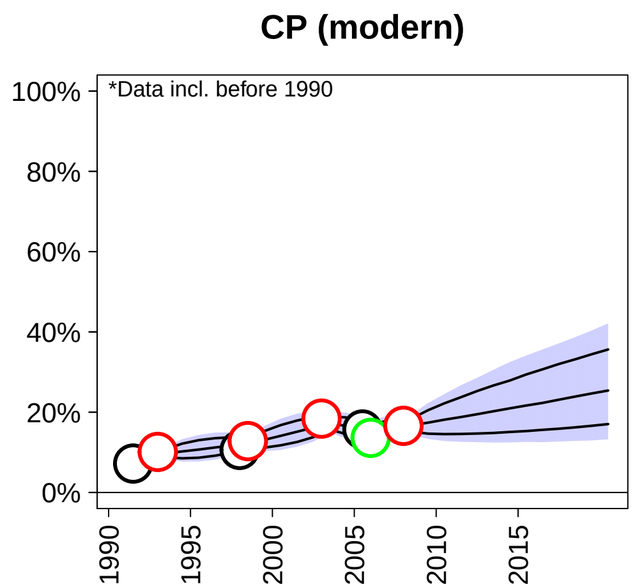
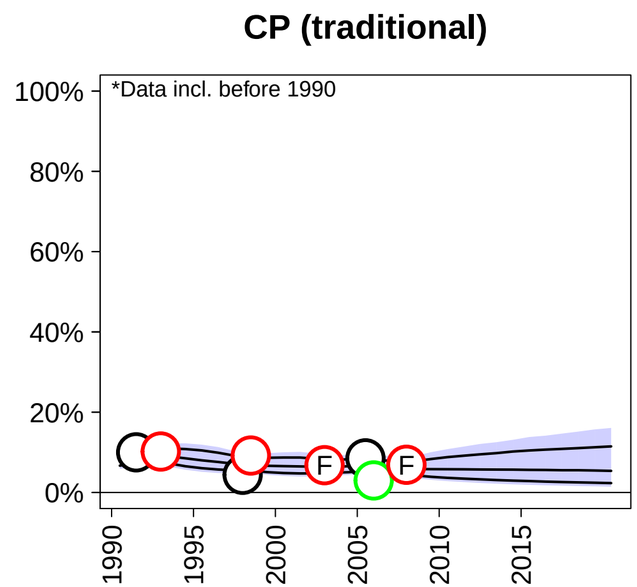
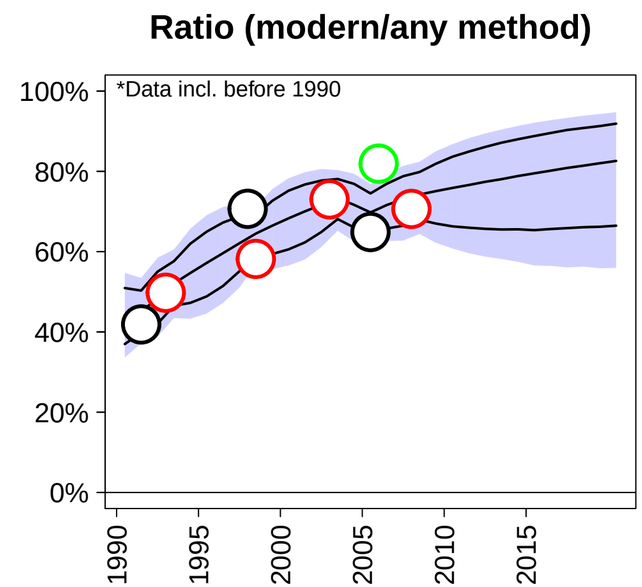
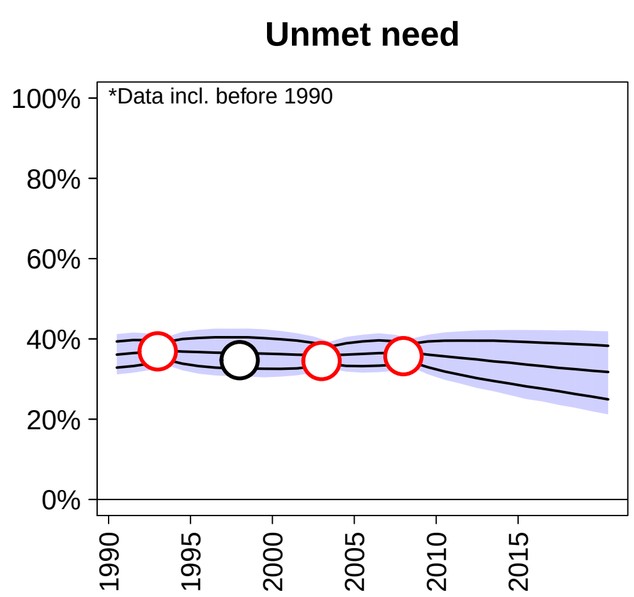
Ghana (Western Africa)

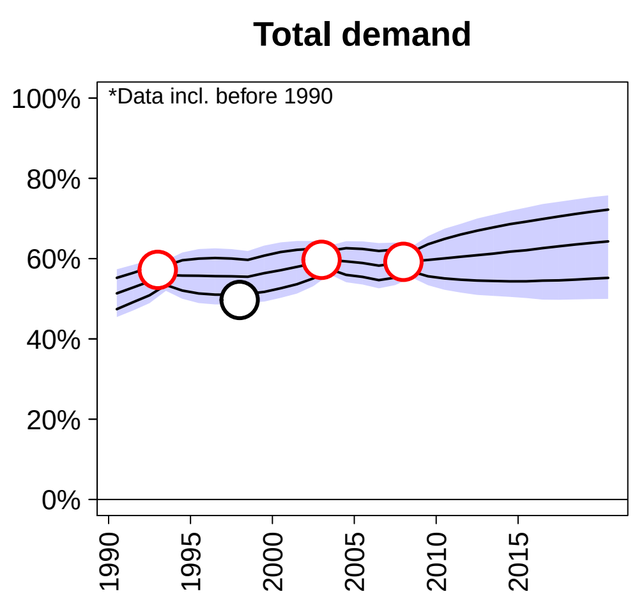


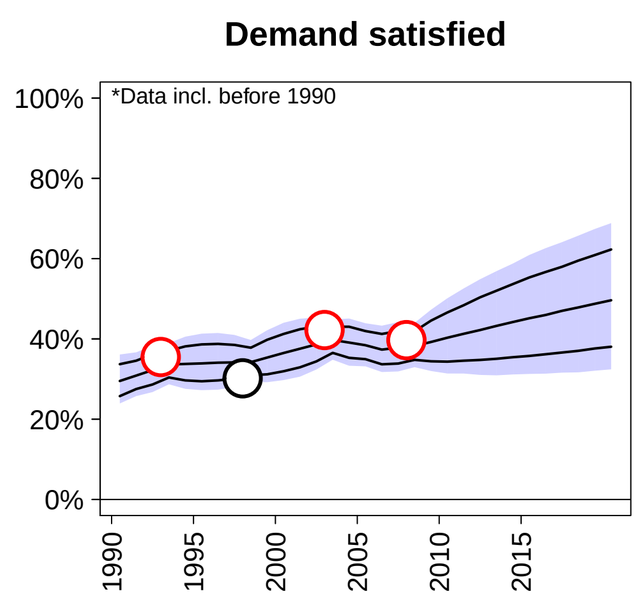












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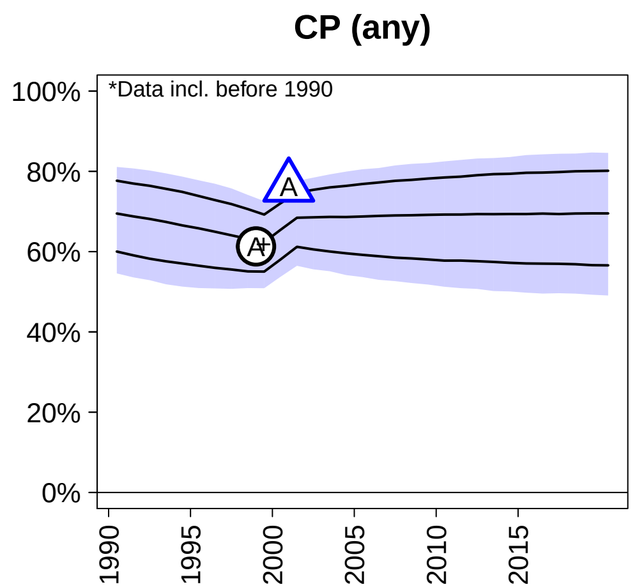
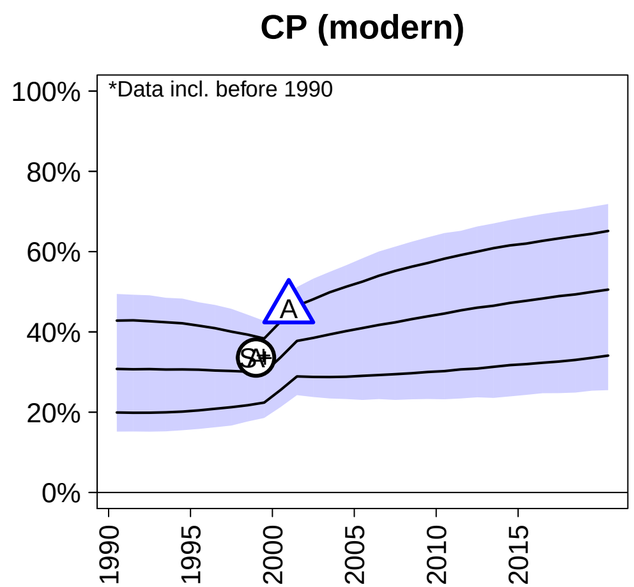
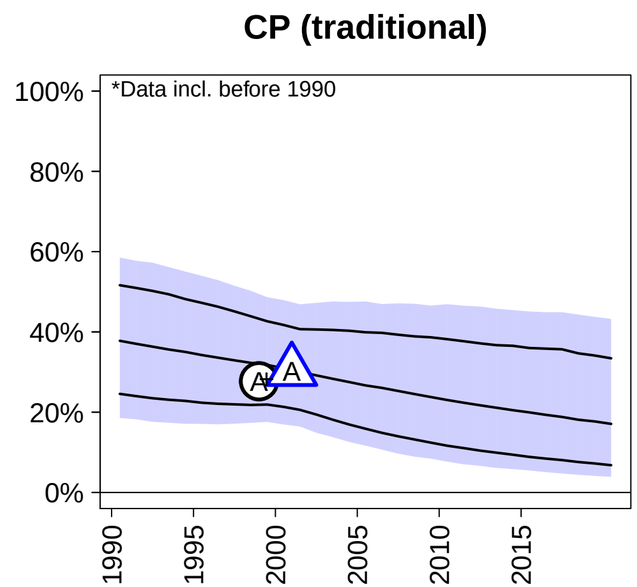
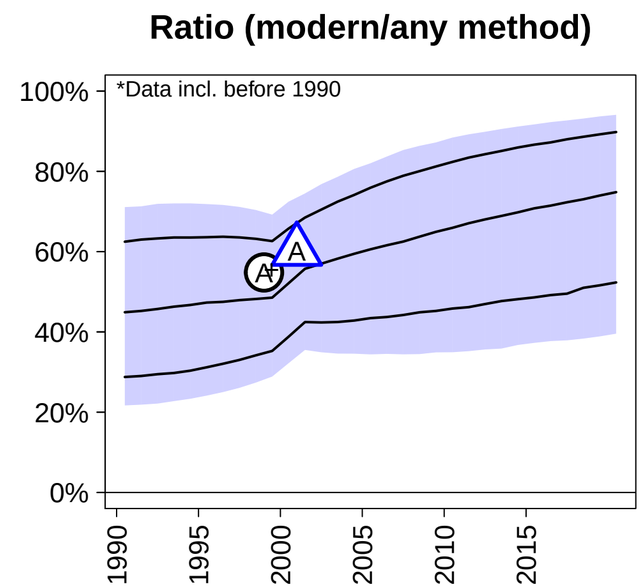
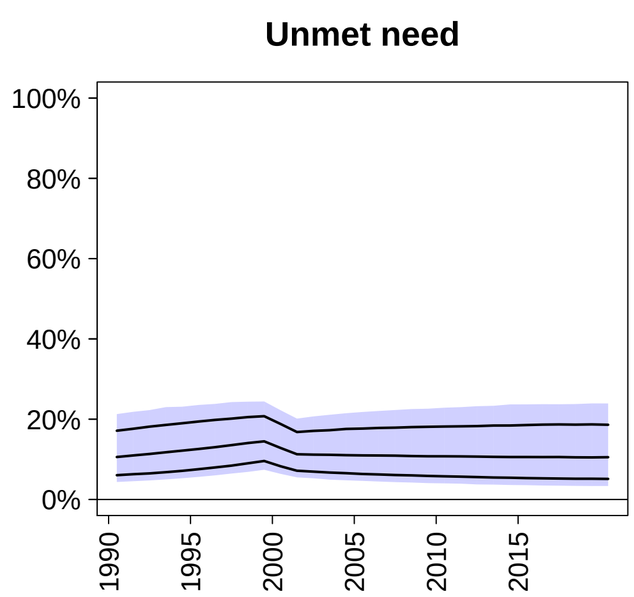
Greece (Southern Europe)

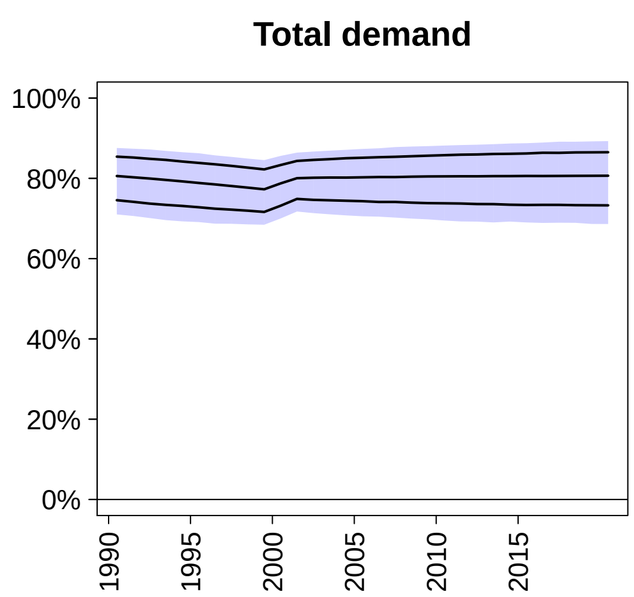


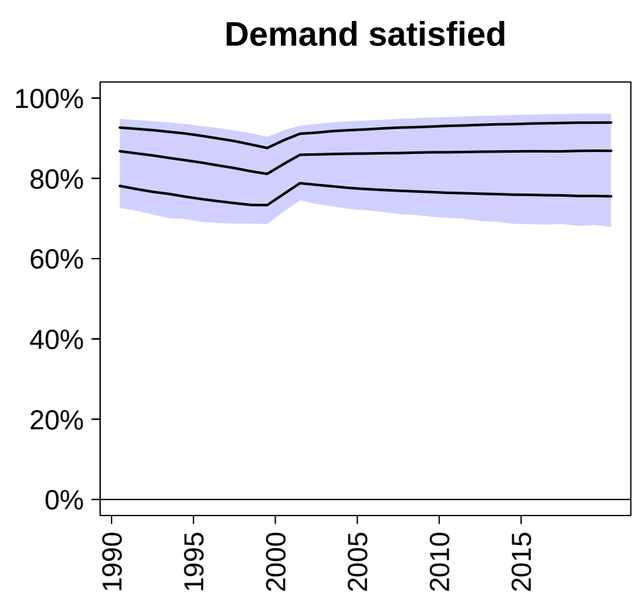












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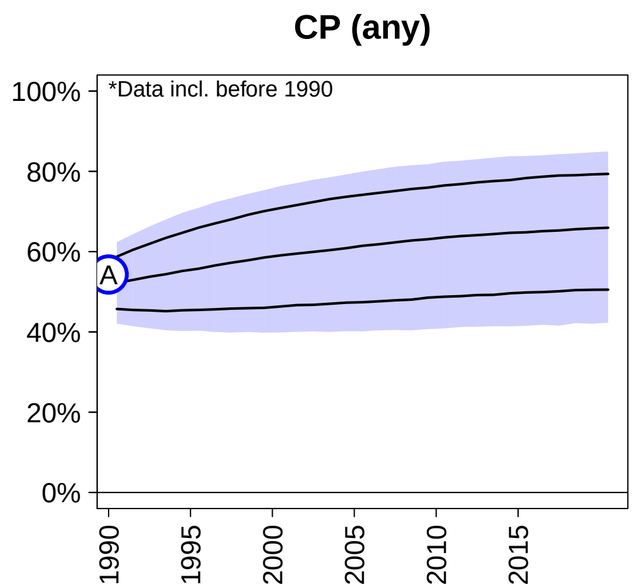
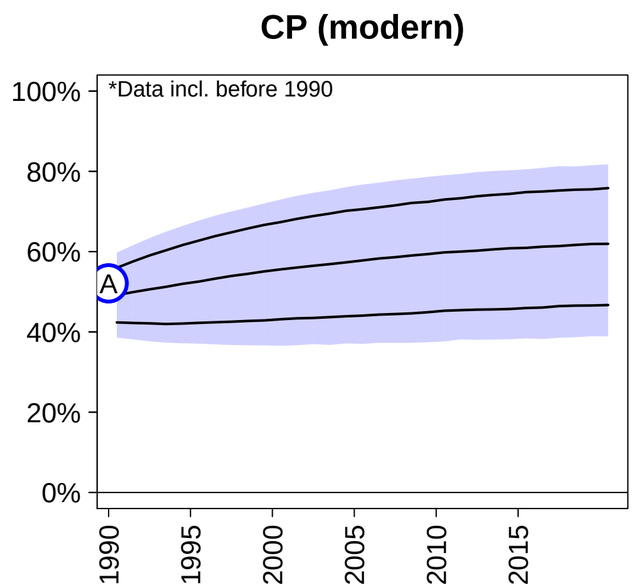
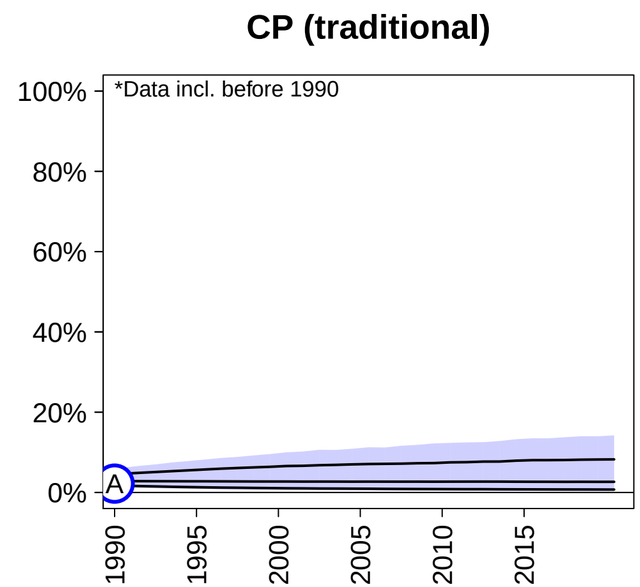
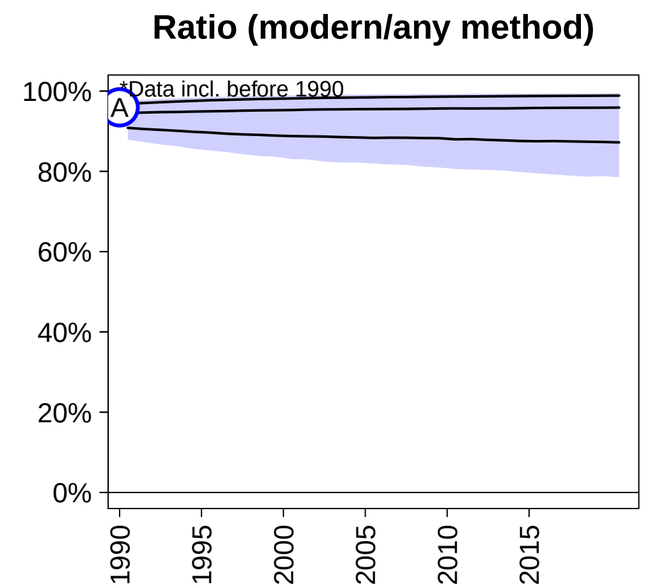
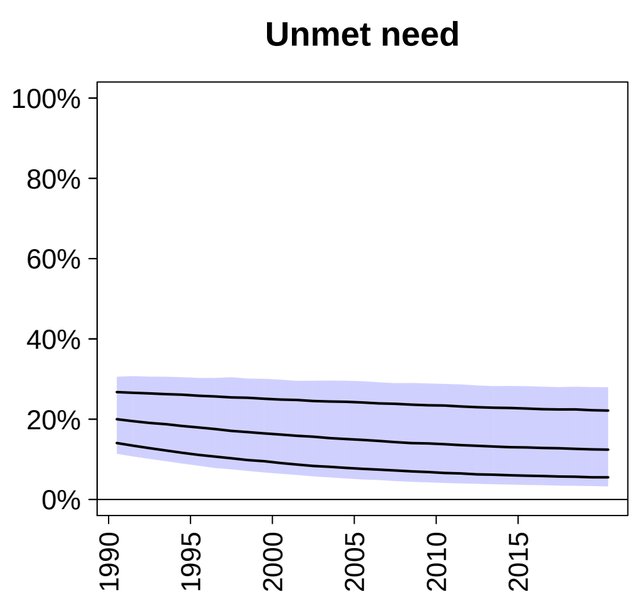
Grenada (Caribbean)

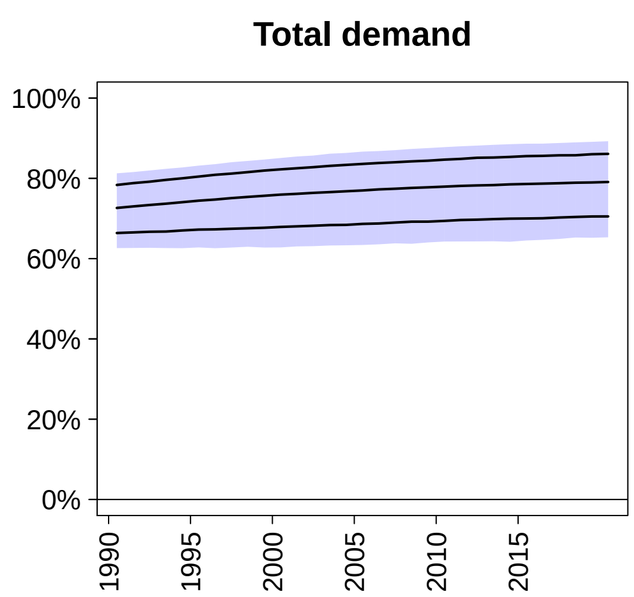


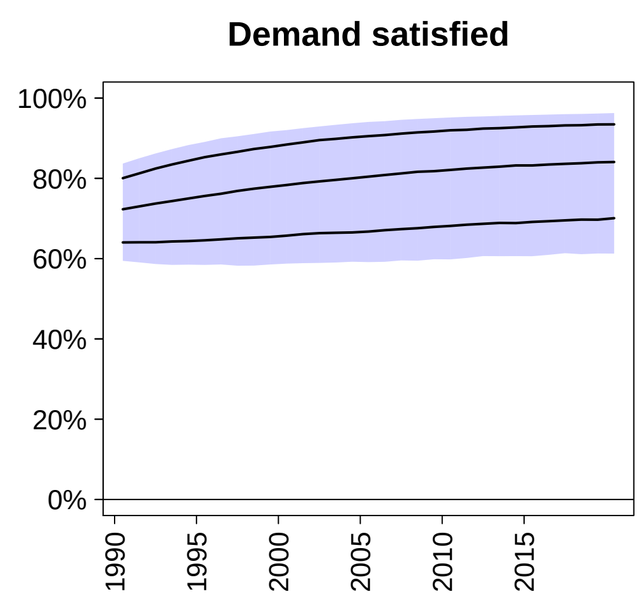












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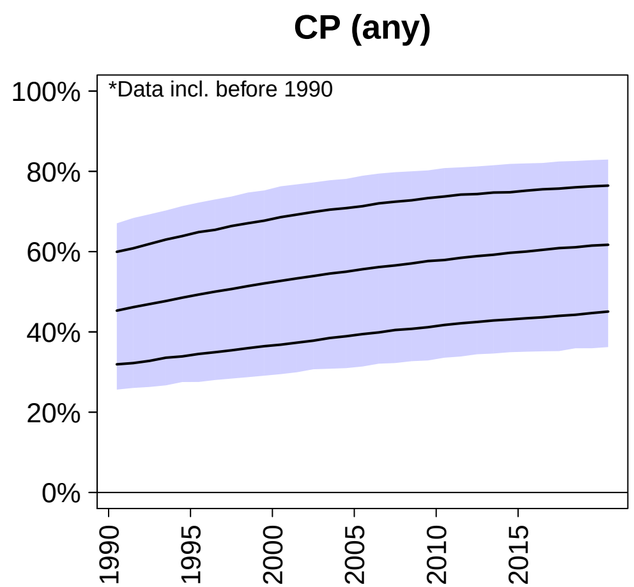
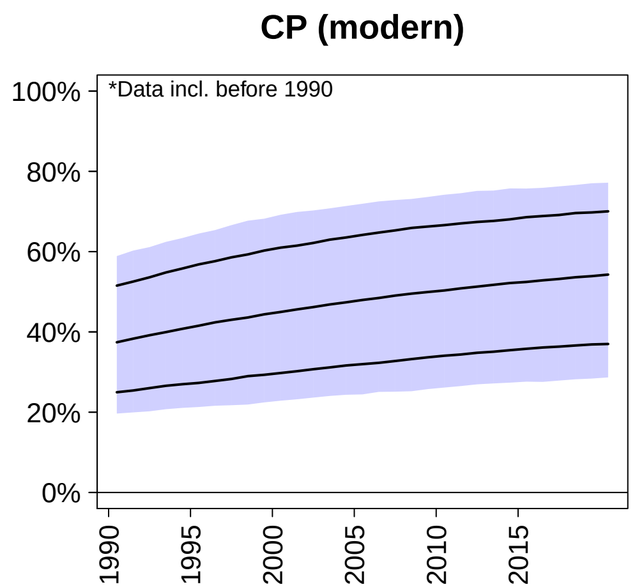
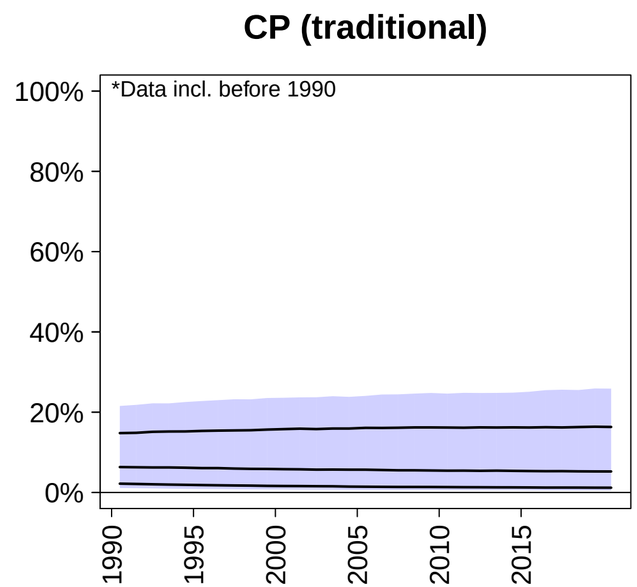
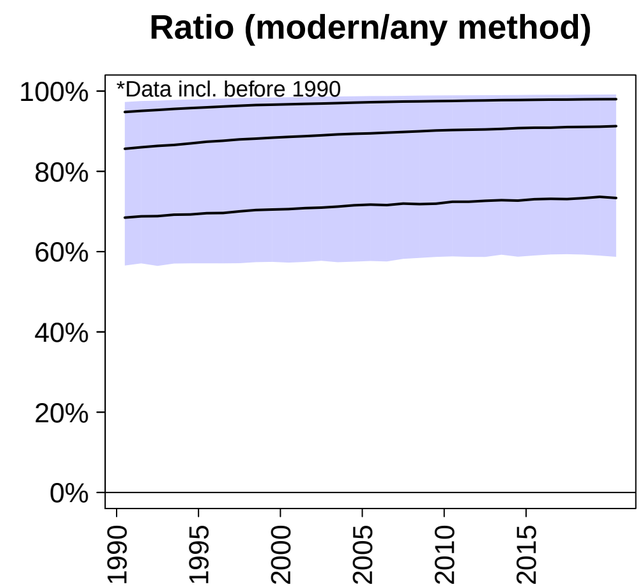
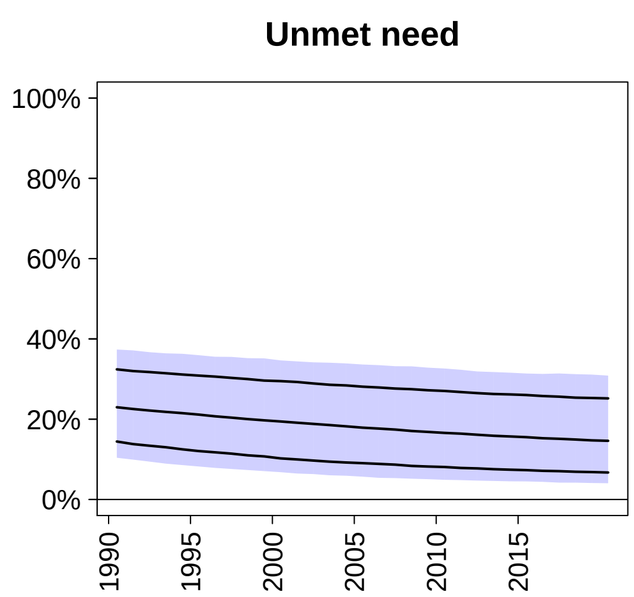
Guadeloupe (Caribbean)

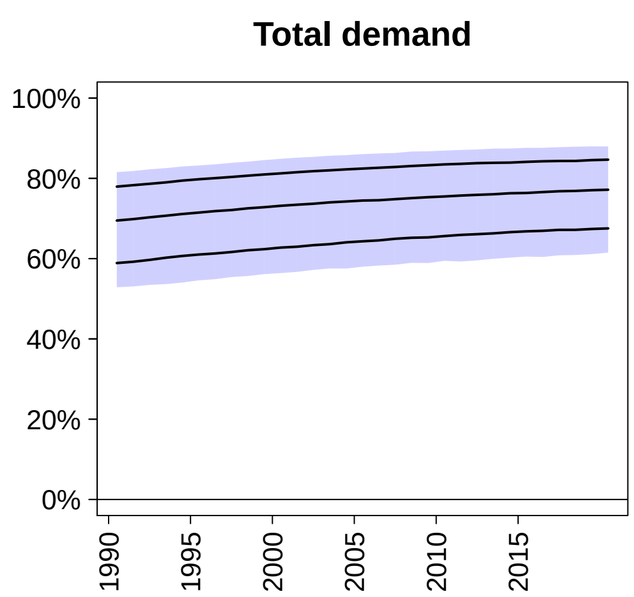


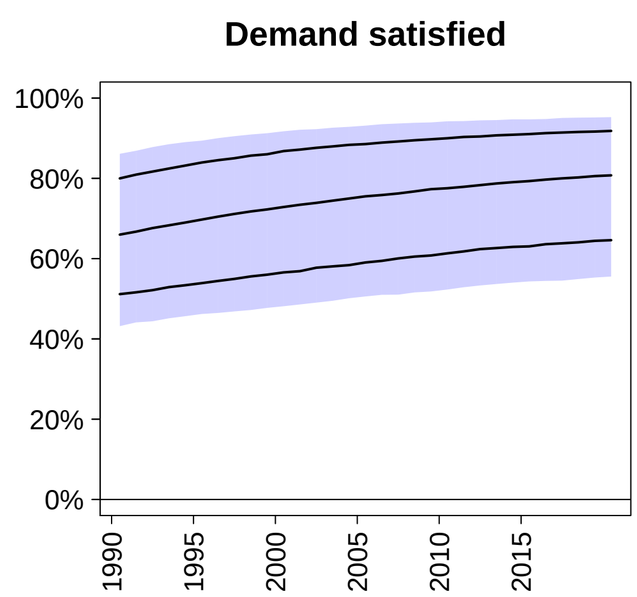












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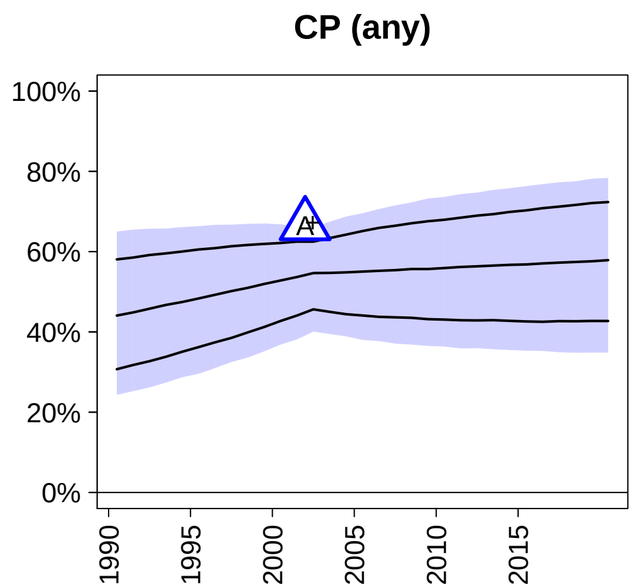
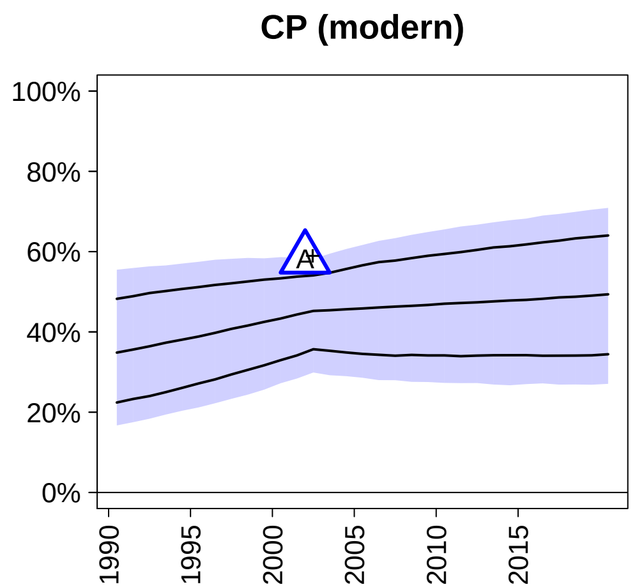
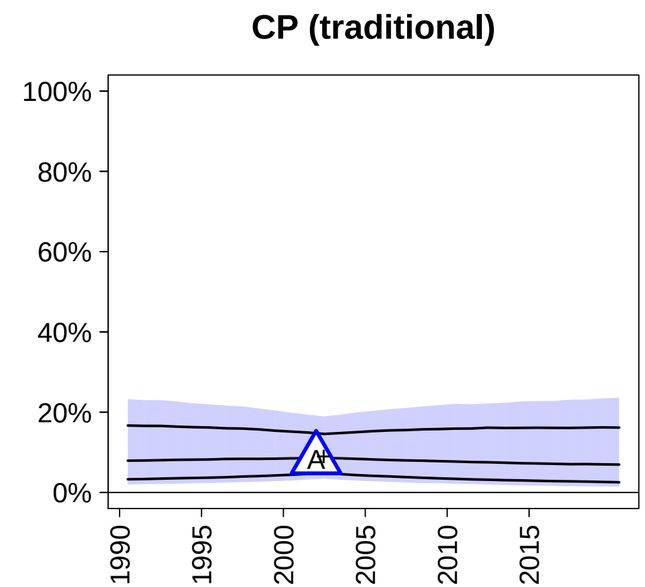
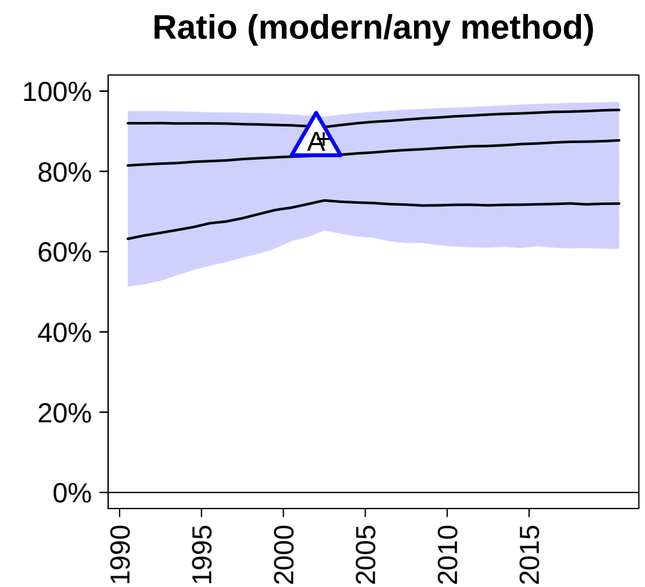
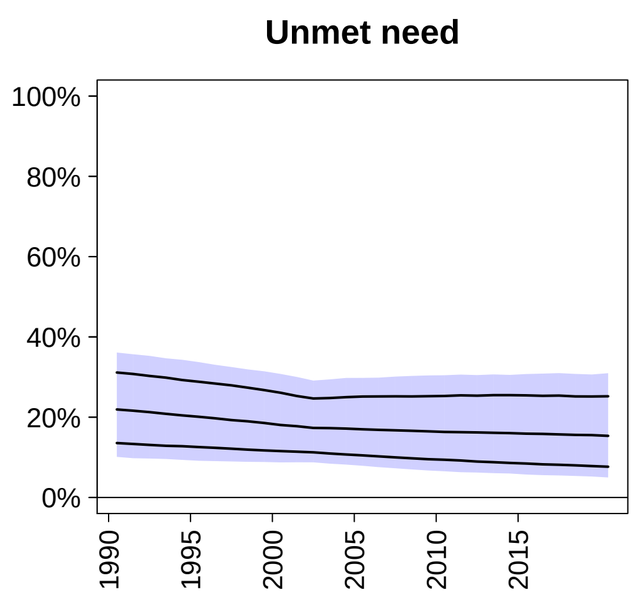
Guam (Micronesia)

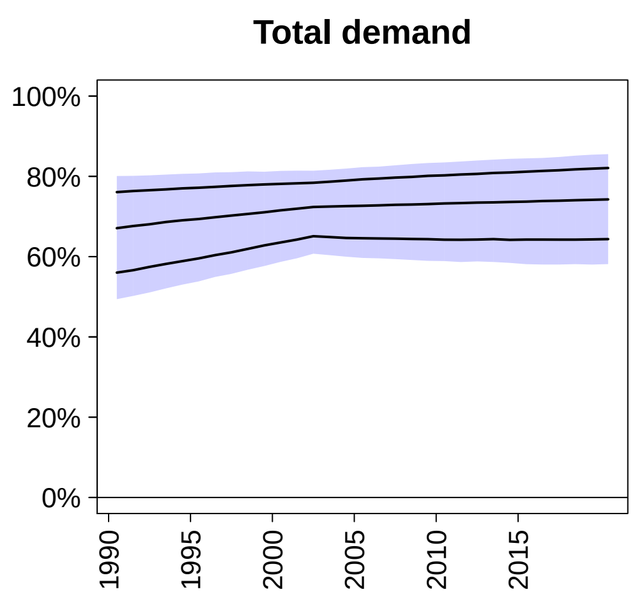


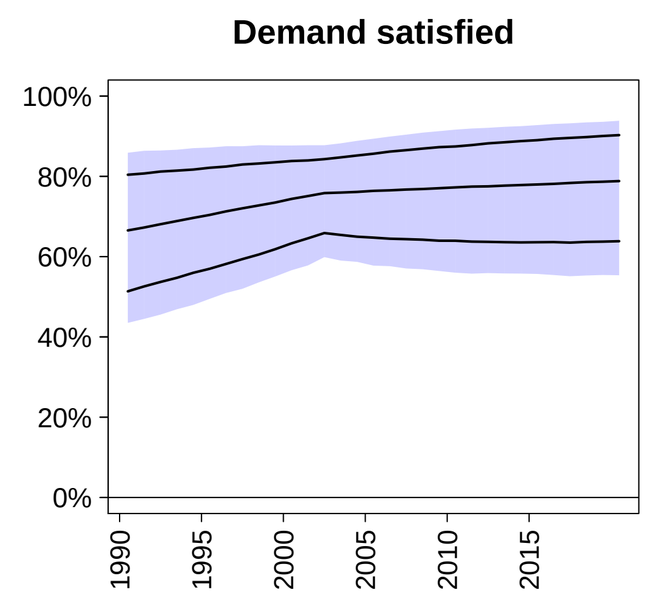












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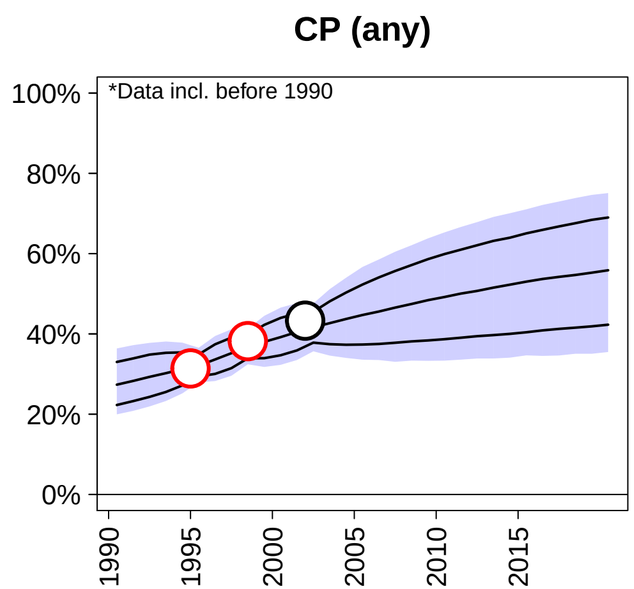
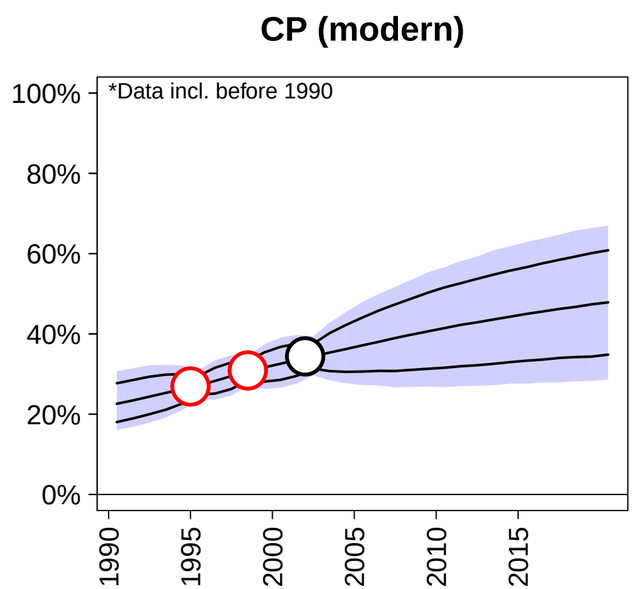
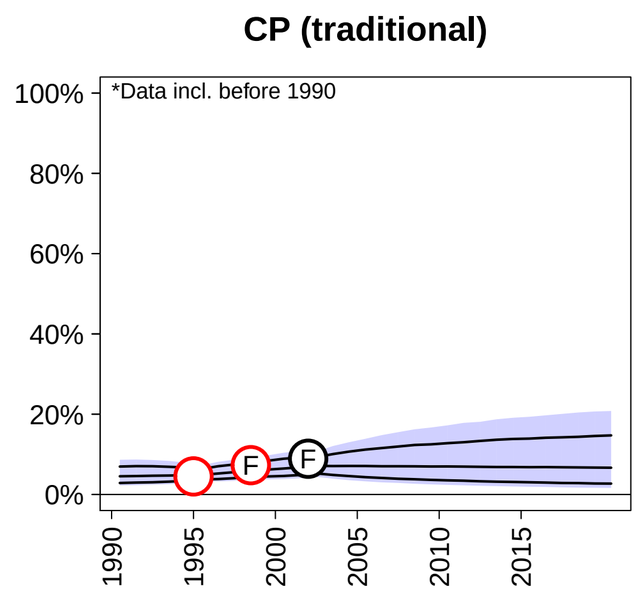
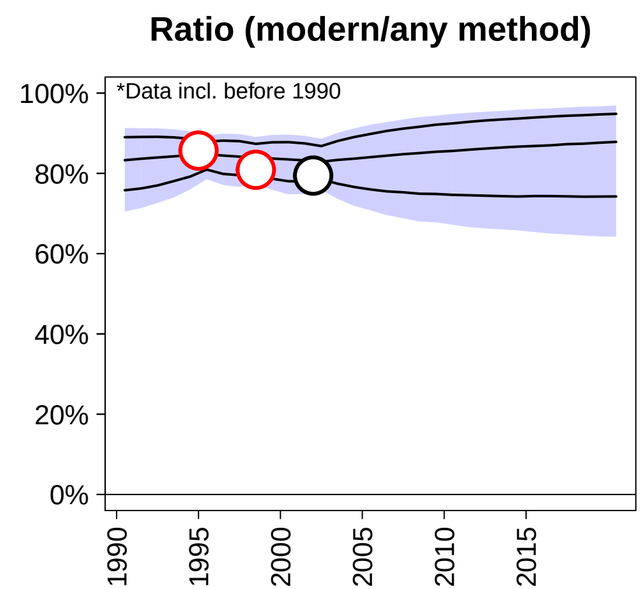
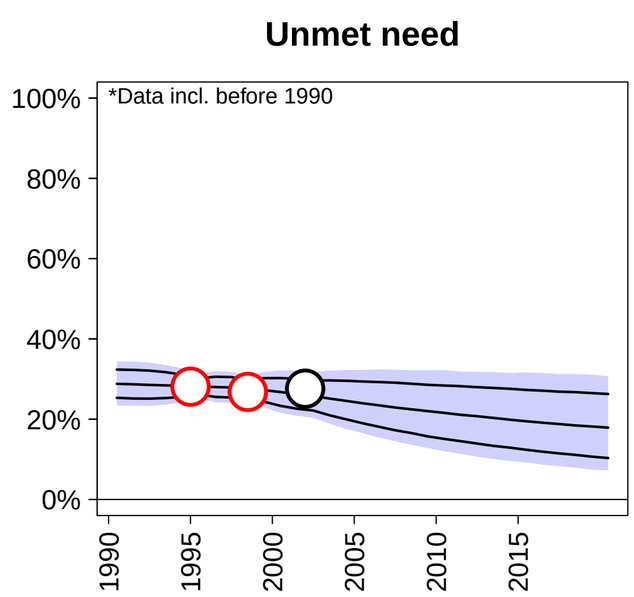
Guatemala (Central America)

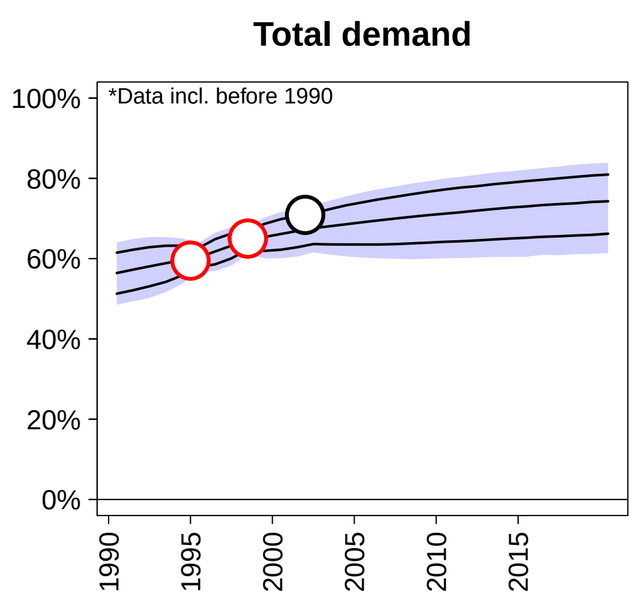


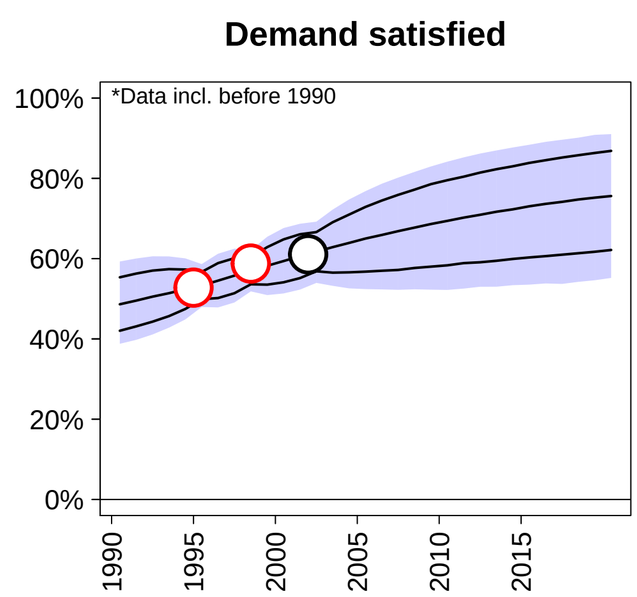












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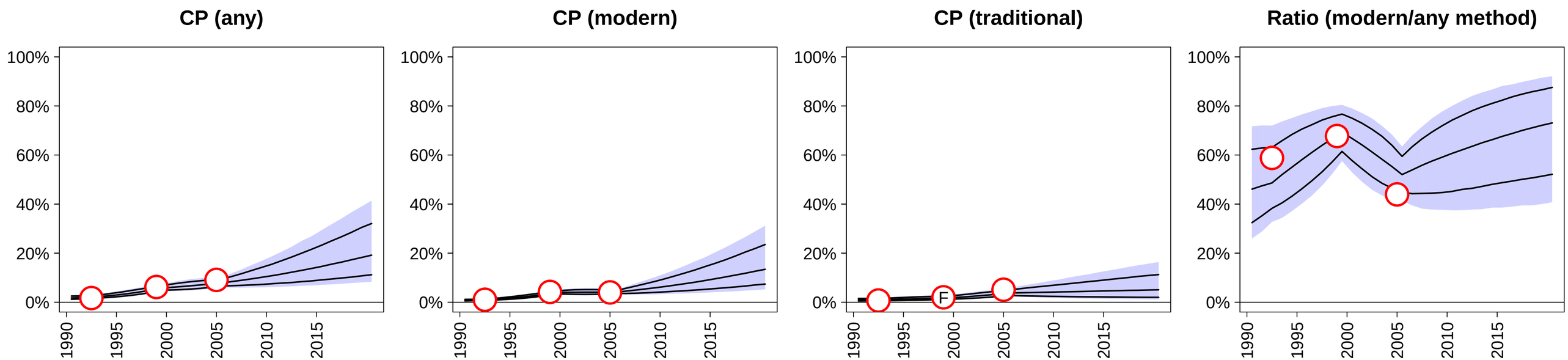
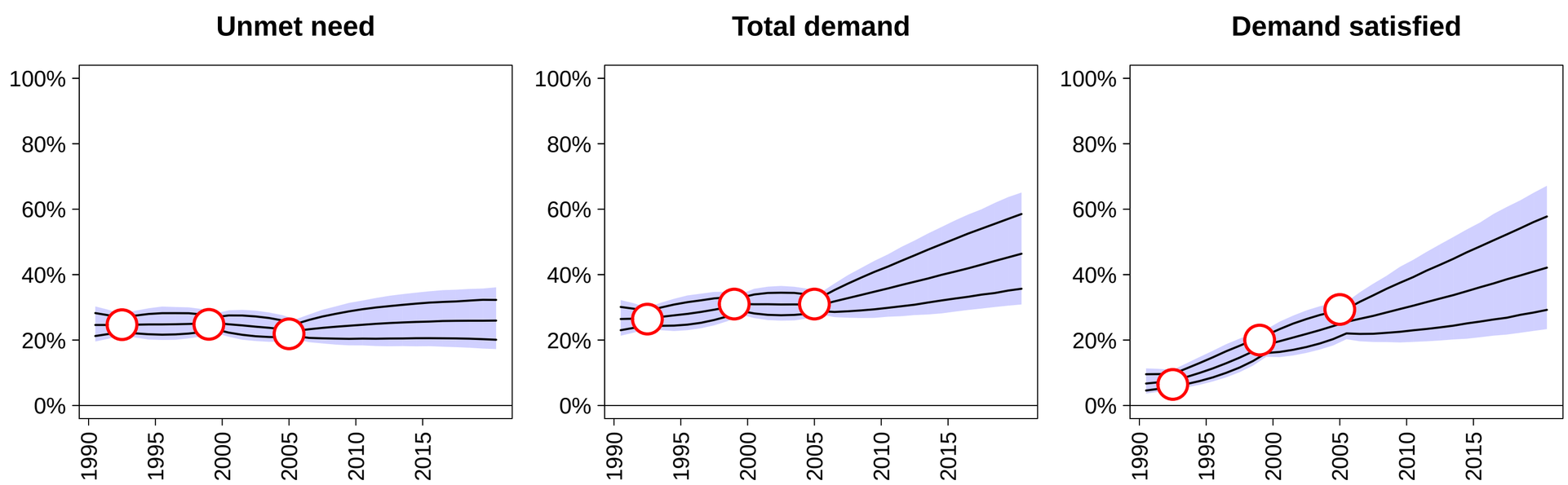
Guinea (Western Africa)





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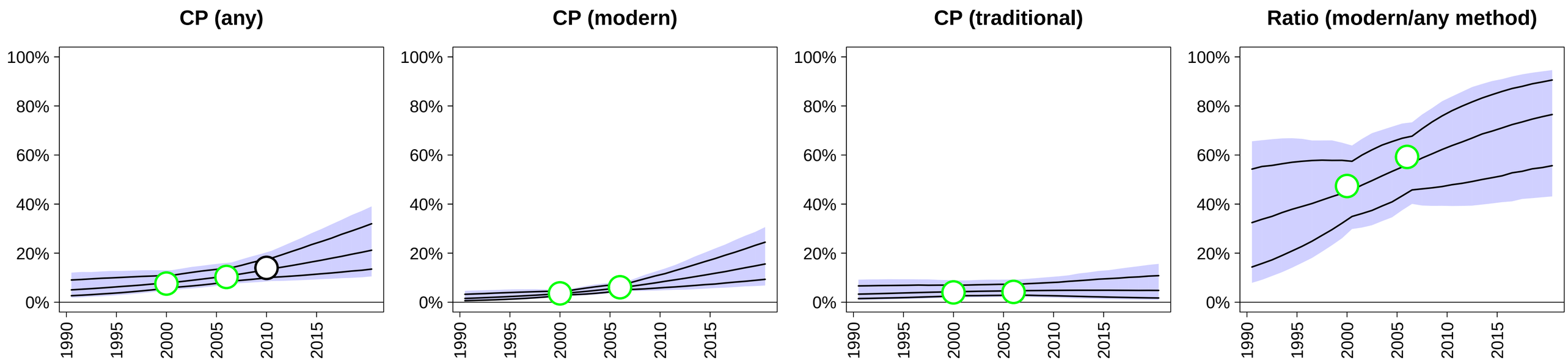
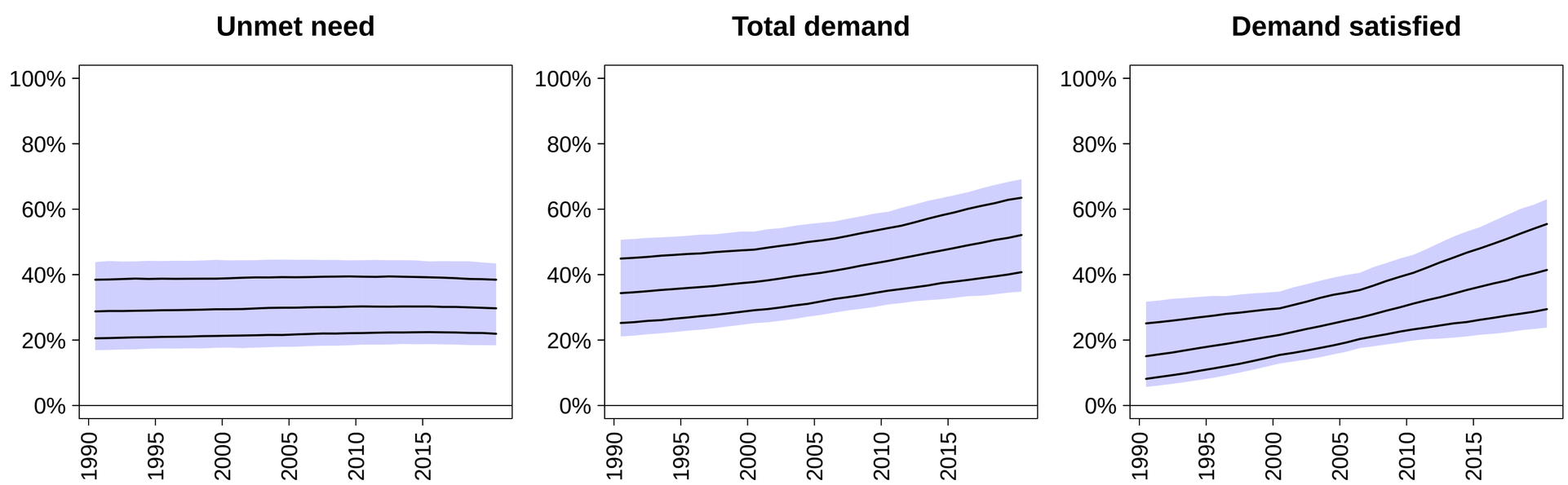
Guinea−Bissau (Western Africa)





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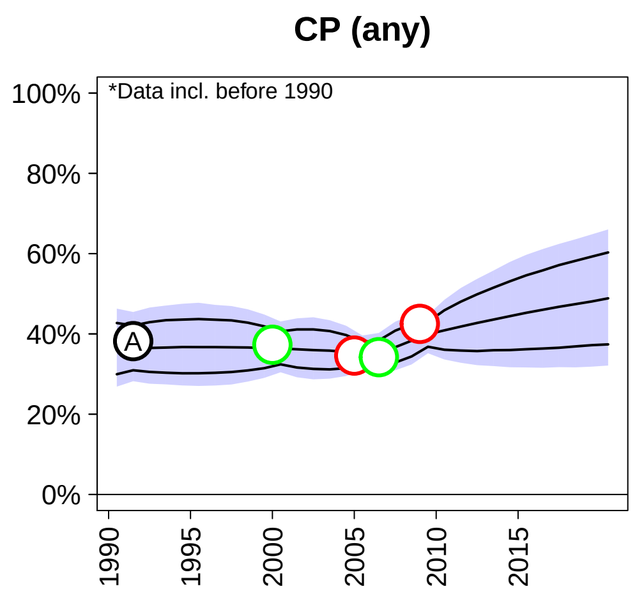
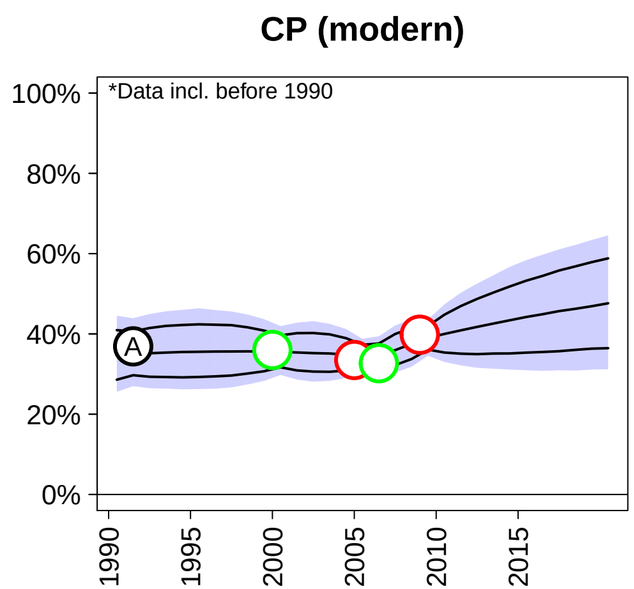
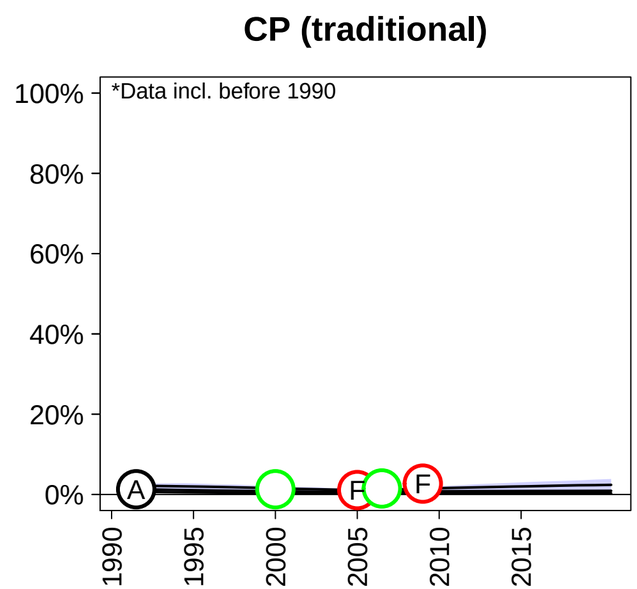
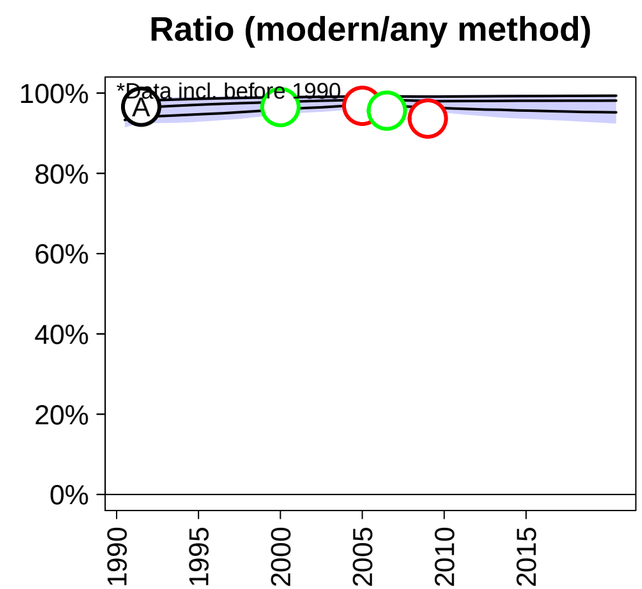
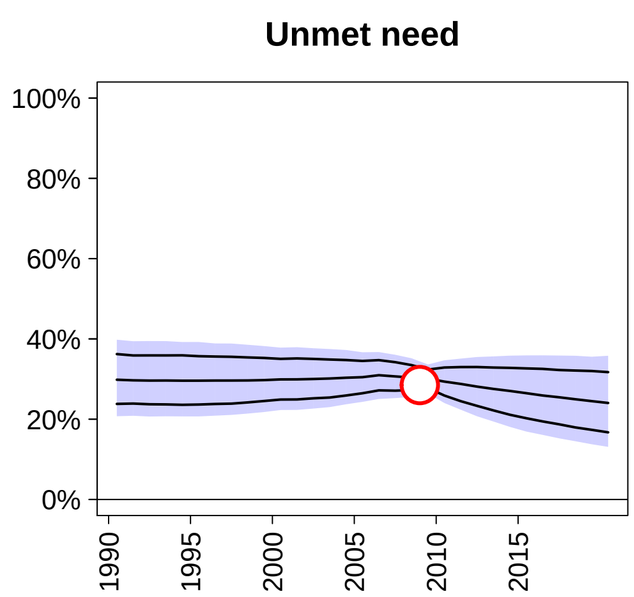
Guyana (South America)

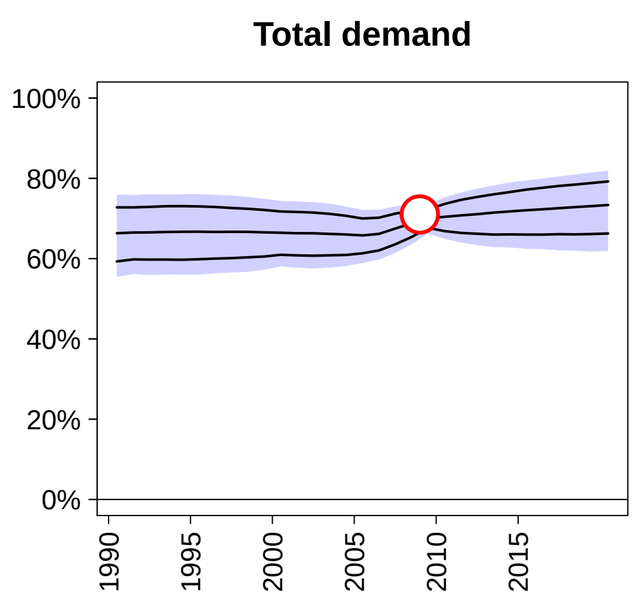


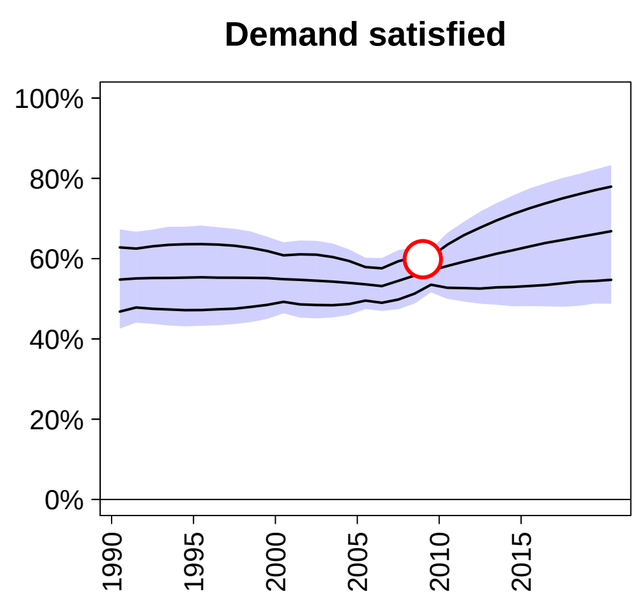












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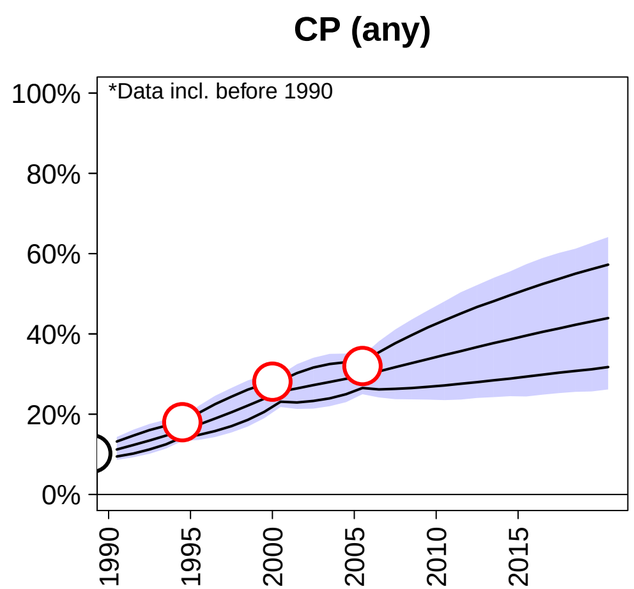
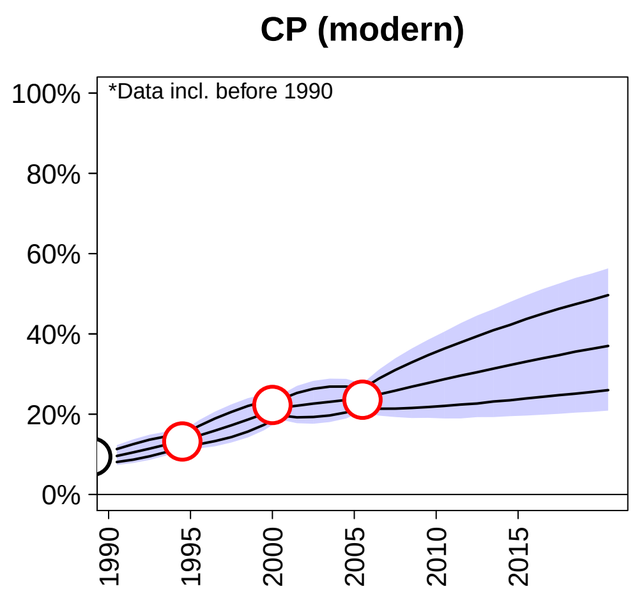
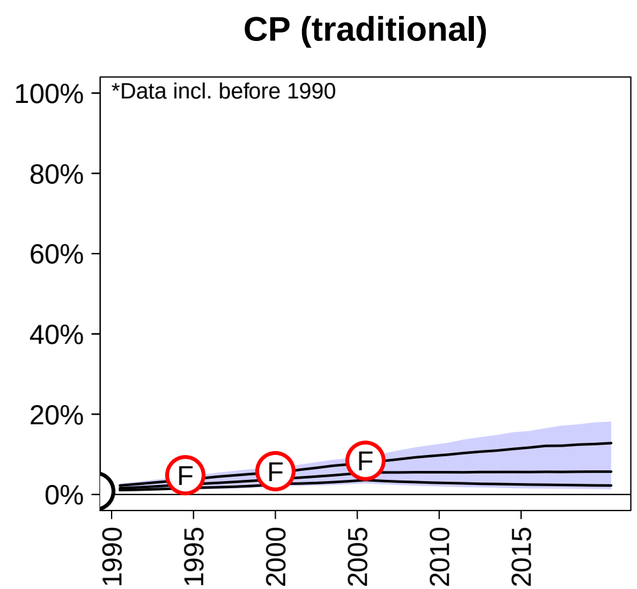
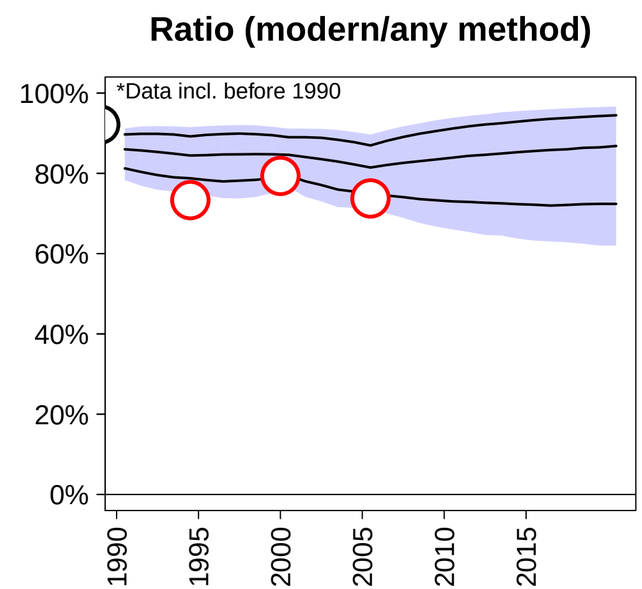
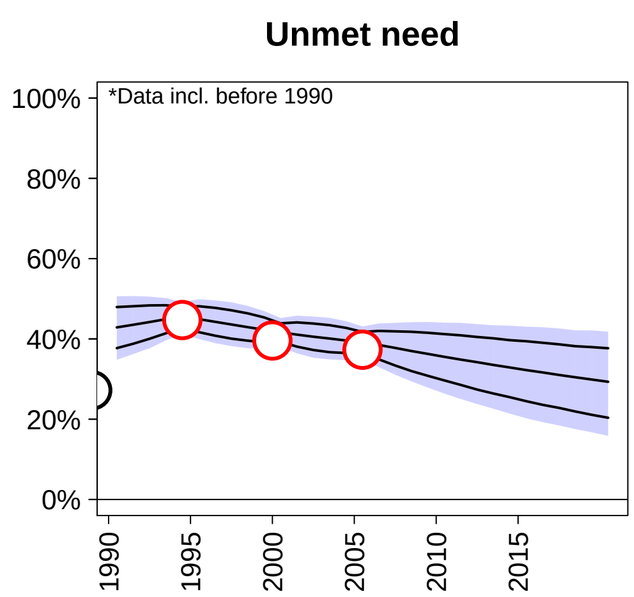
Haiti (Caribbean)

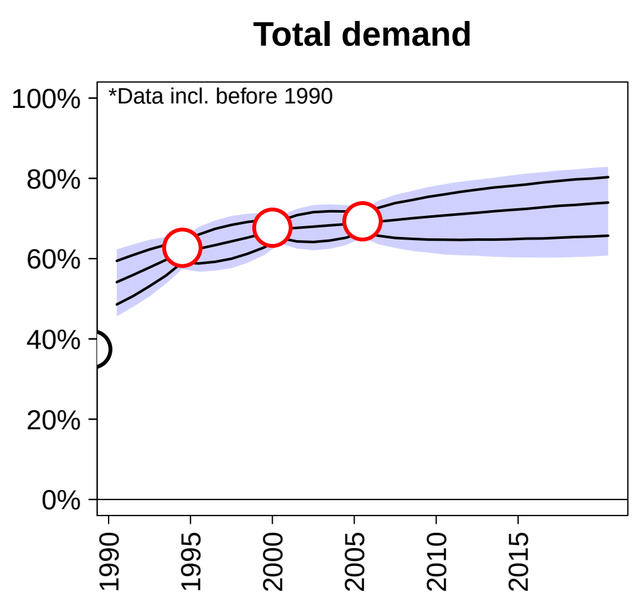


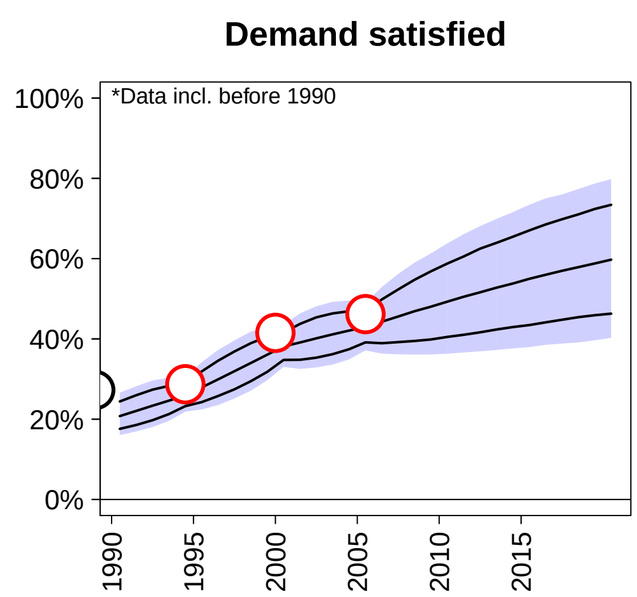












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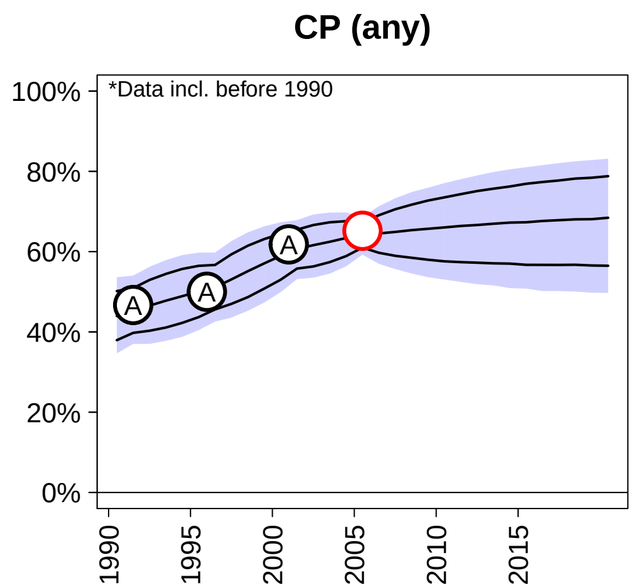
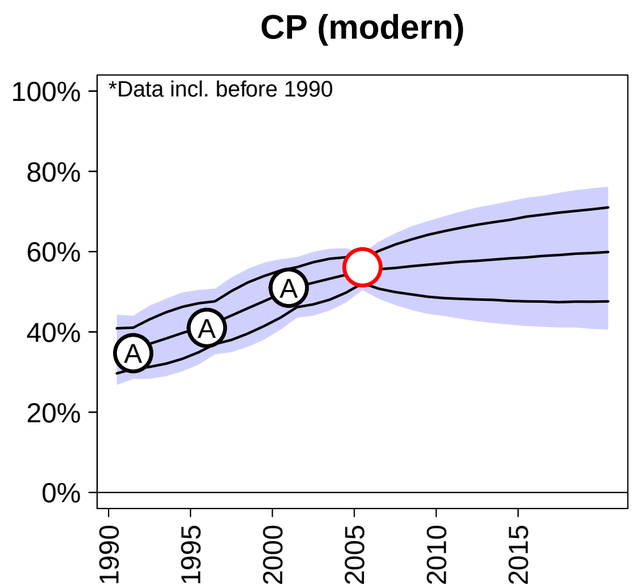
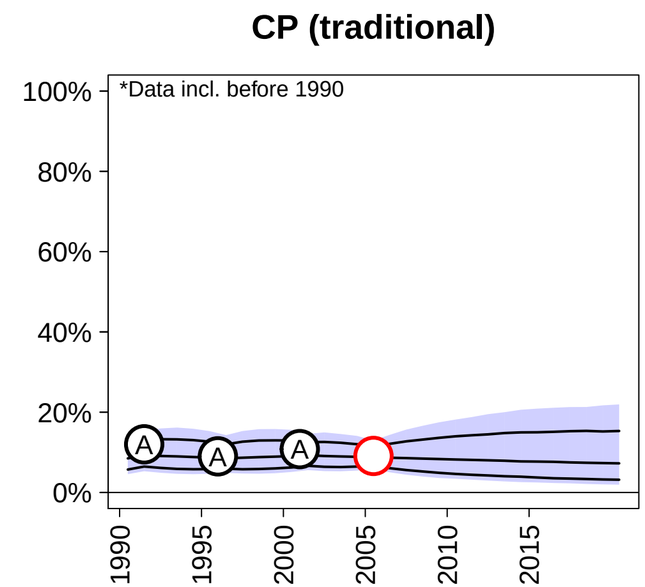
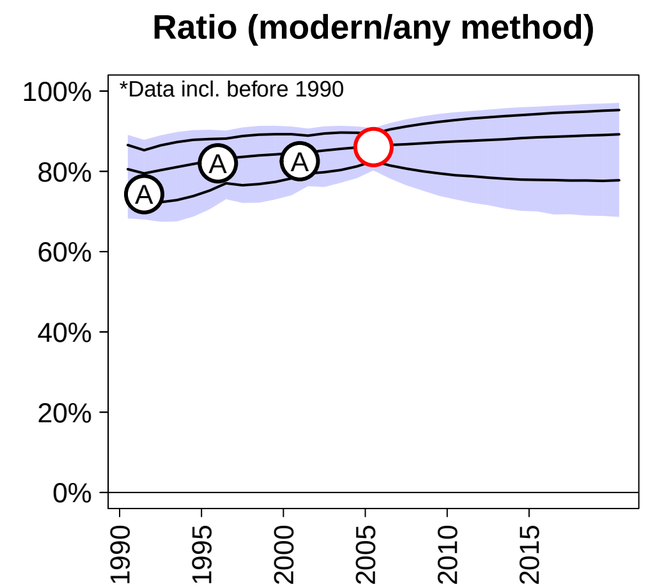
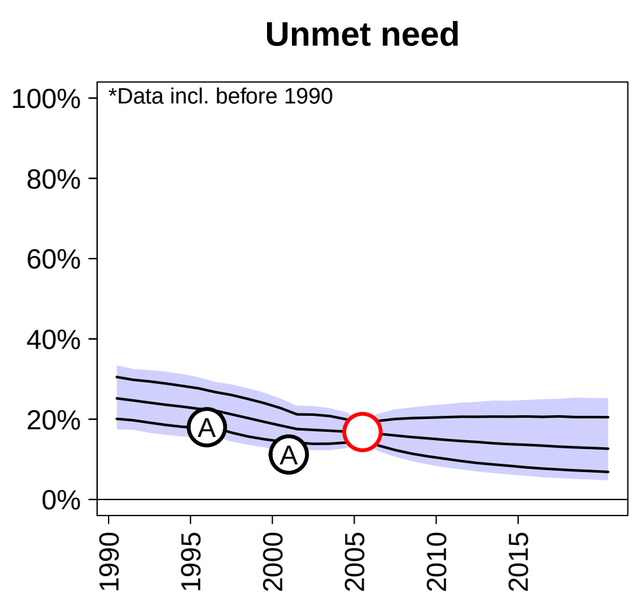
Honduras (Central America)

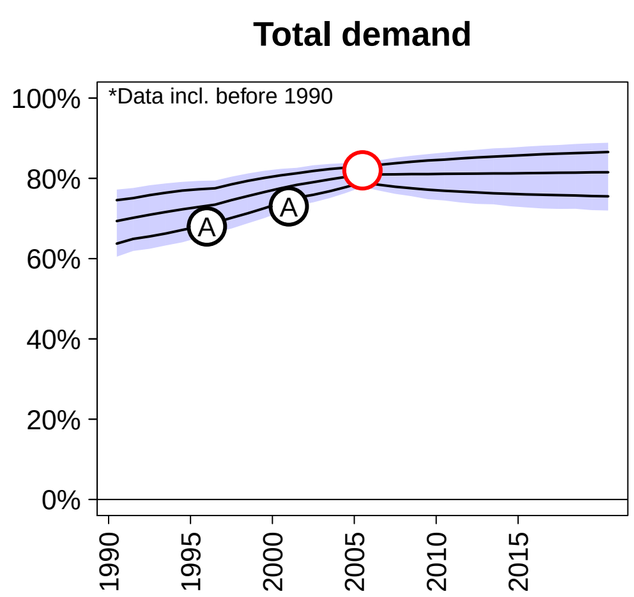


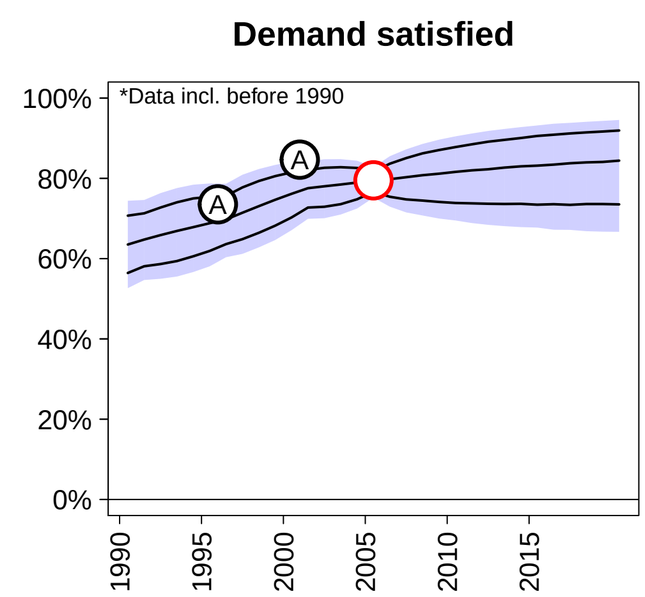












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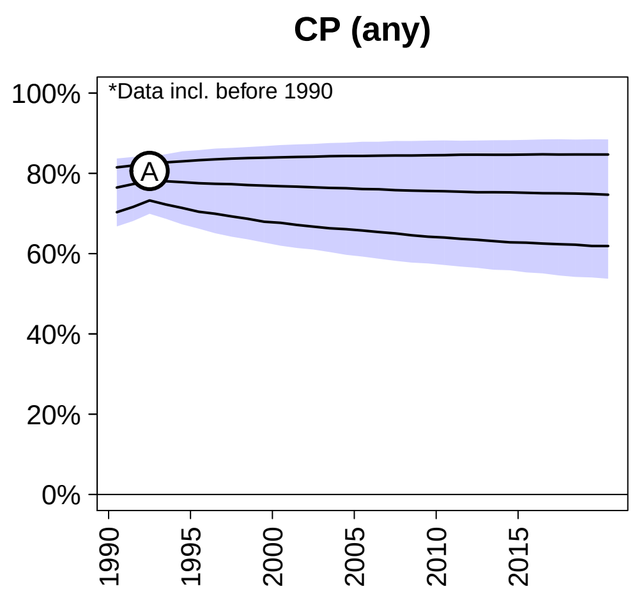
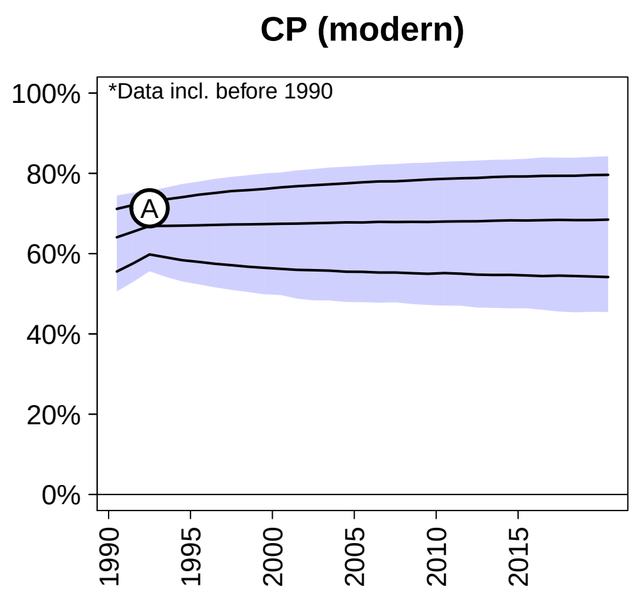
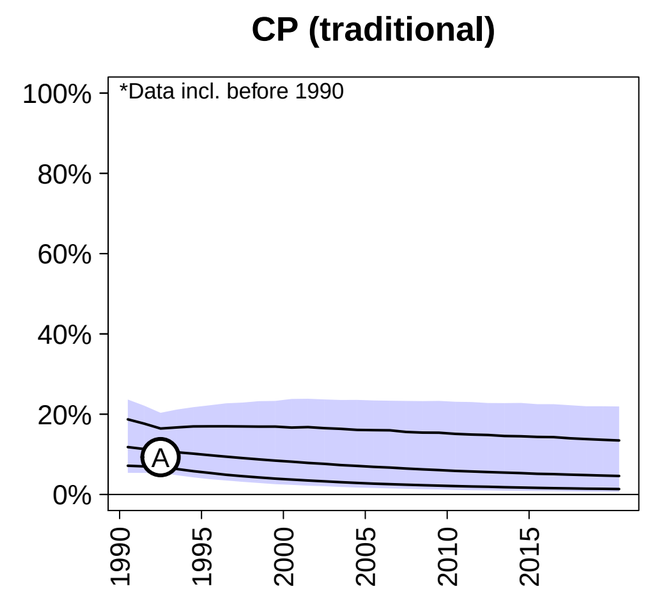
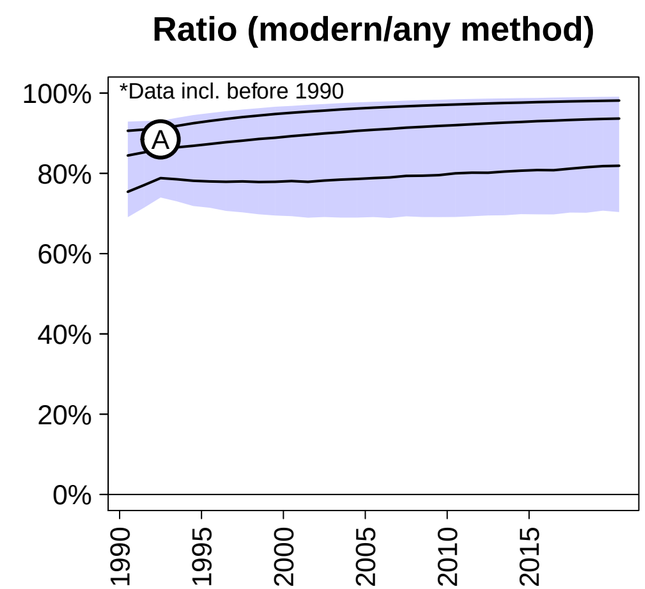
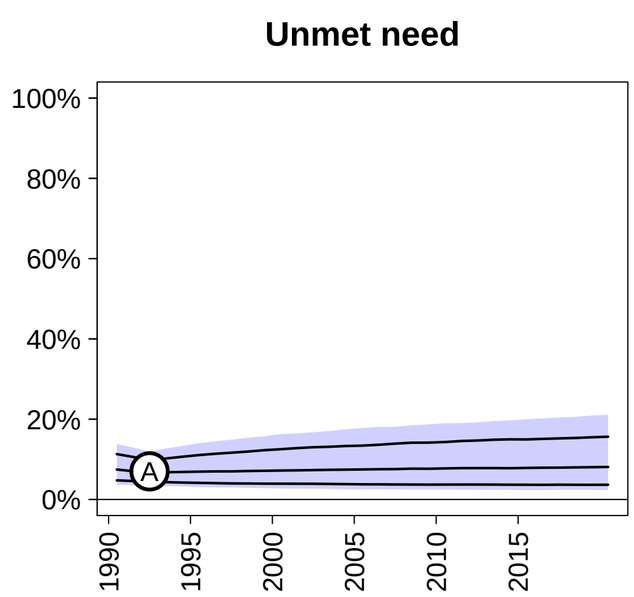
Hungary (Eastern Europe)

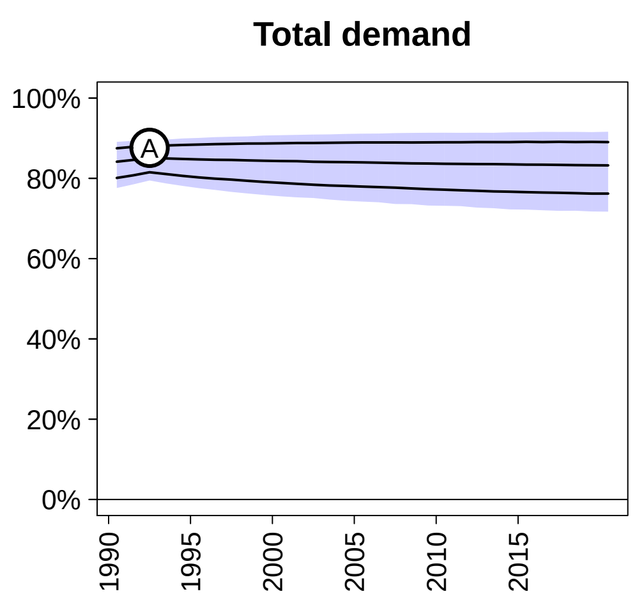


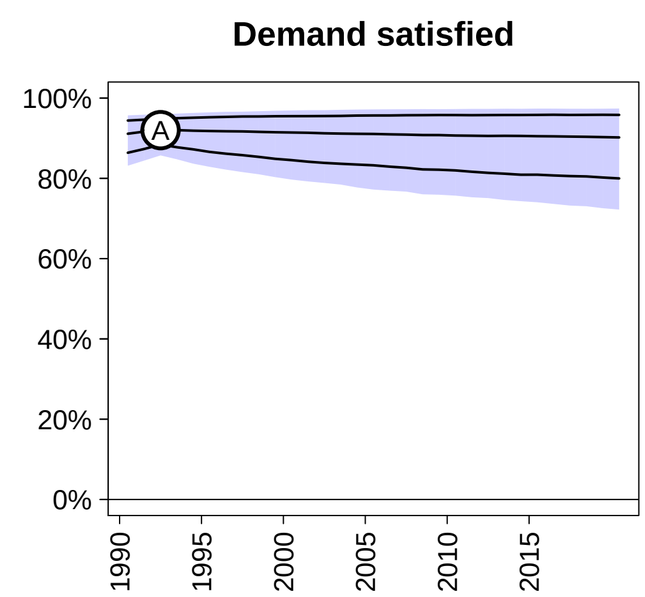












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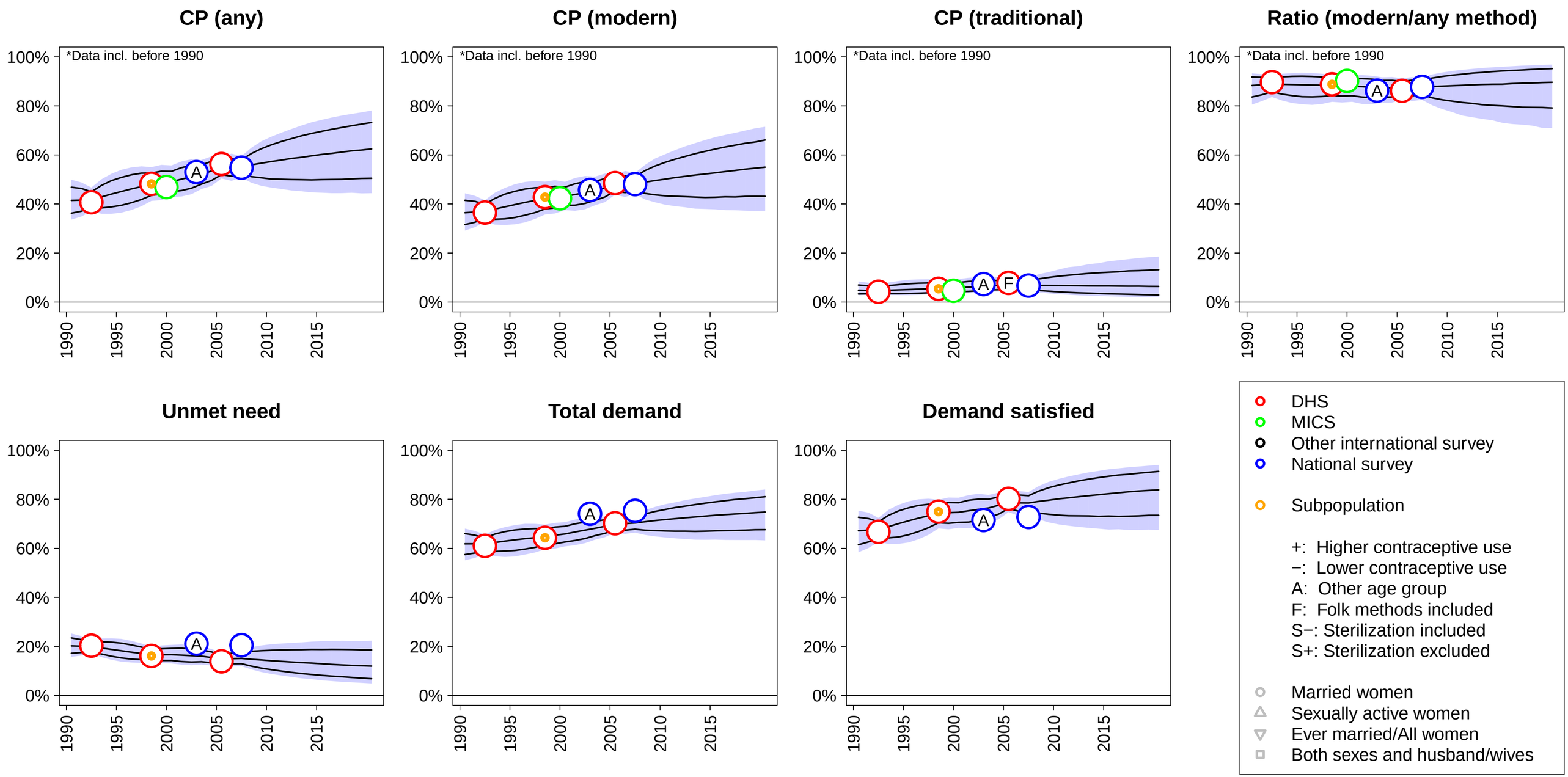
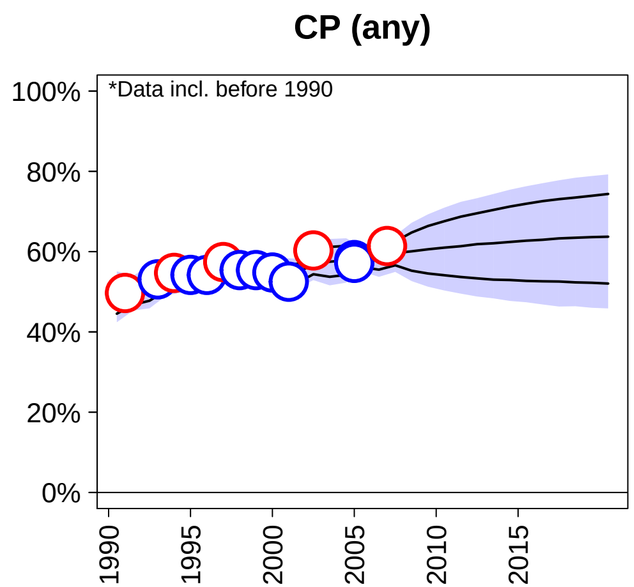
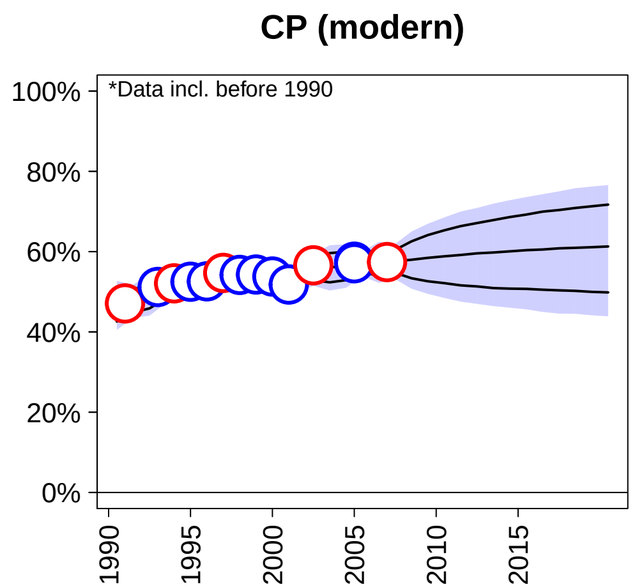
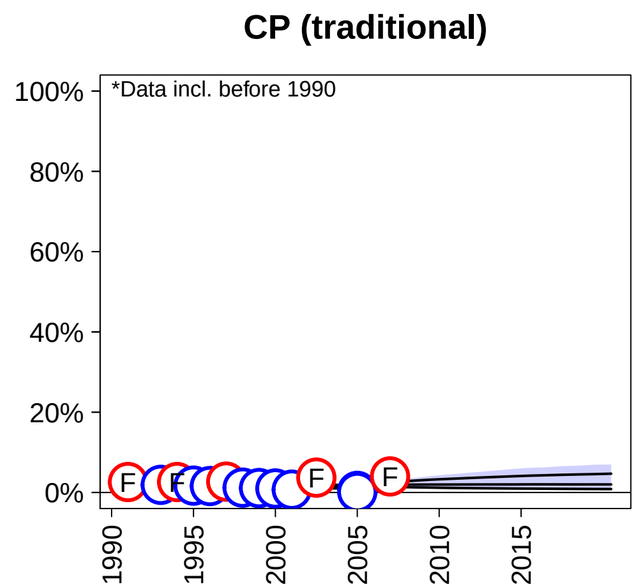
India (Southern Asia)

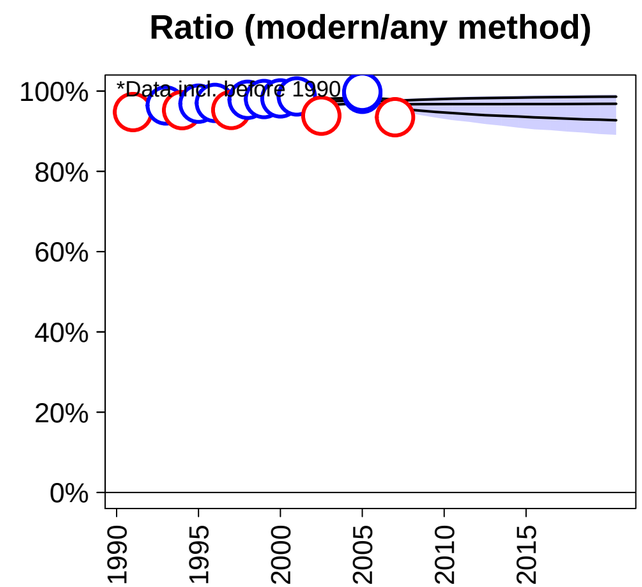


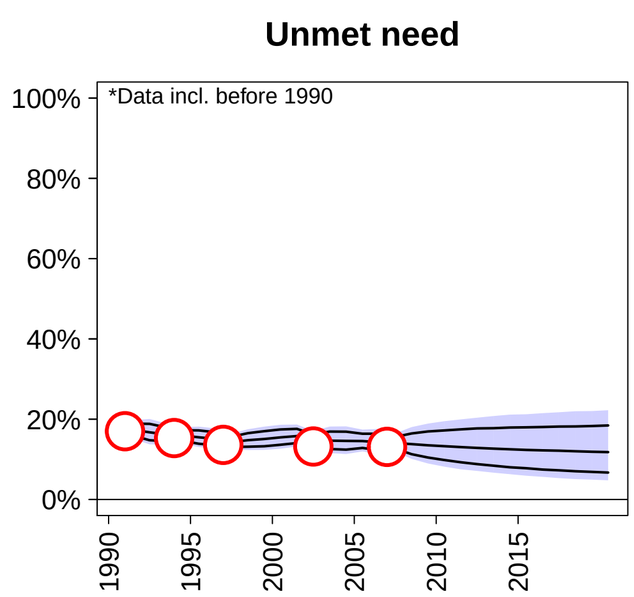
Indonesia (South−Eastern Asia)

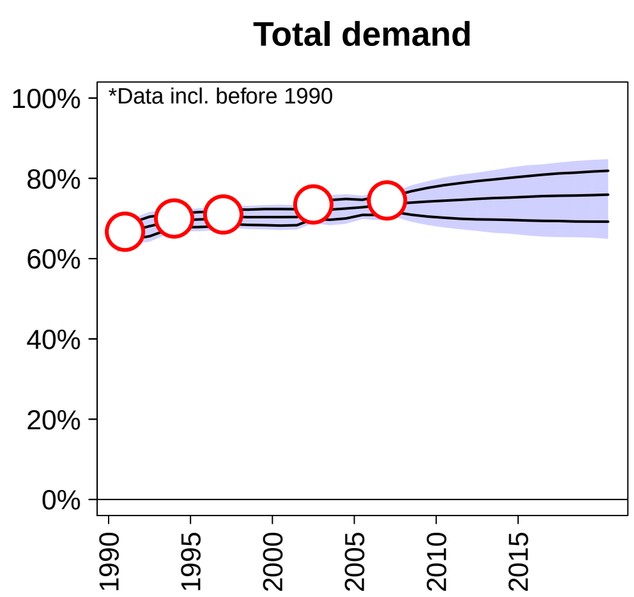


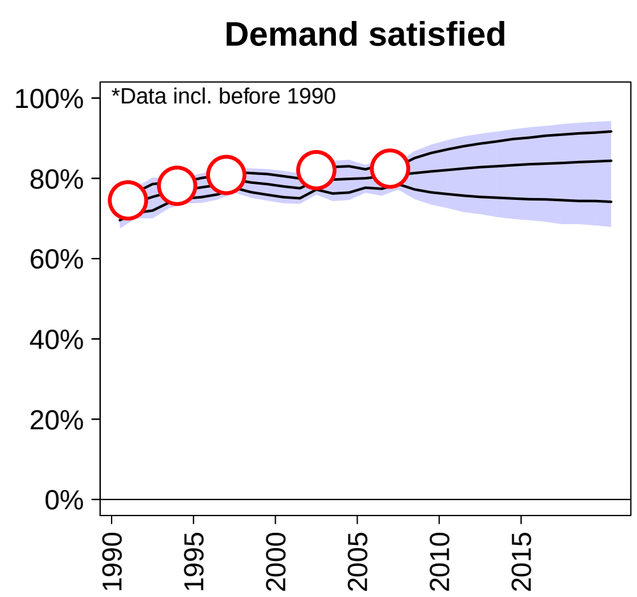












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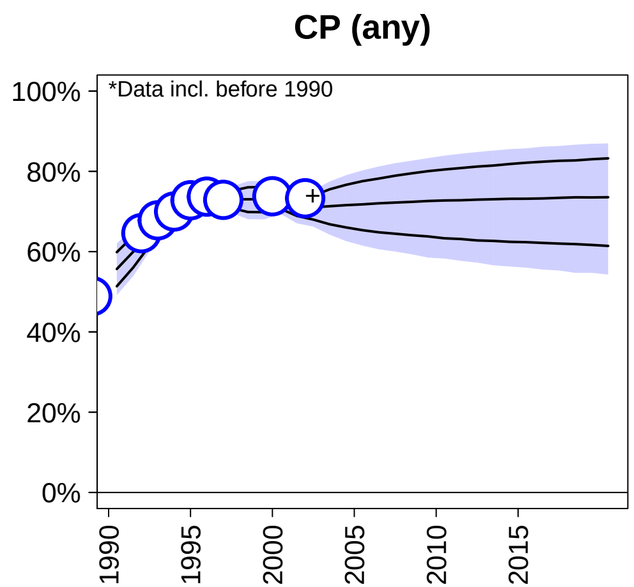
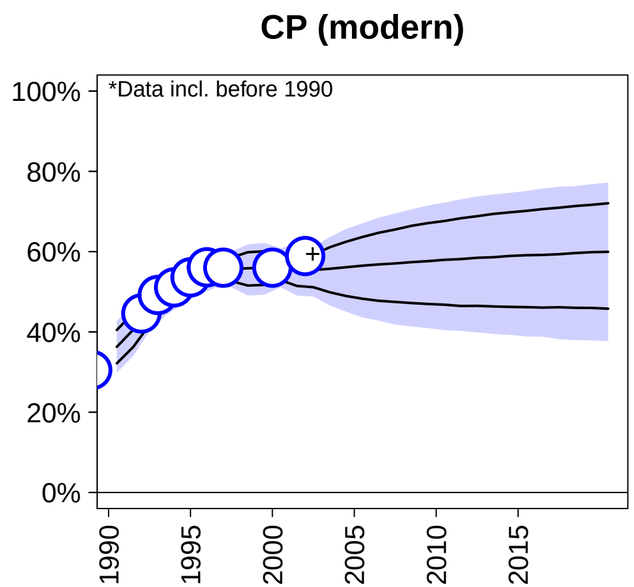
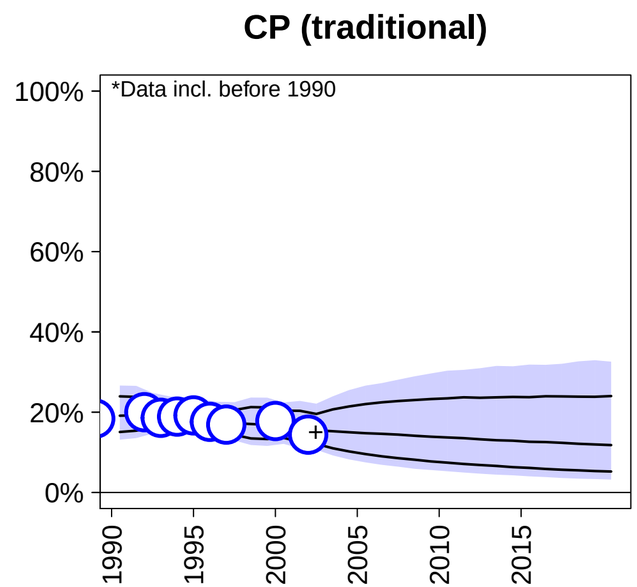
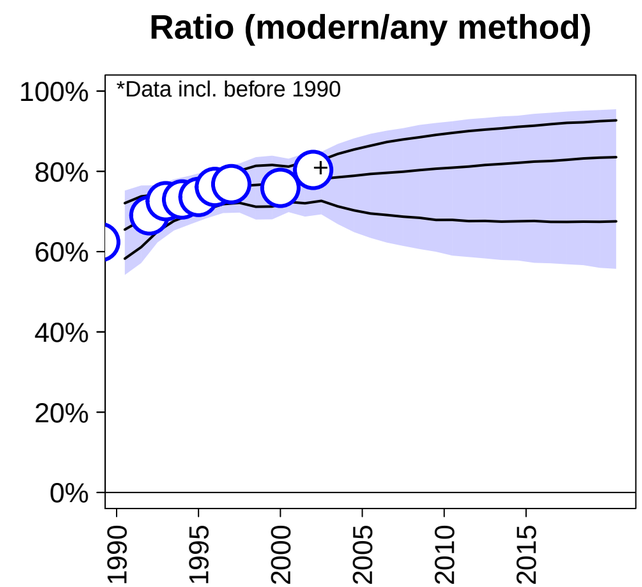
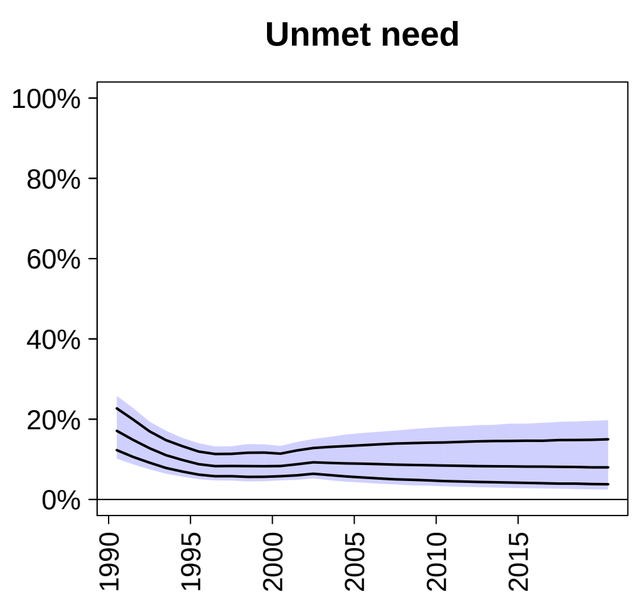
Iran (Islamic Republic of) (Southern Asia)

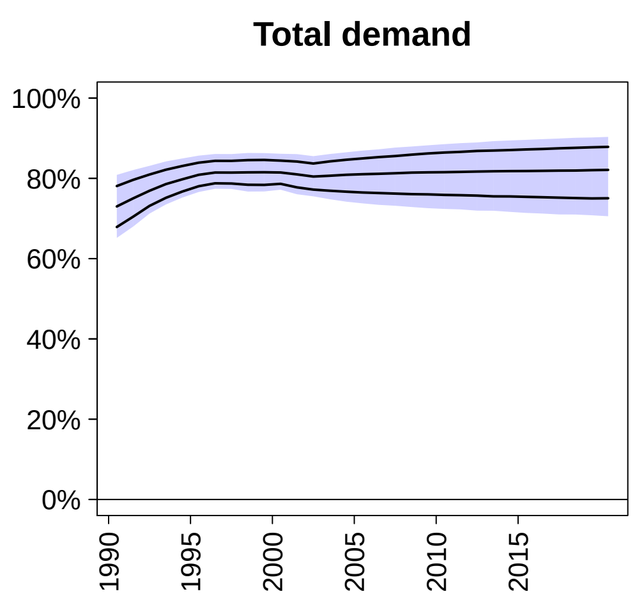


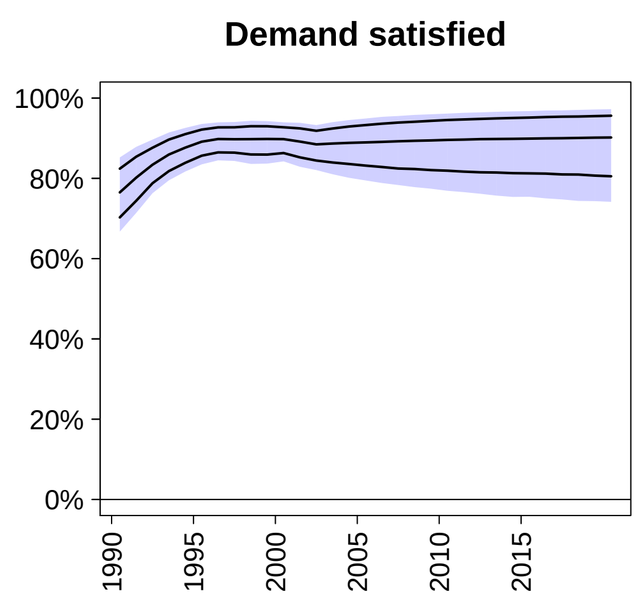












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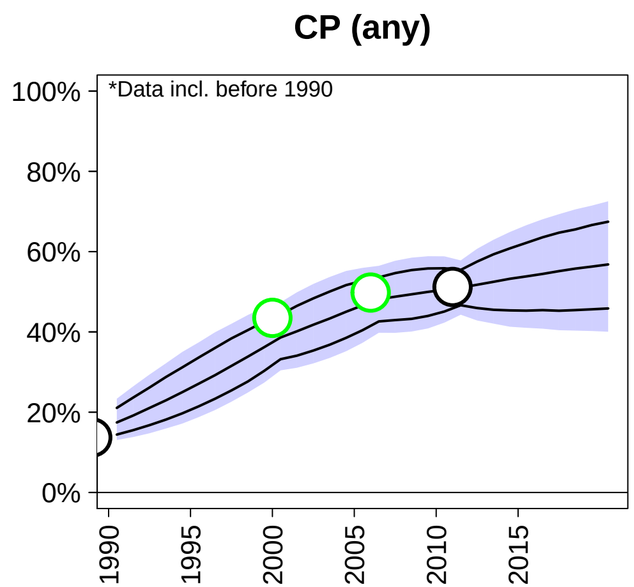
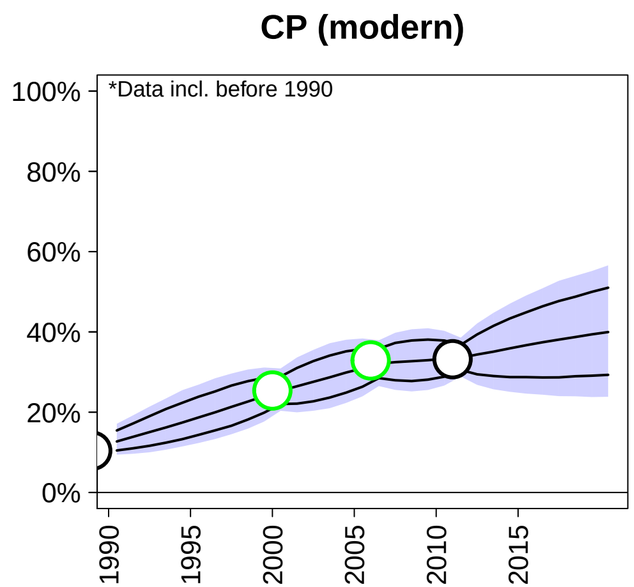
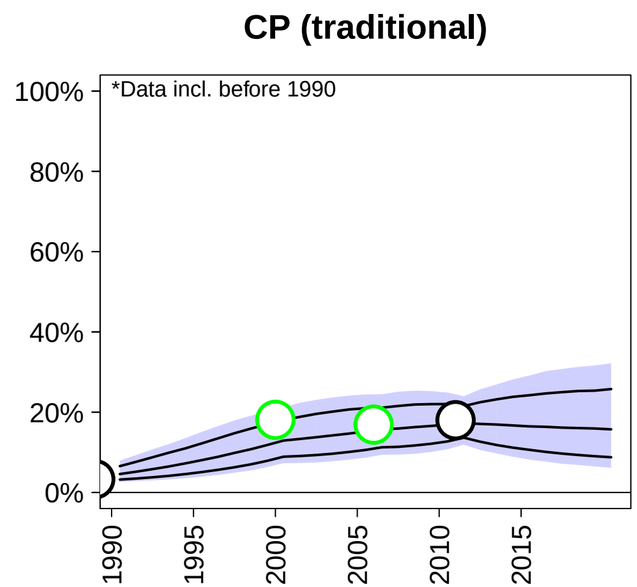
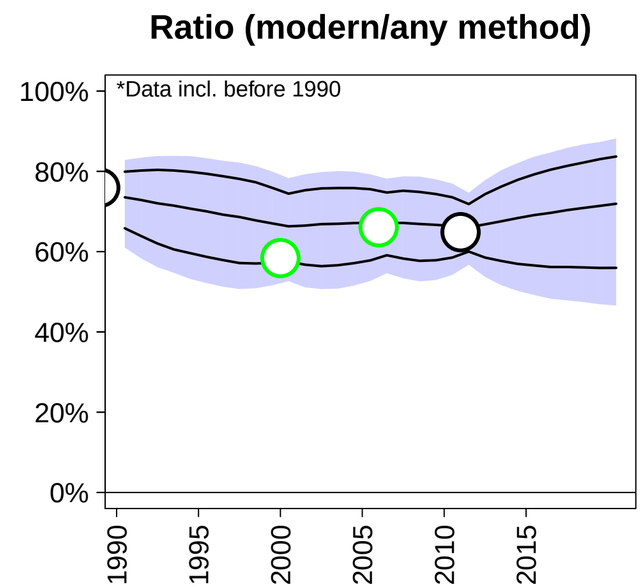
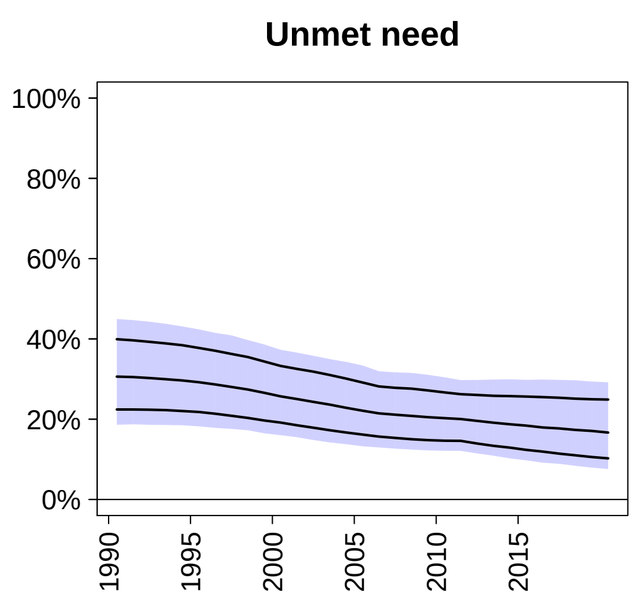
Iraq (Western Asia)

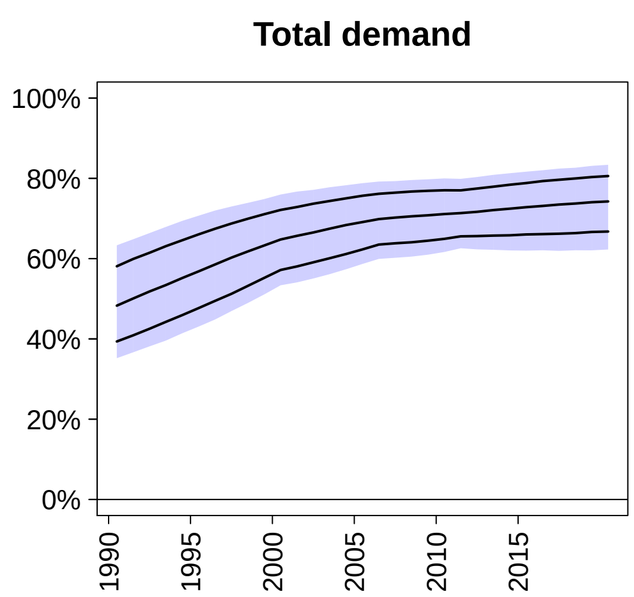


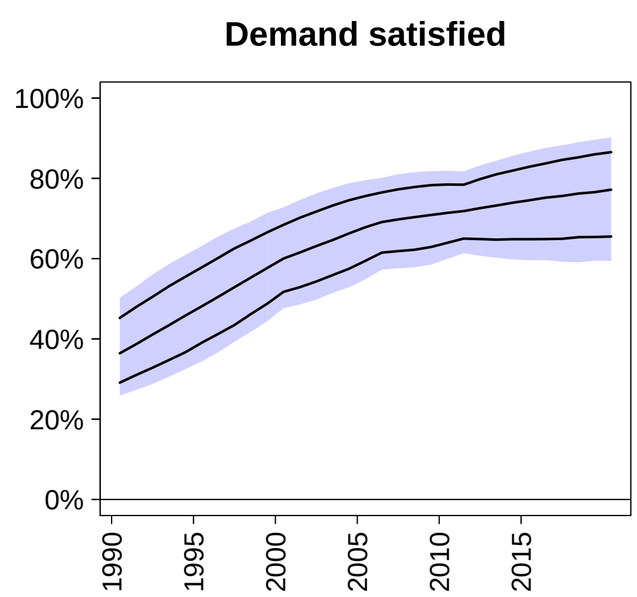












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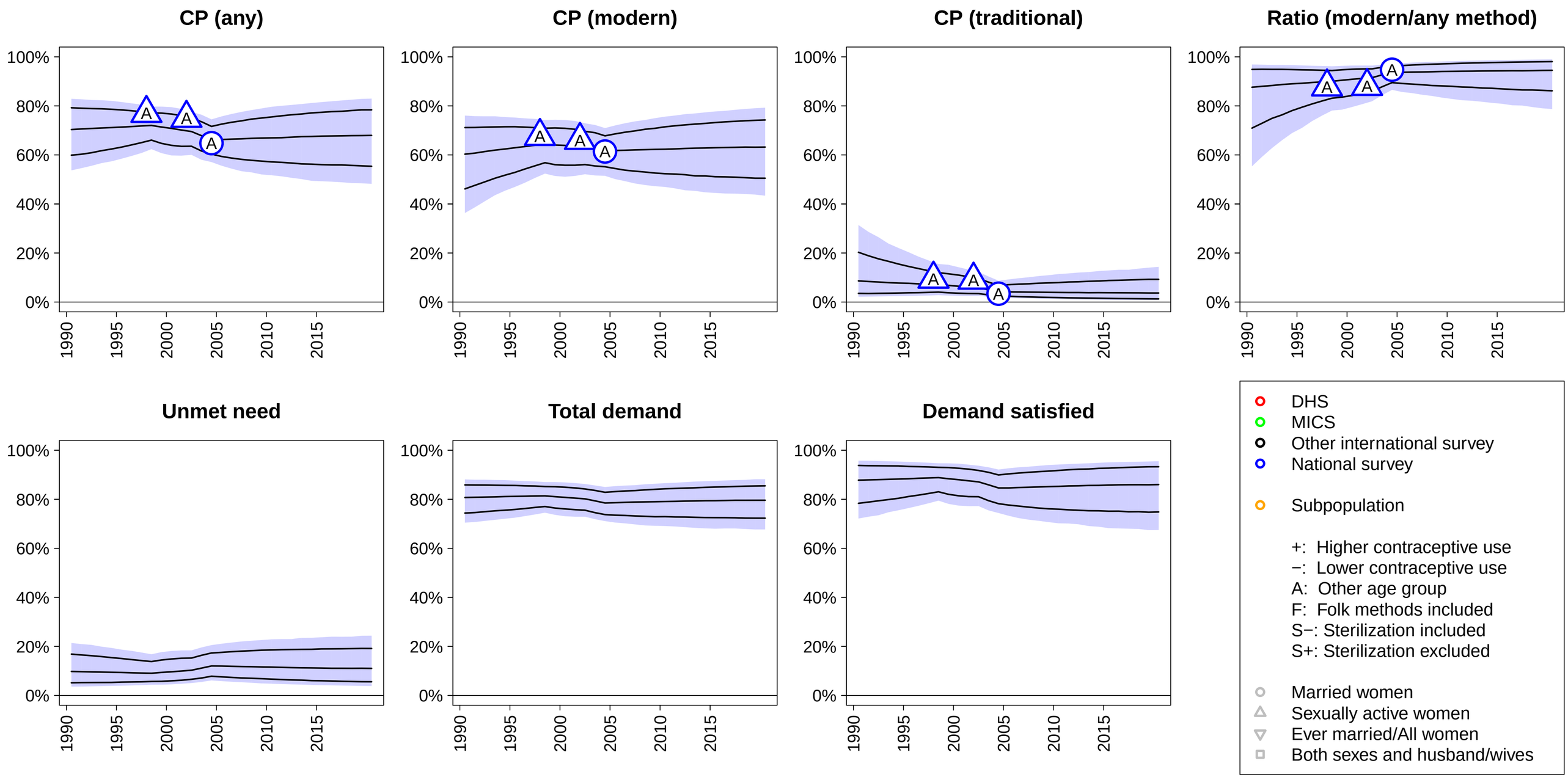
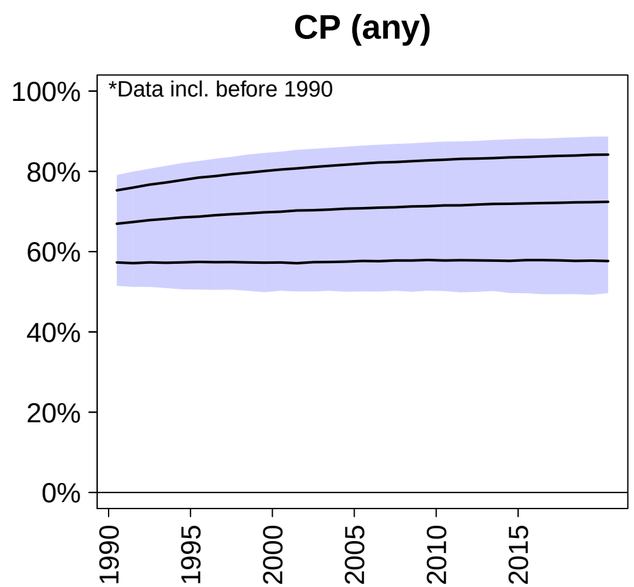
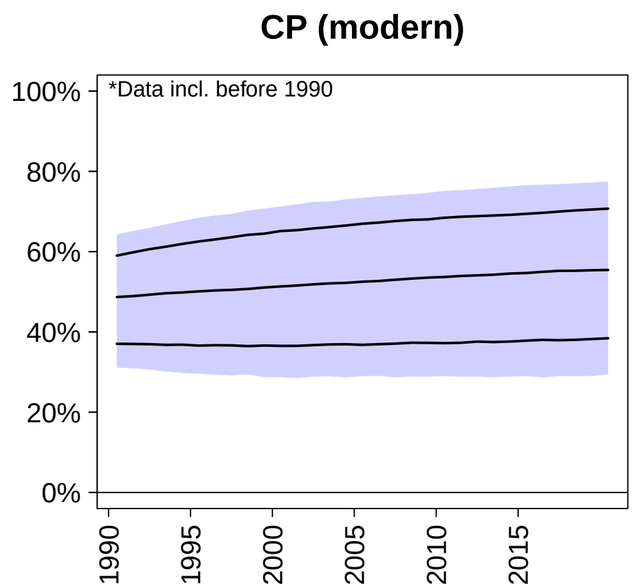
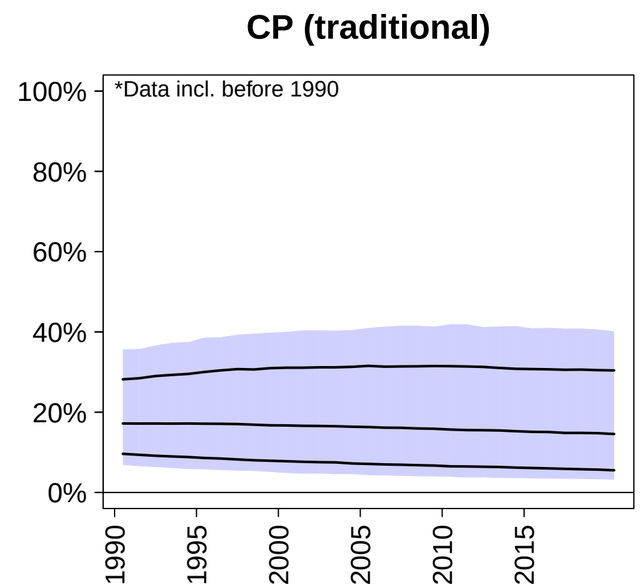
Ireland (Northern Europe)

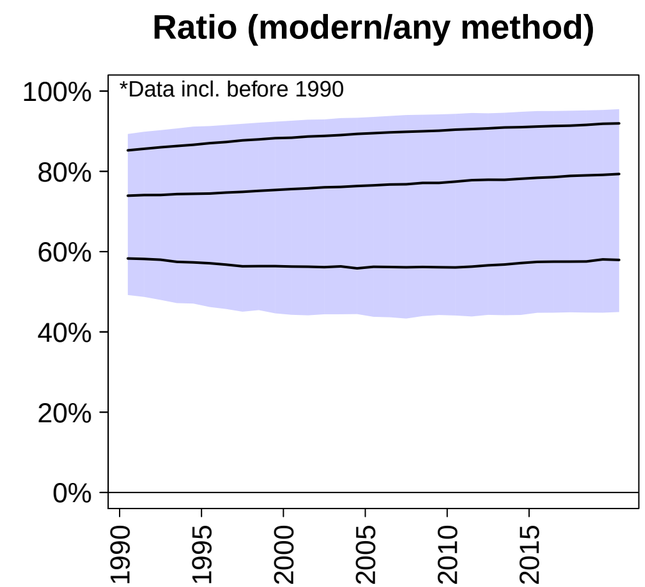


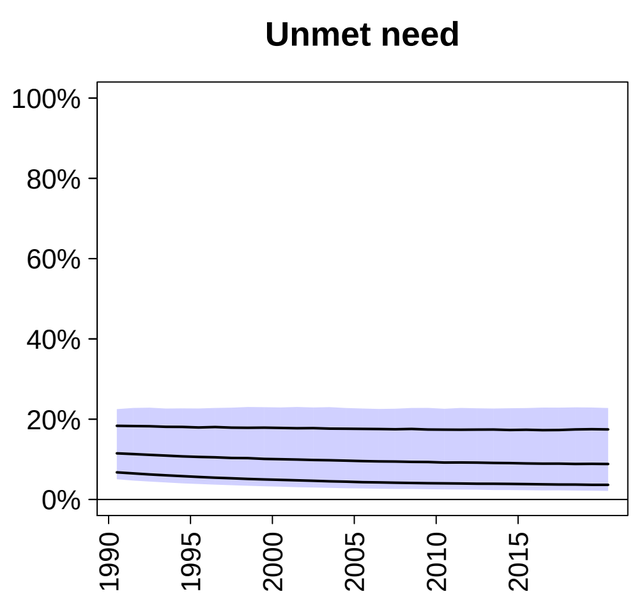
Israel (Western Asia)

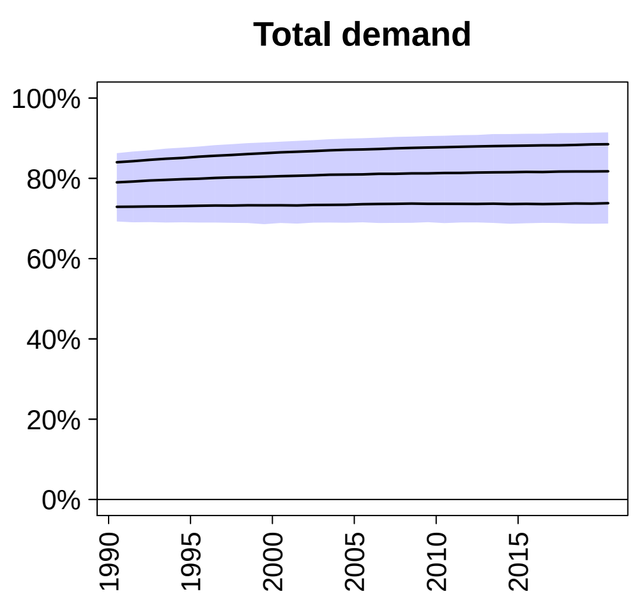


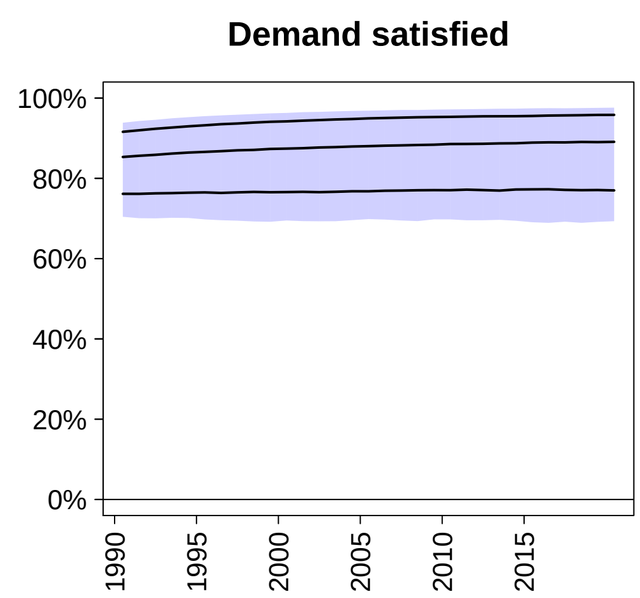












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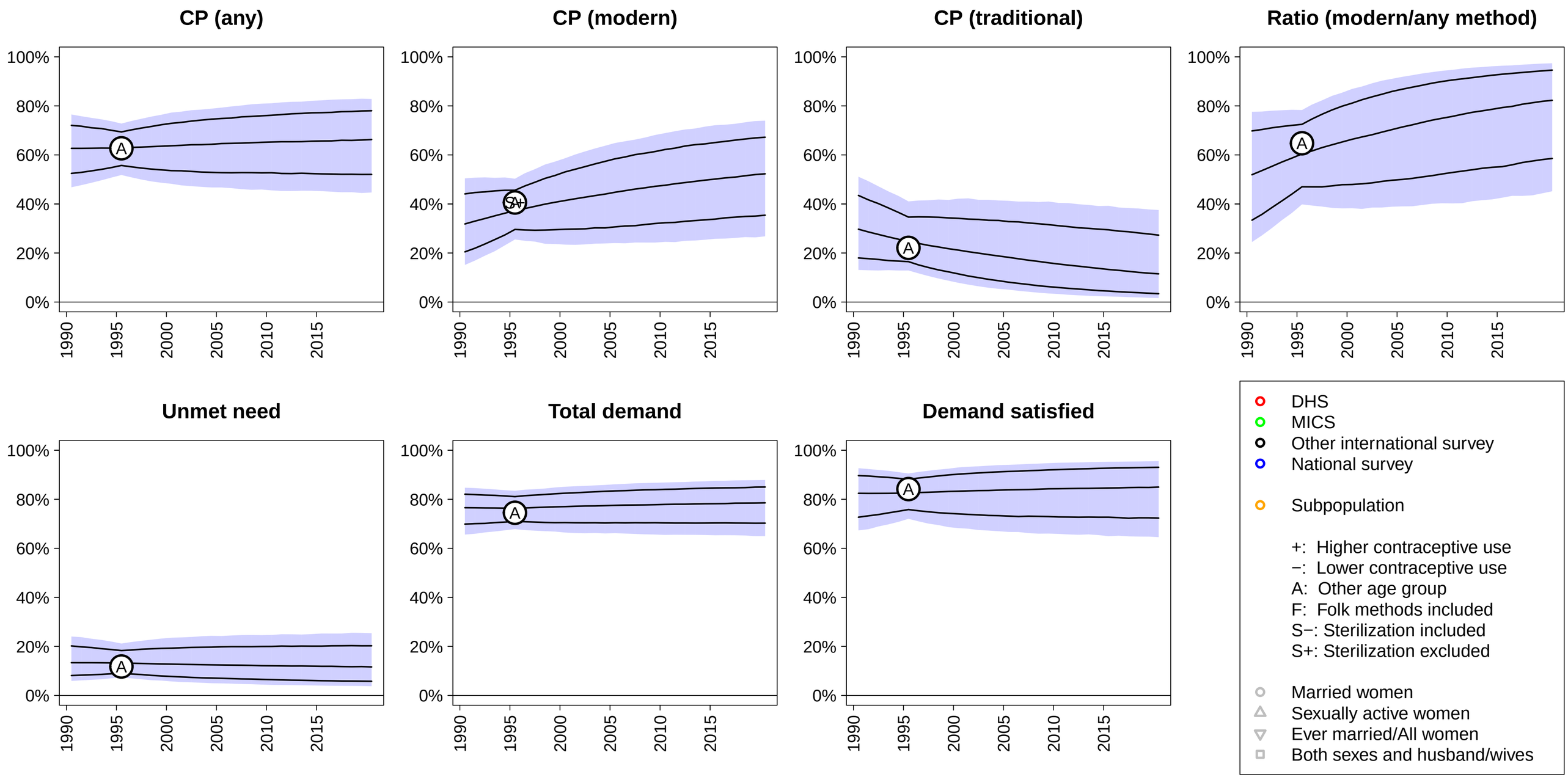
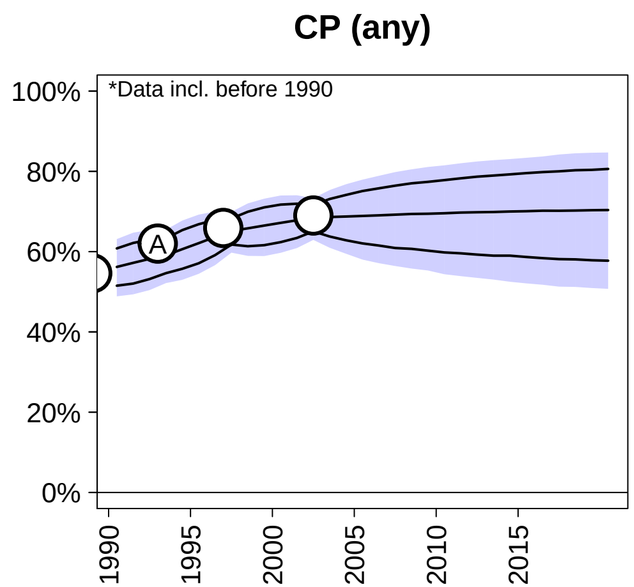
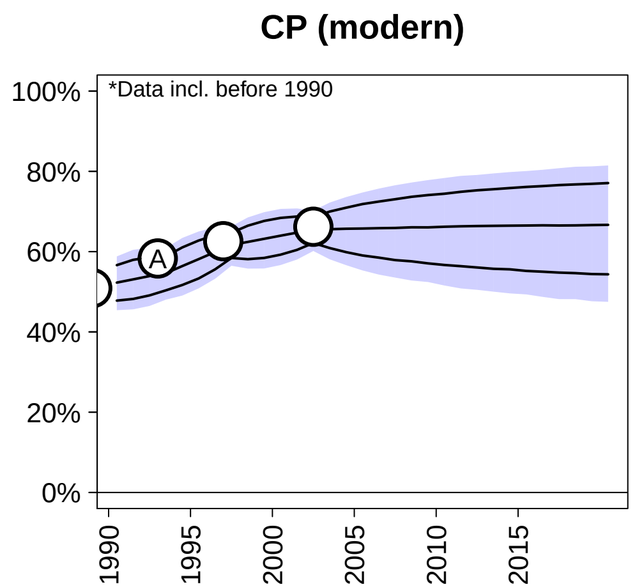
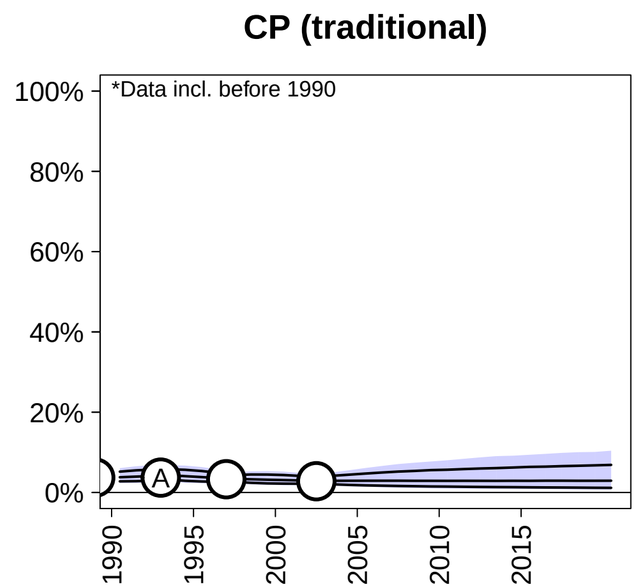
Italy (Southern Europe)

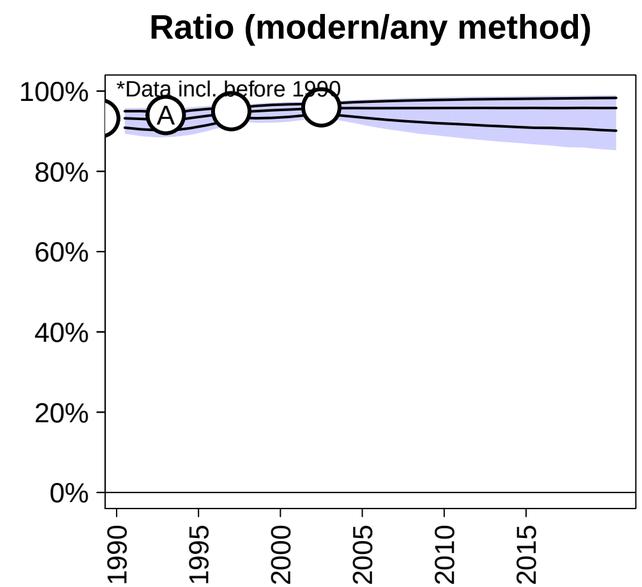


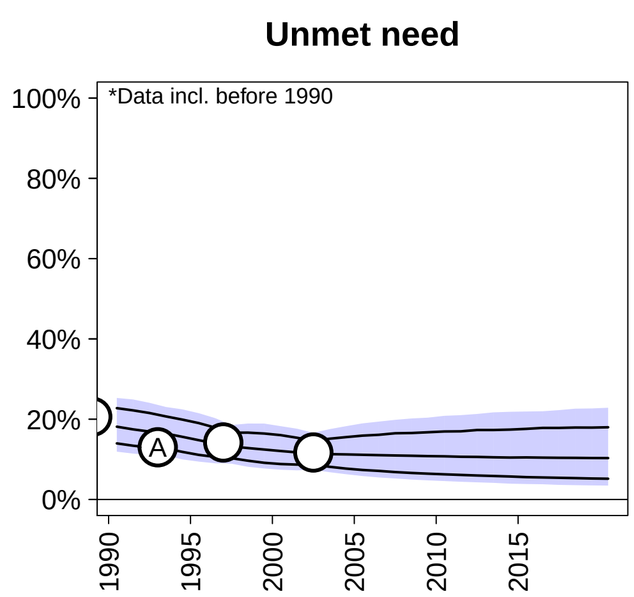
Jamaica (Caribbean)

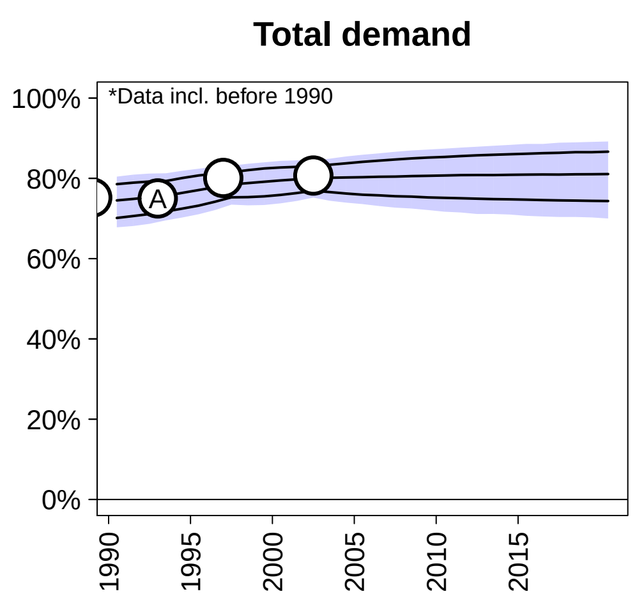


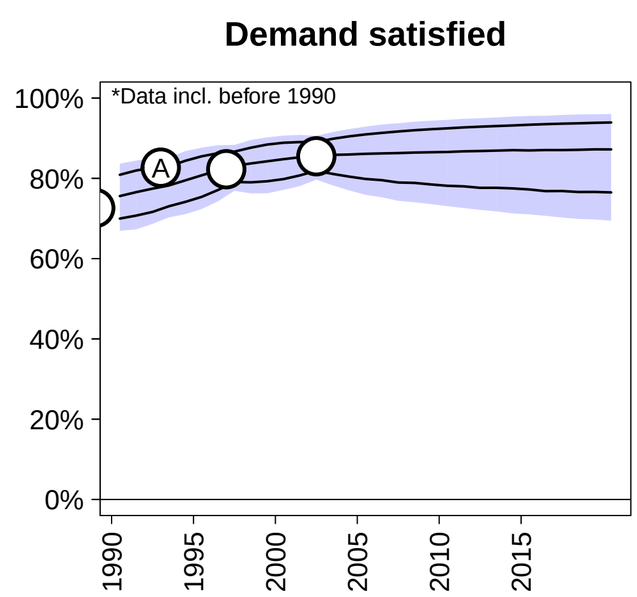












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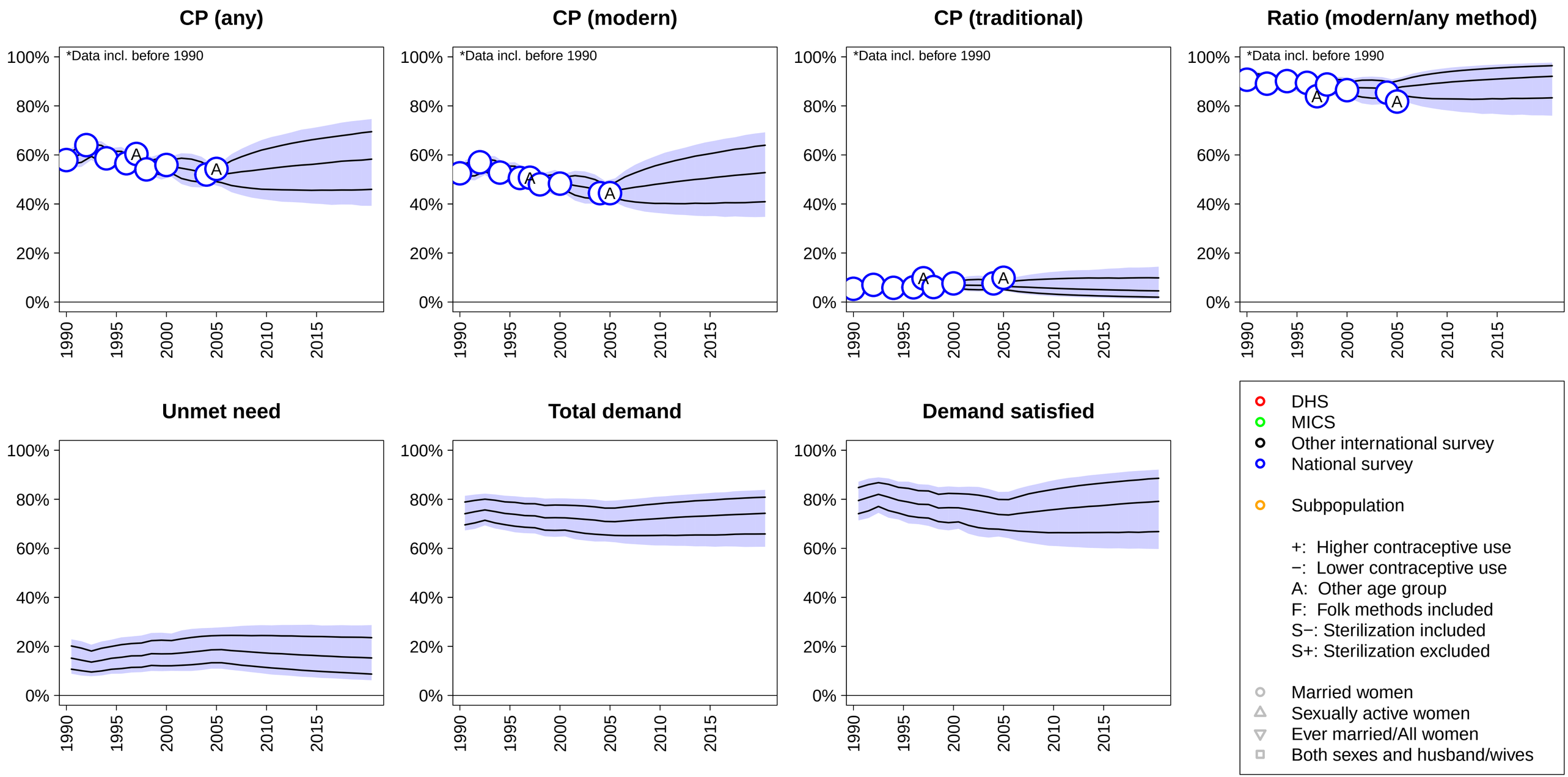
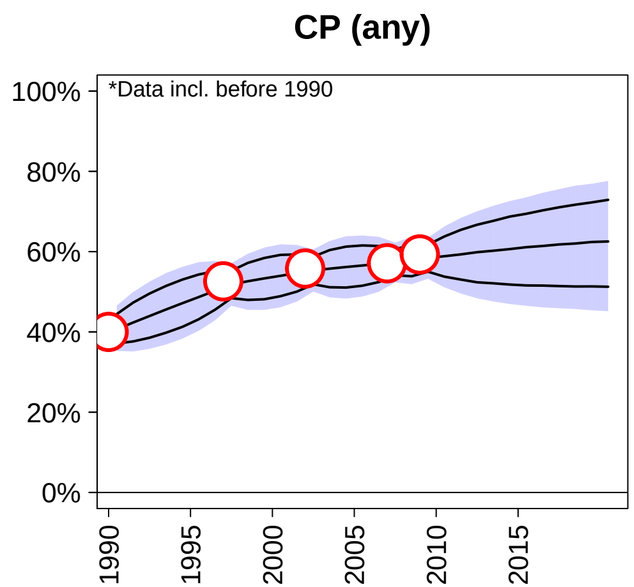
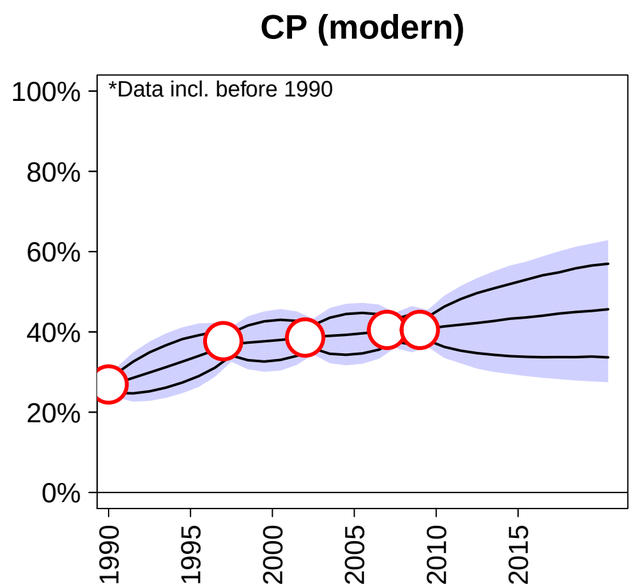
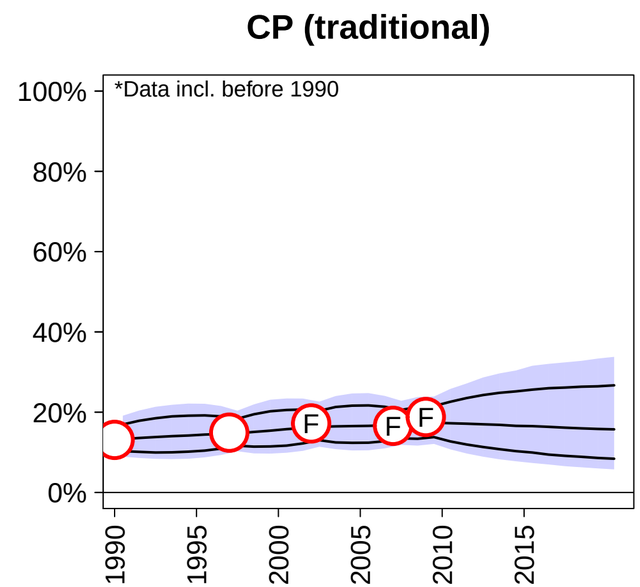
Japan (Eastern Asia)

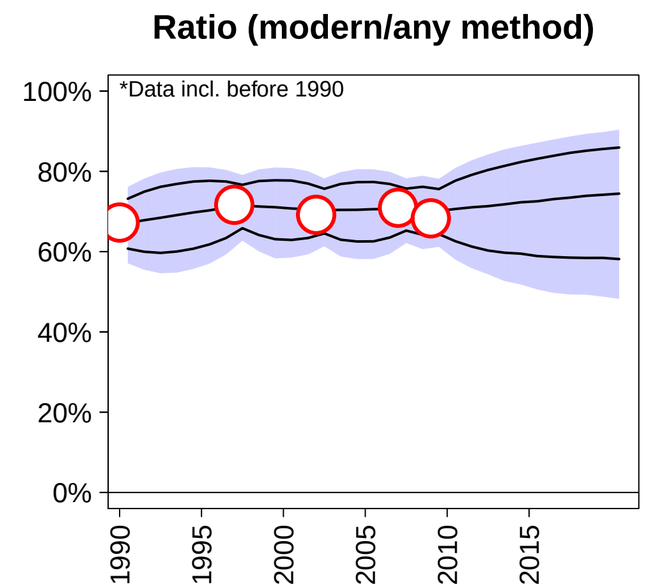


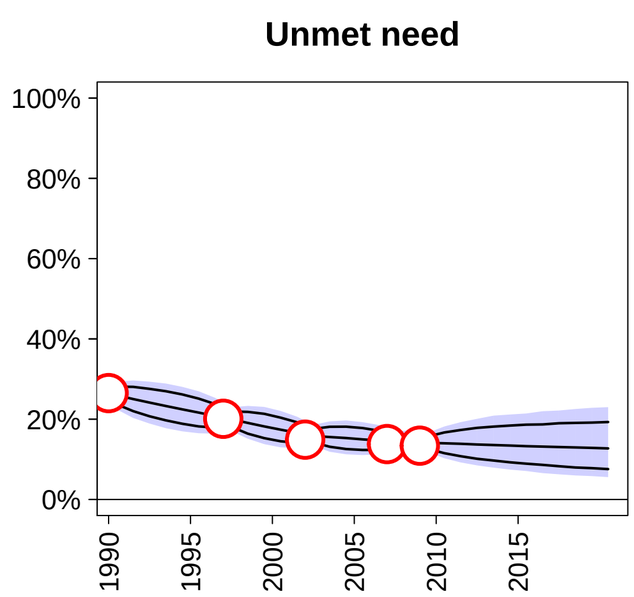
Jordan (Western Asia)

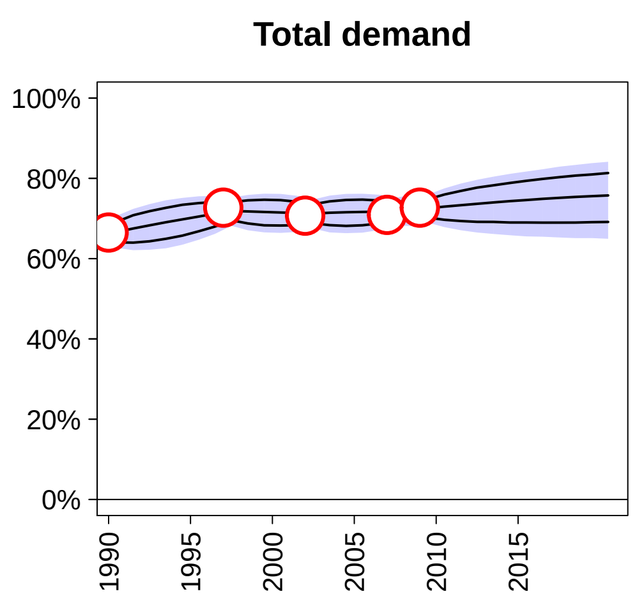


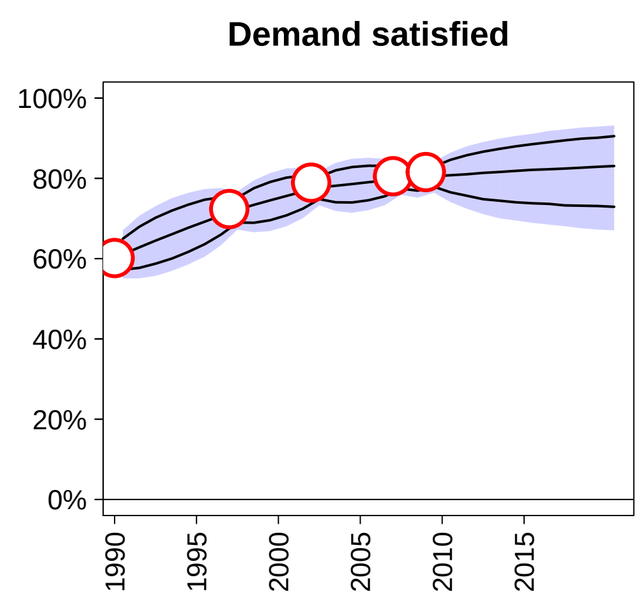












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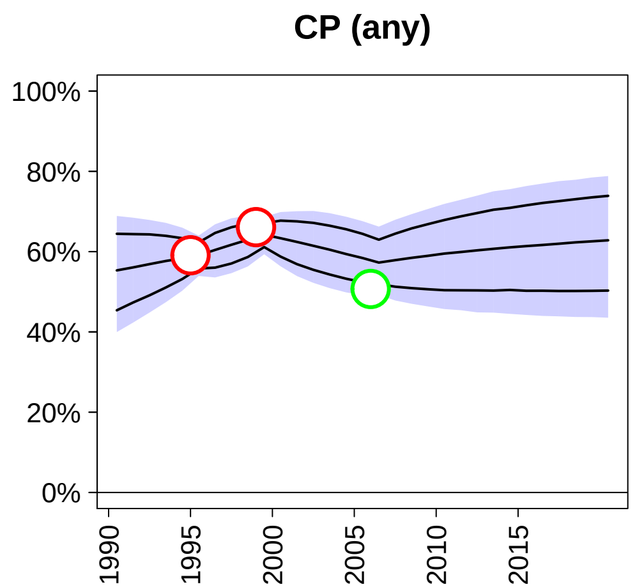
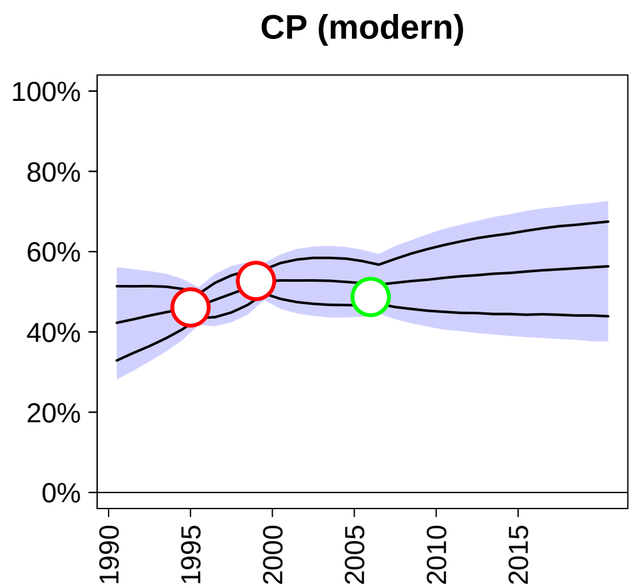
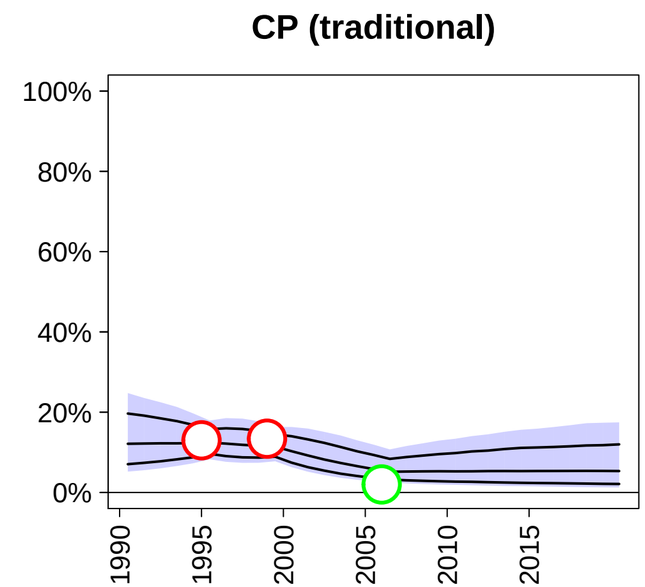
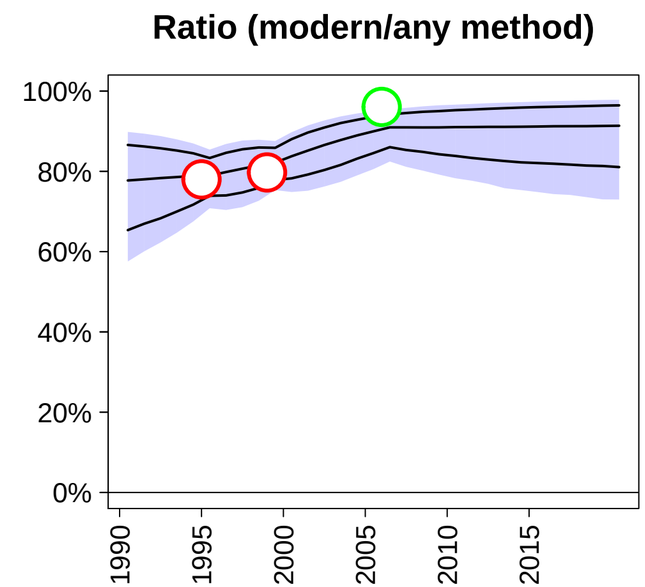
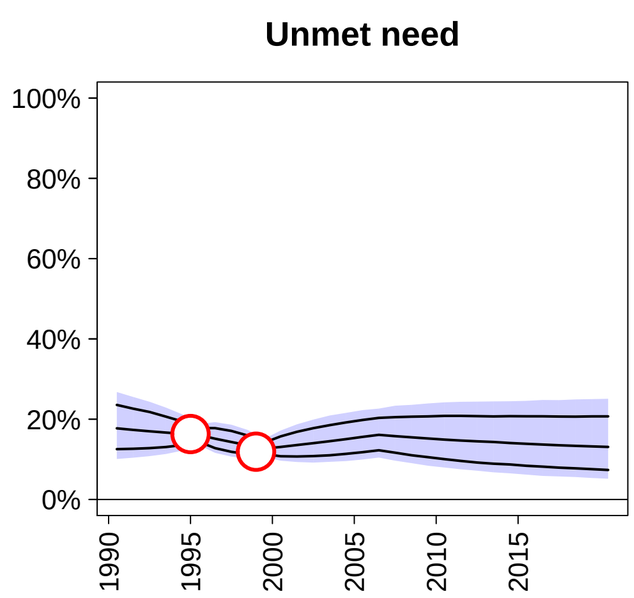
Kazakhstan (Central Asia)

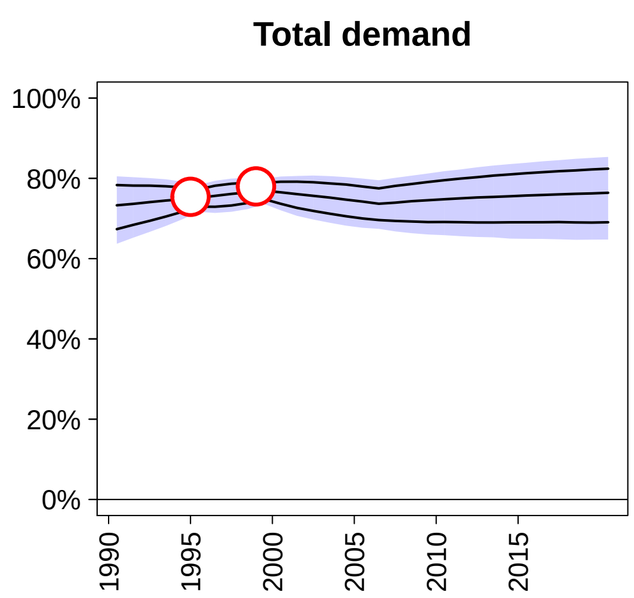


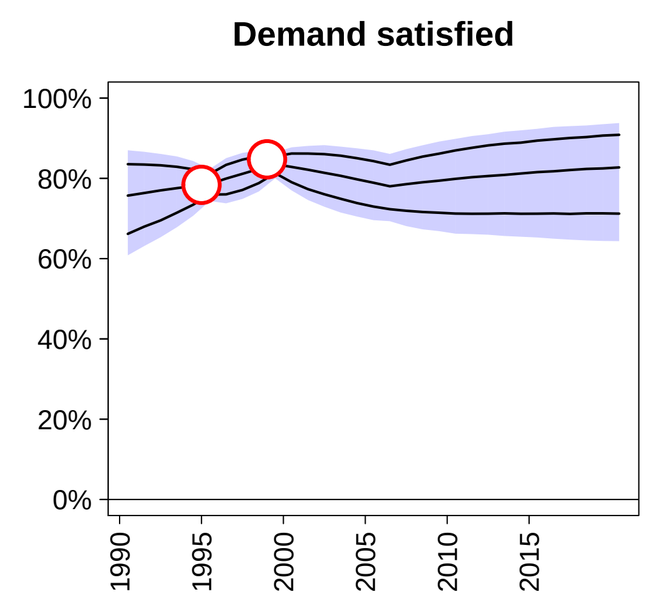












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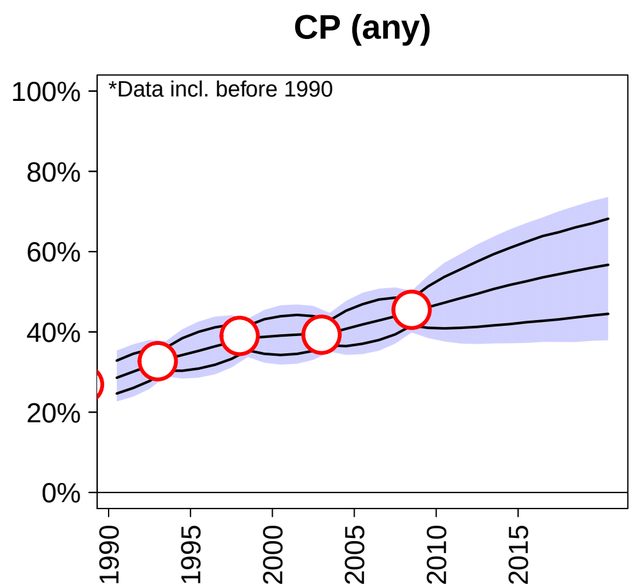
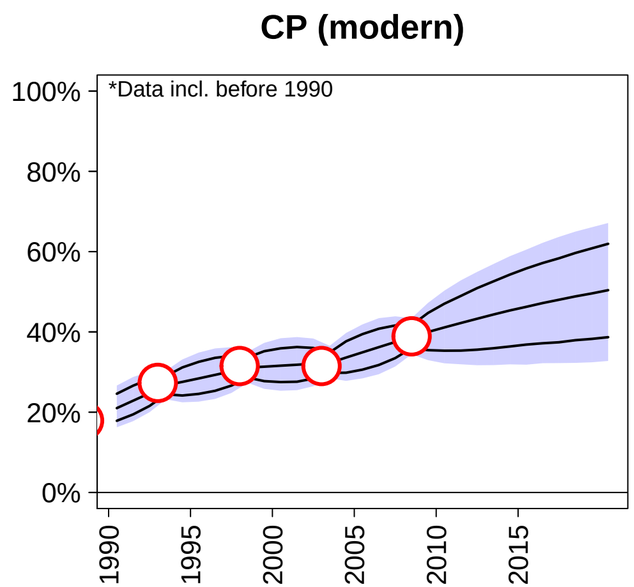
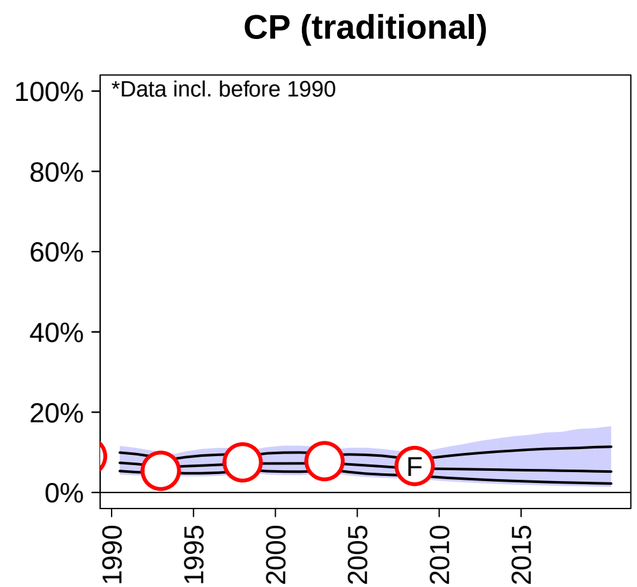
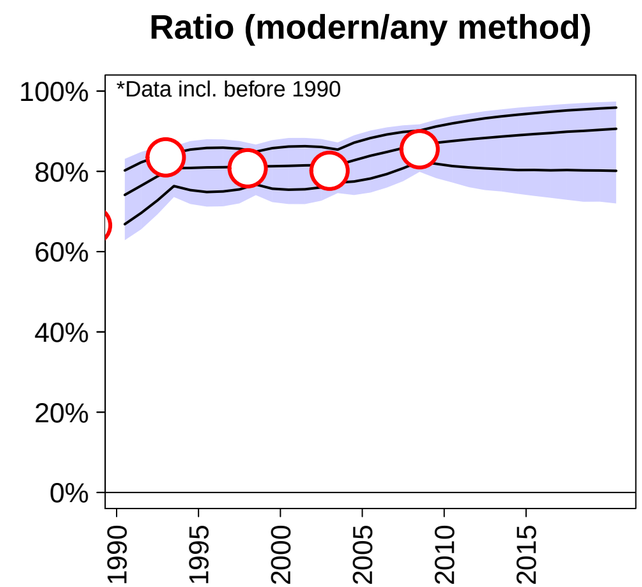
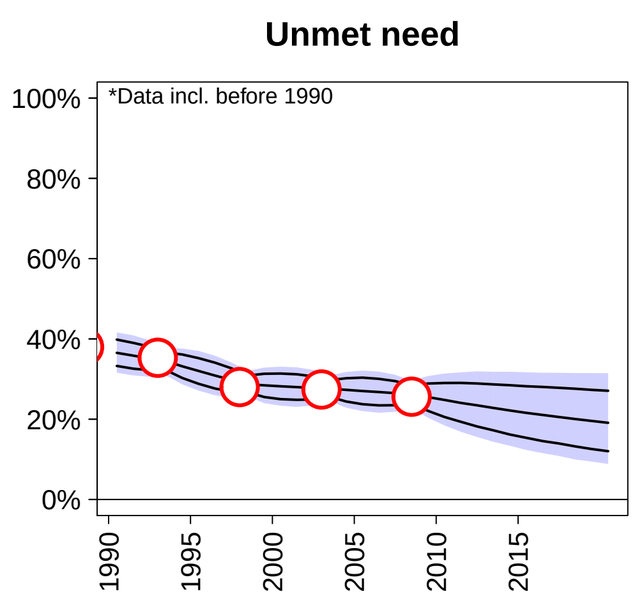
Kenya (Eastern Africa)

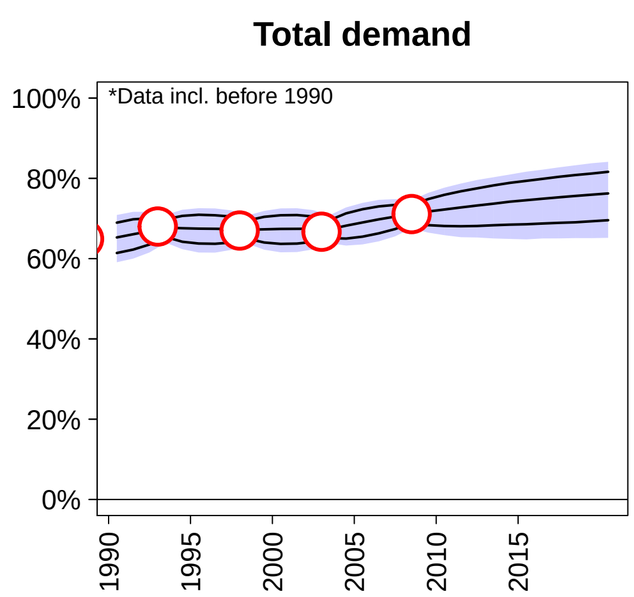


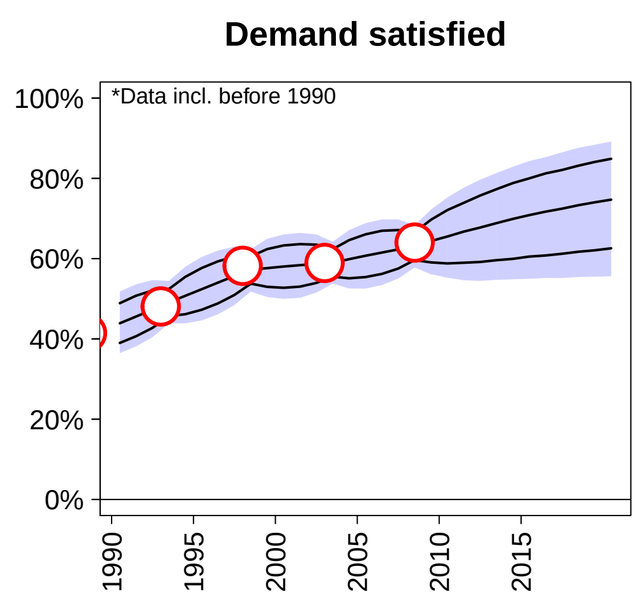












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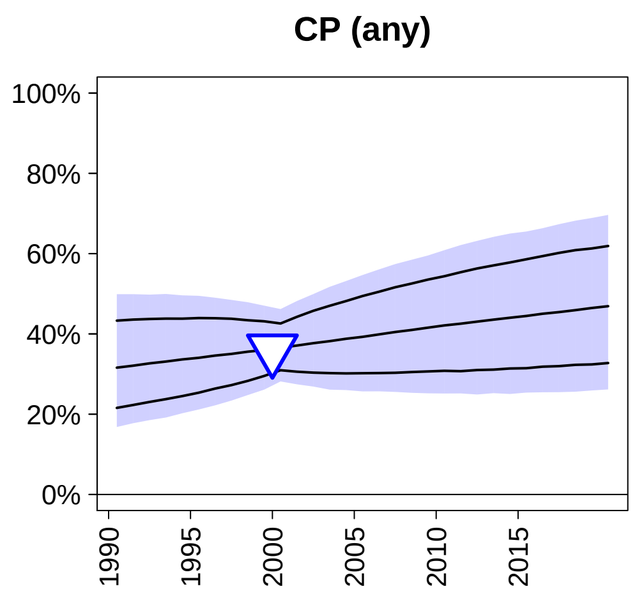
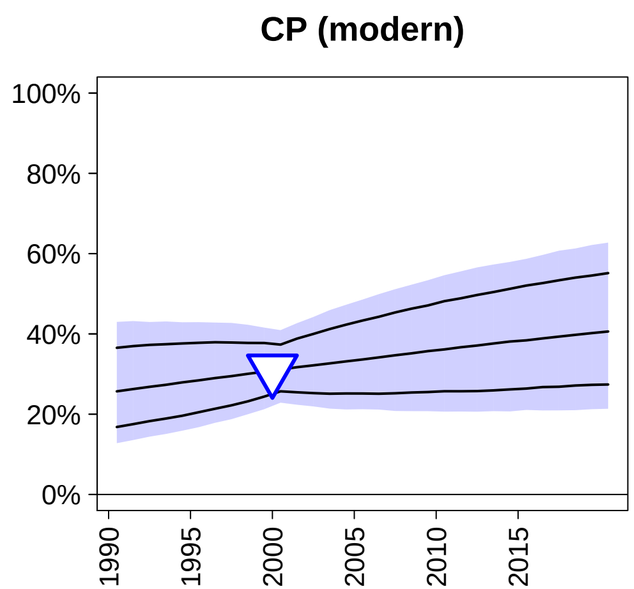
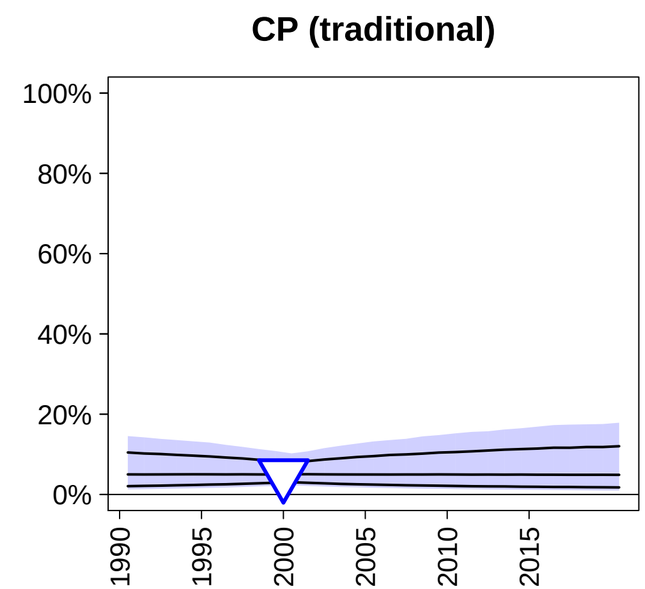
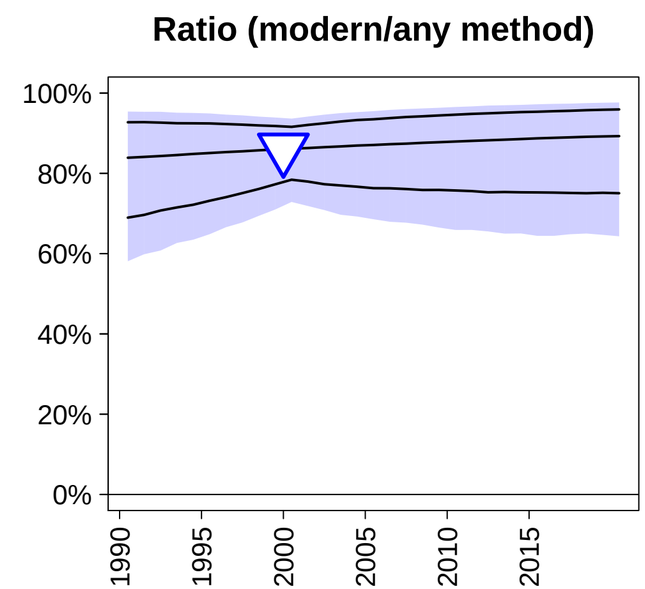
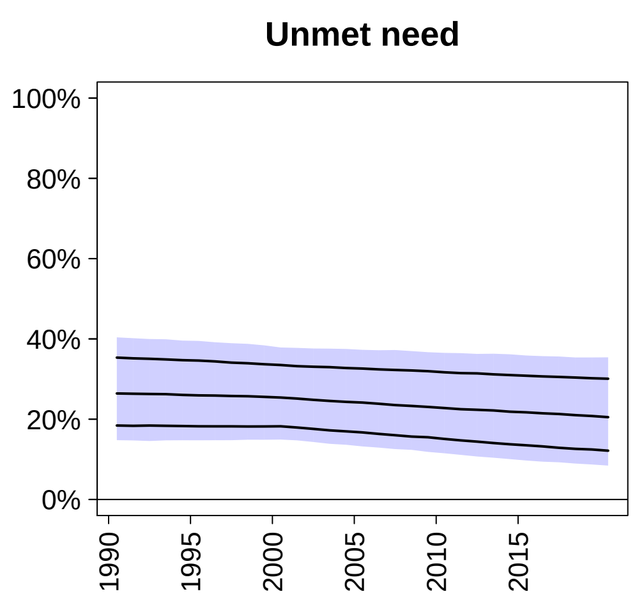
Kiribati (Micronesia)

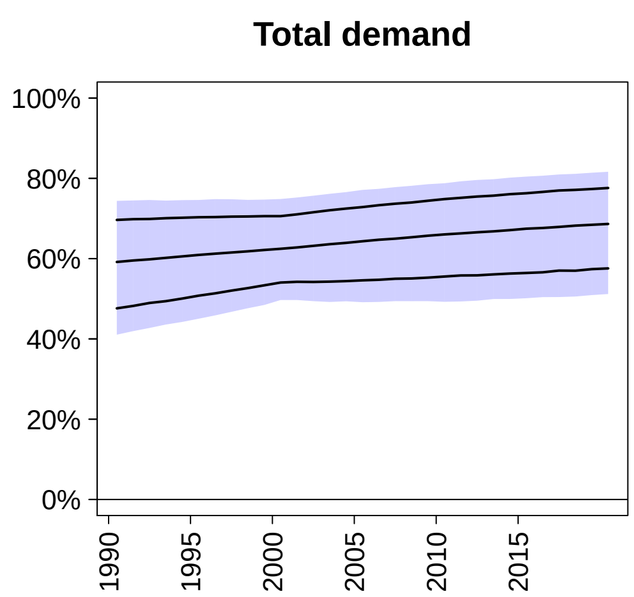


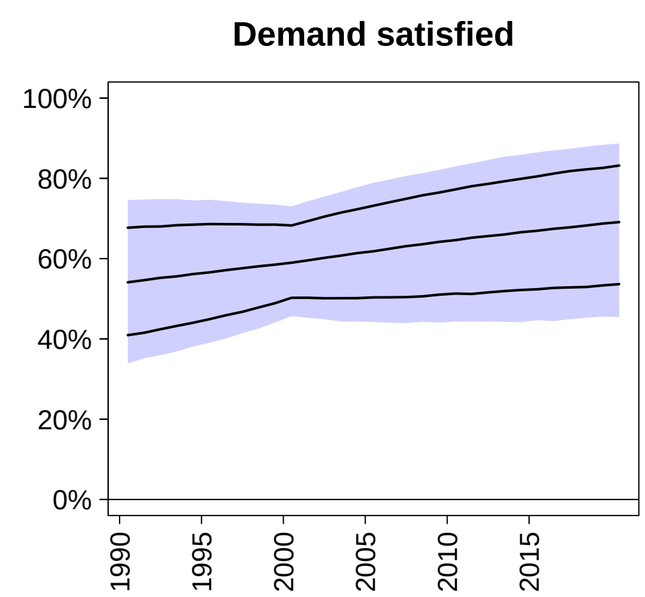












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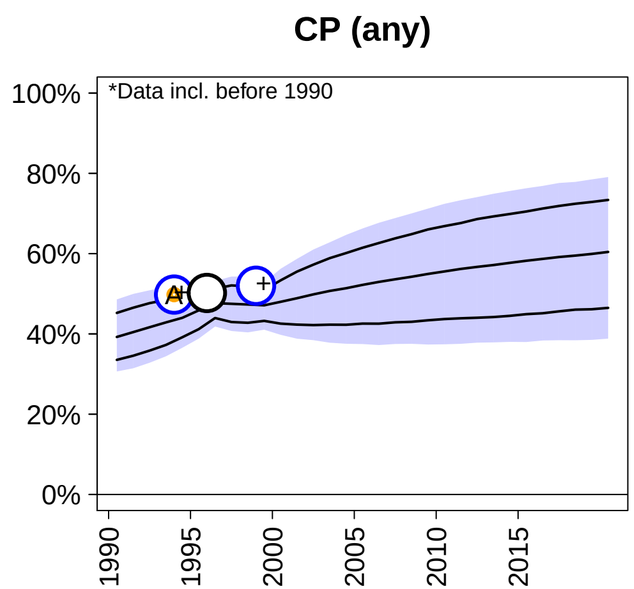
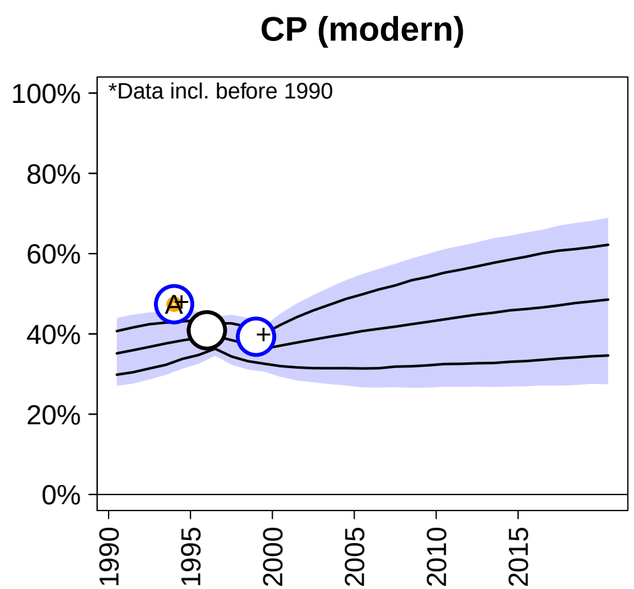
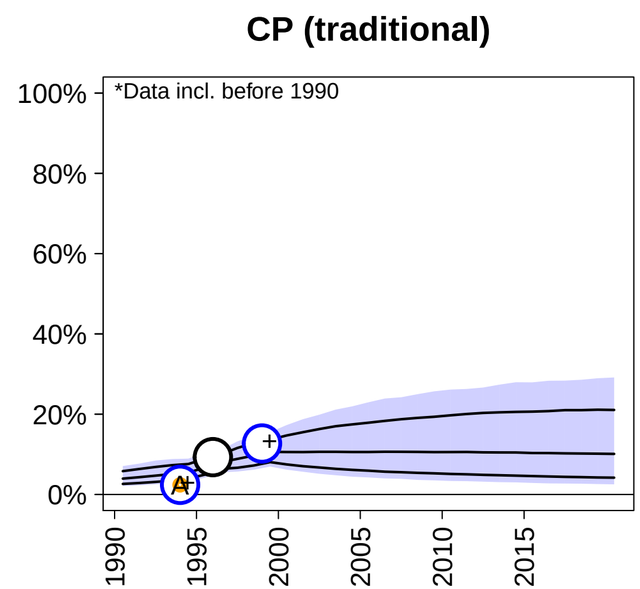
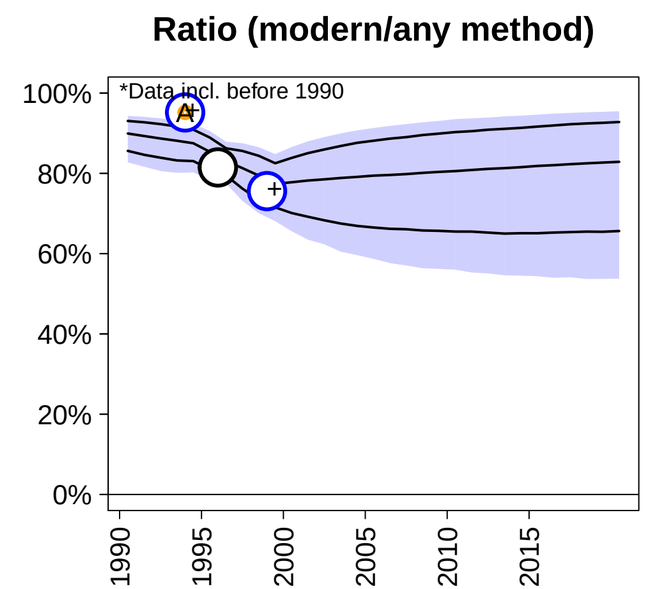
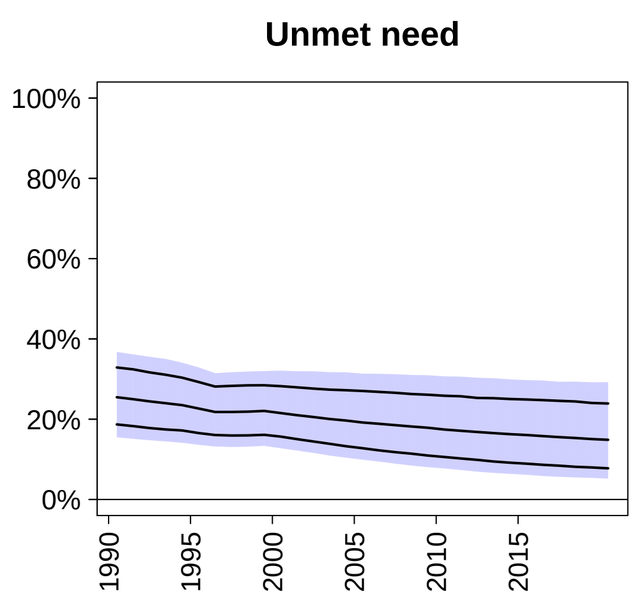
Kuwait (Western Asia)

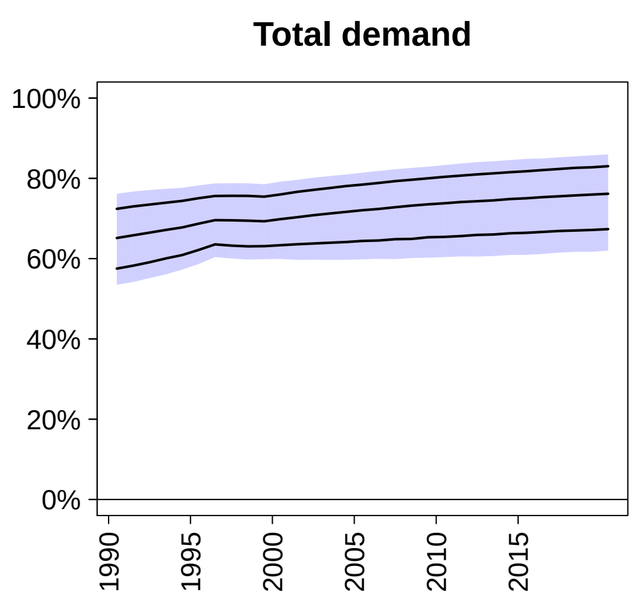


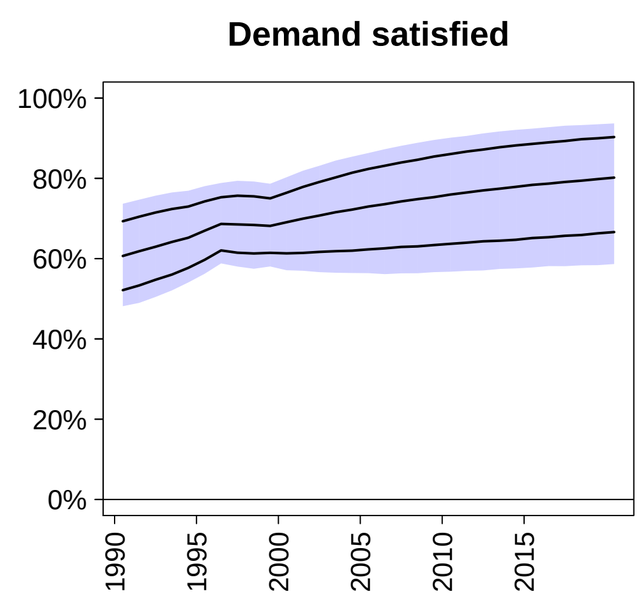












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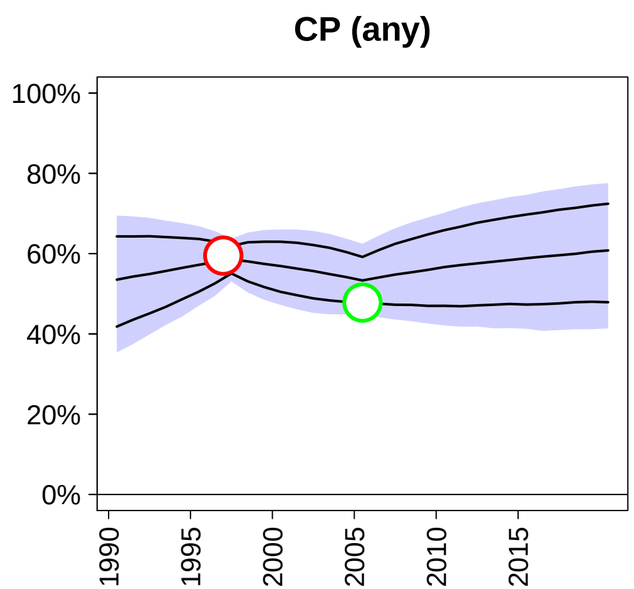
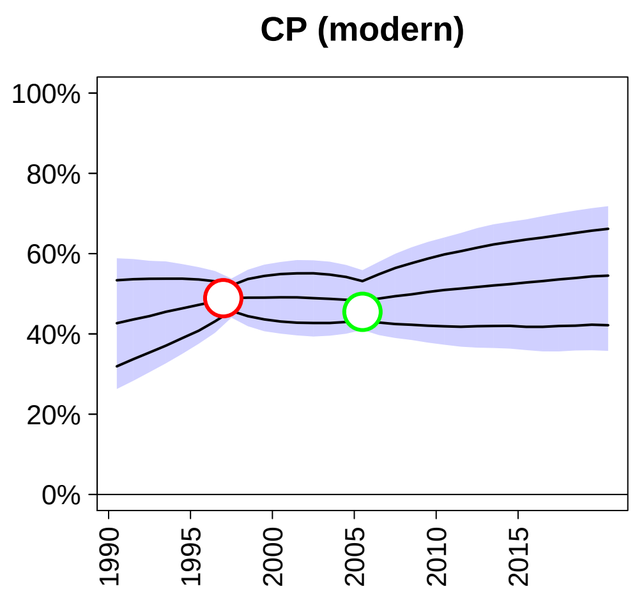
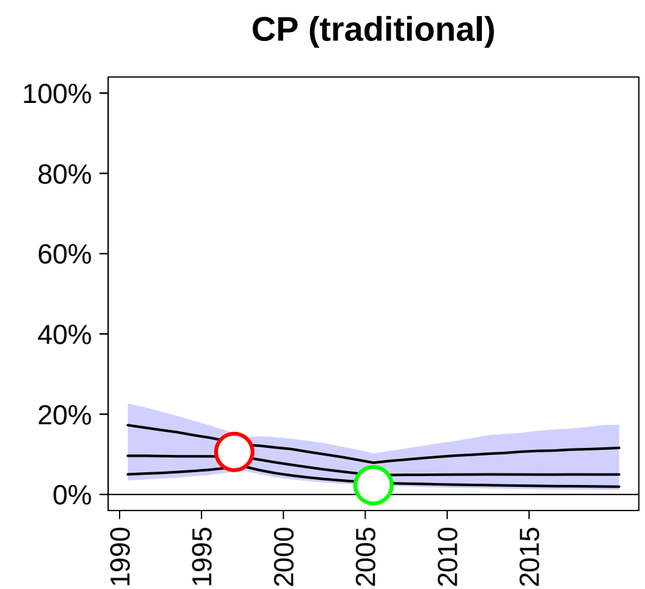
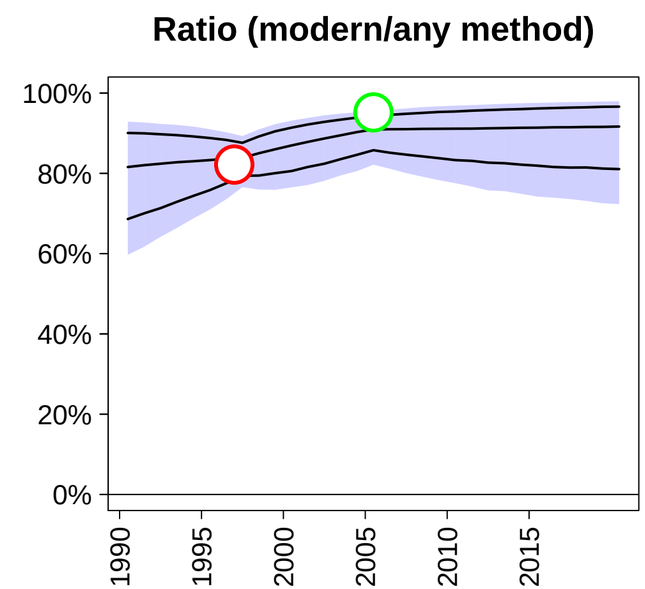
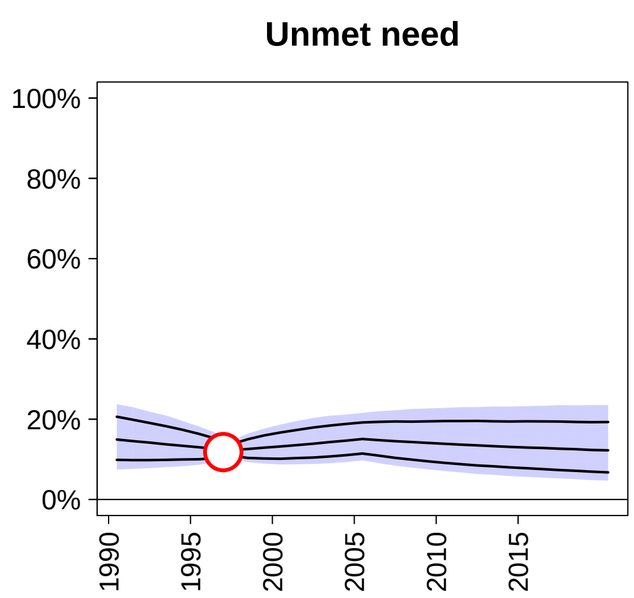
Kyrgyzstan (Central Asia)

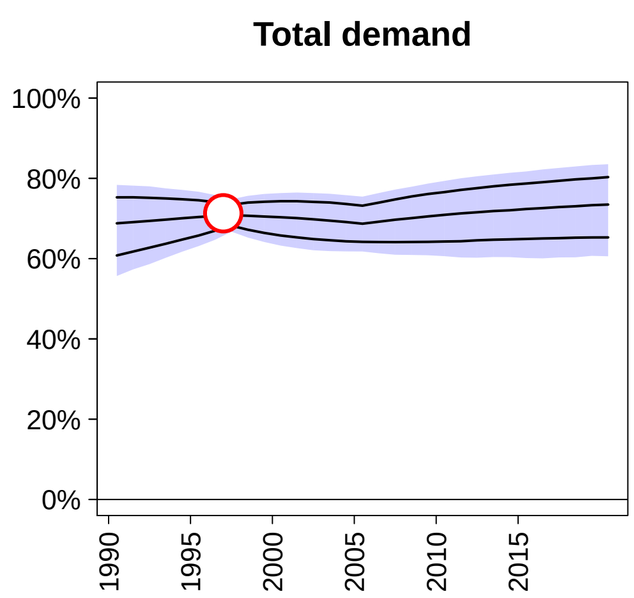


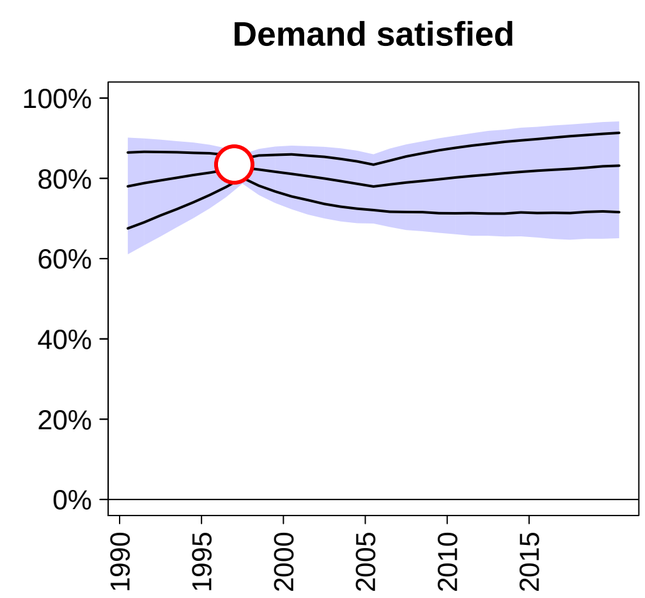












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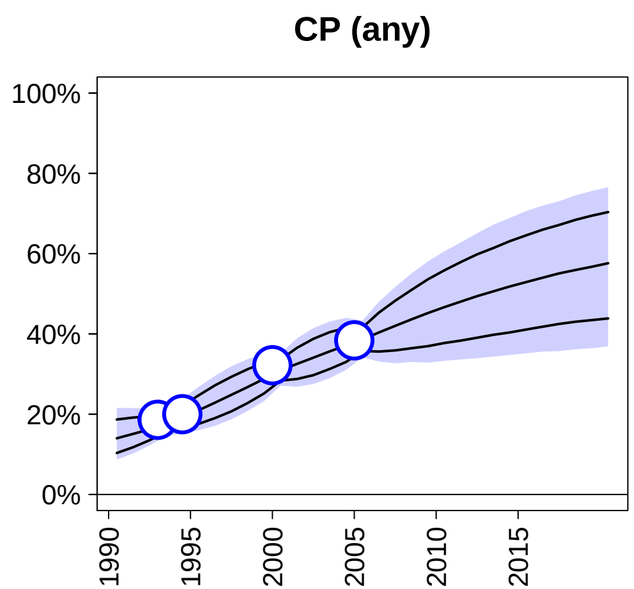
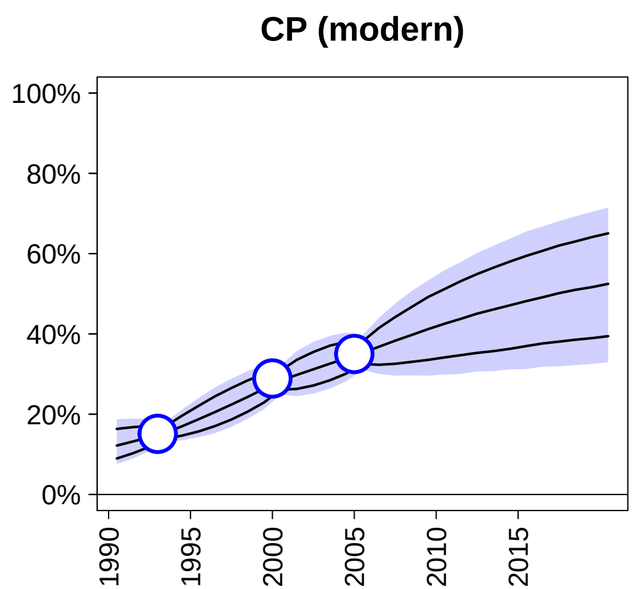
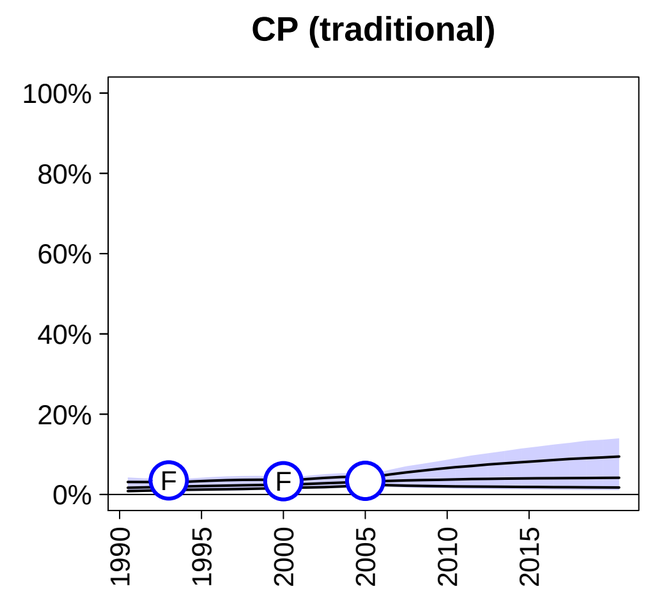
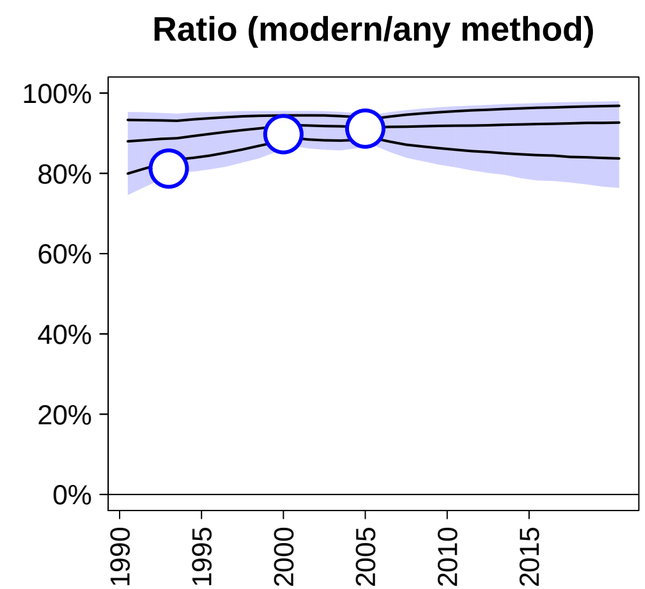
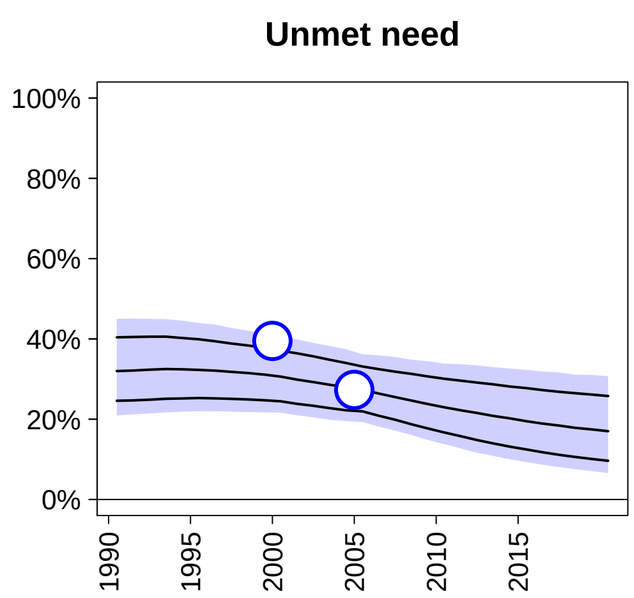
Lao People's Democratic Republic (South−Eastern Asia)

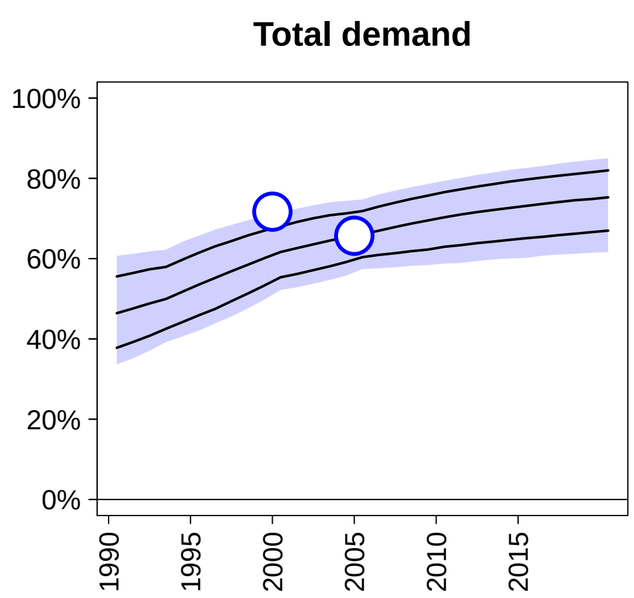


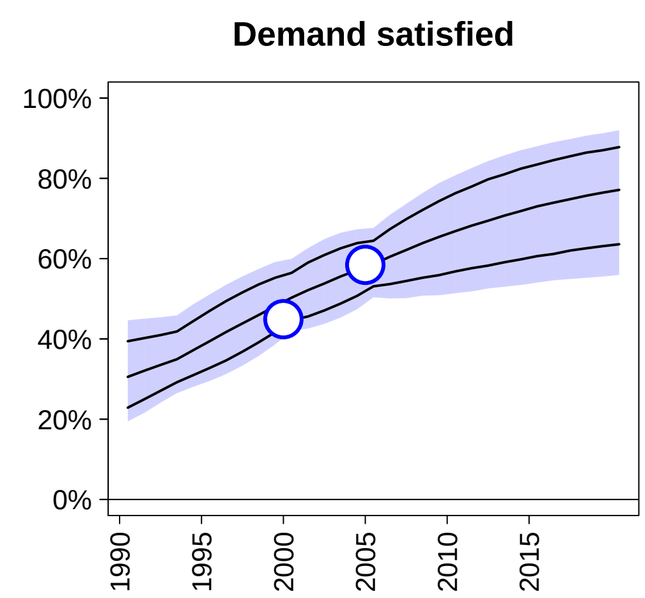












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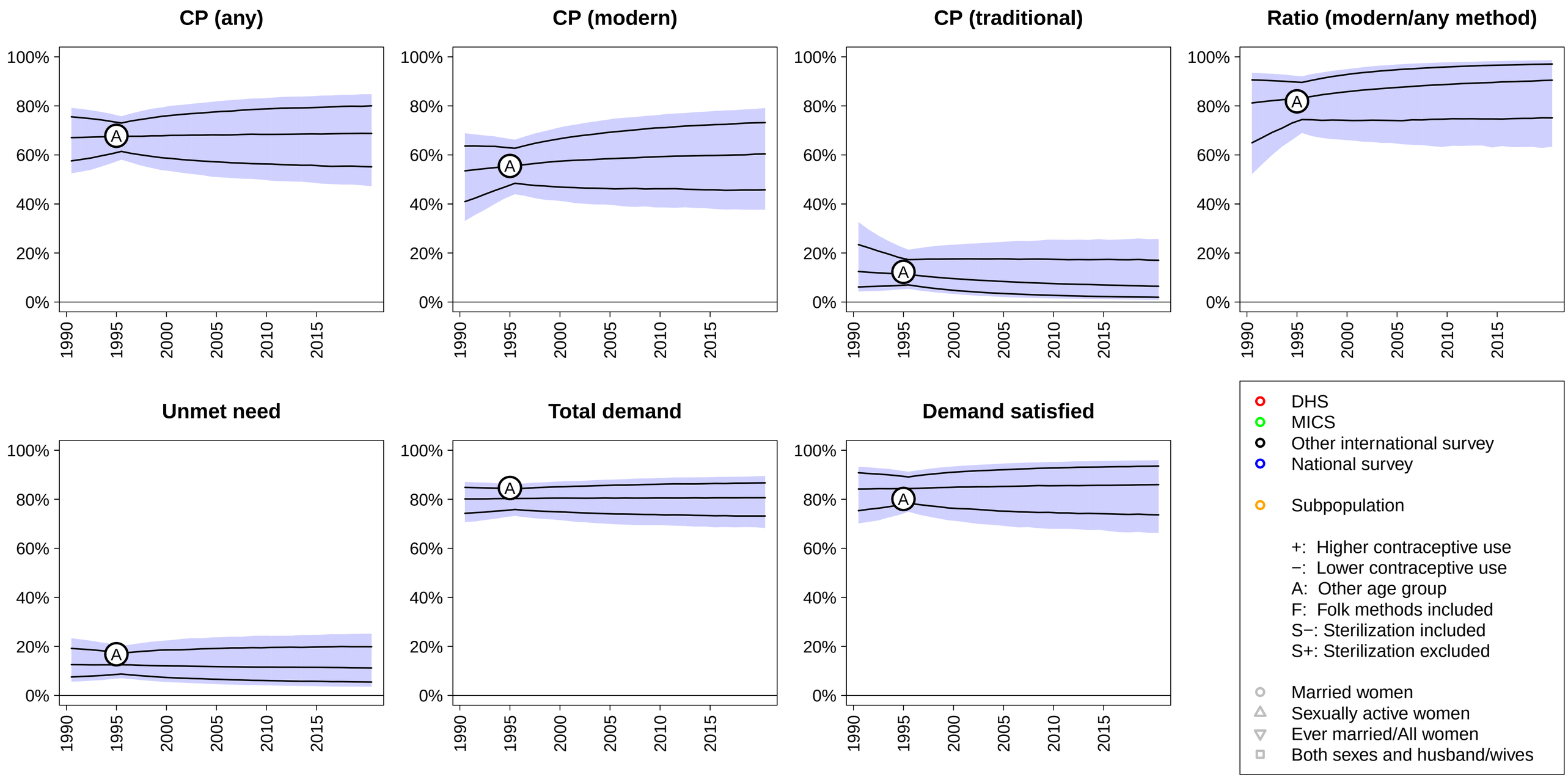
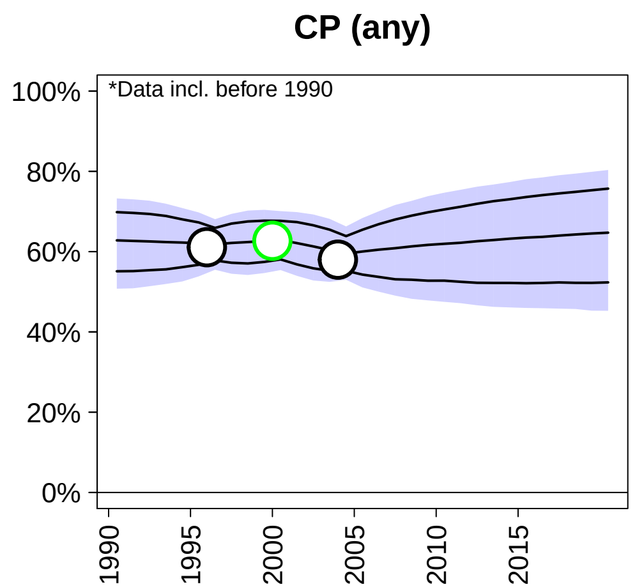
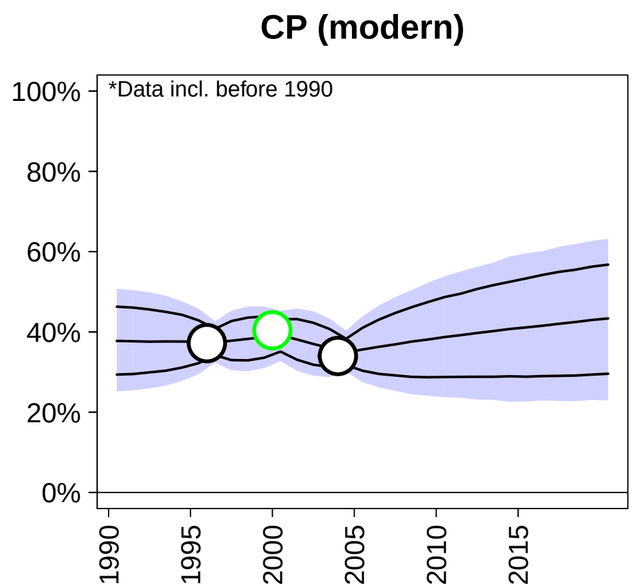
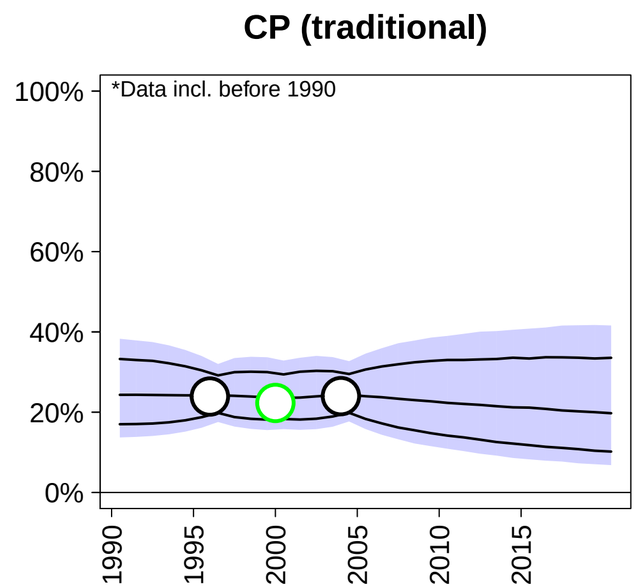
Latvia (Northern Europe)

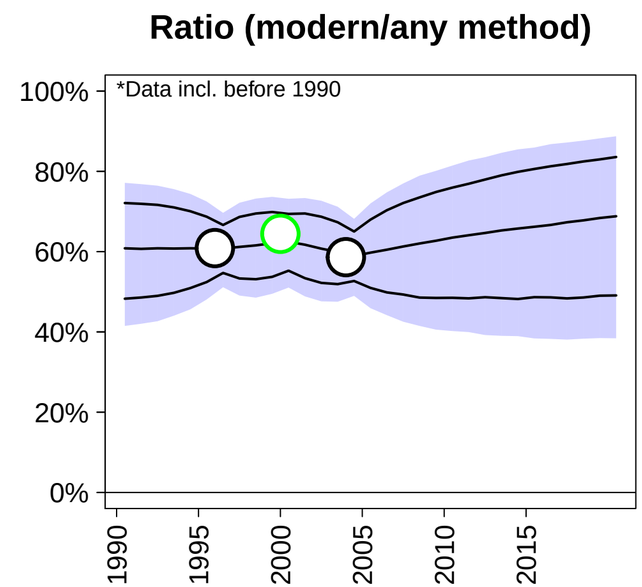


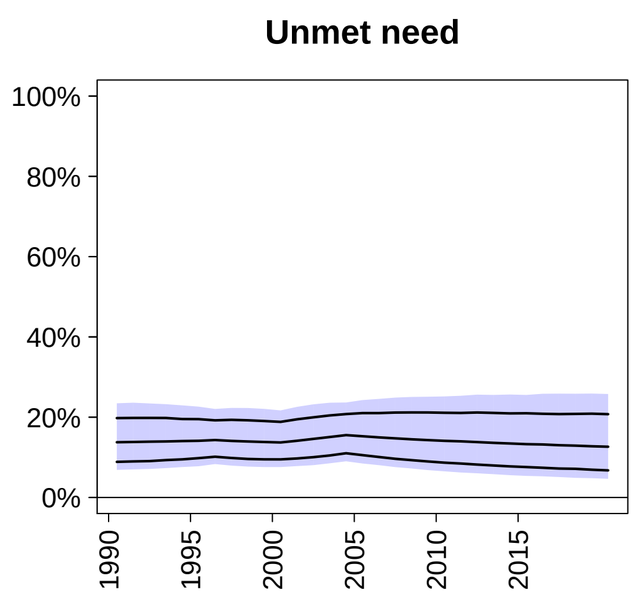
Lebanon (Western Asia)

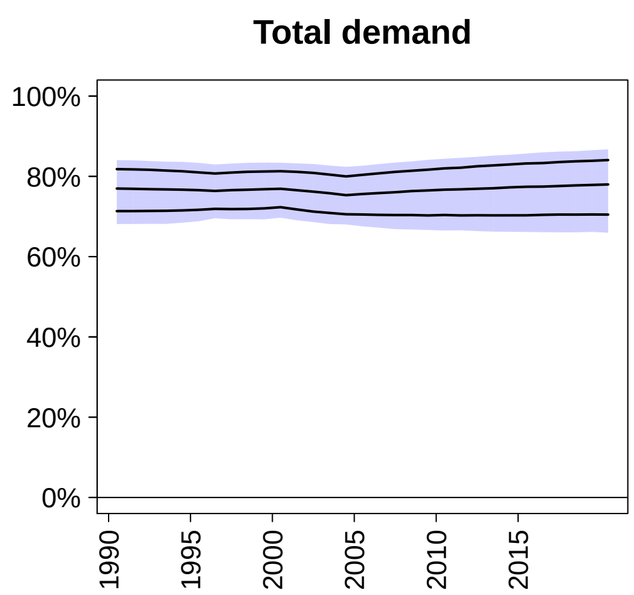


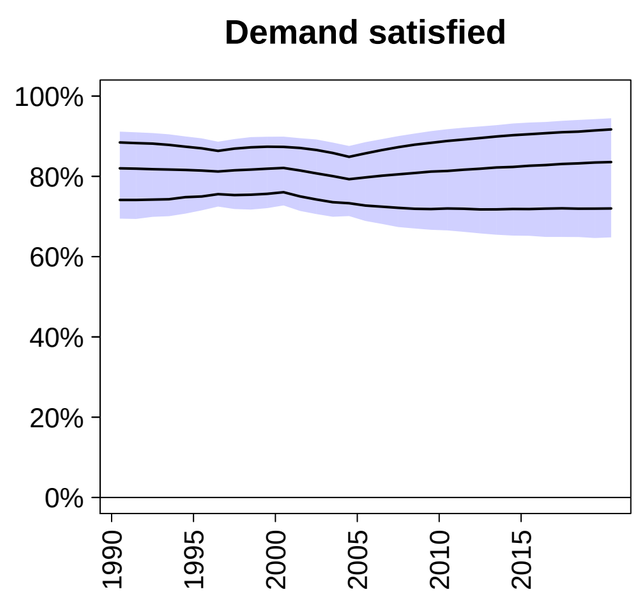












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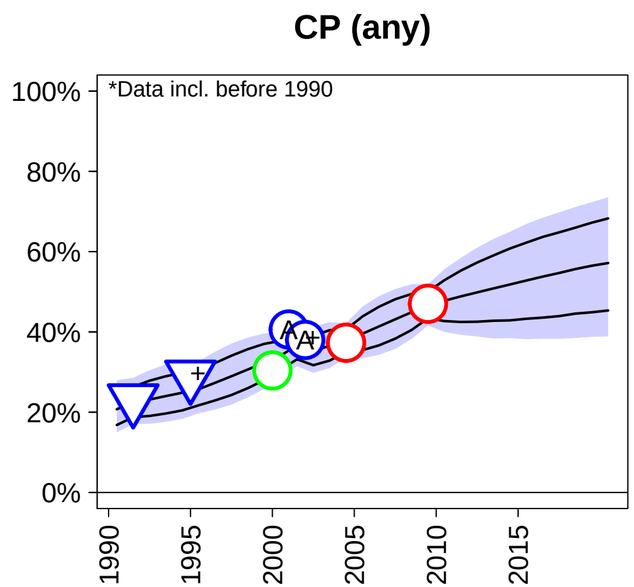
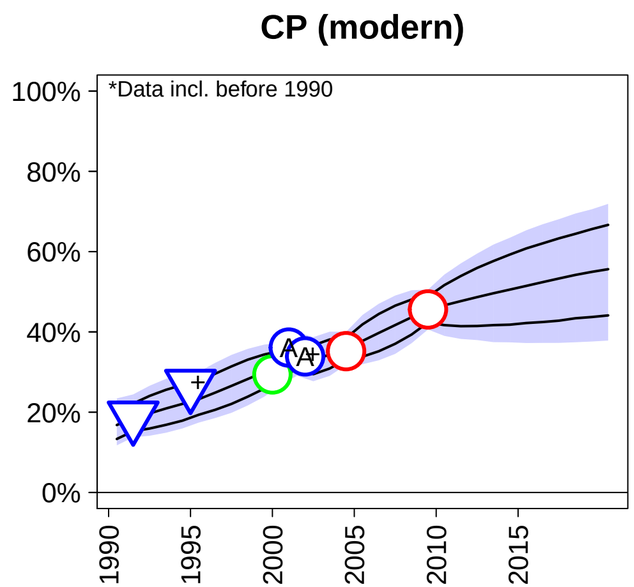
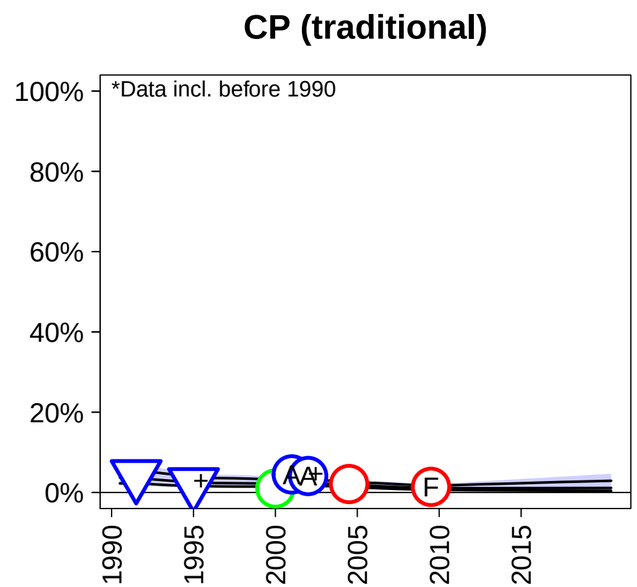
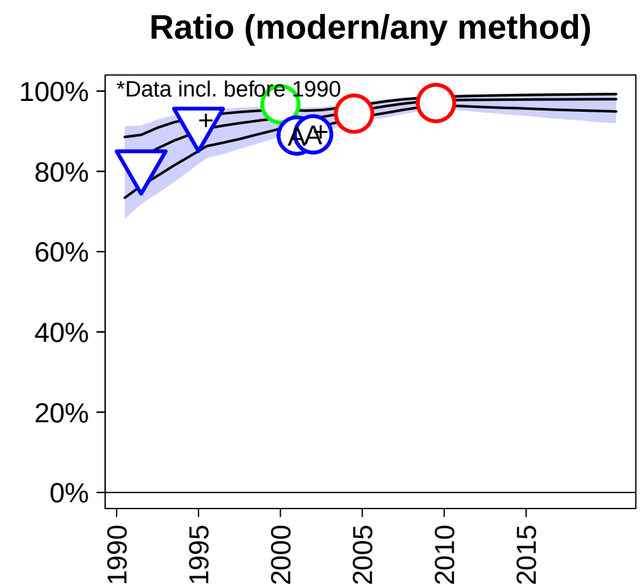
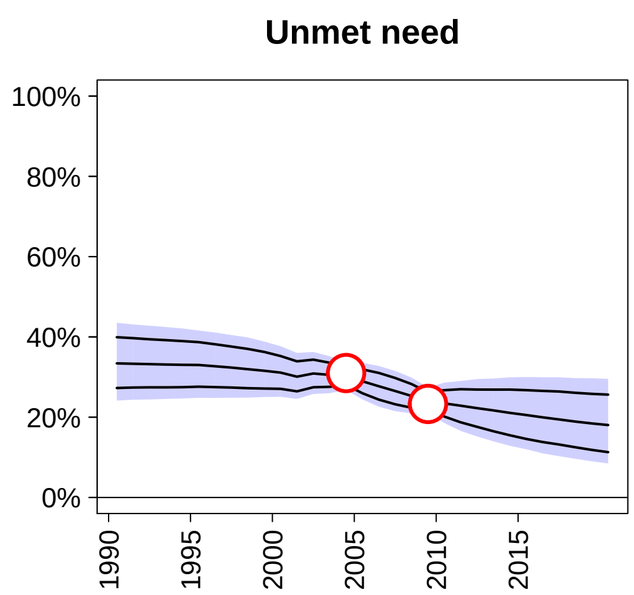
Lesotho (Southern Africa)

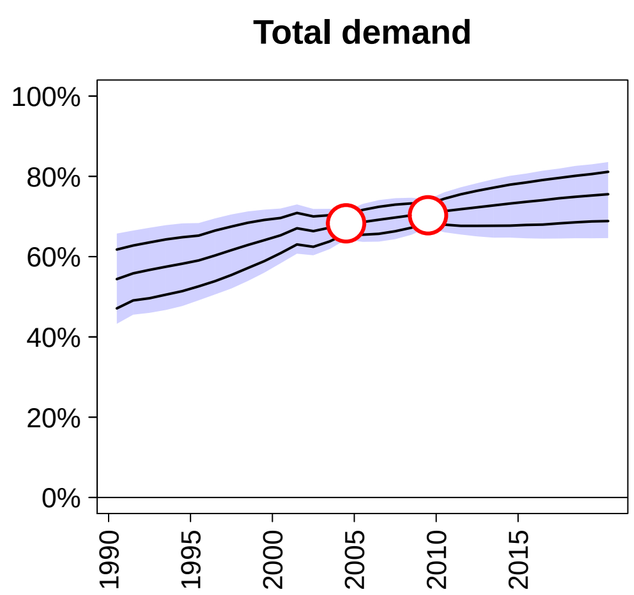


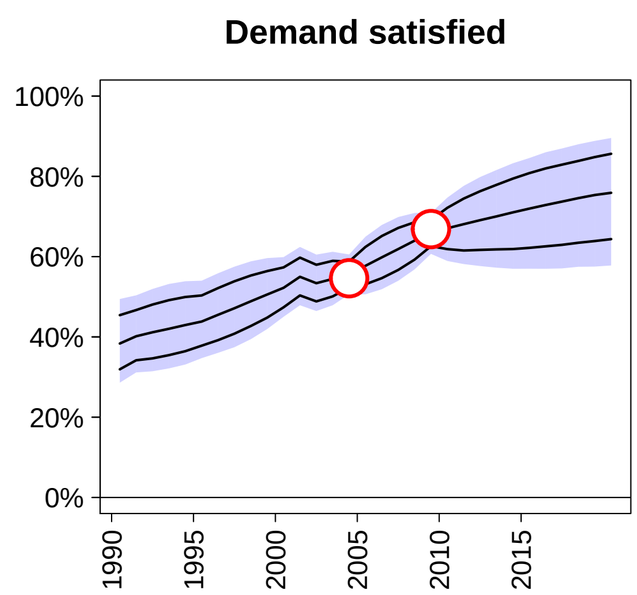












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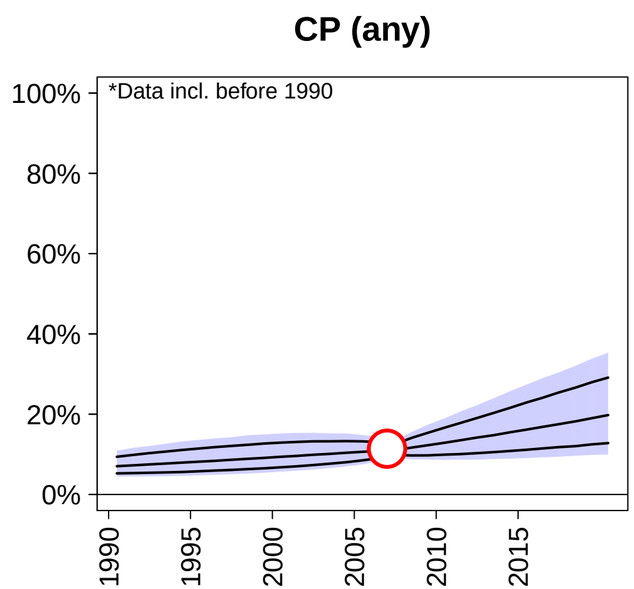
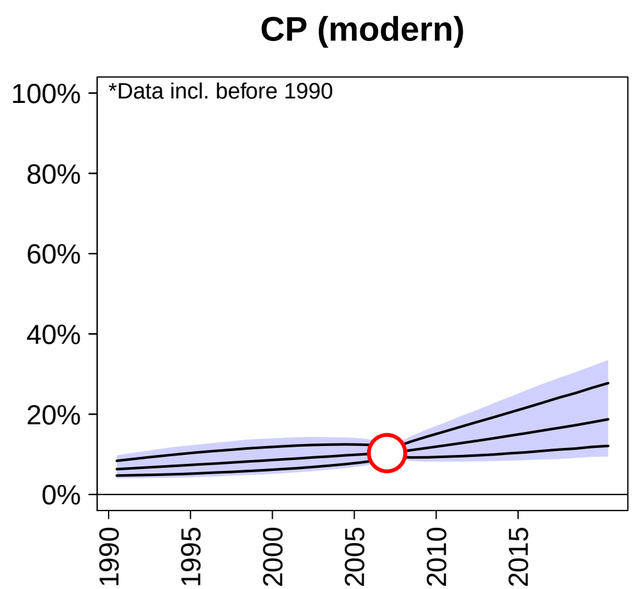
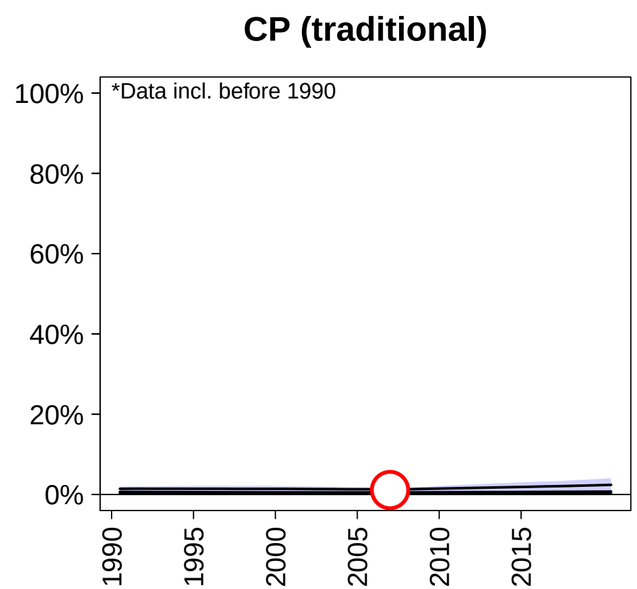
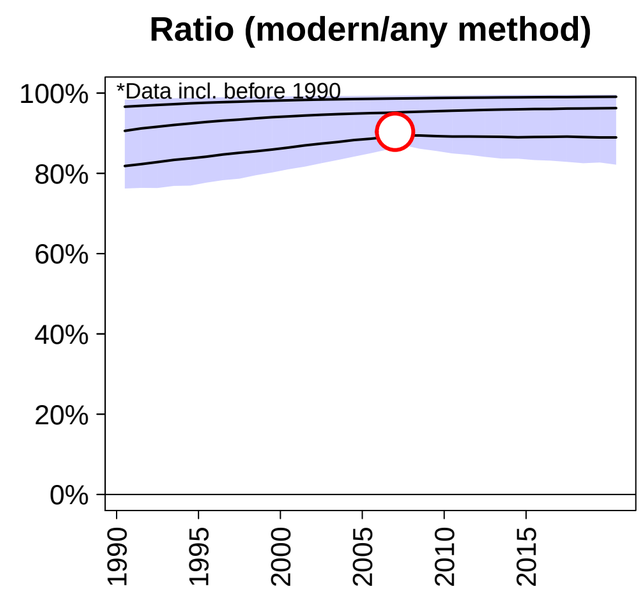
Sexually active women
Ever married/All women
Both sexes and husband/wives

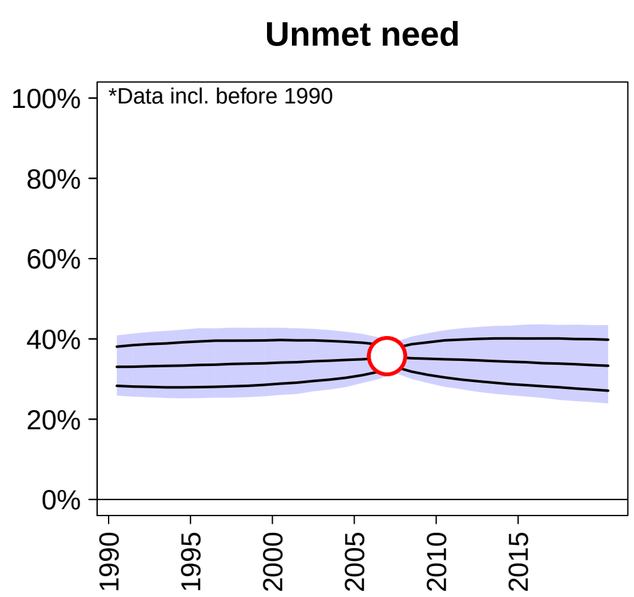
Liberia (Western Africa)

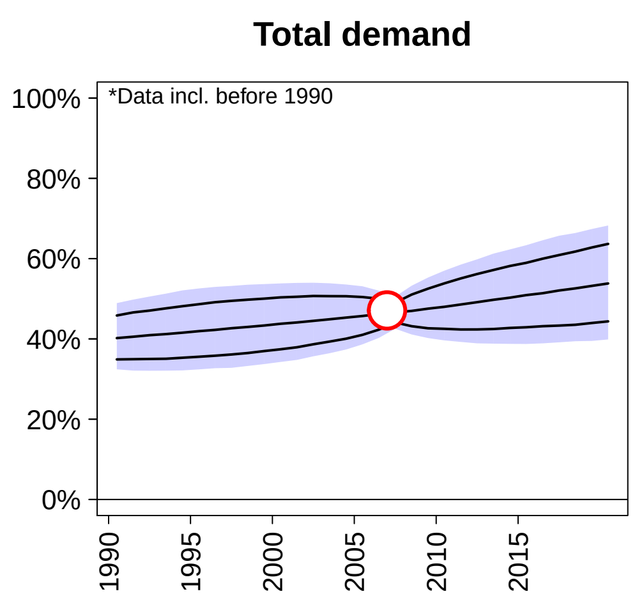


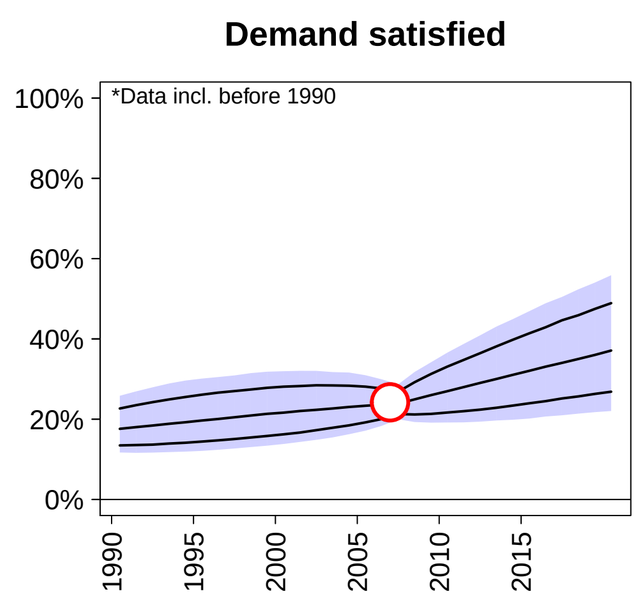












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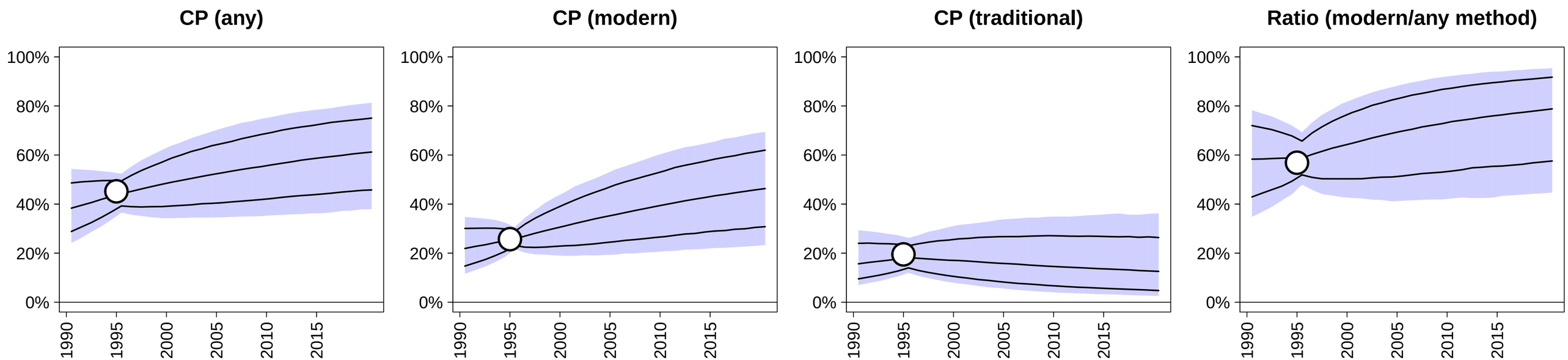
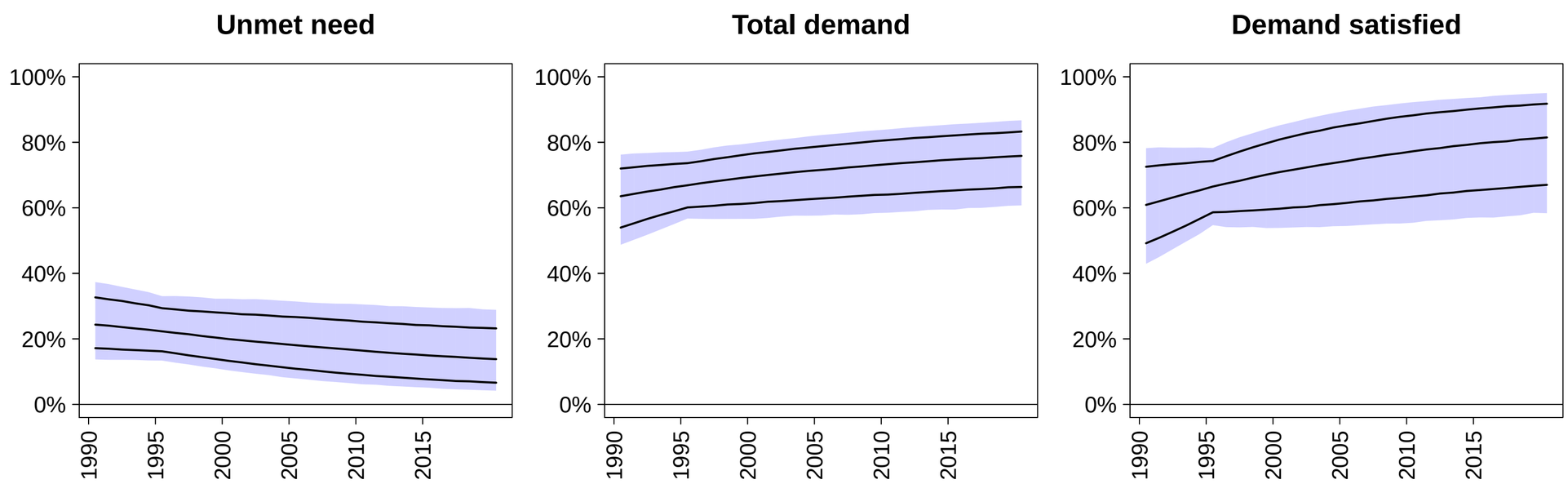
Libya (Northern Africa)





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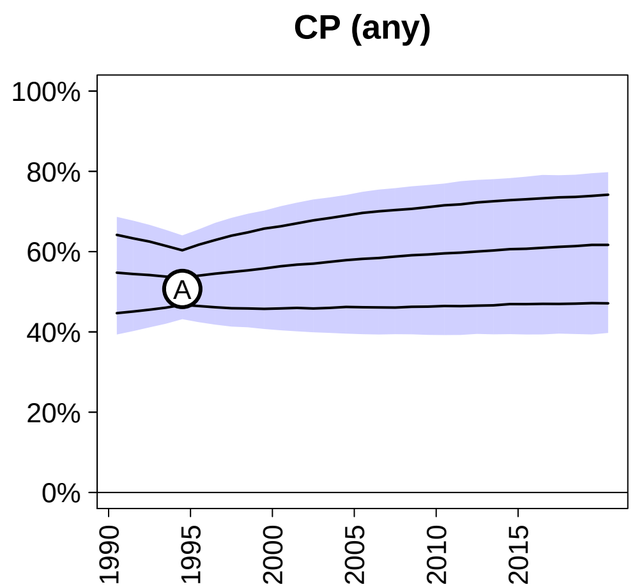
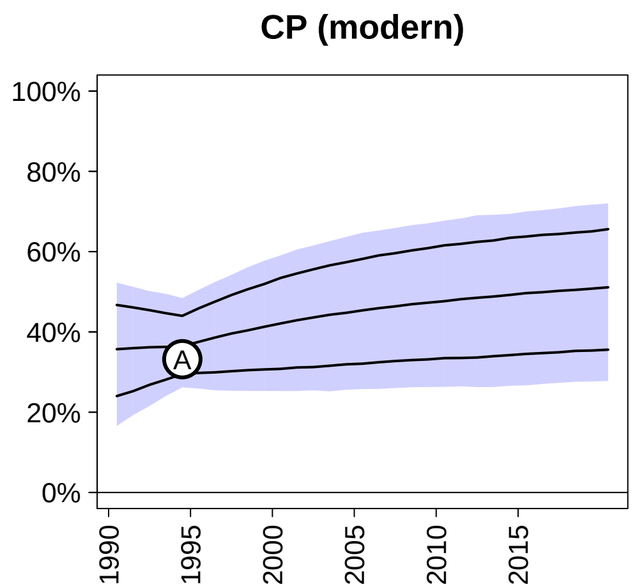
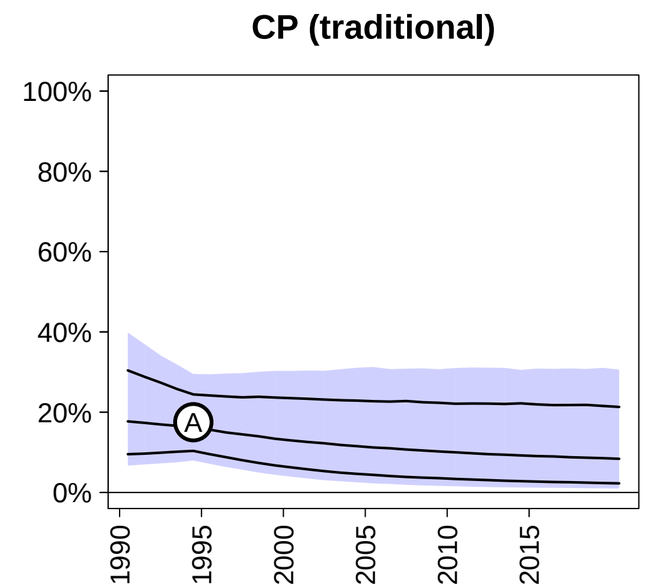
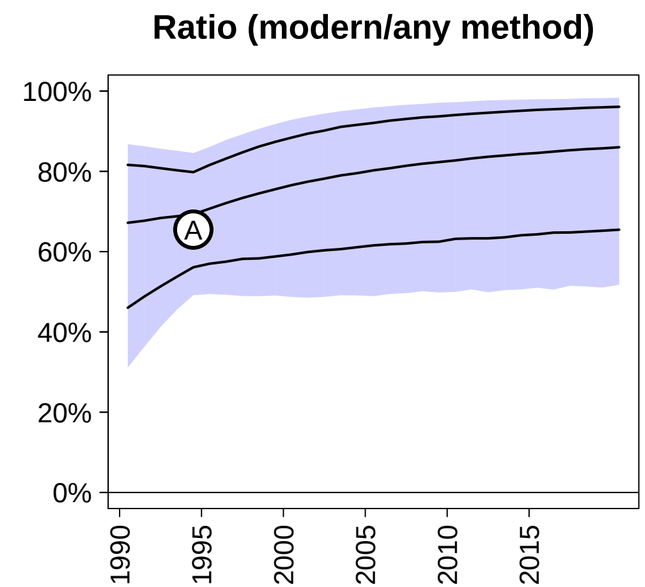
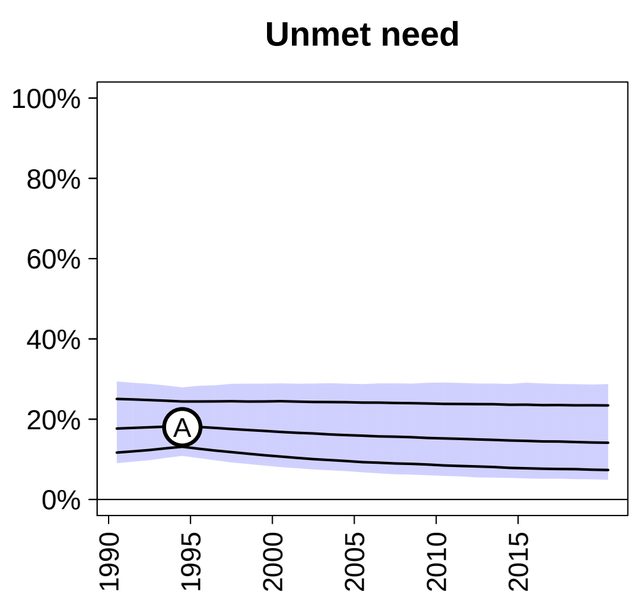
Lithuania (Northern Europe)

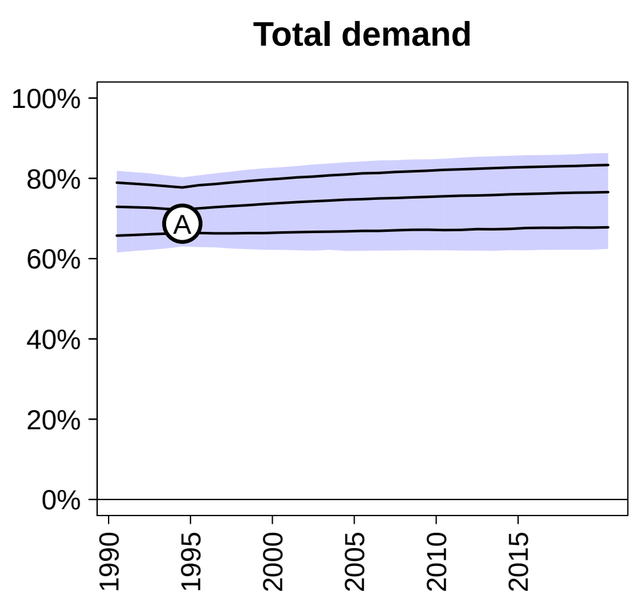


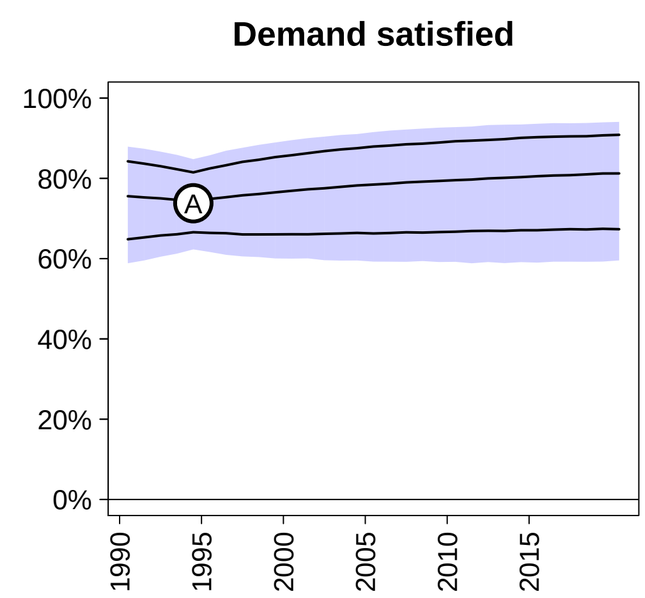












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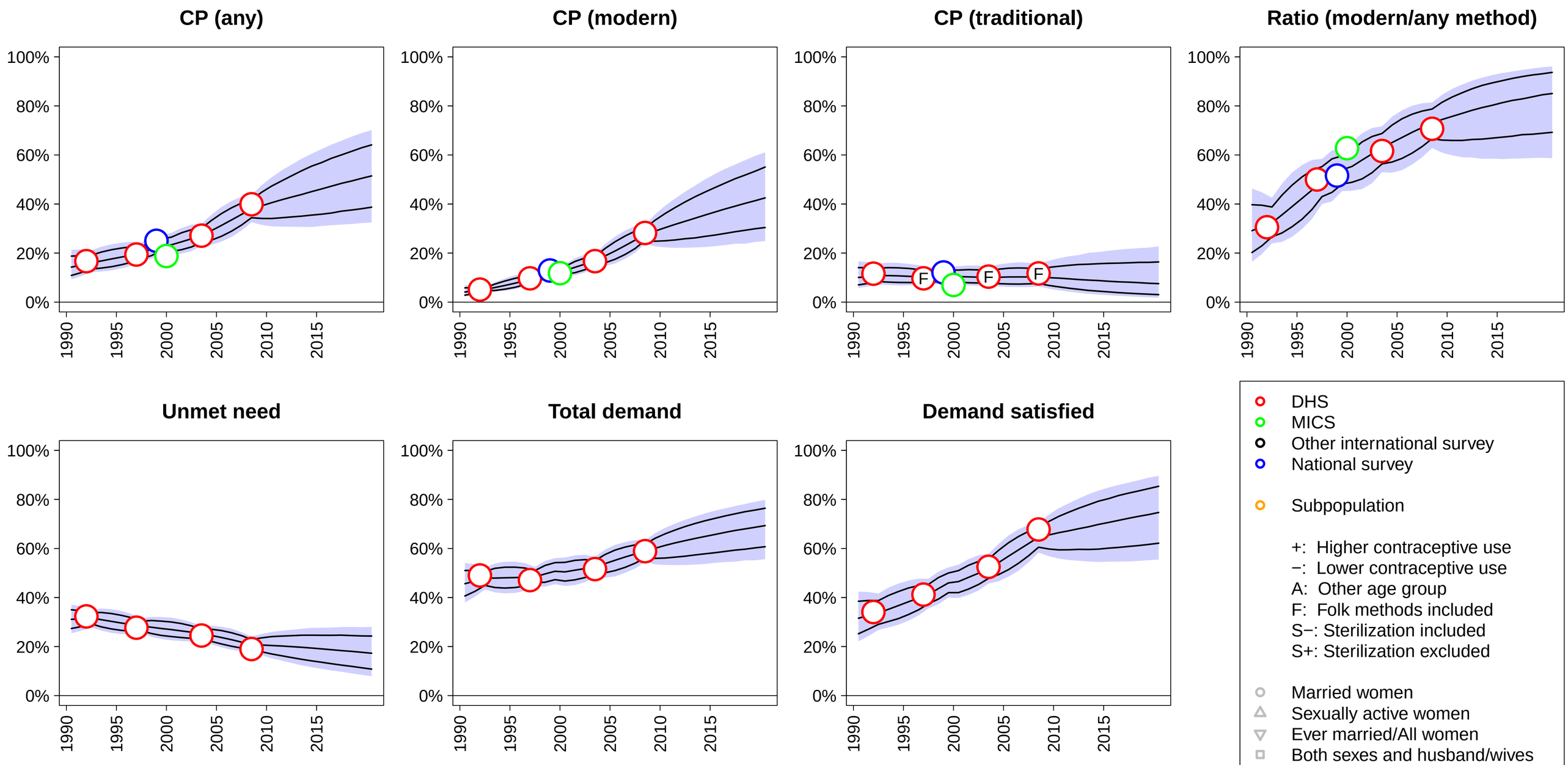
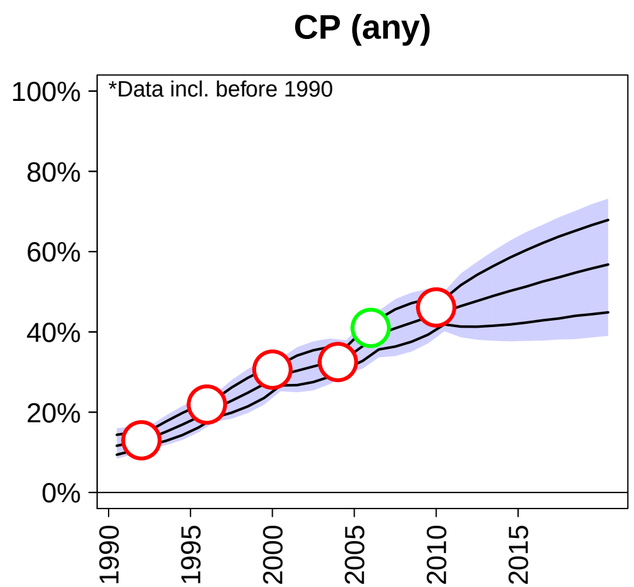
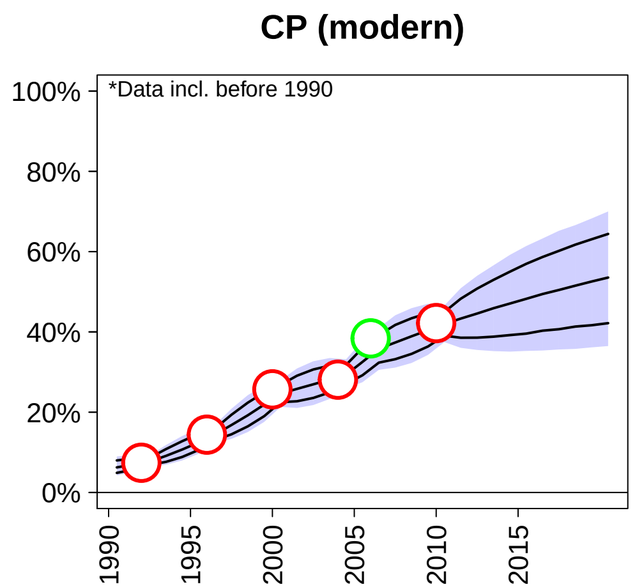
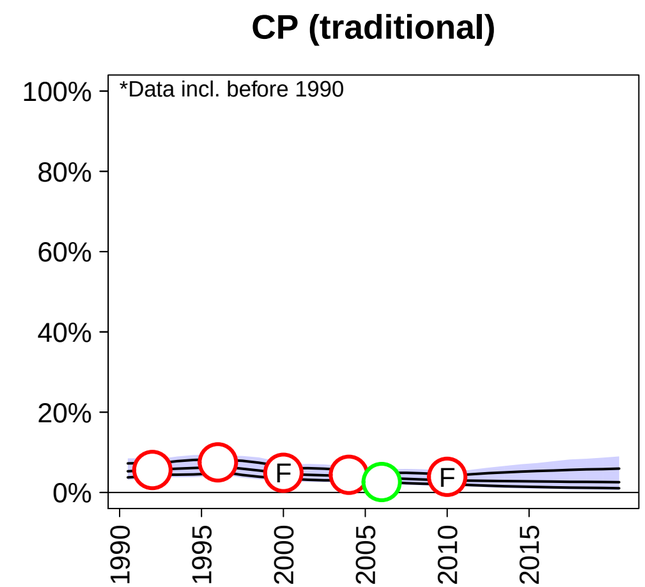
Madagascar (Eastern Africa)

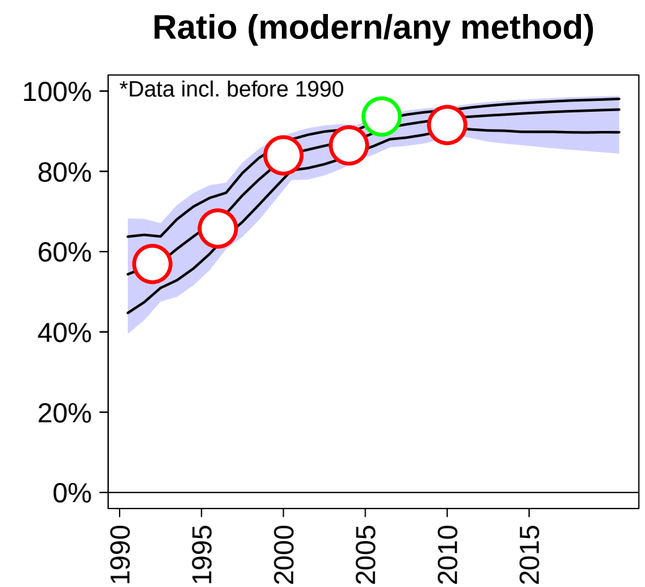


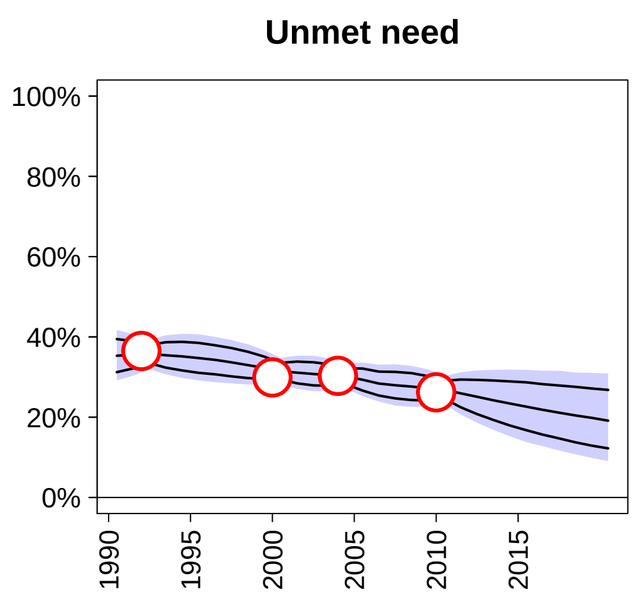
Malawi (Eastern Africa)

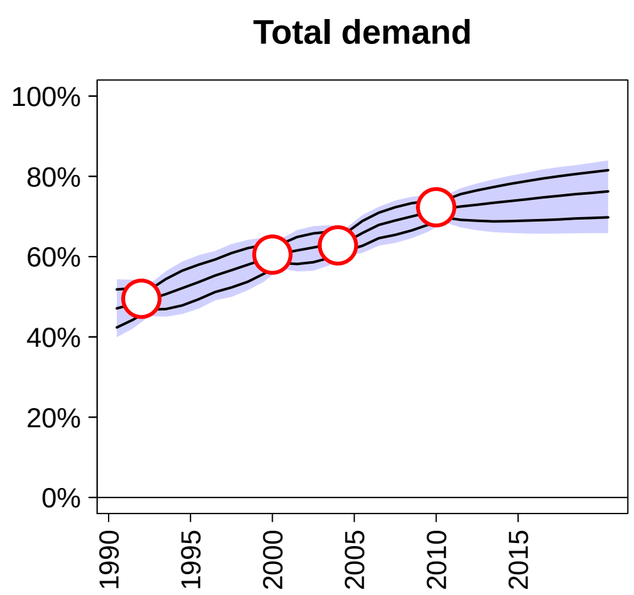


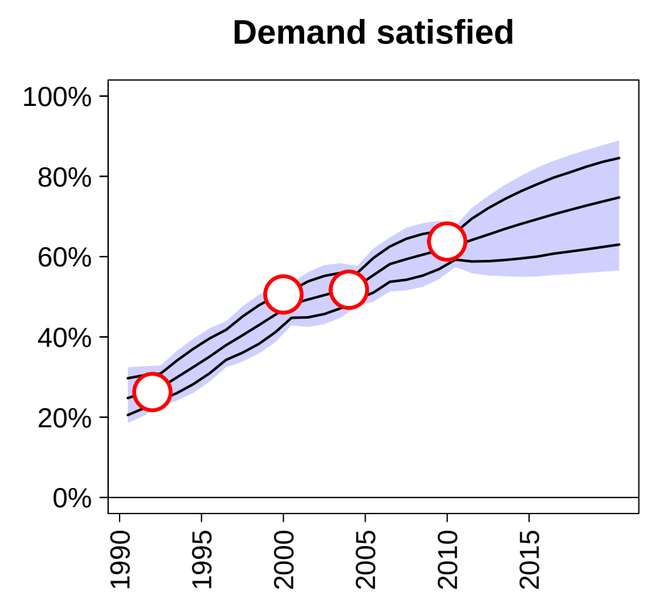












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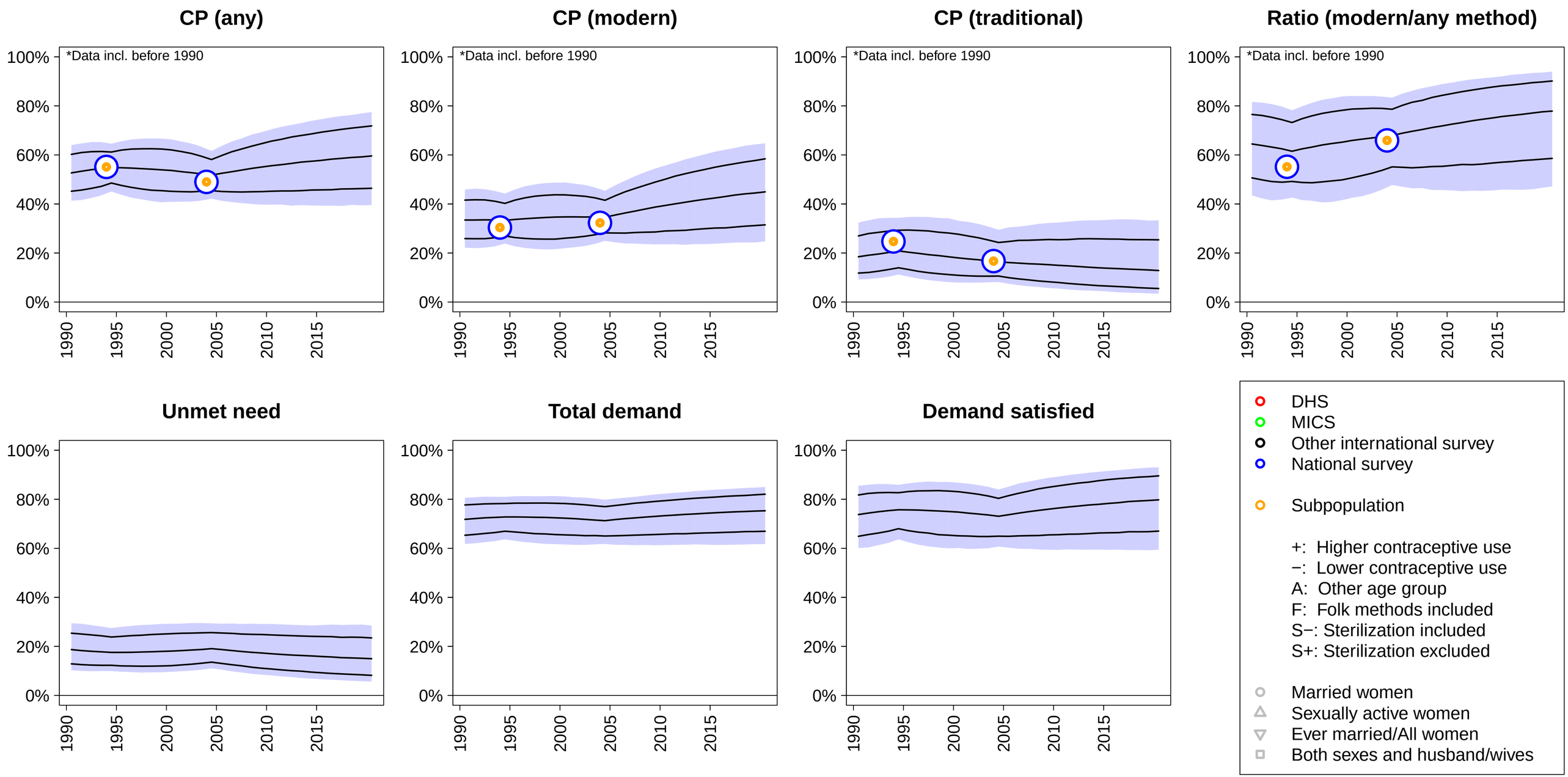
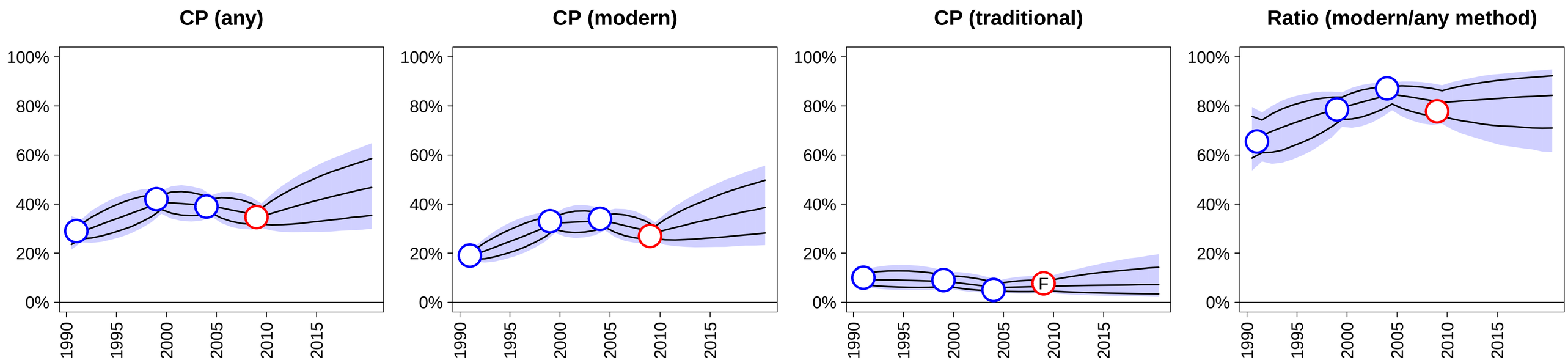
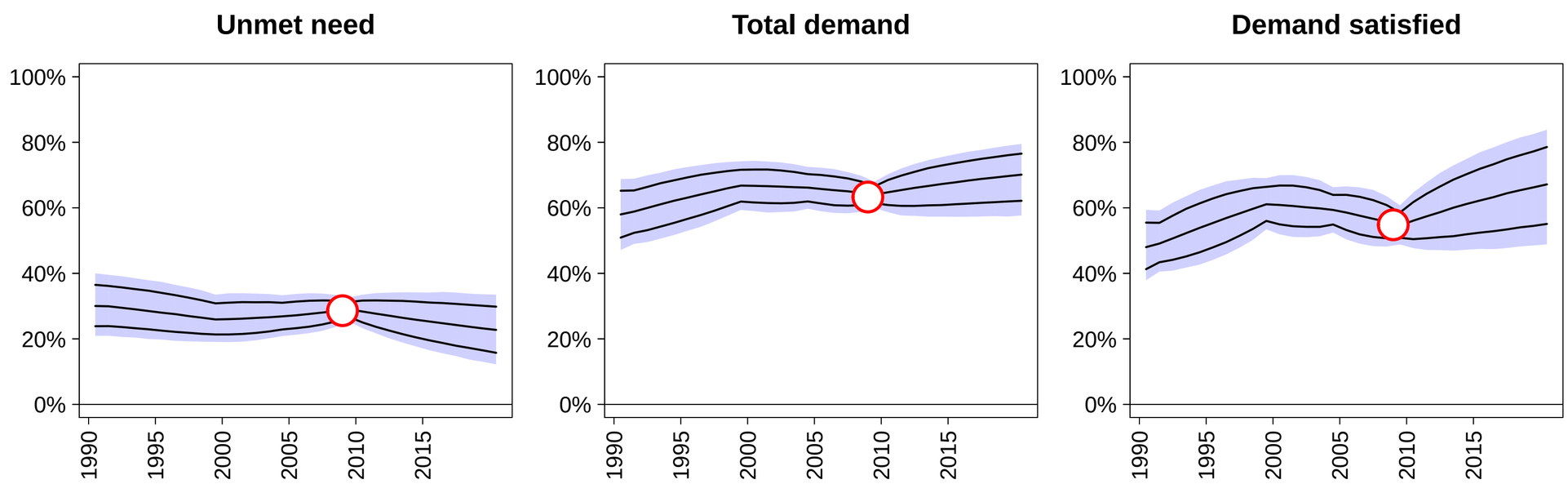
Malaysia (South−Eastern Asia)



Maldives (Southern Asia)





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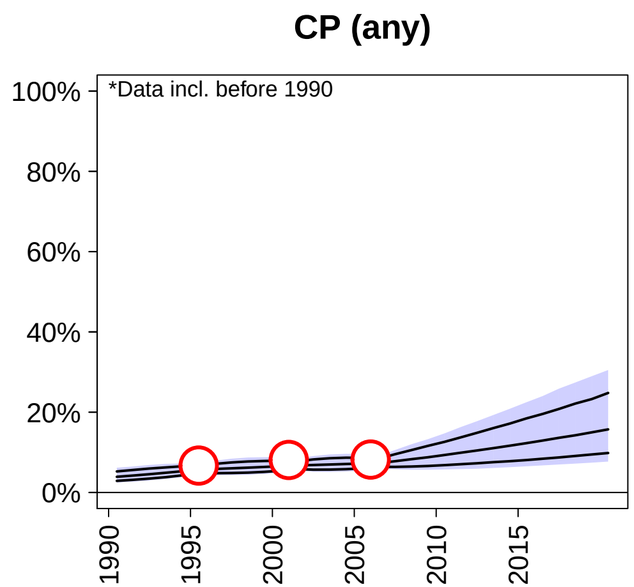
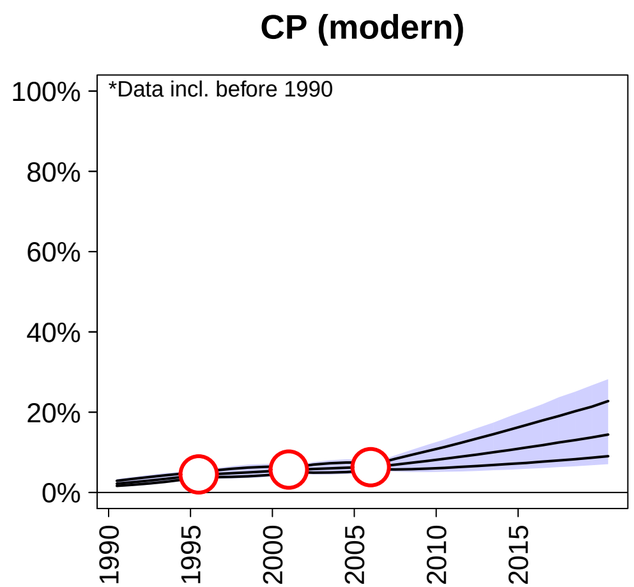
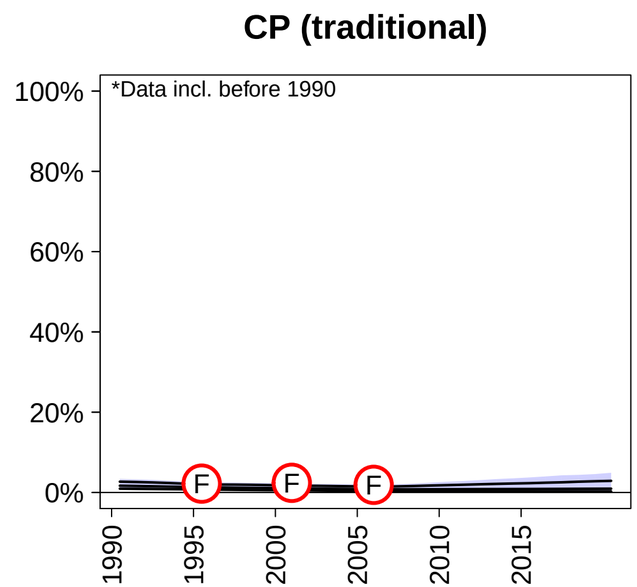
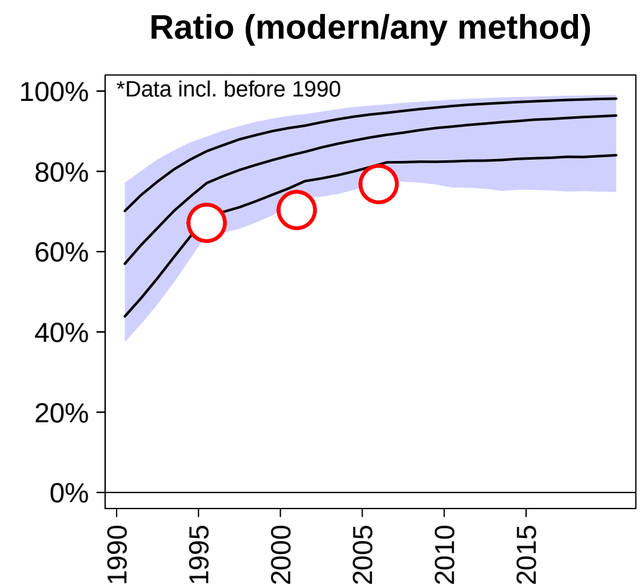
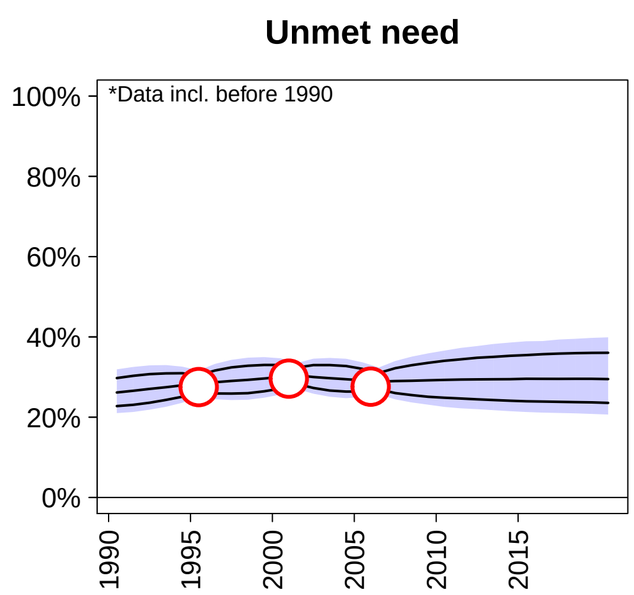
Mali (Western Africa)

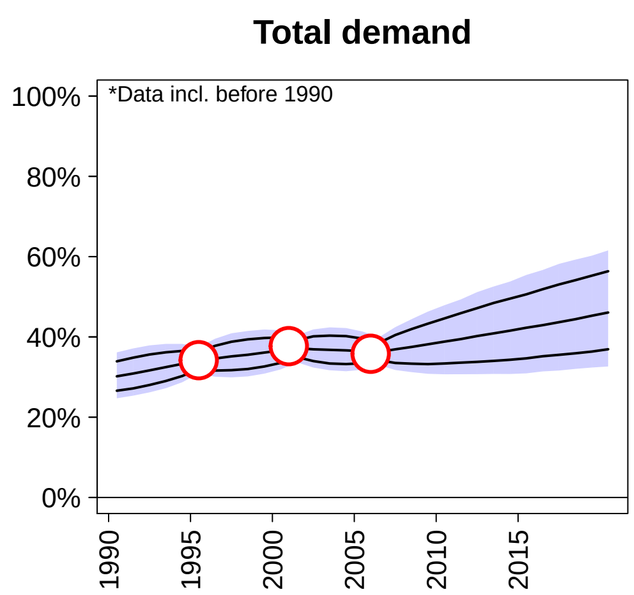


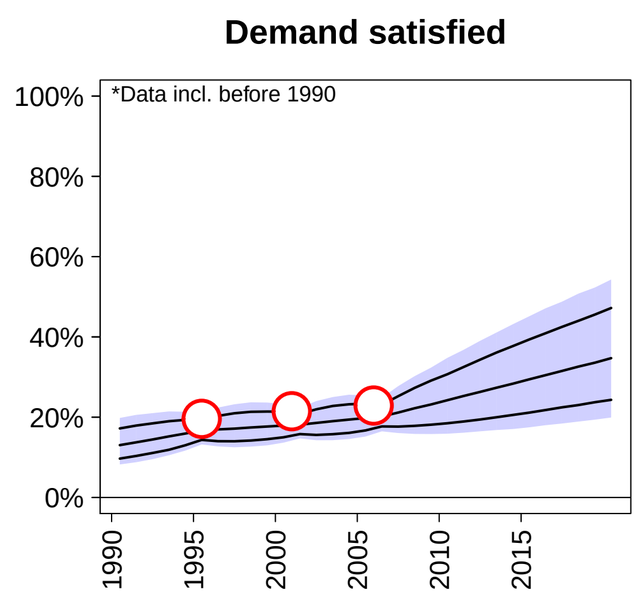












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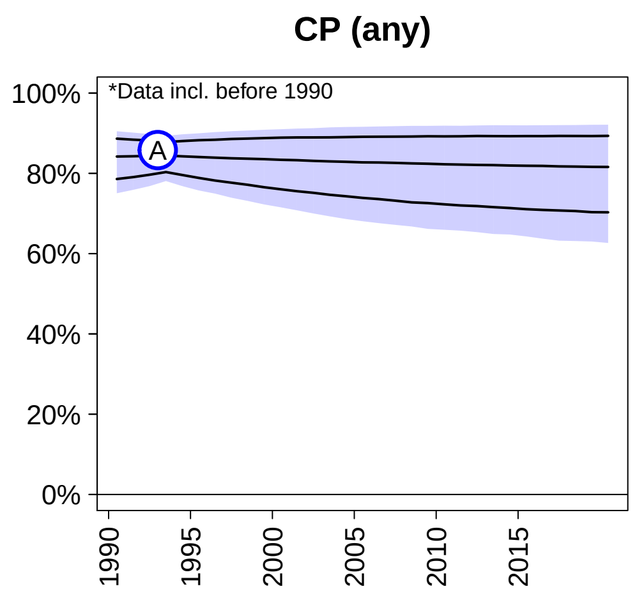
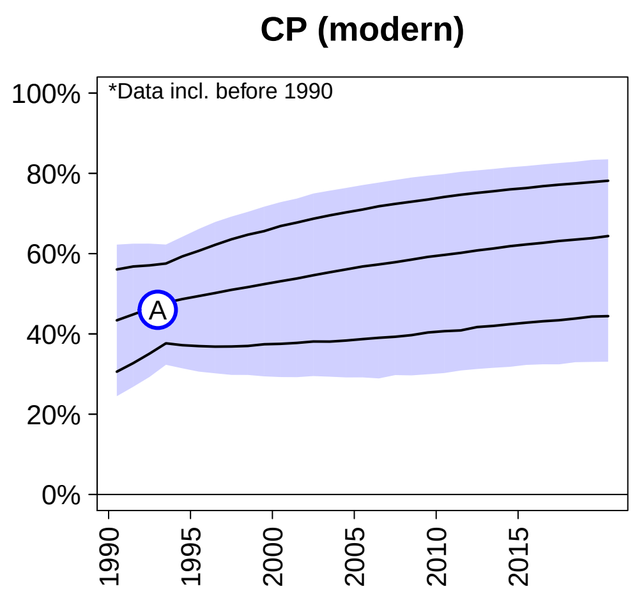
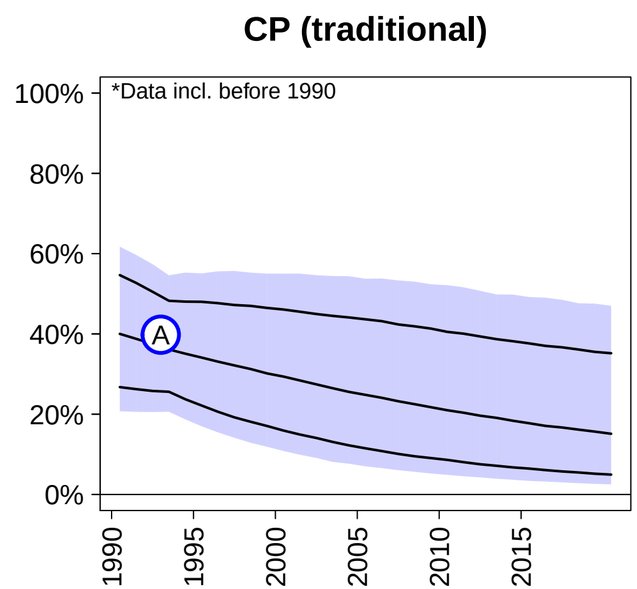
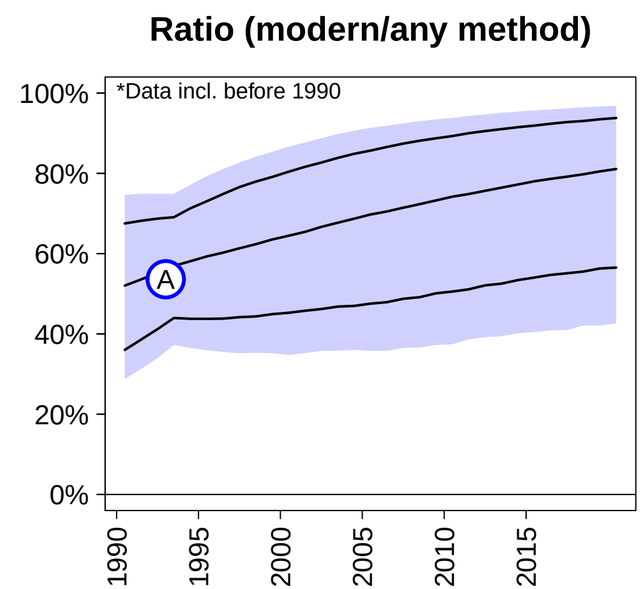
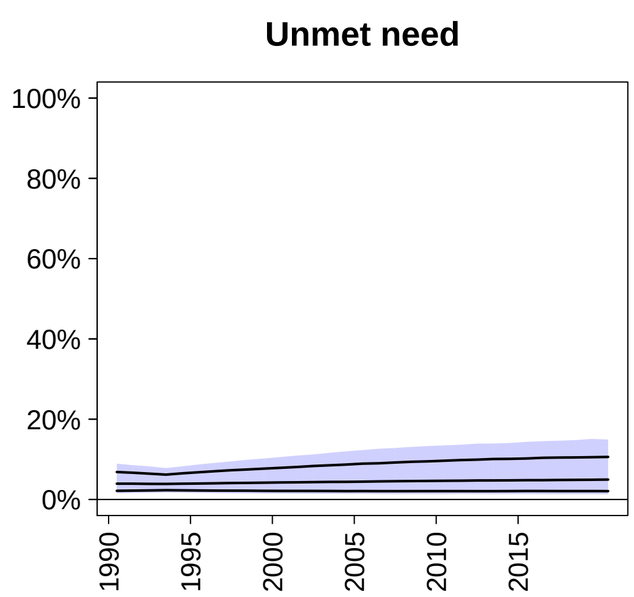
Malta (Southern Europe)

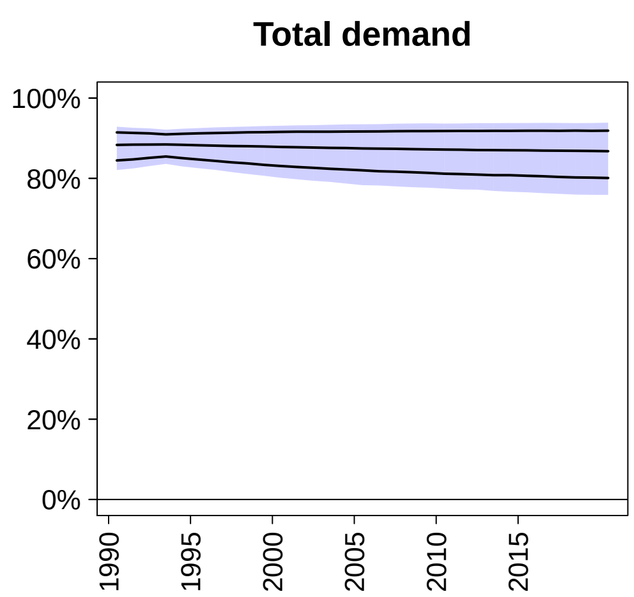


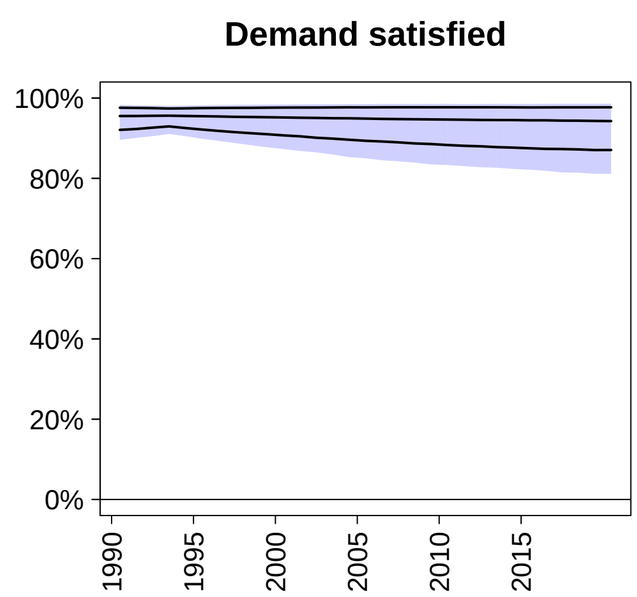












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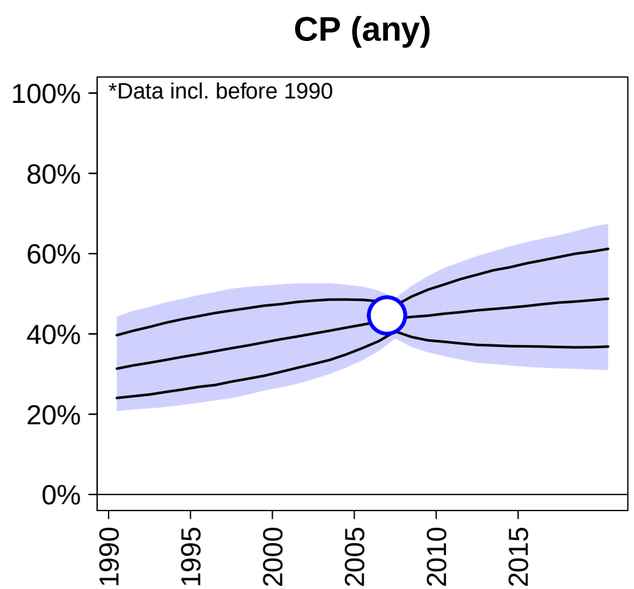
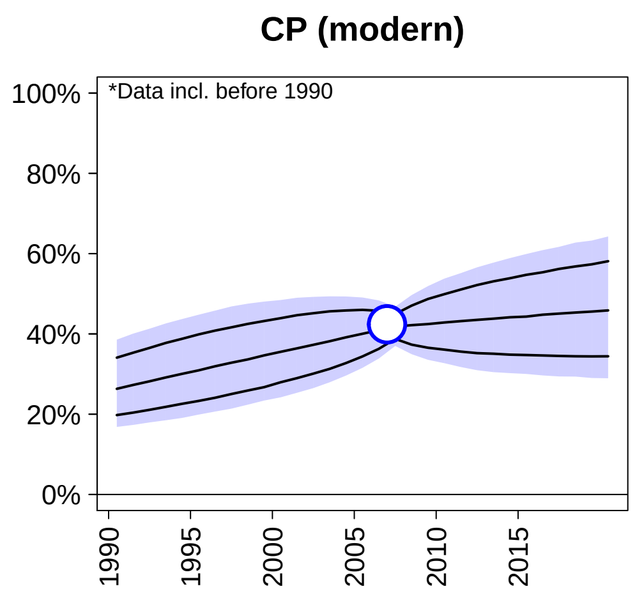
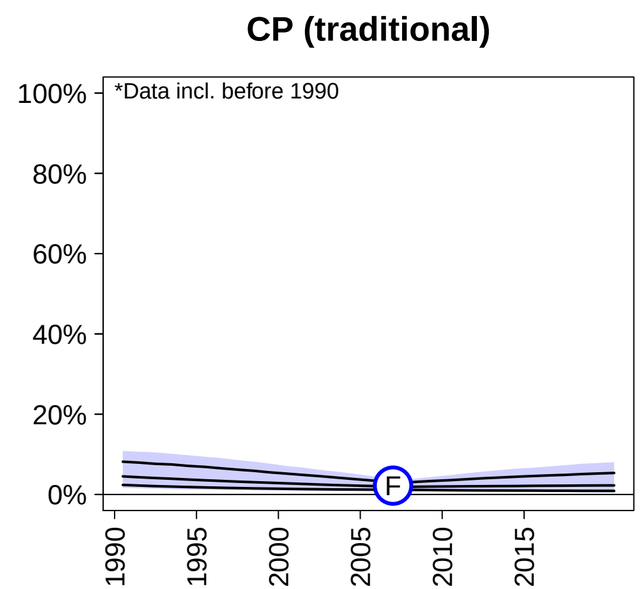
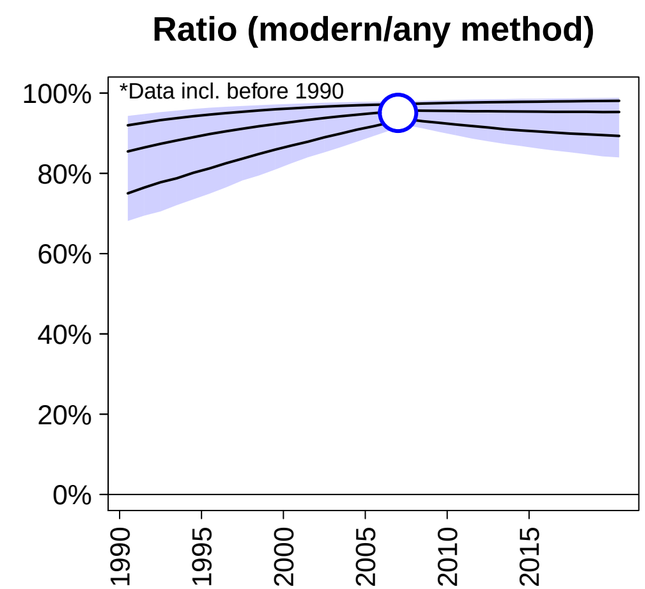
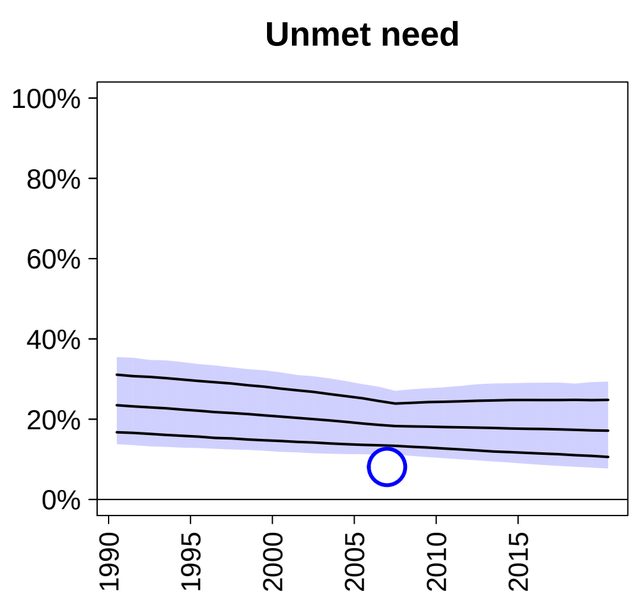
Marshall Islands (Micronesia)

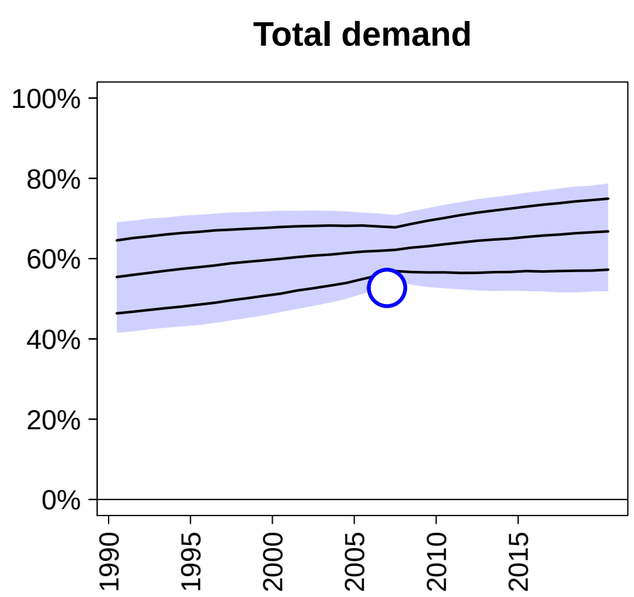


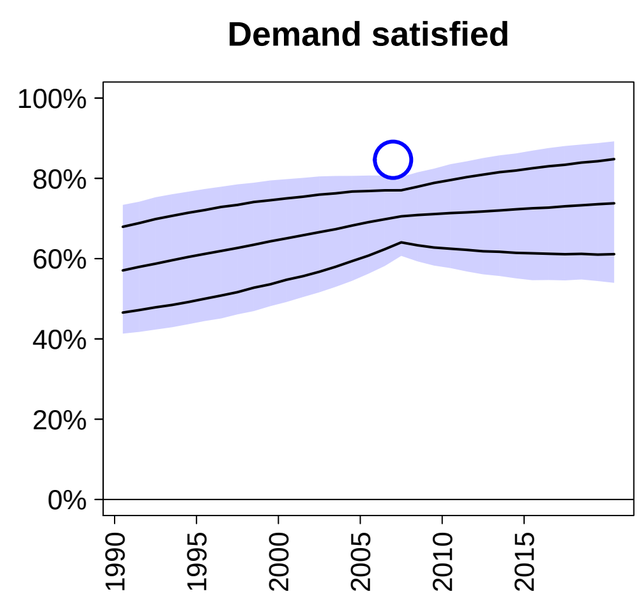












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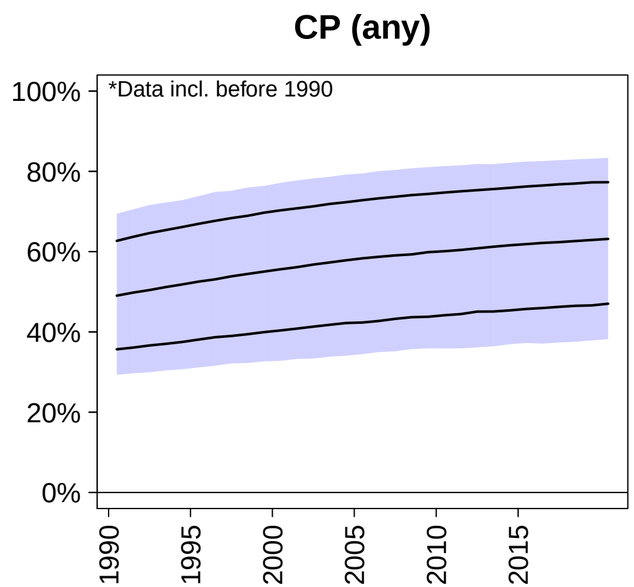
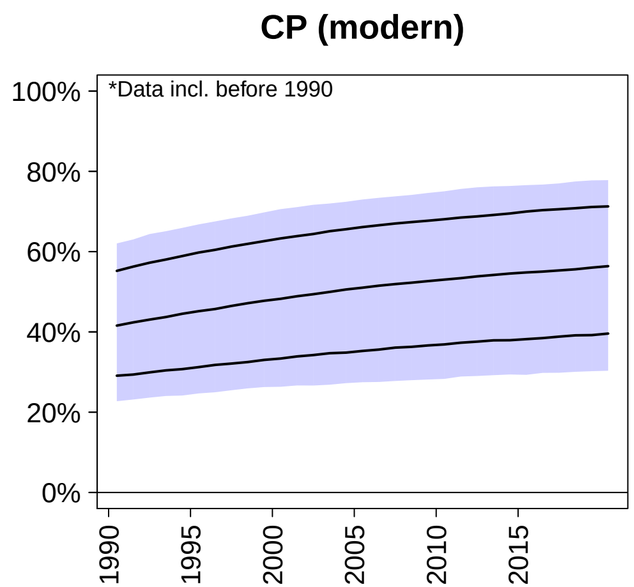
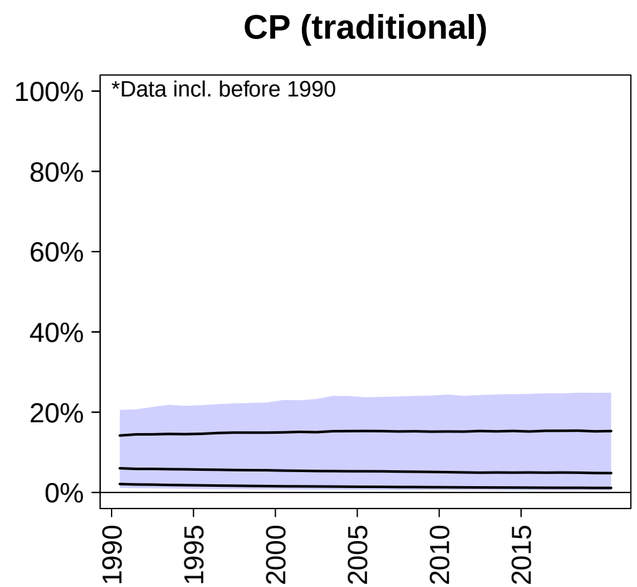
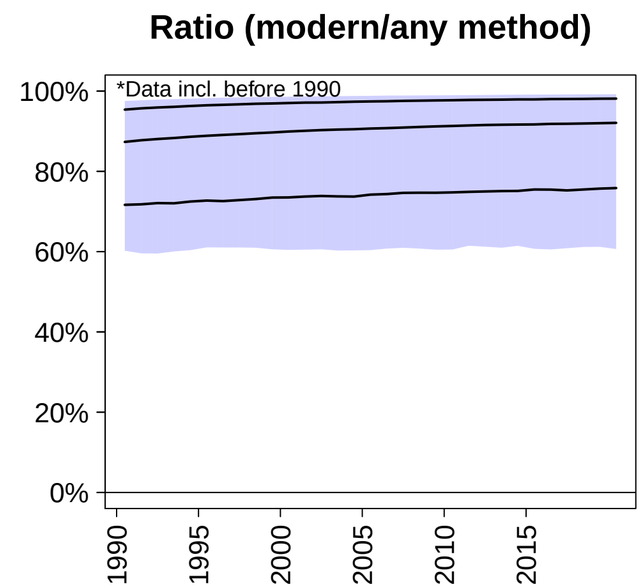
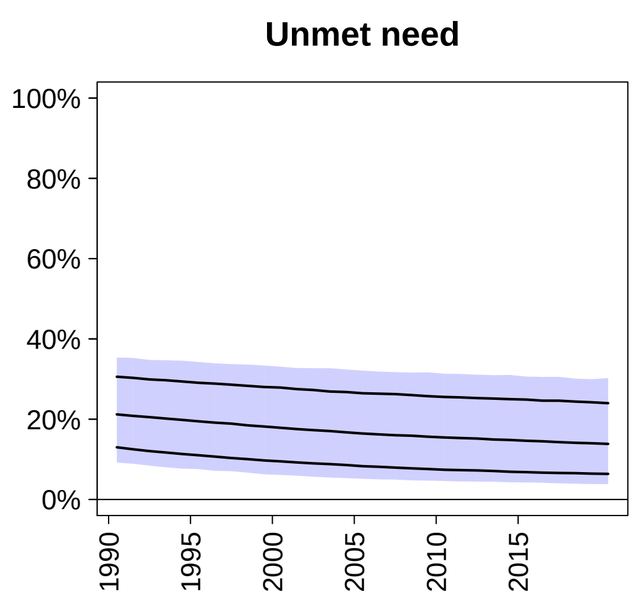
Martinique (Caribbean)

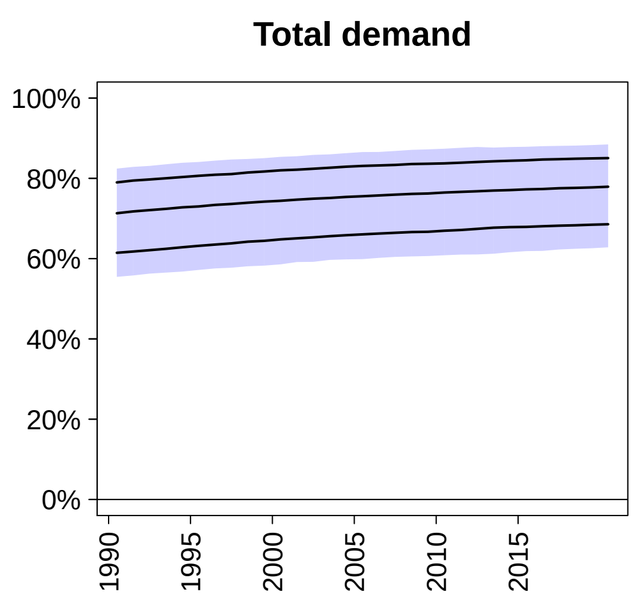


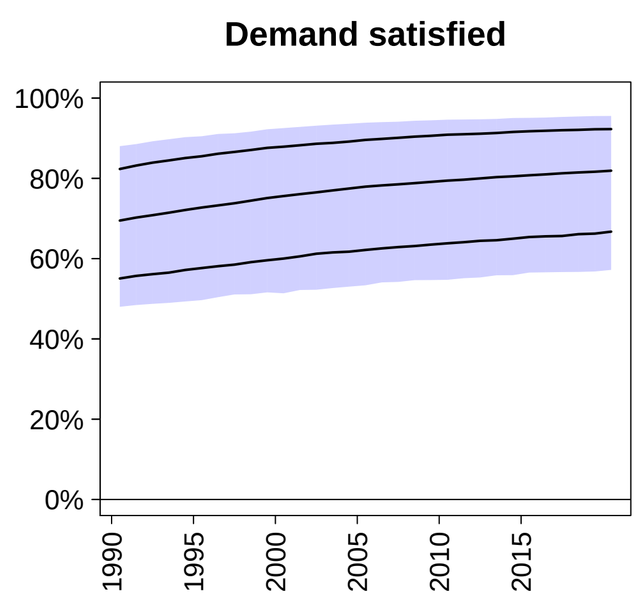












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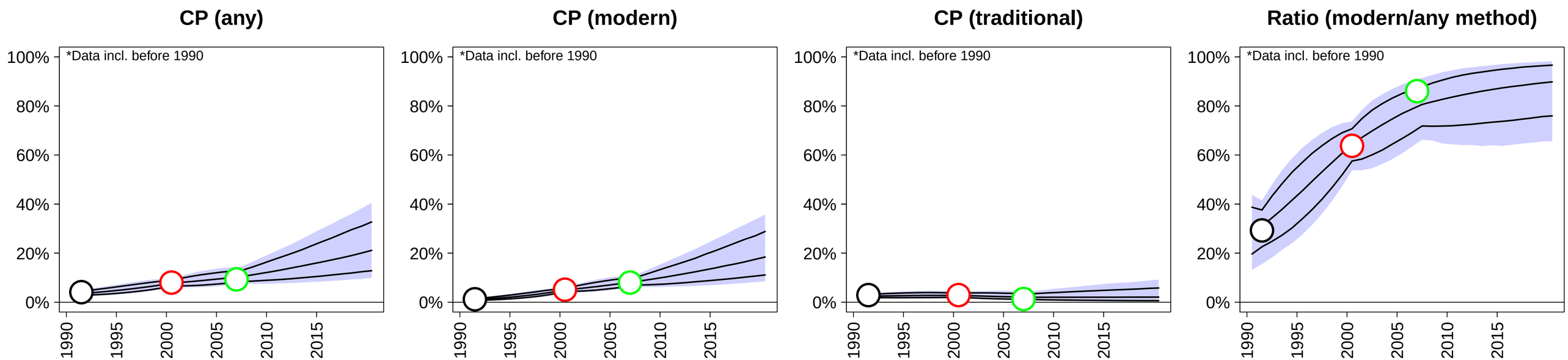
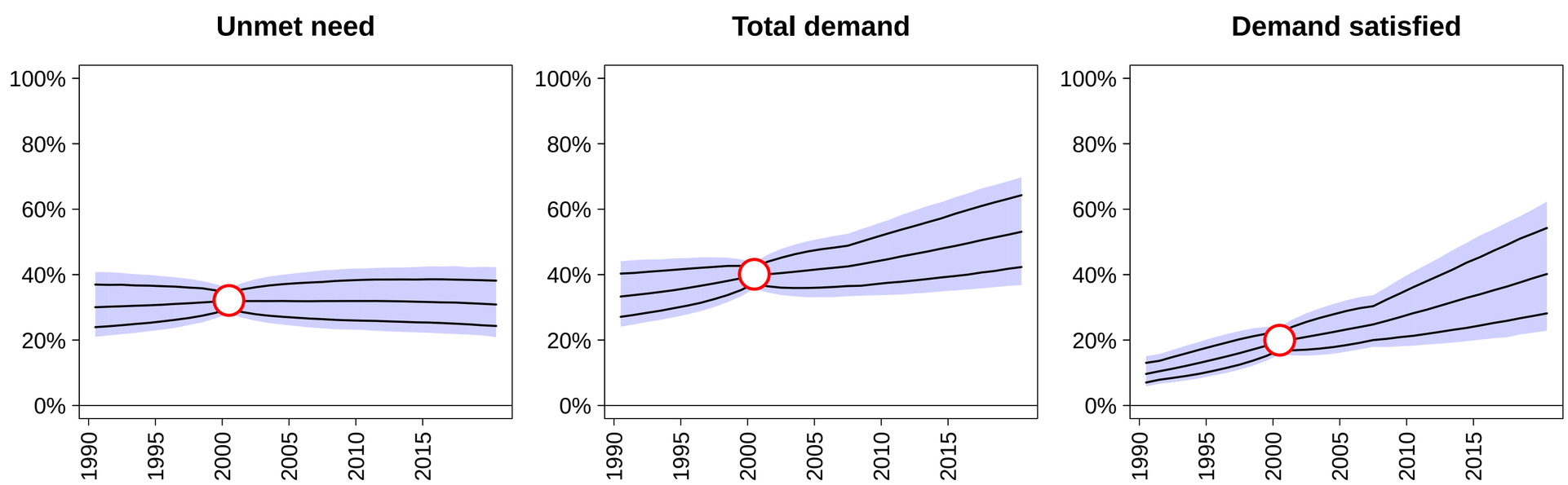
Mauritania (Western Africa)





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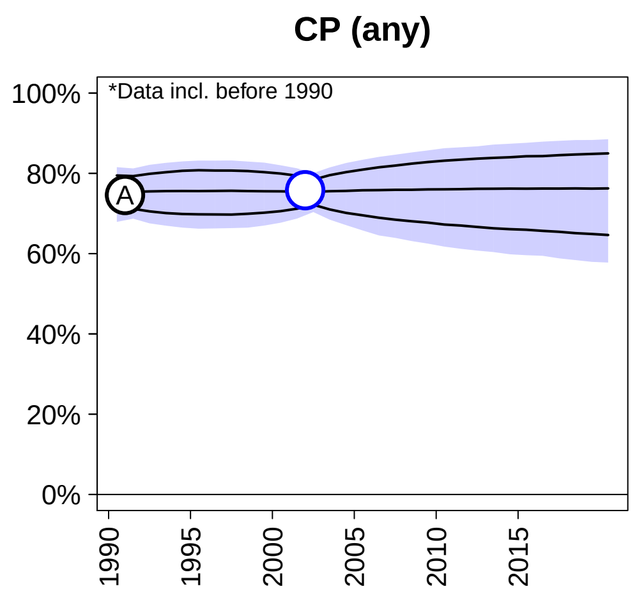
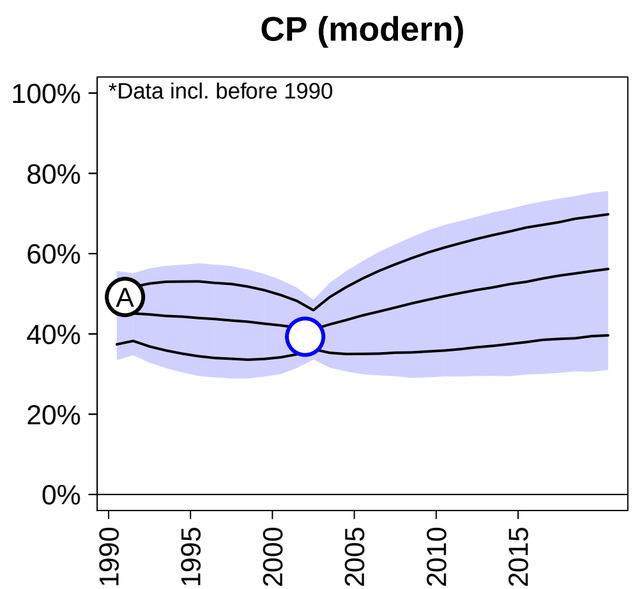
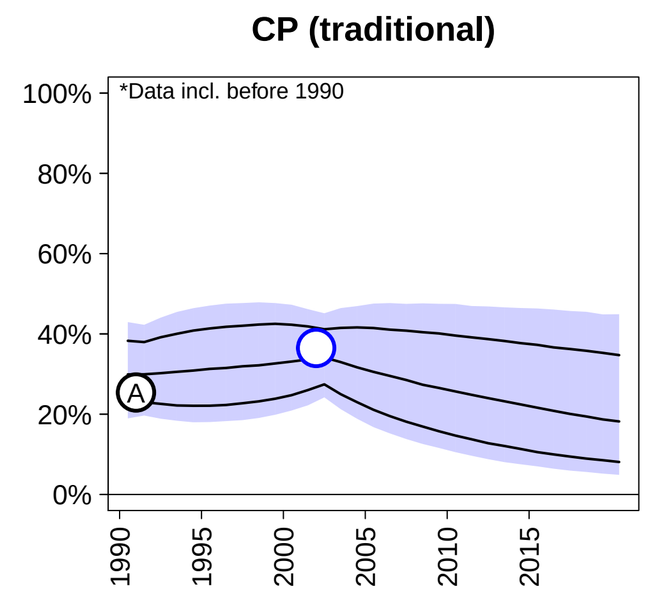
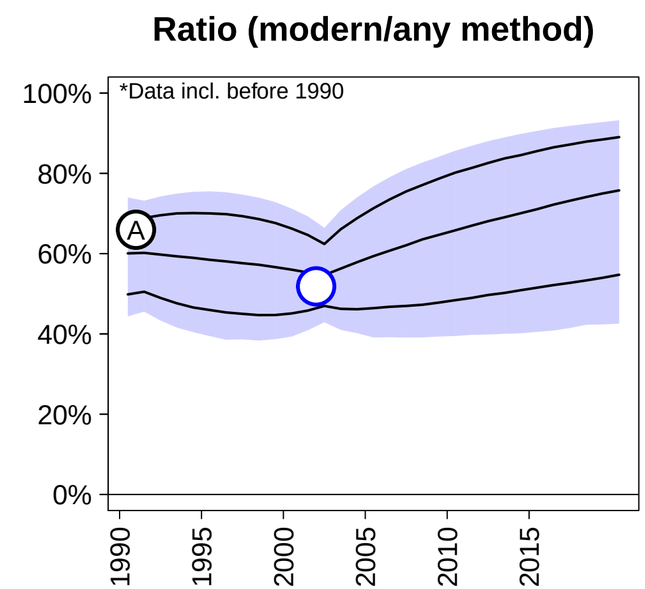
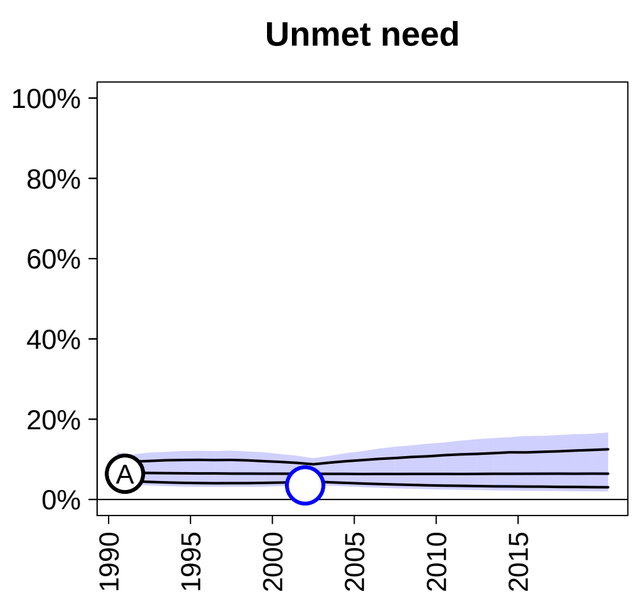
Mauritius (Eastern Africa)

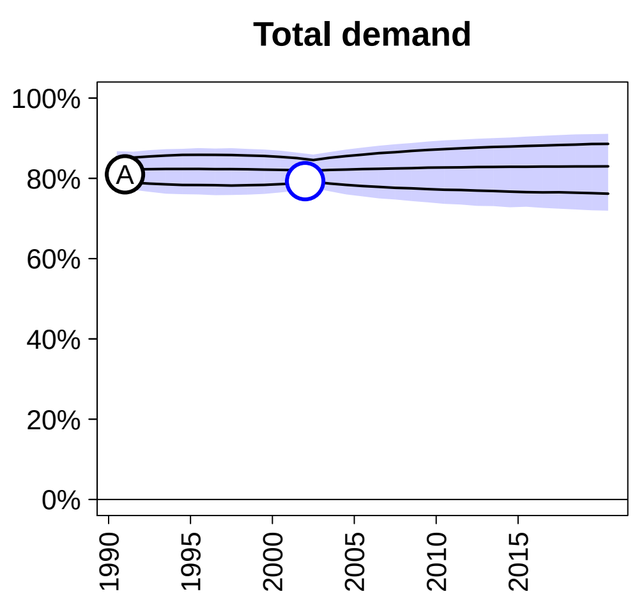


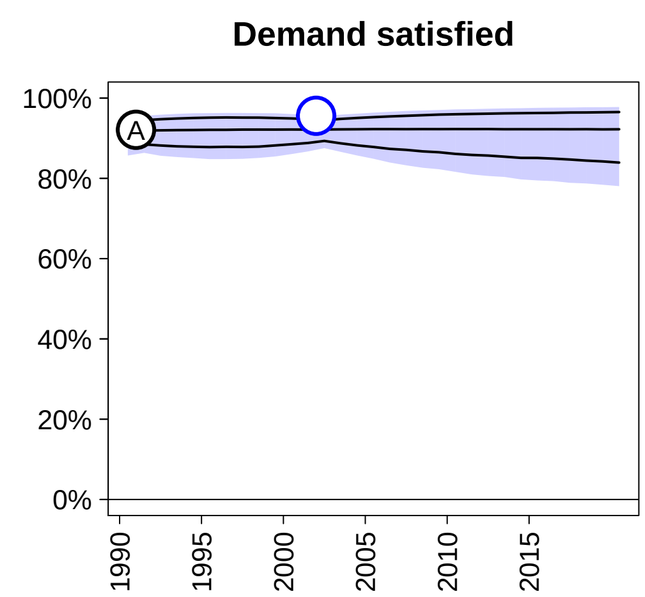












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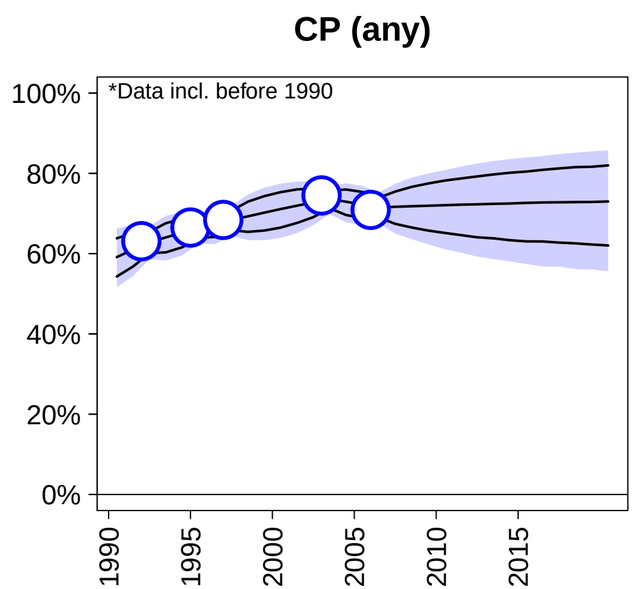
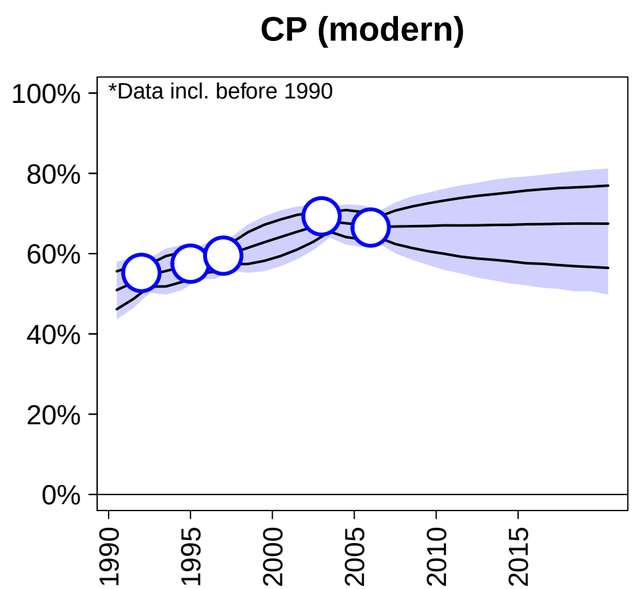
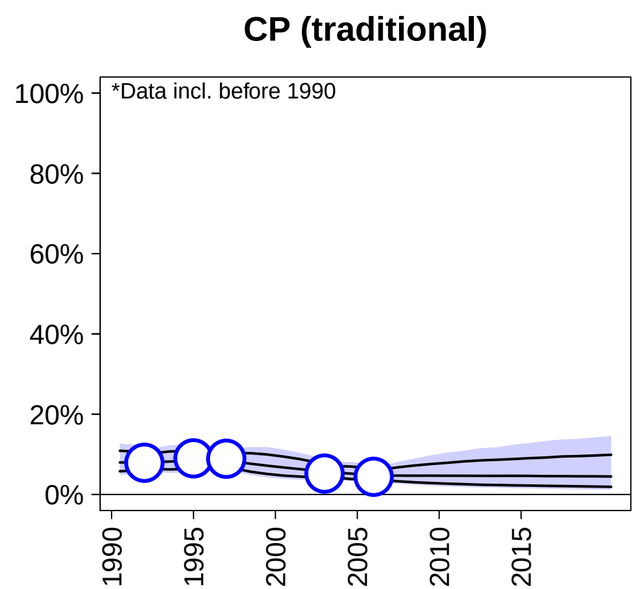
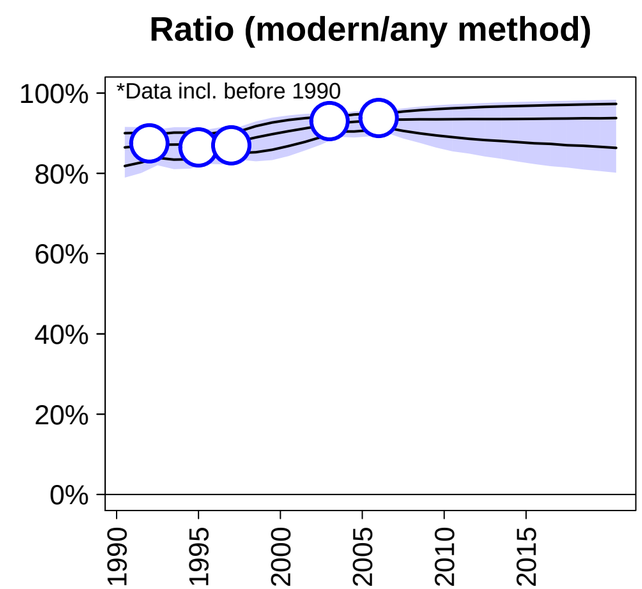
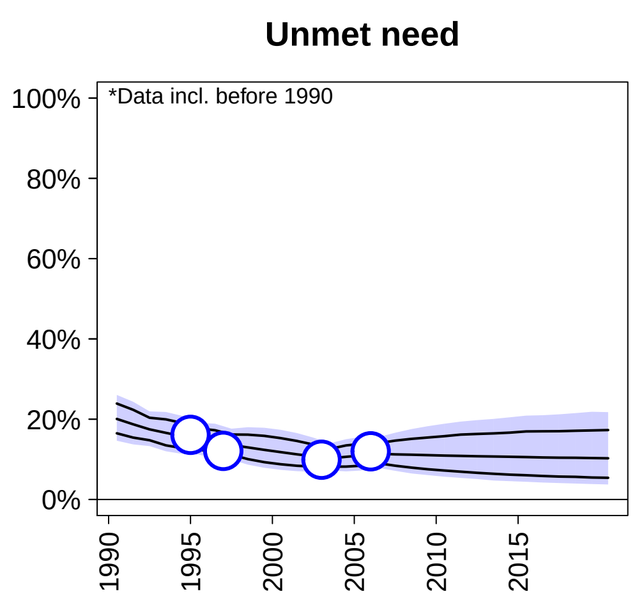
Mexico (Central America)

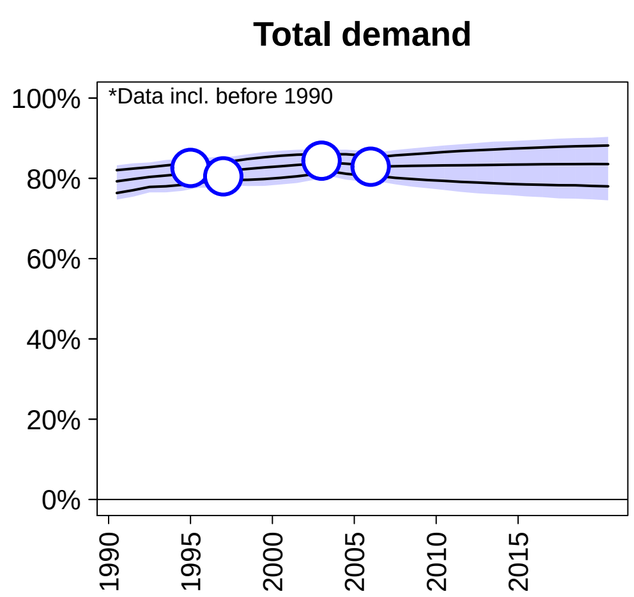


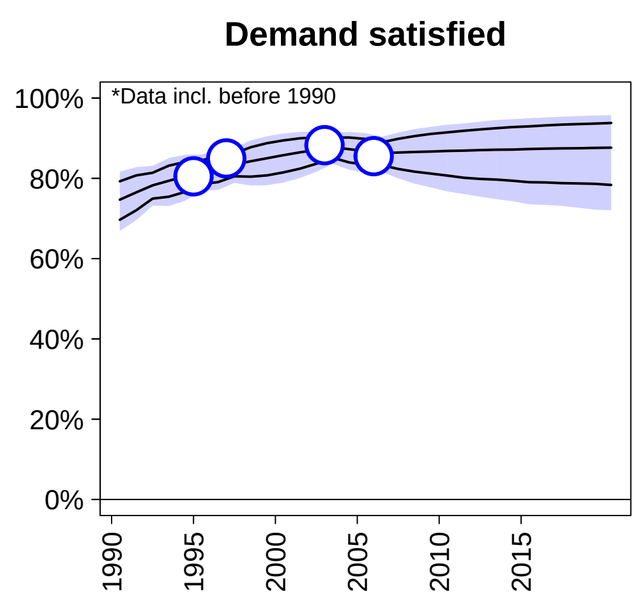












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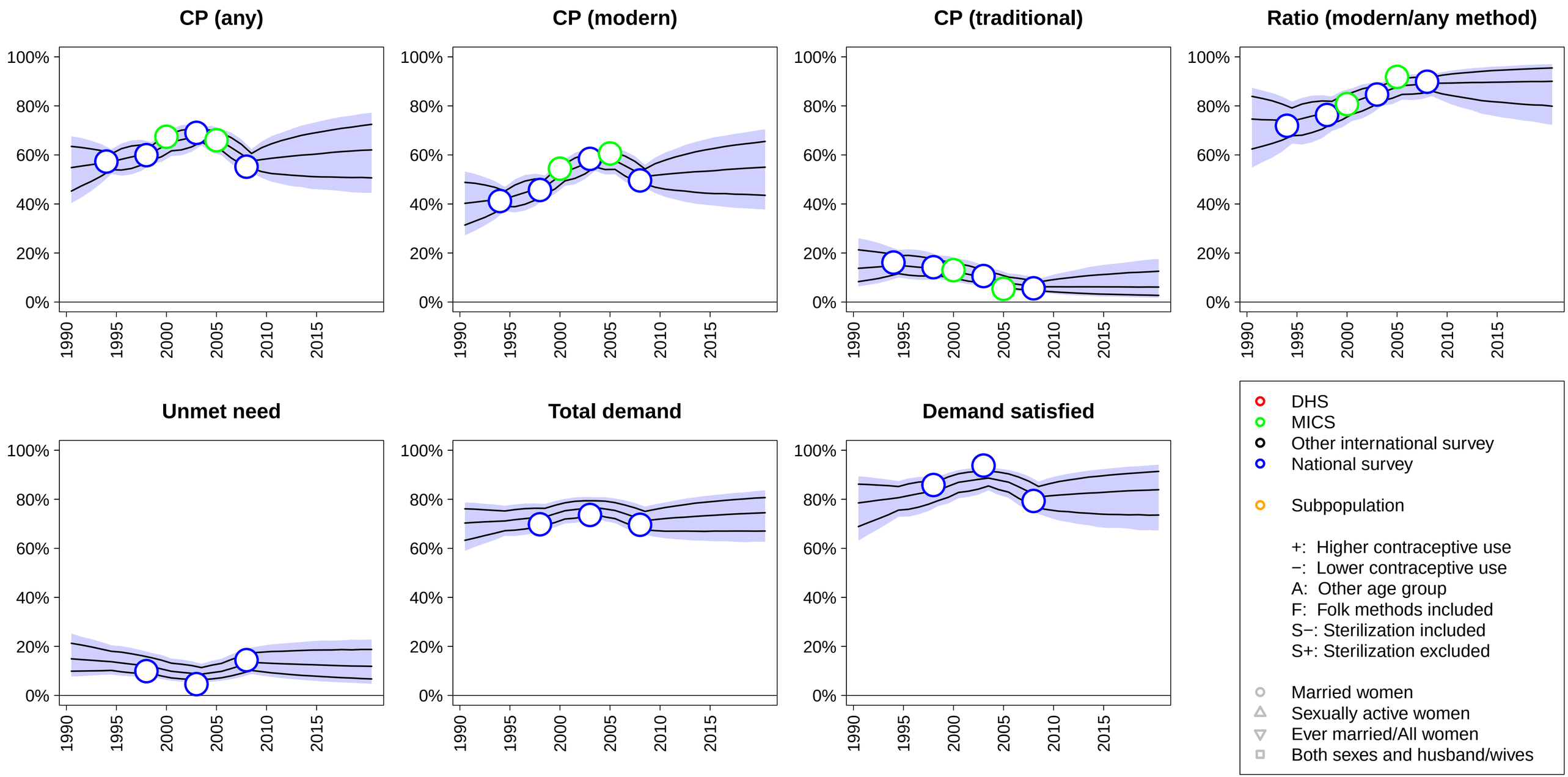
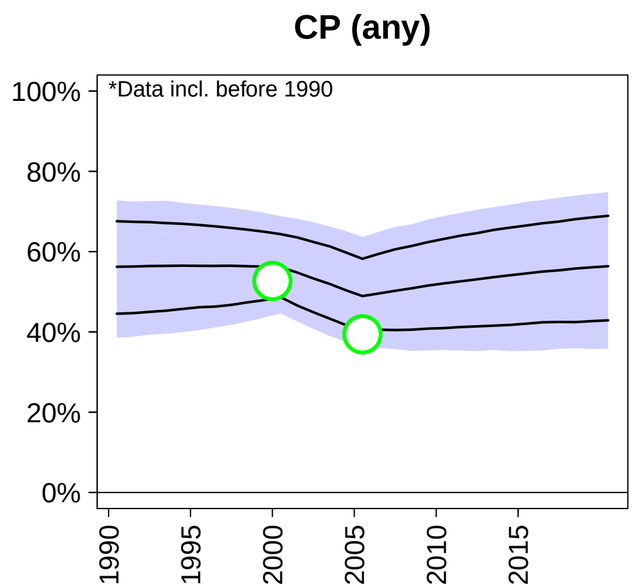
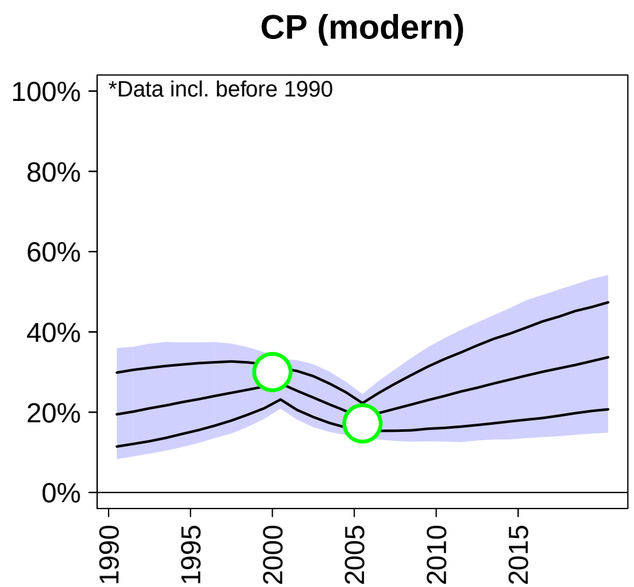
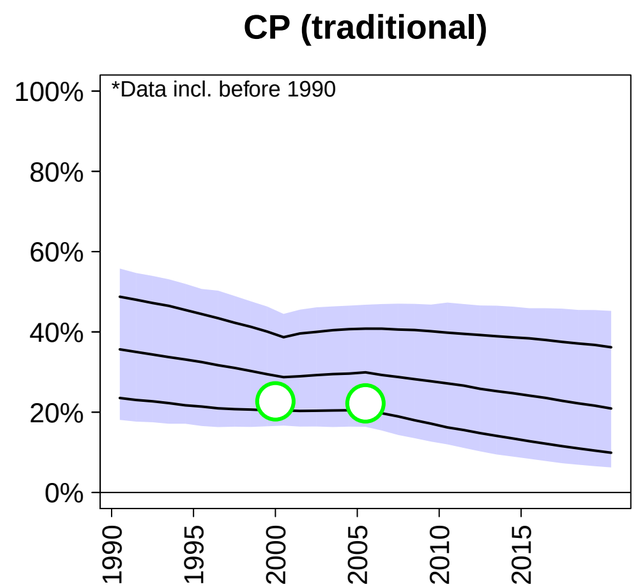
Mongolia (Eastern Asia)

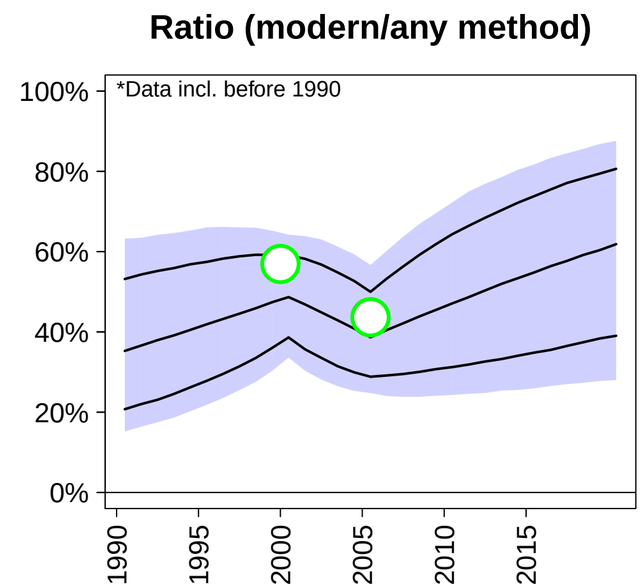


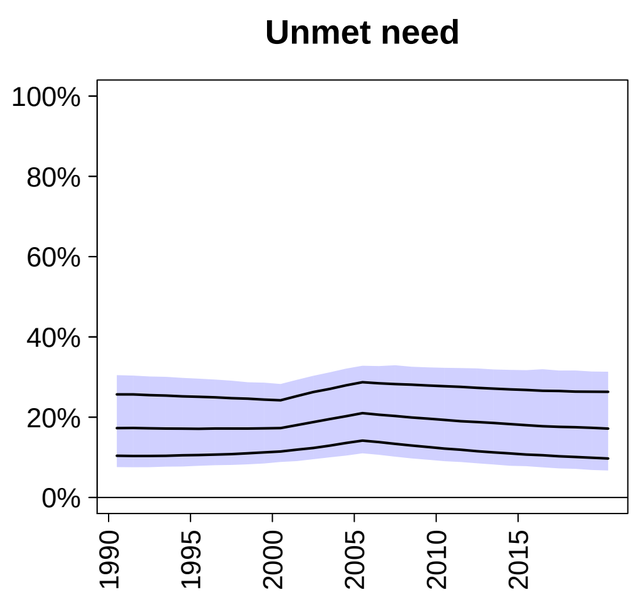
Montenegro (Southern Europe)

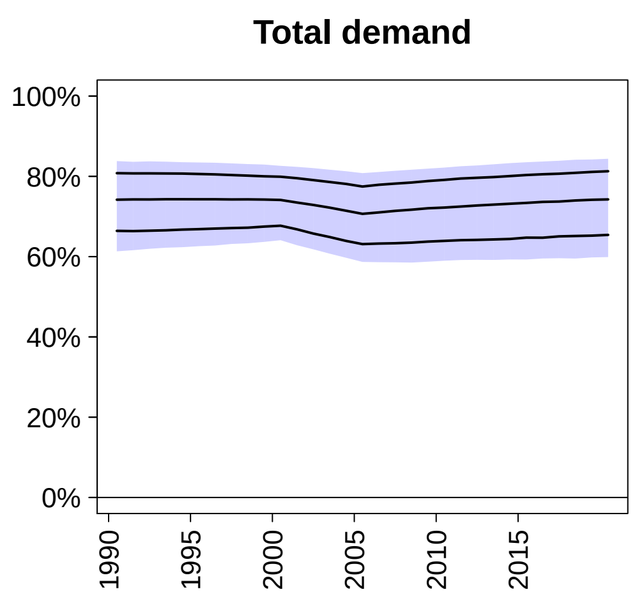


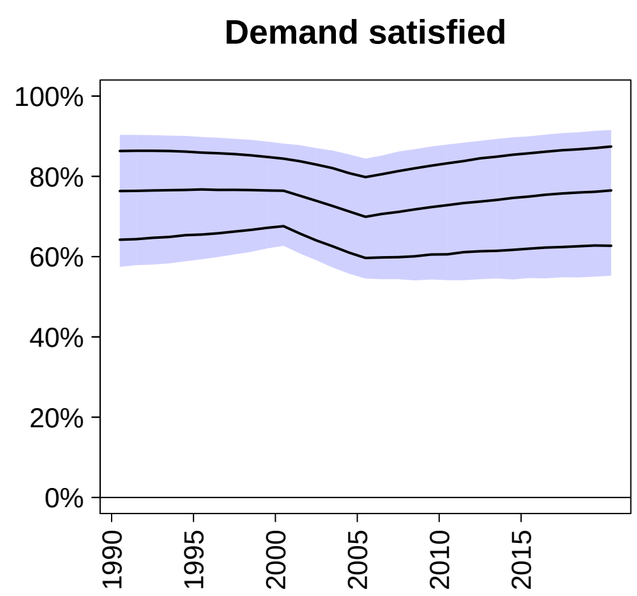












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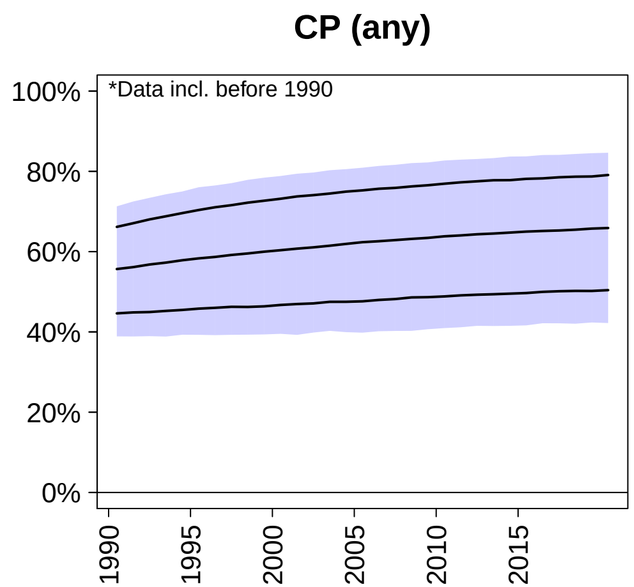
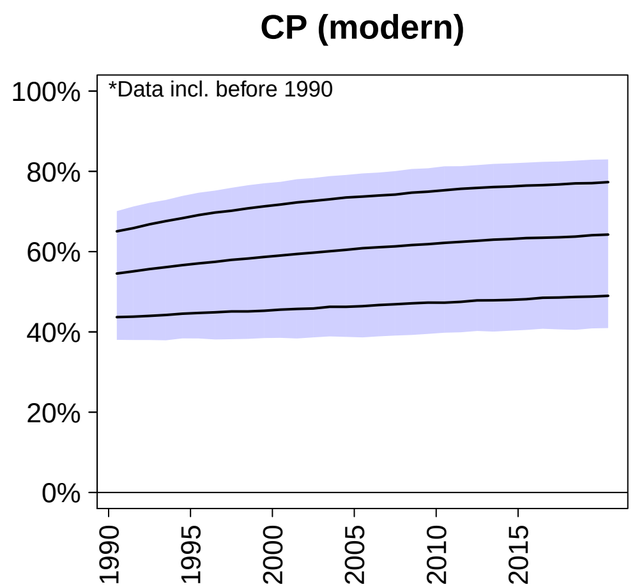
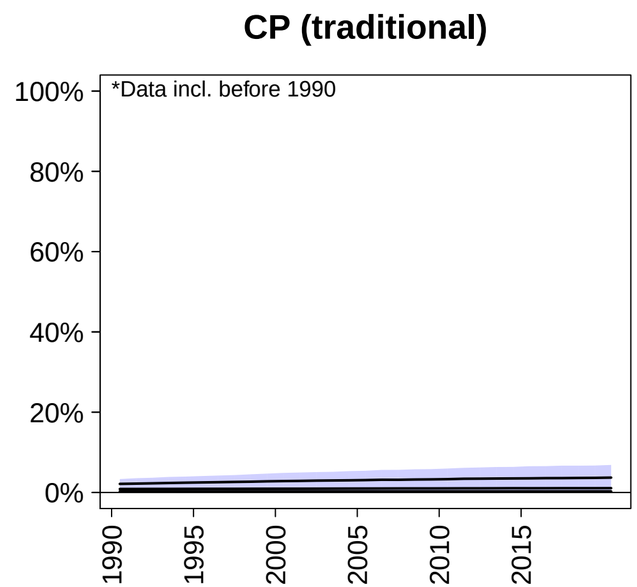
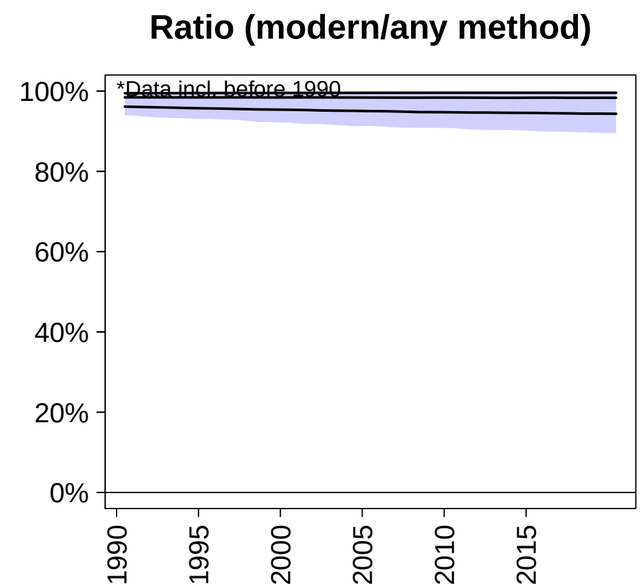
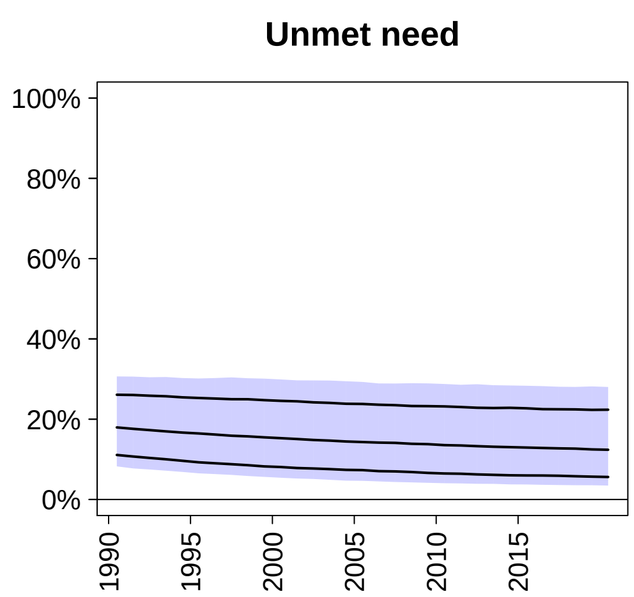
Montserrat (Caribbean)

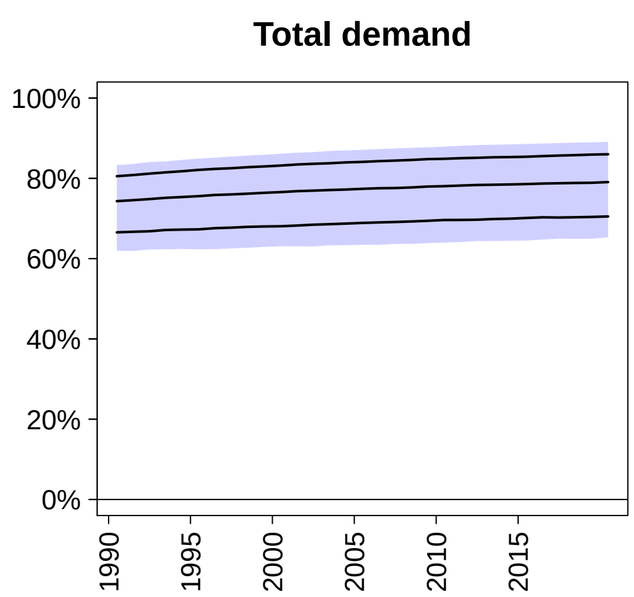


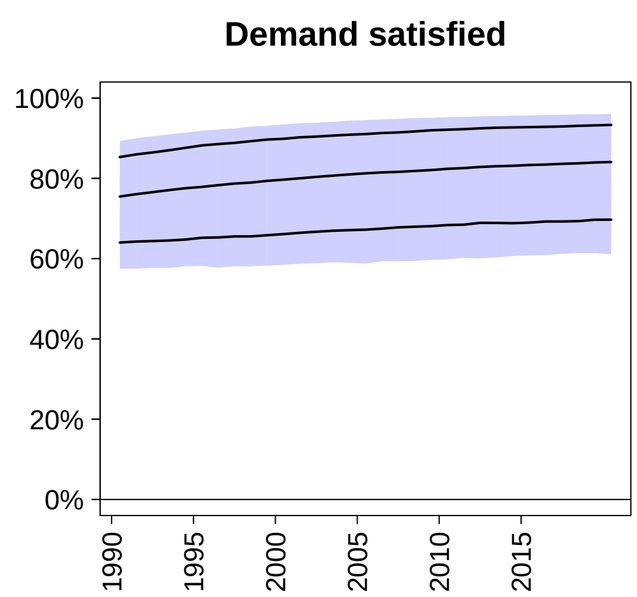












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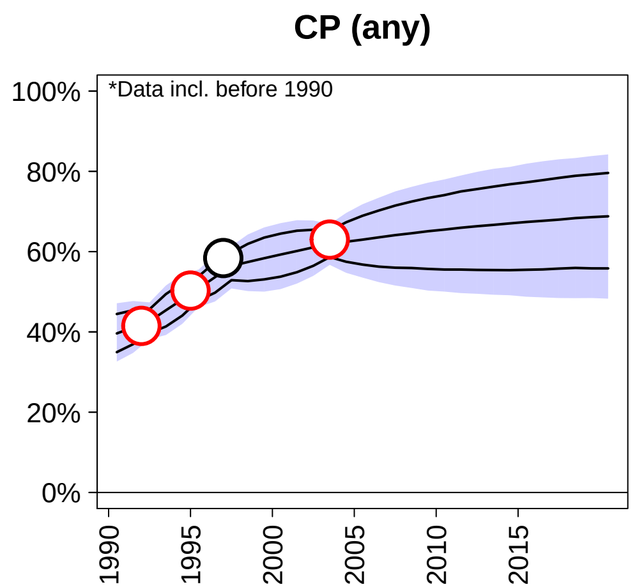
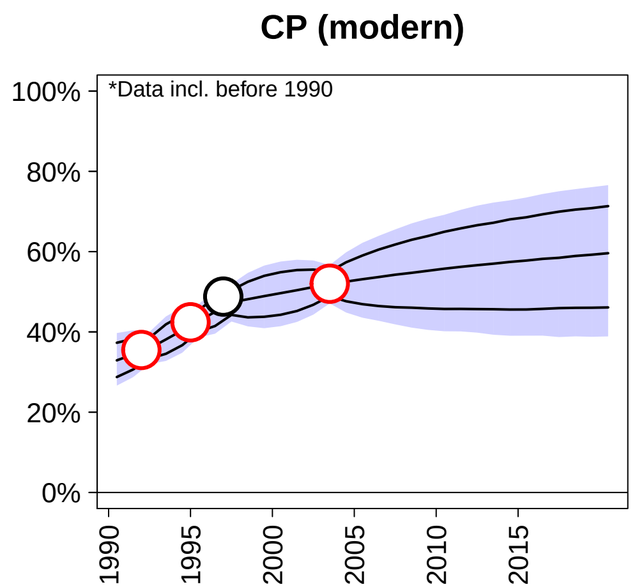
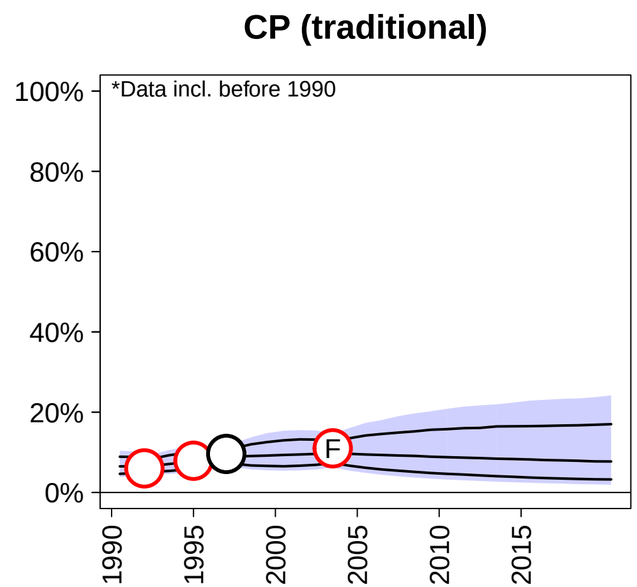
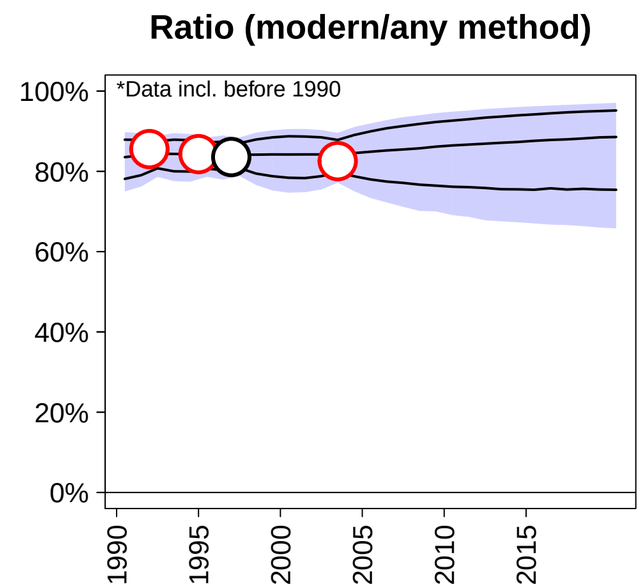
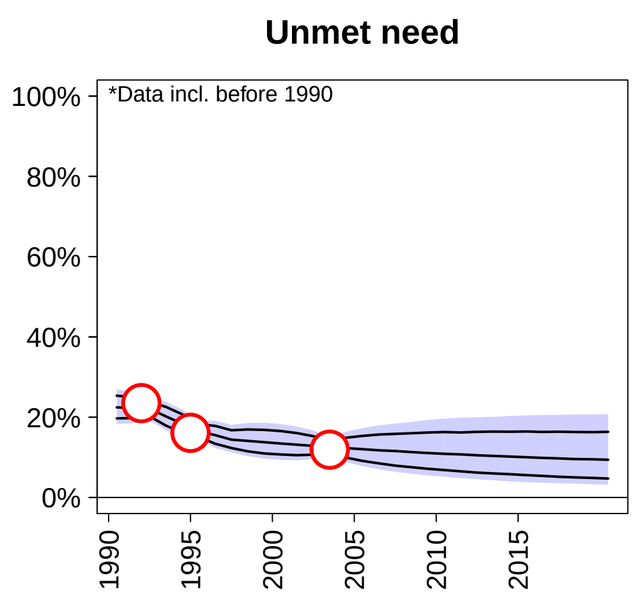
Morocco (Northern Africa)

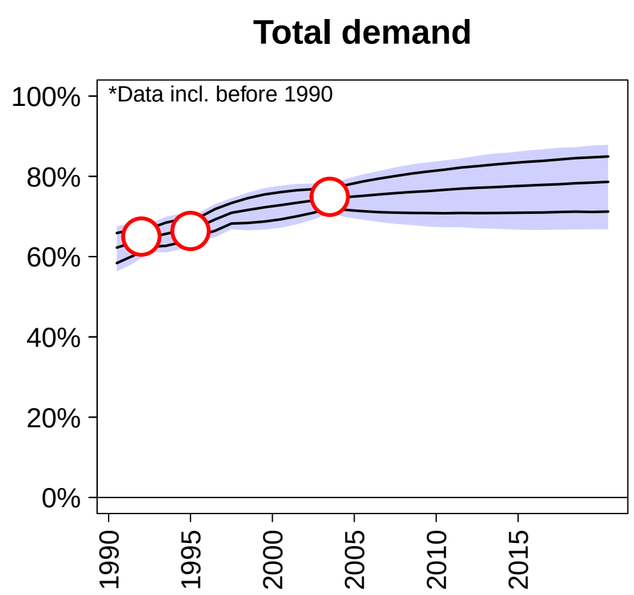


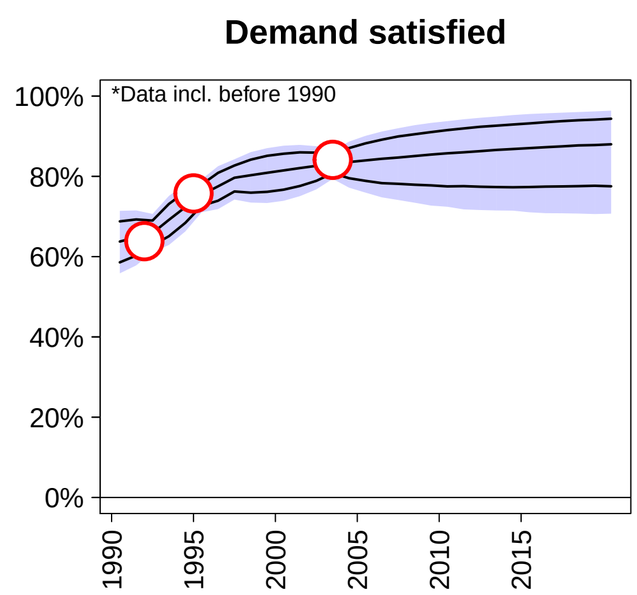












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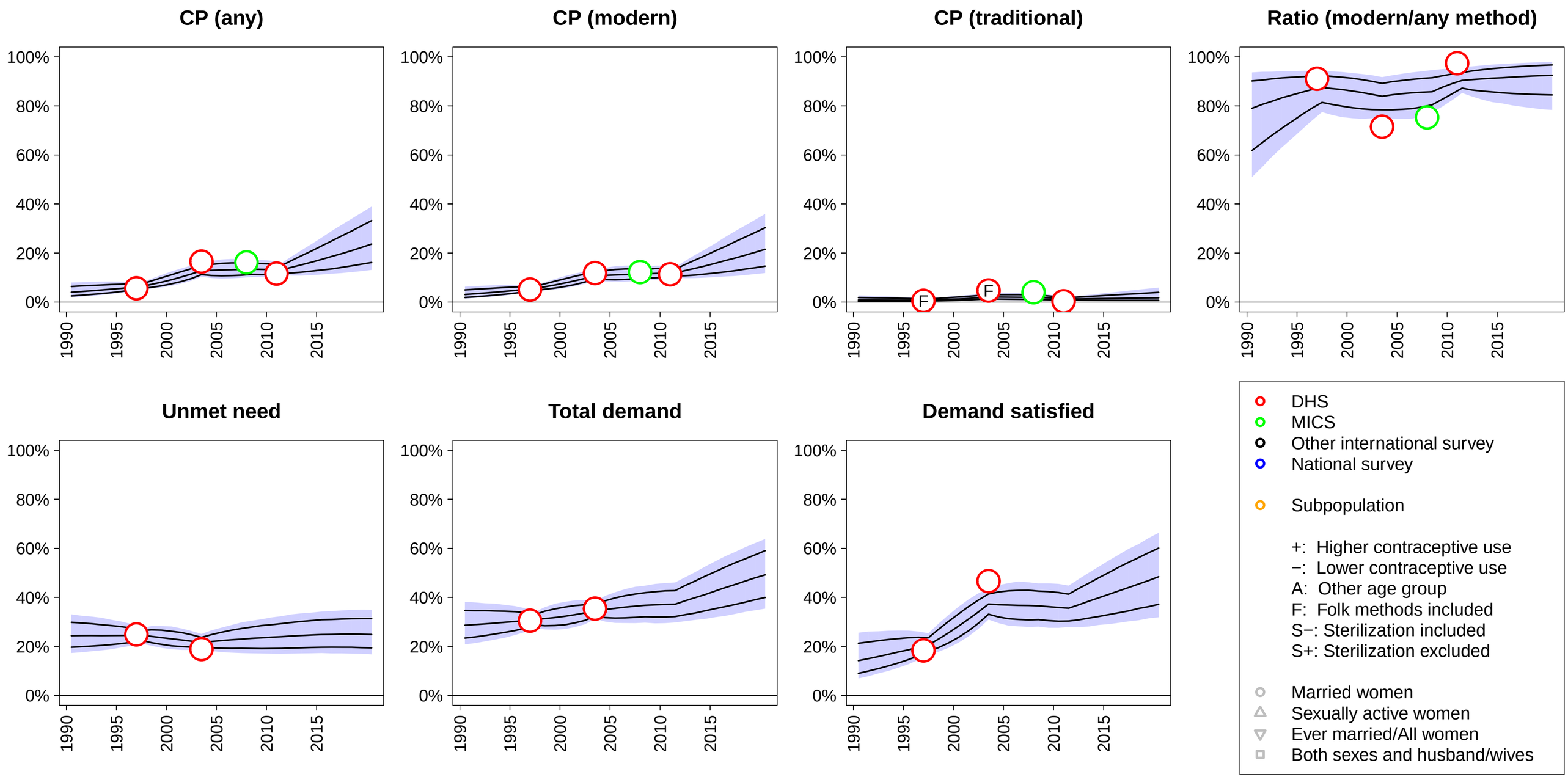
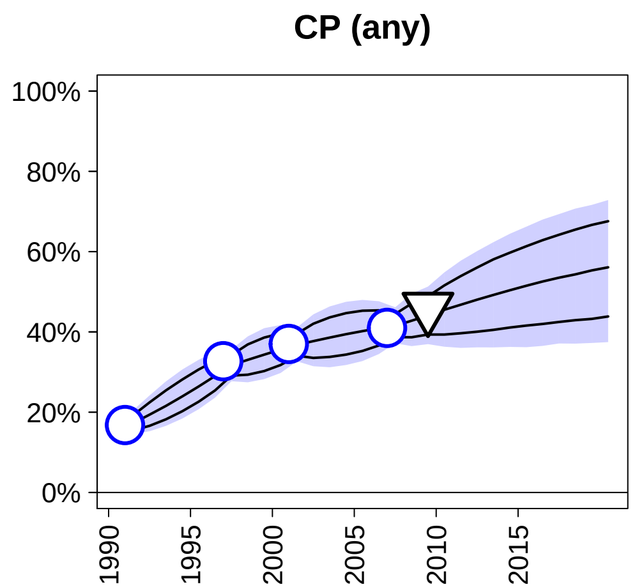
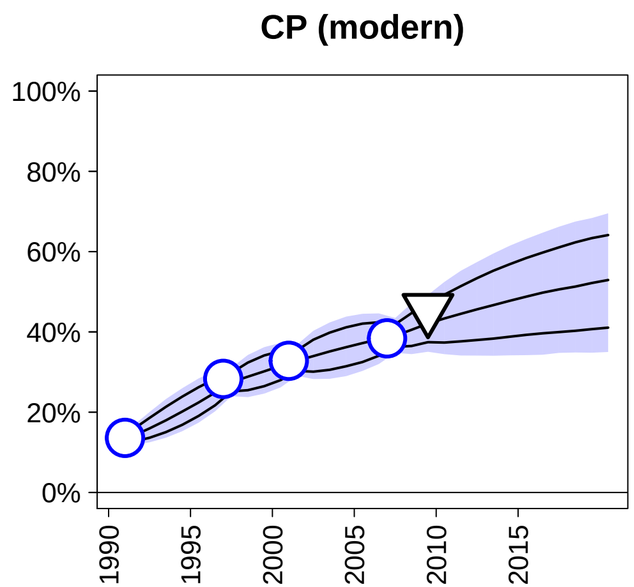
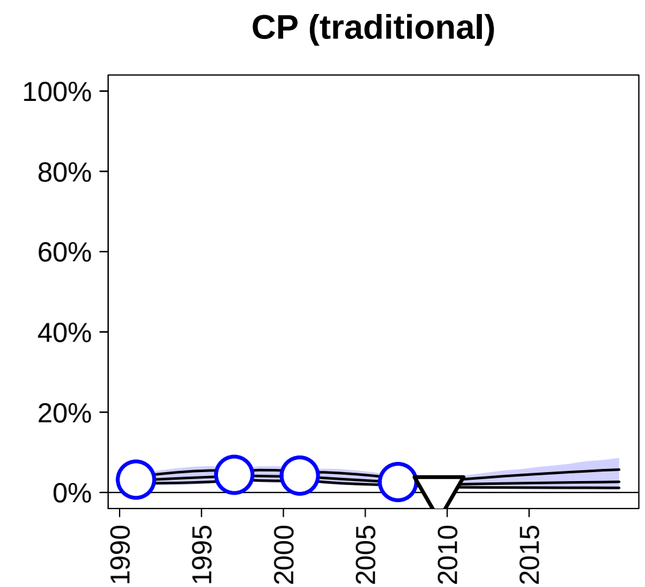
Mozambique (Eastern Africa)

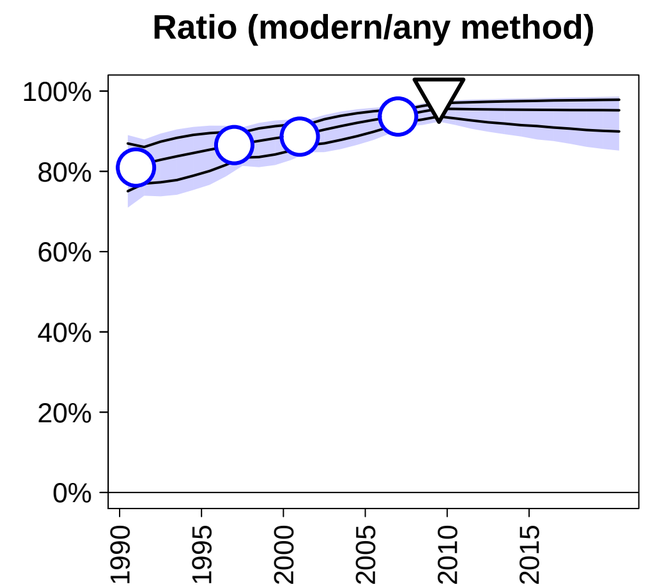


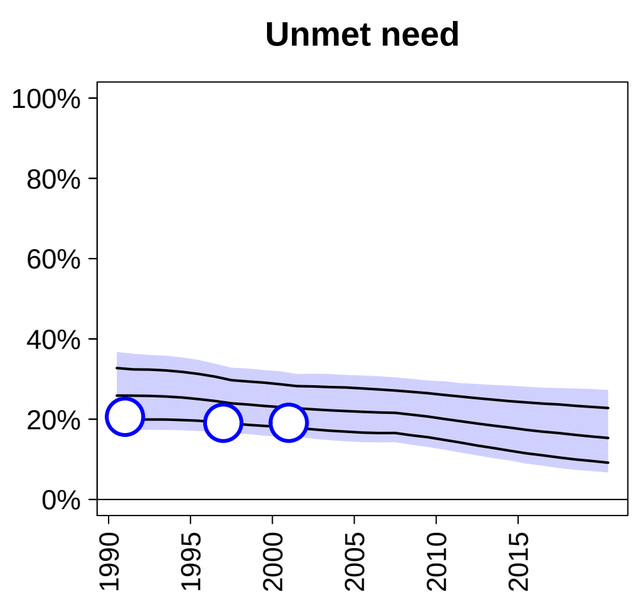
Myanmar (South−Eastern Asia)

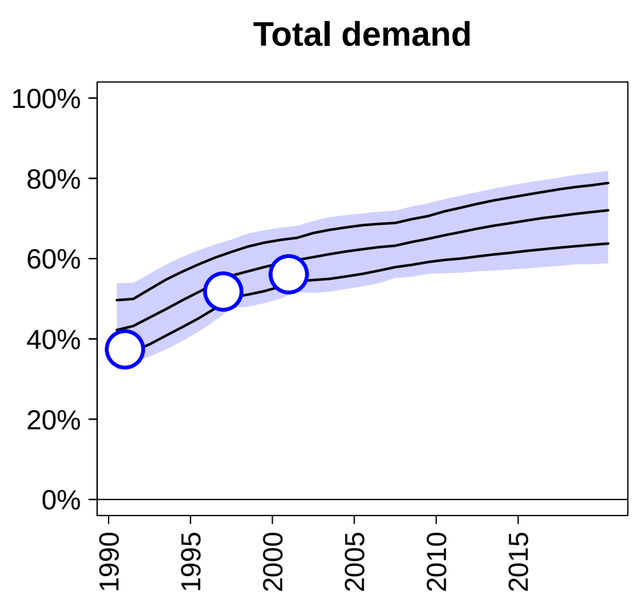


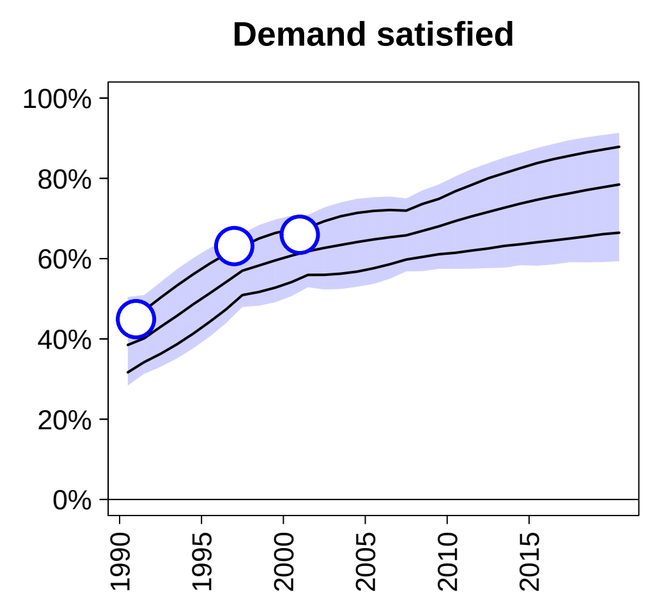












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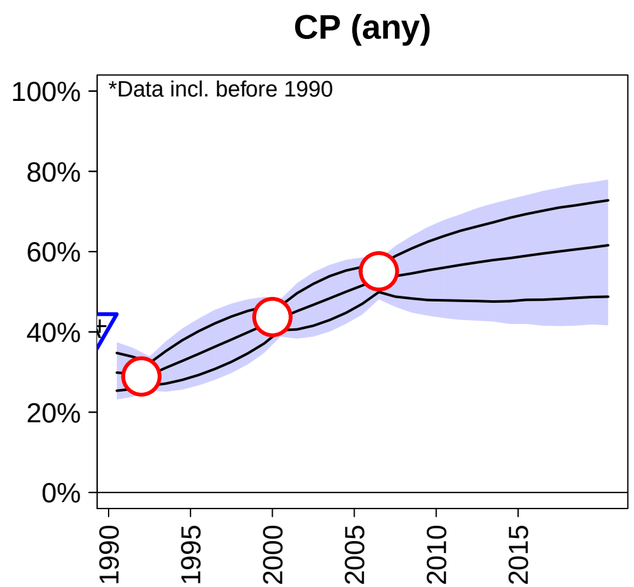
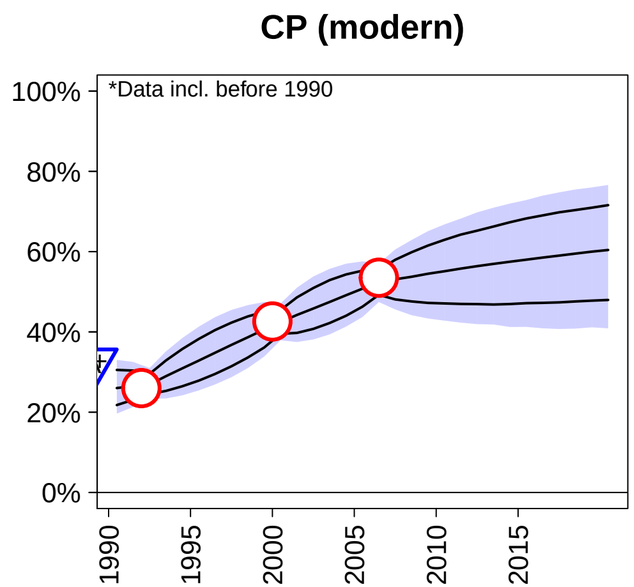
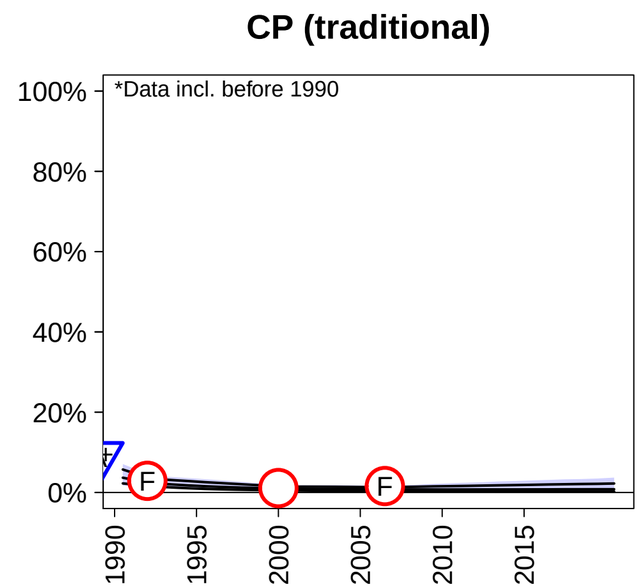
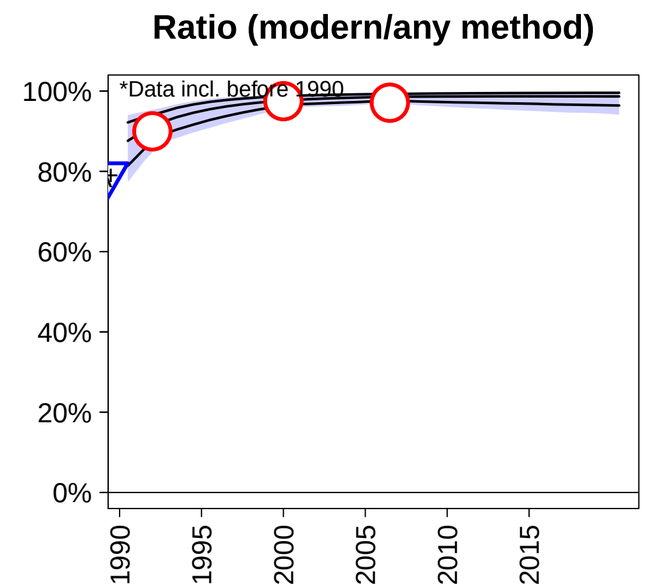
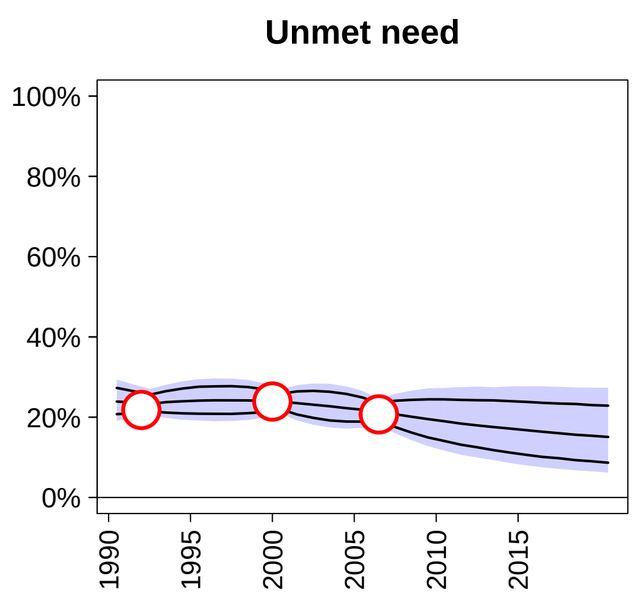
Namibia (Southern Africa)

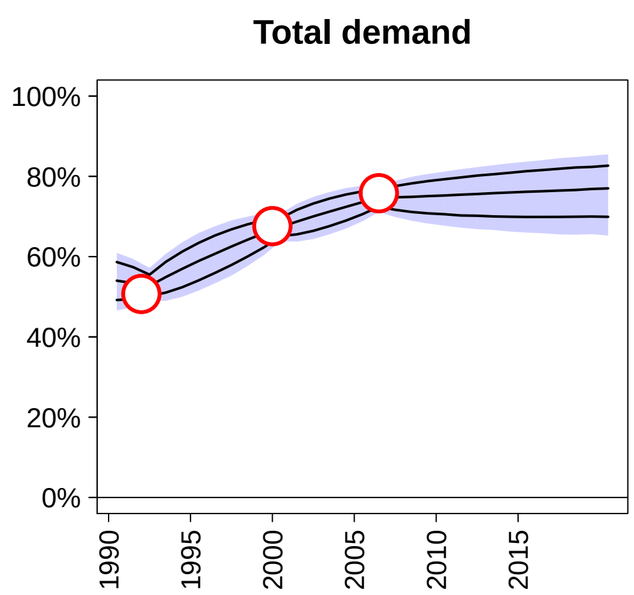


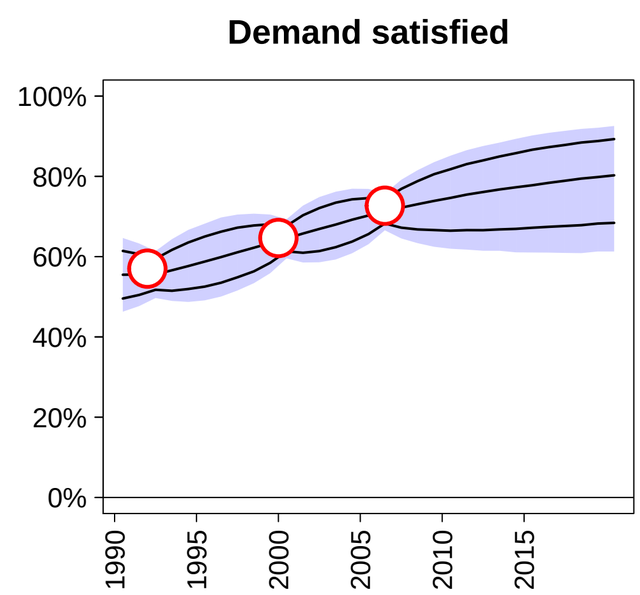












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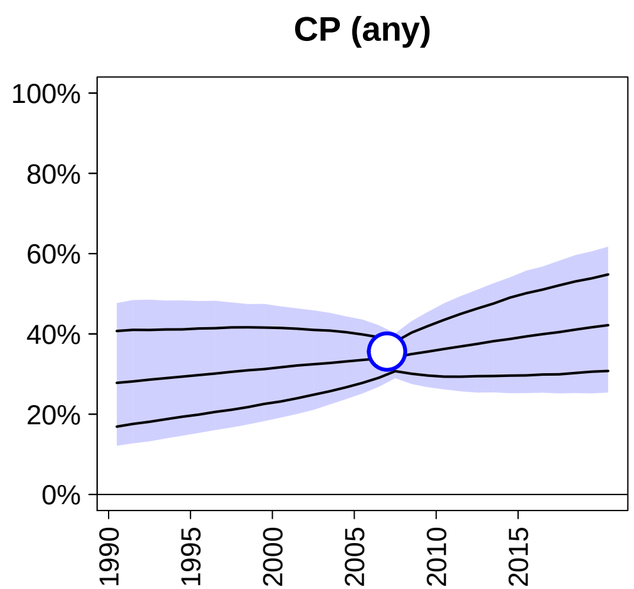
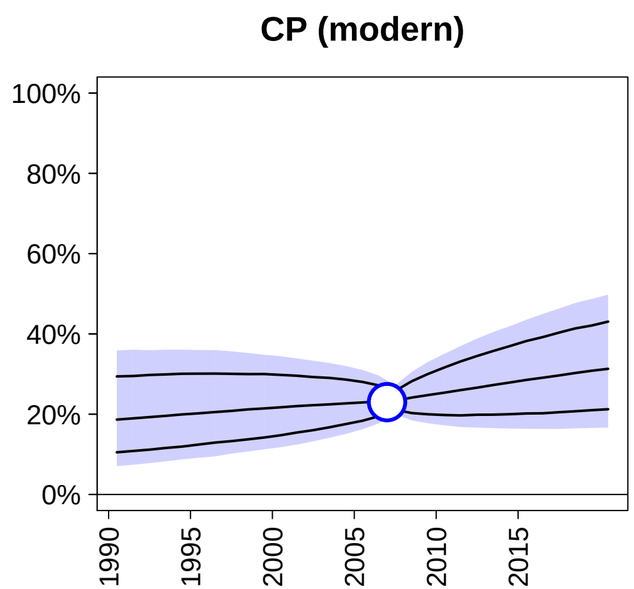
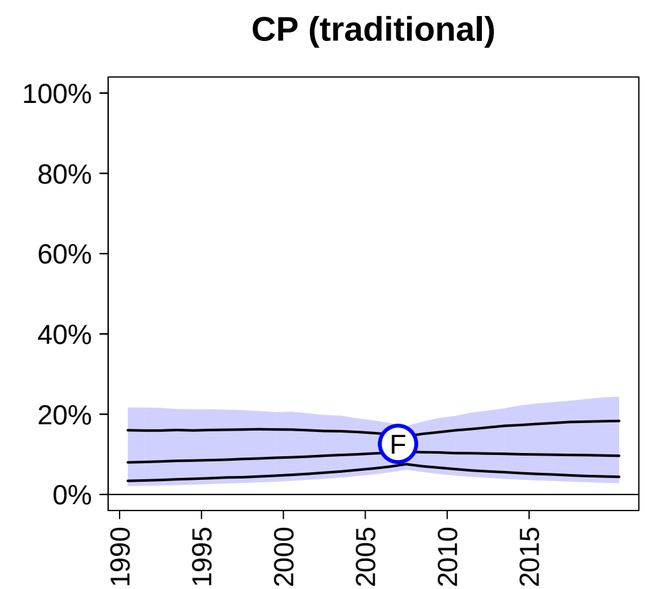
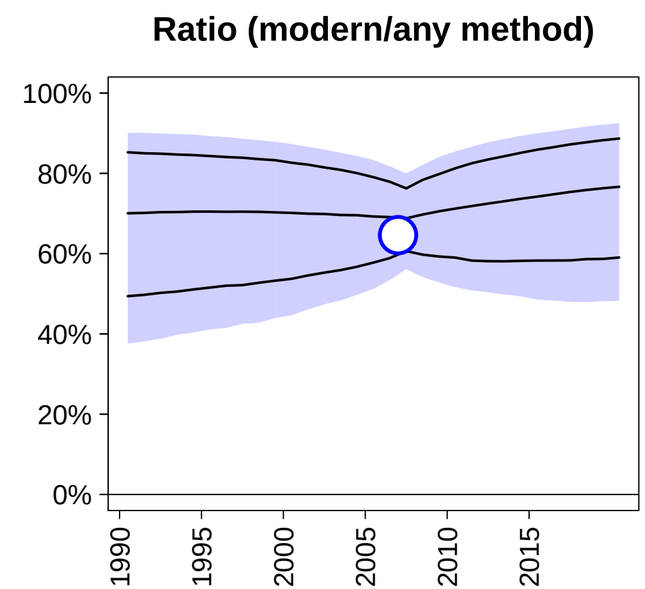
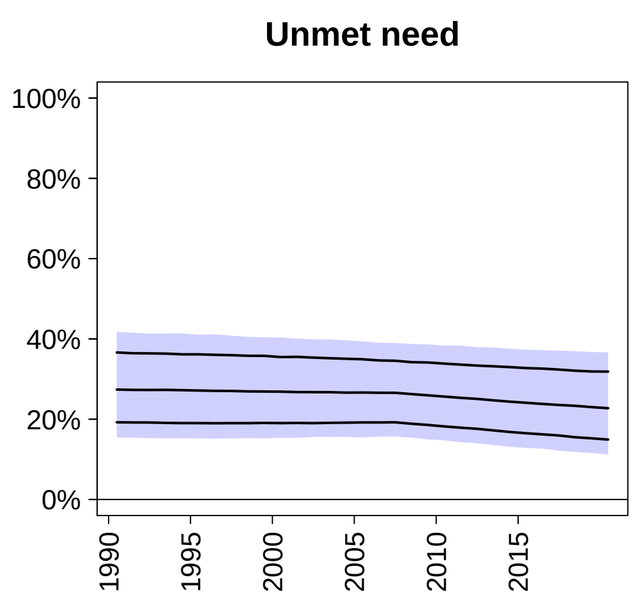
Nauru (Micronesia)

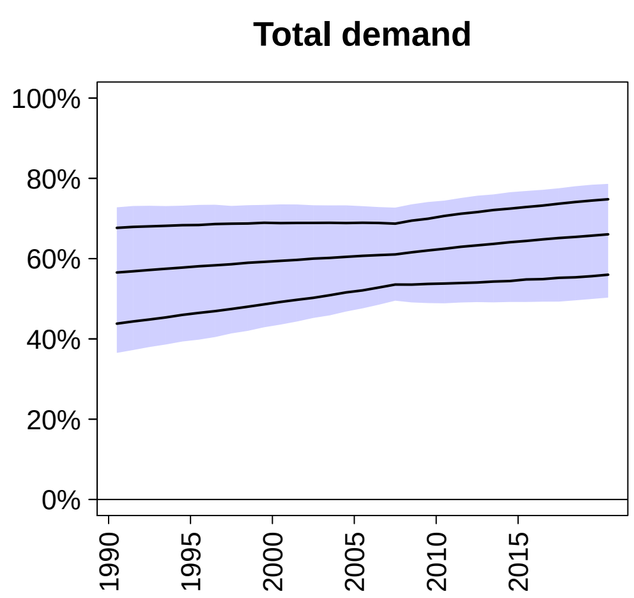


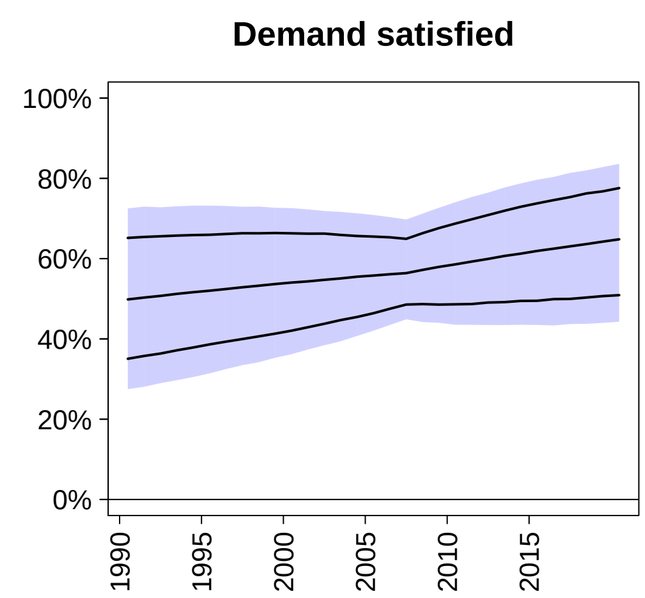












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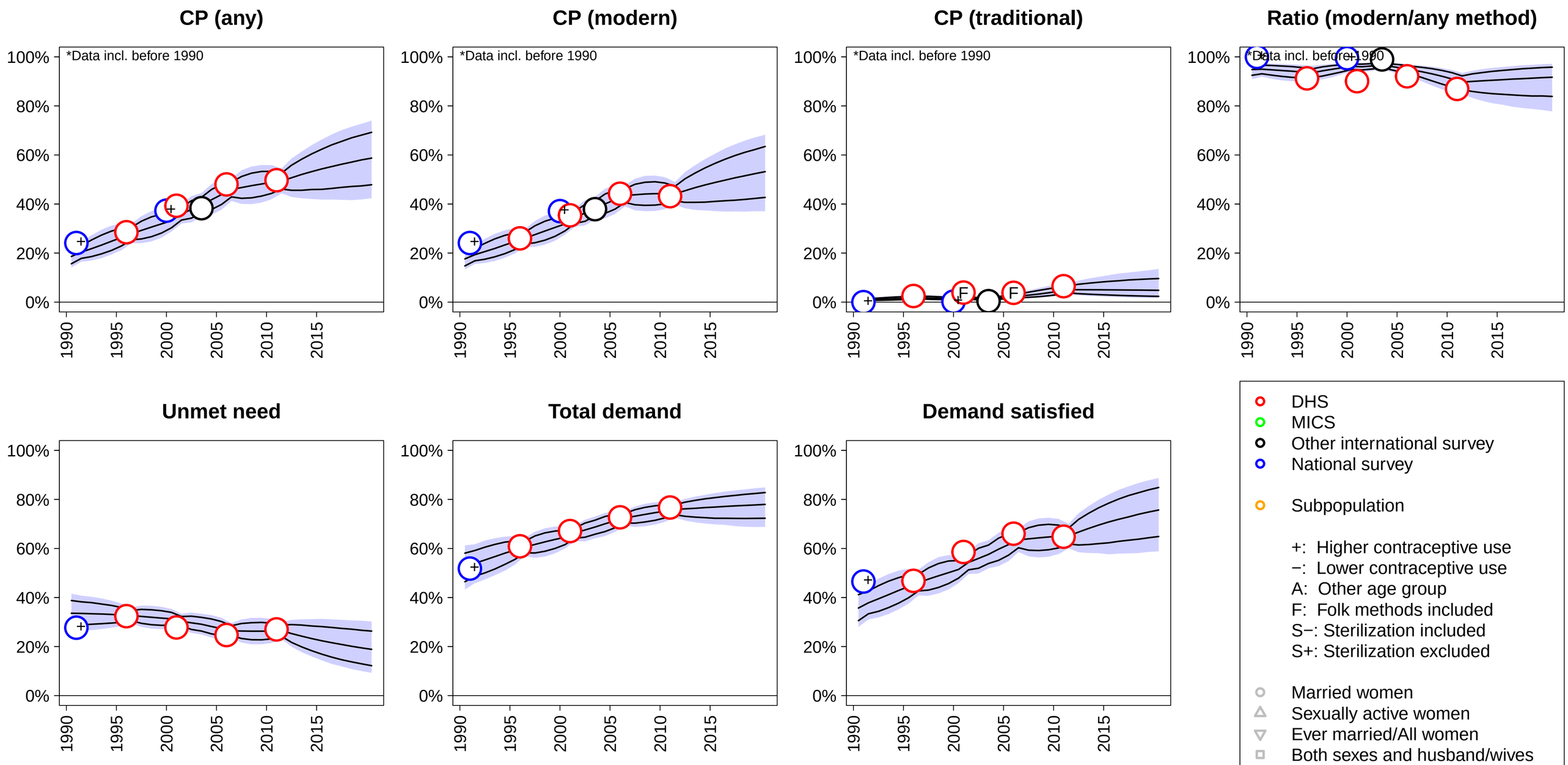
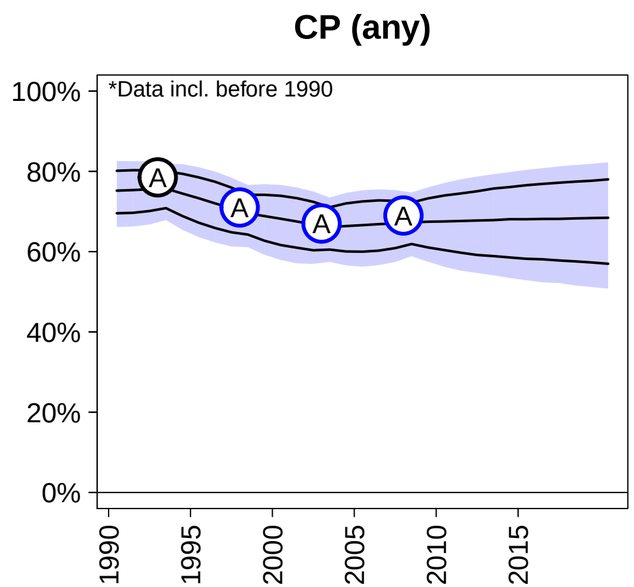
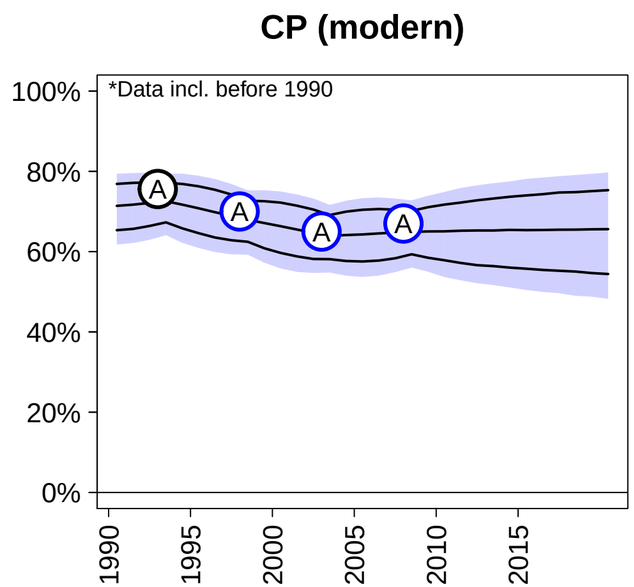
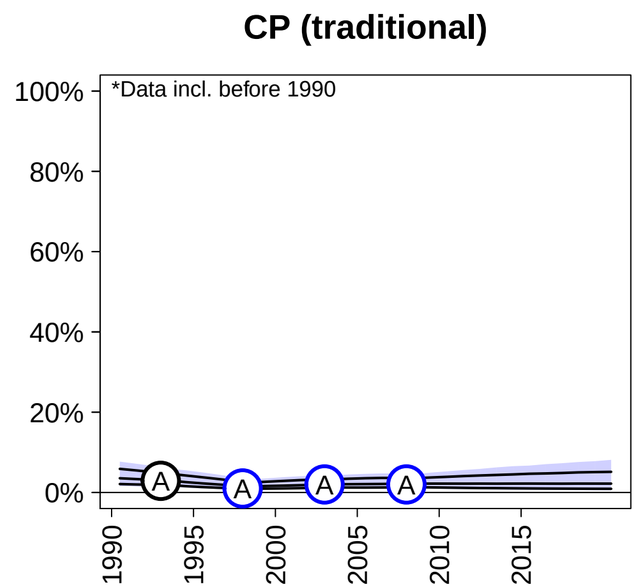
Nepal (Southern Asia)

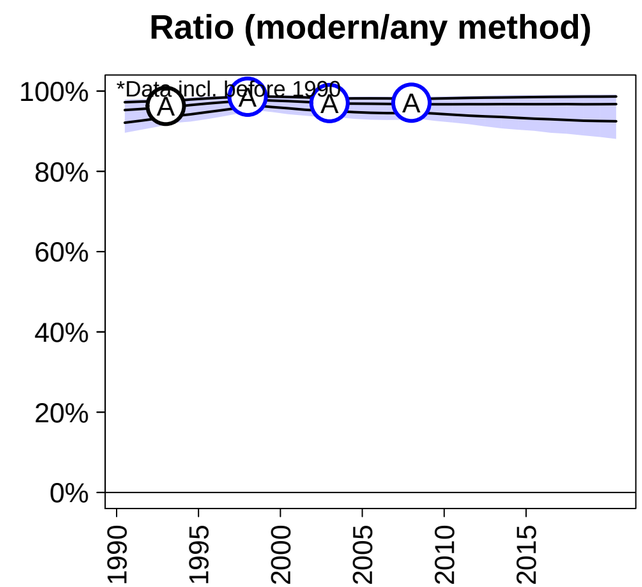


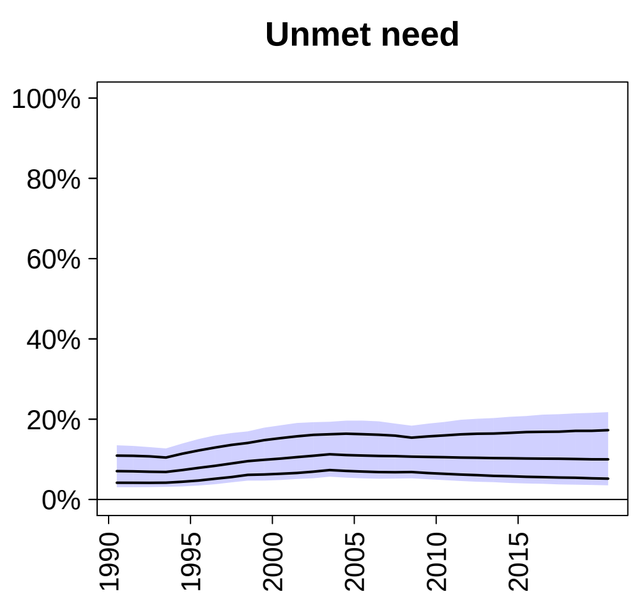
Netherlands (Western Europe)

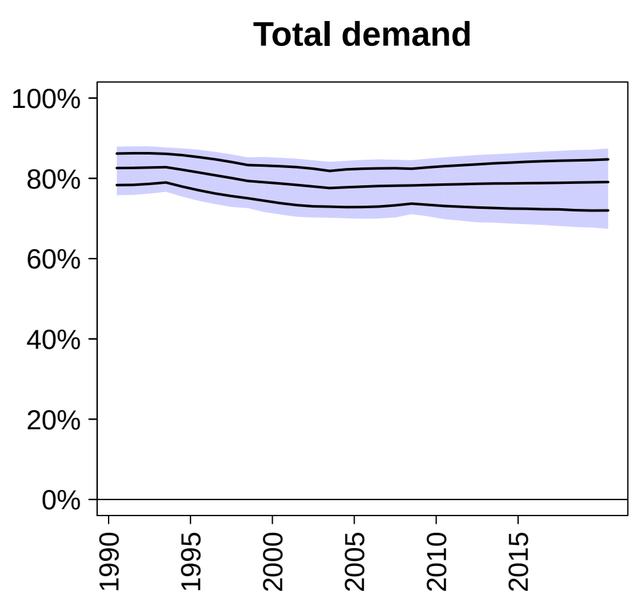


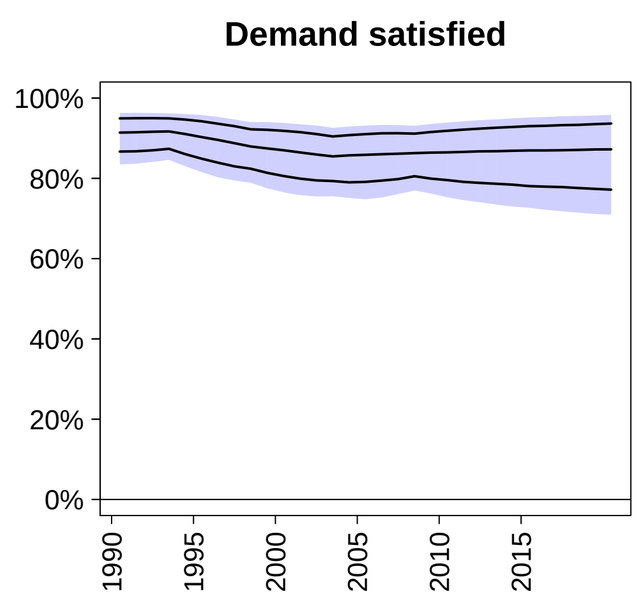












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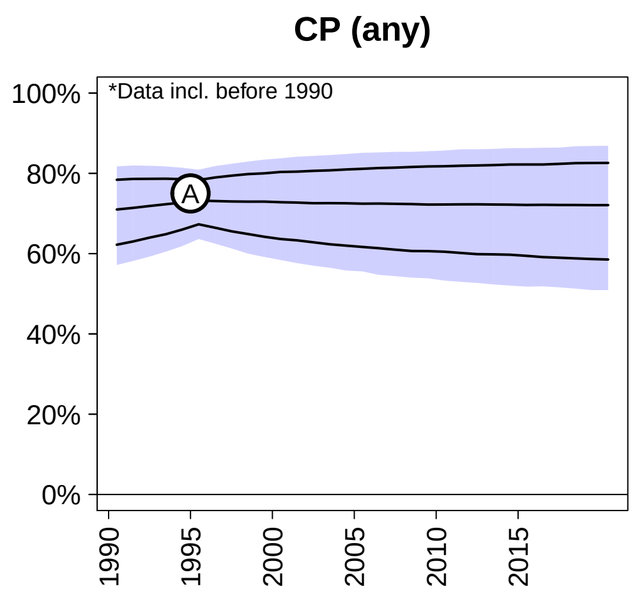
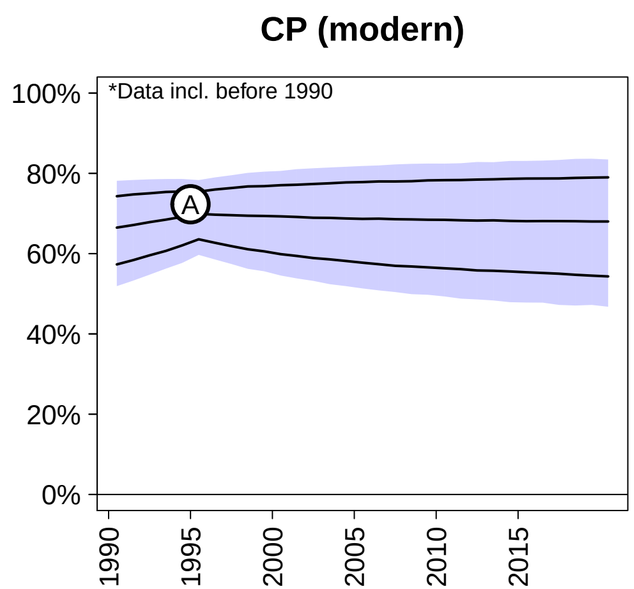
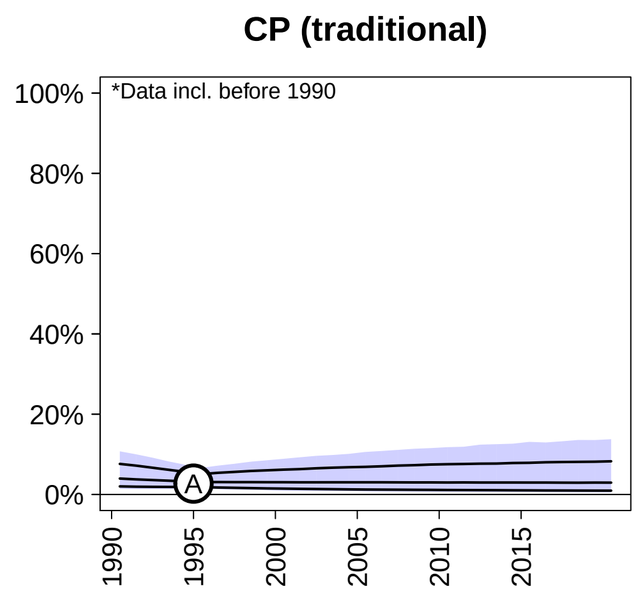
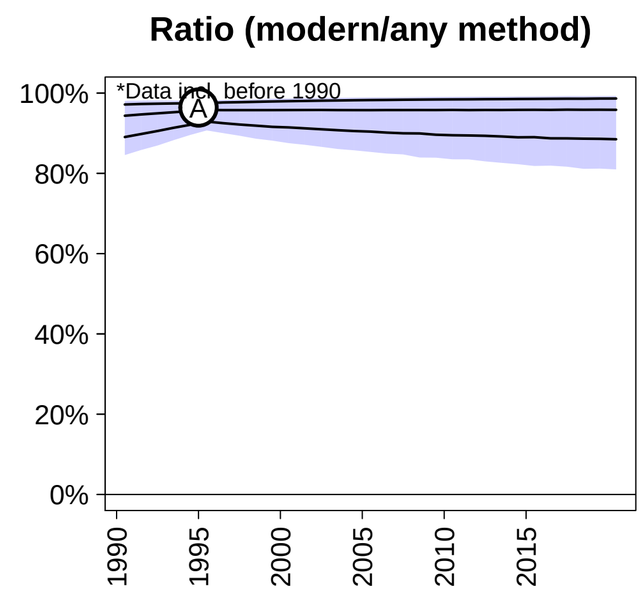
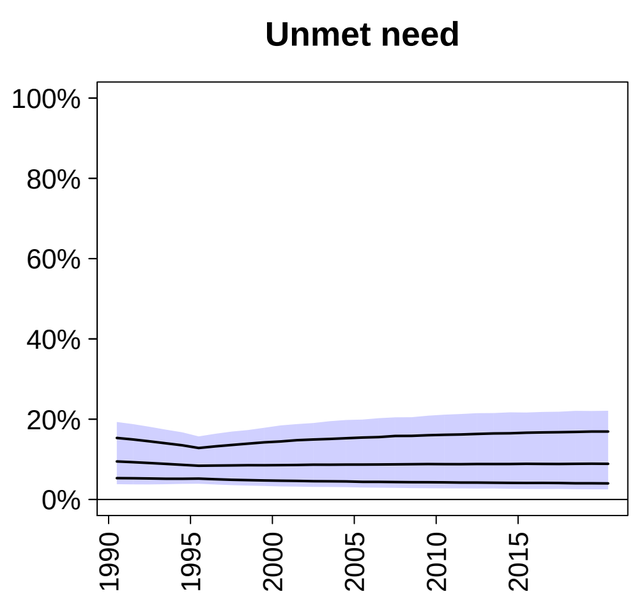
New Zealand (Australia and New Zealand)

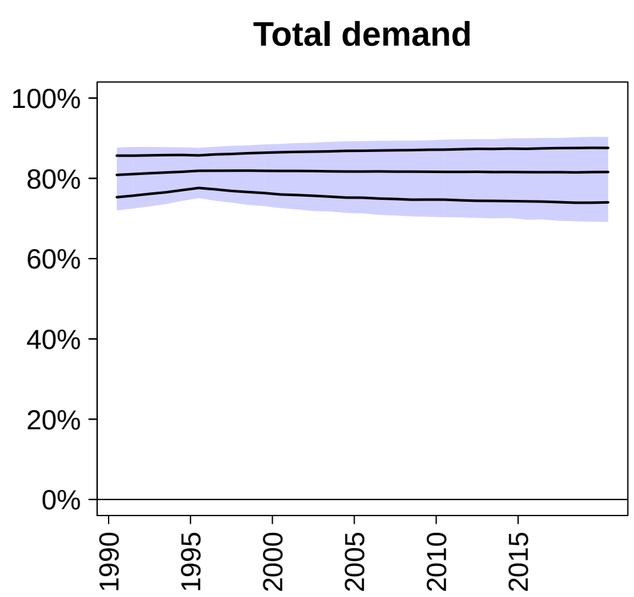


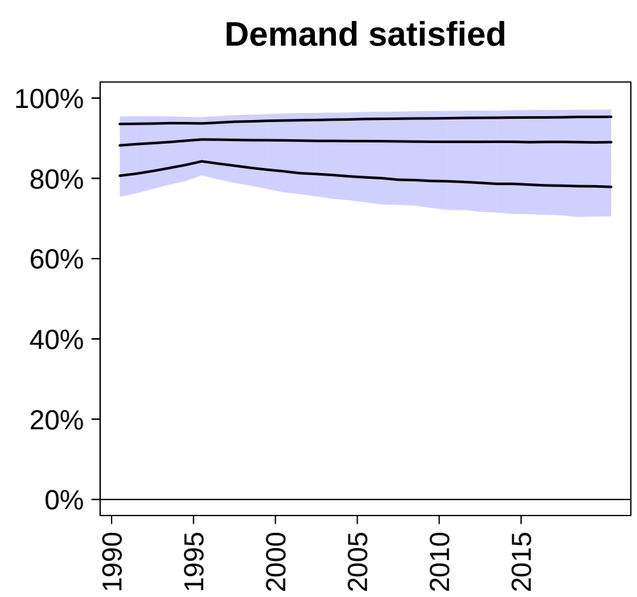












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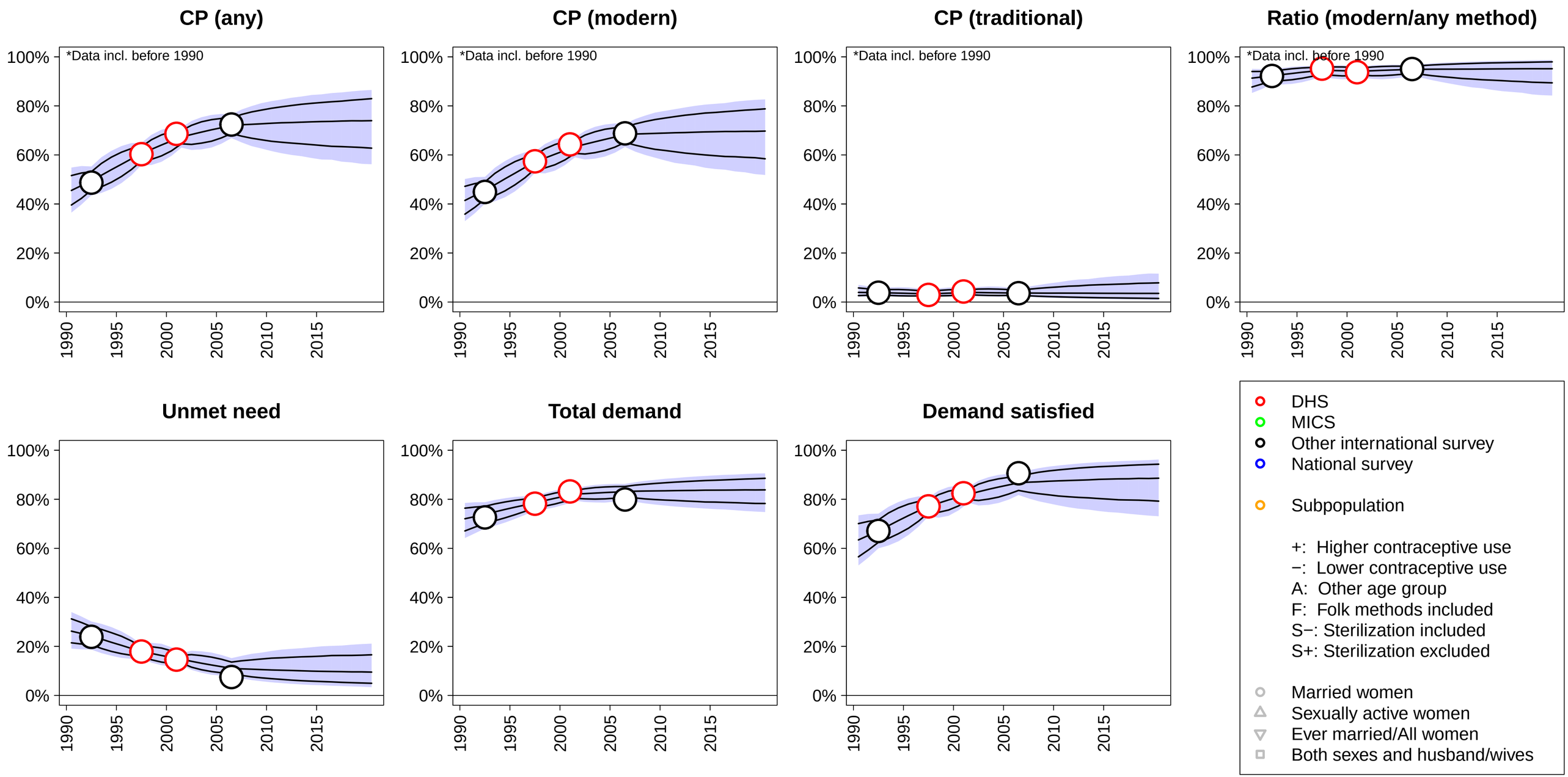
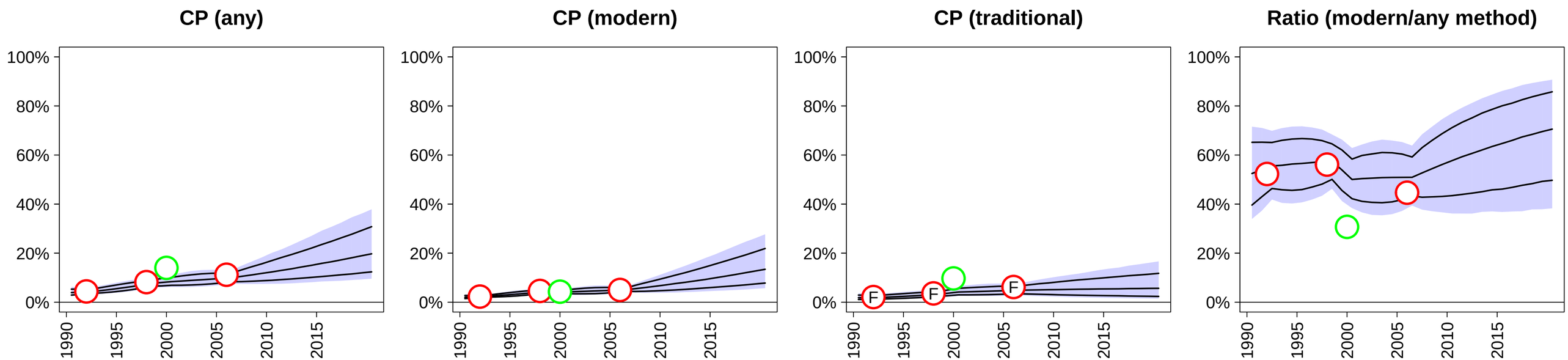
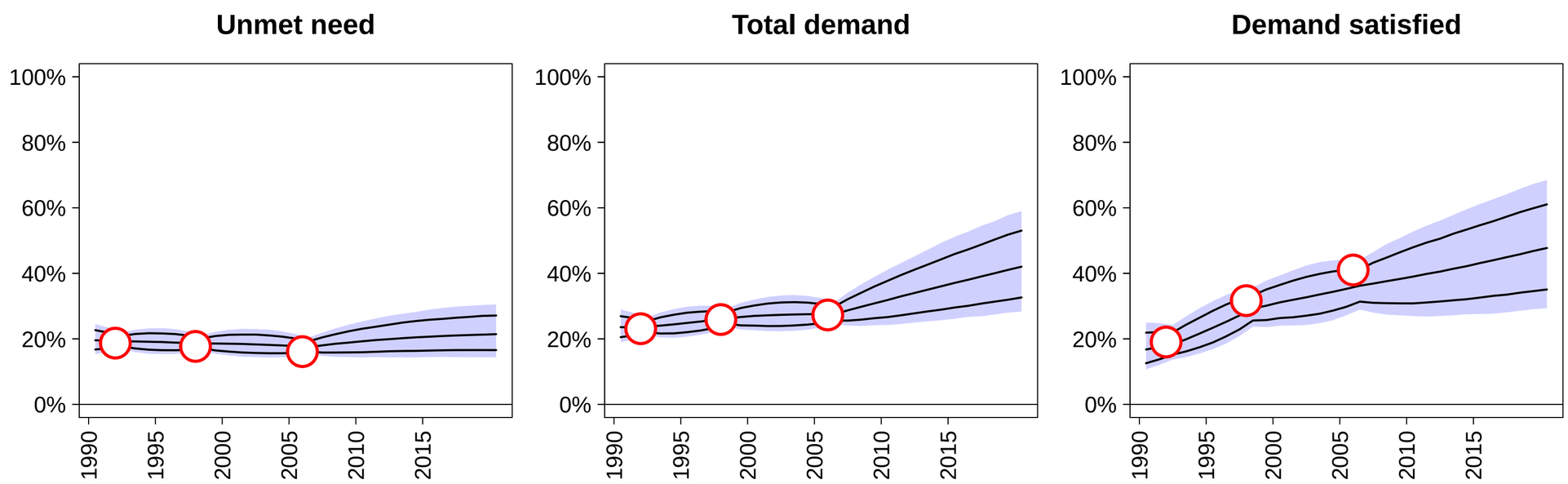
Nicaragua (Central America)



Niger (Western Africa)





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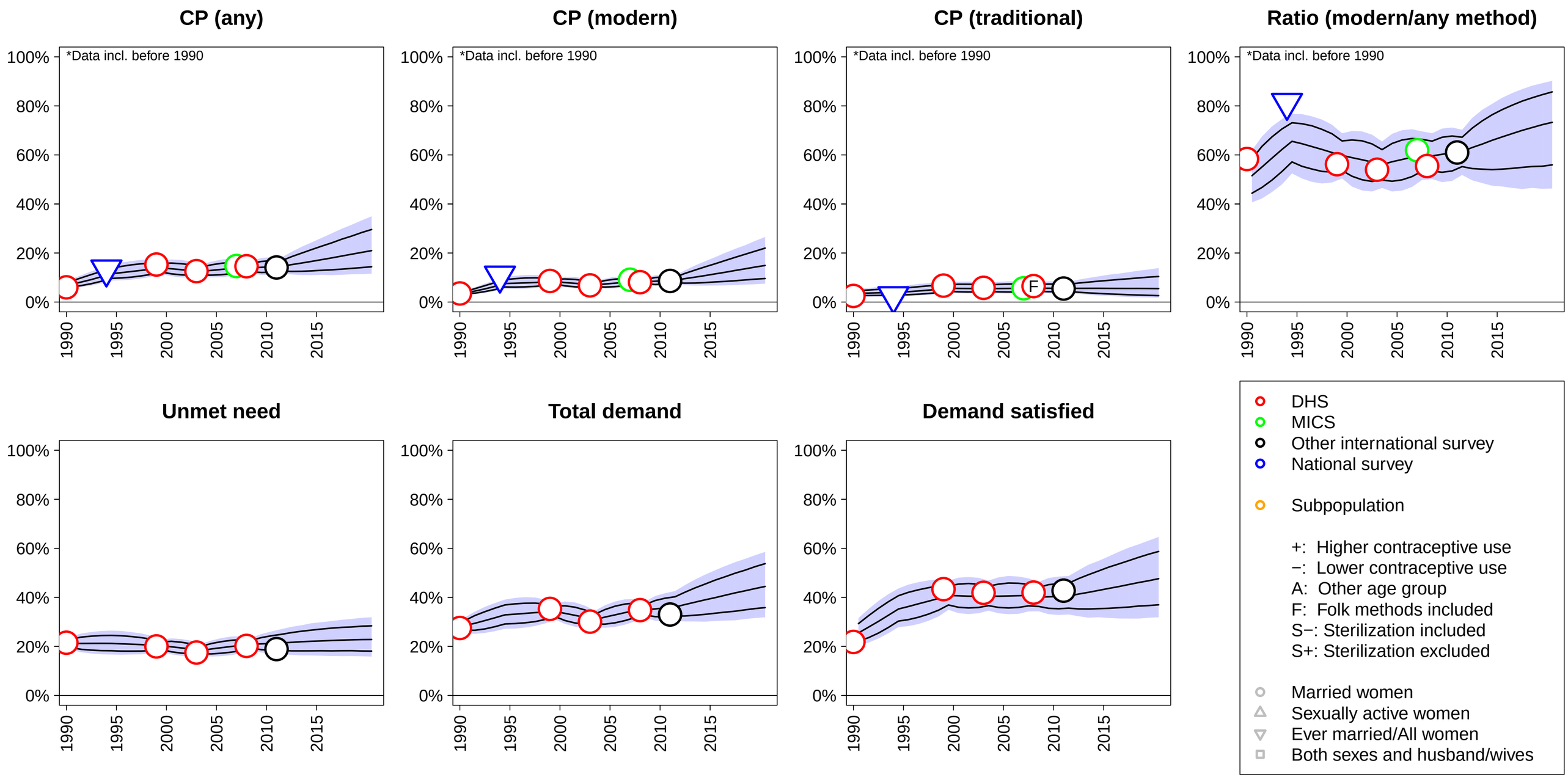
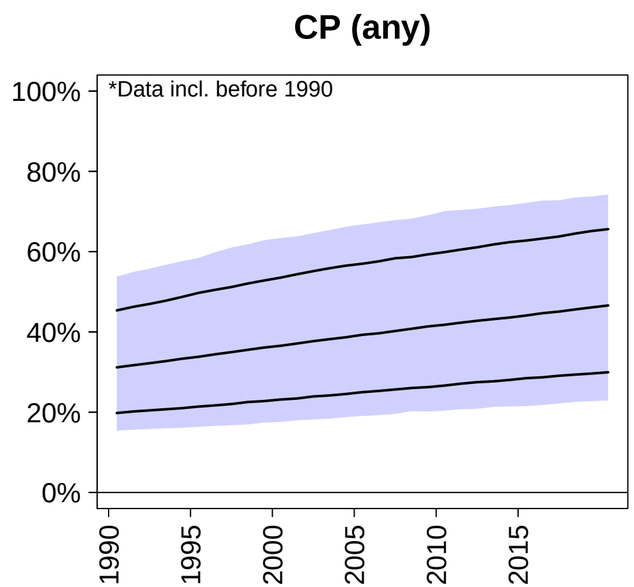
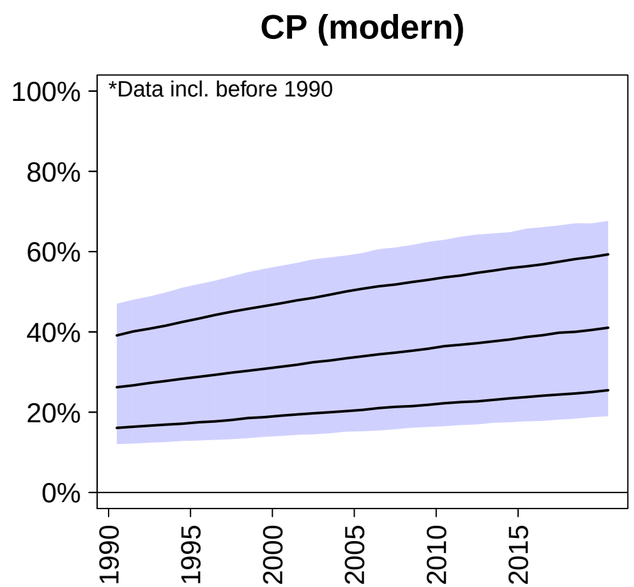
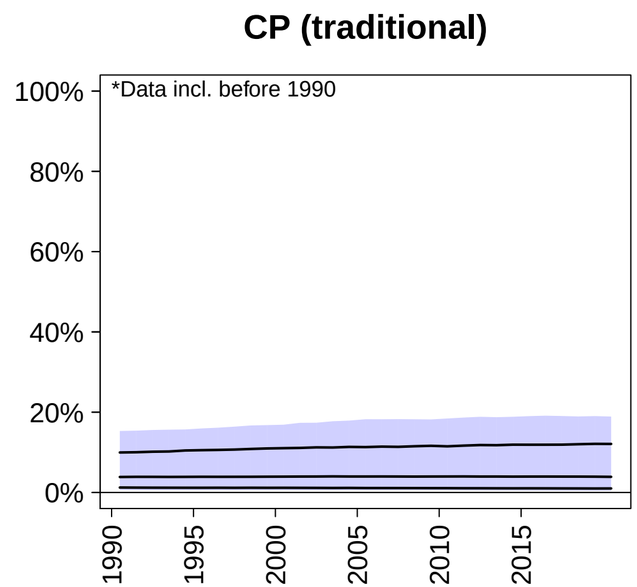
Nigeria (Western Africa)

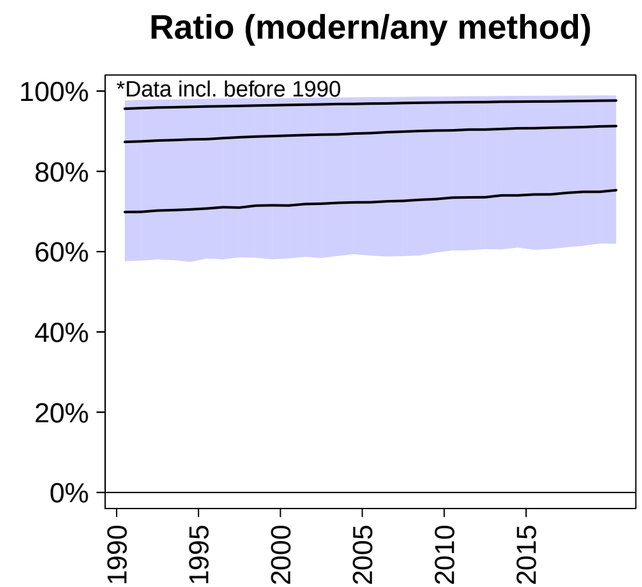


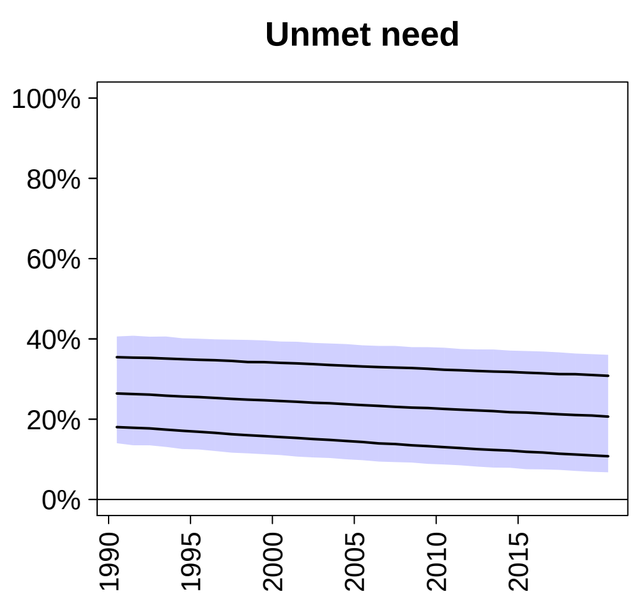
Northern Mariana Islands (Micronesia)

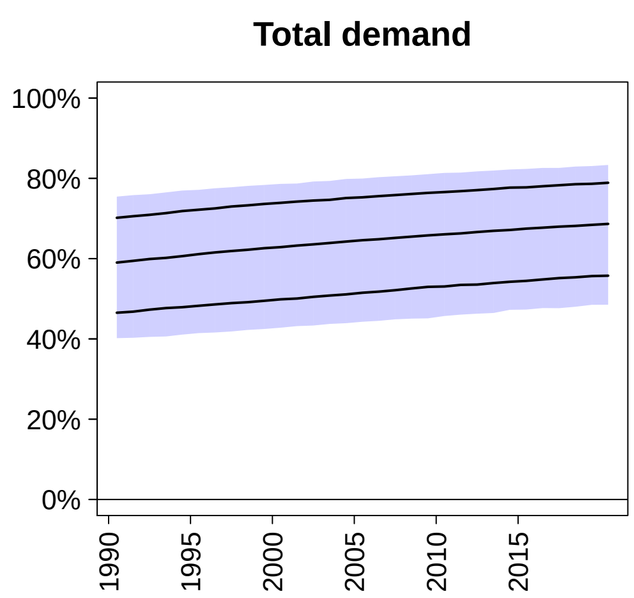












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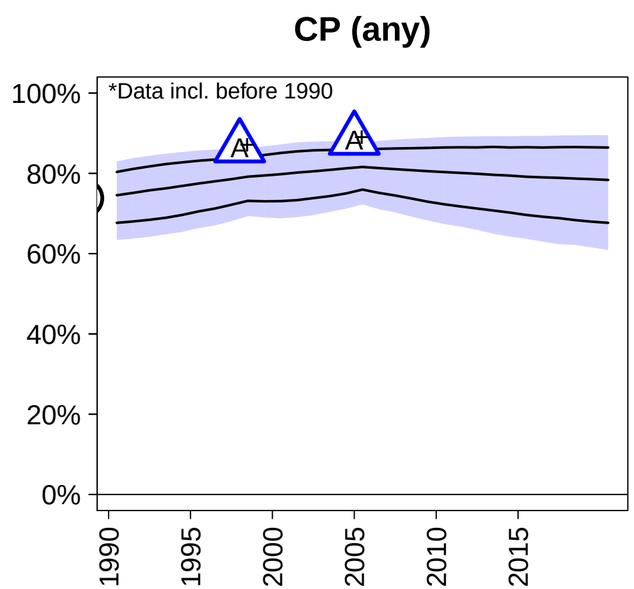
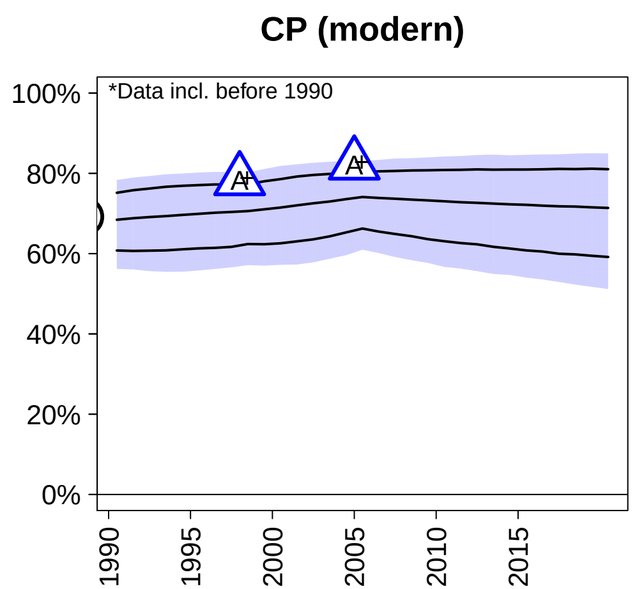
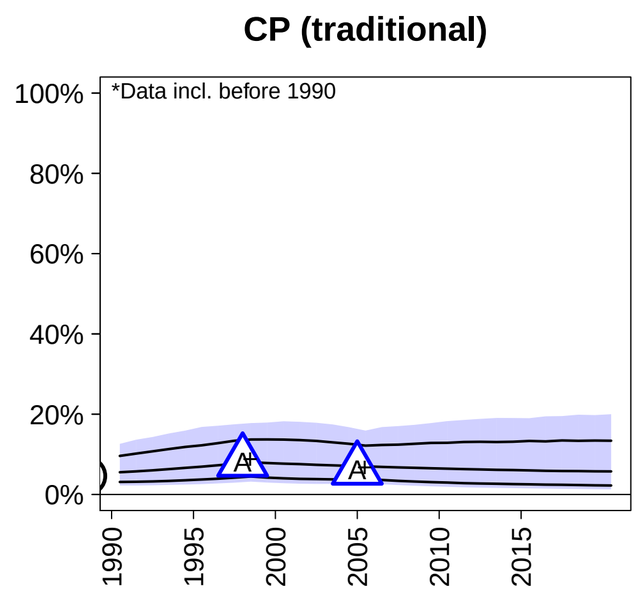
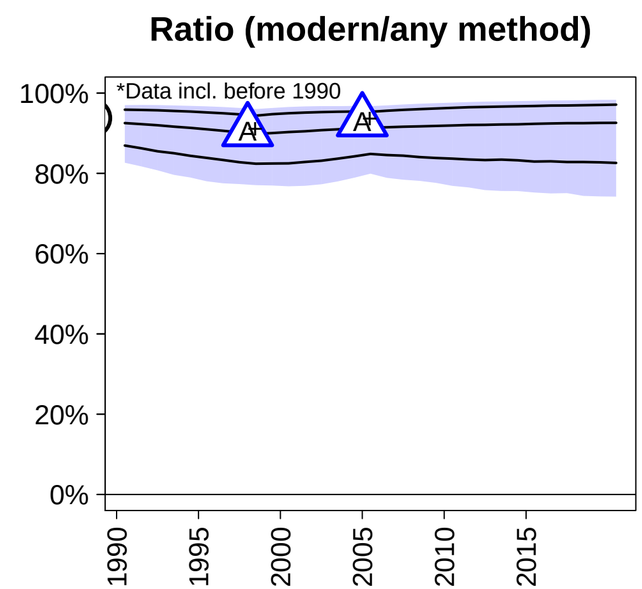
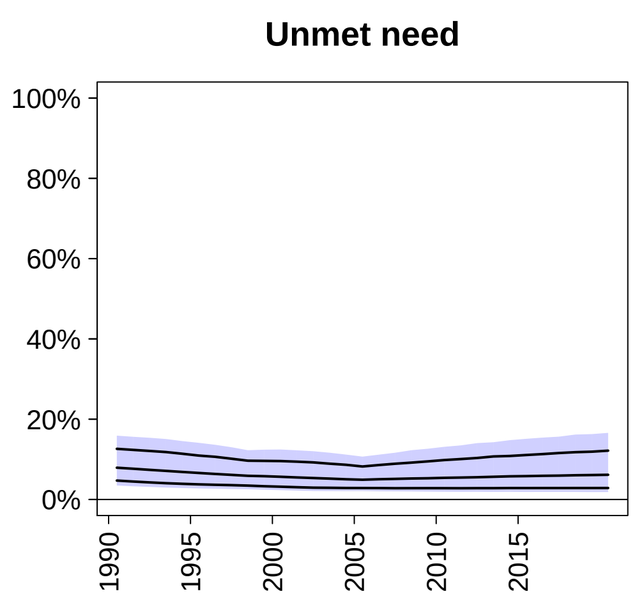
Norway (Northern Europe)

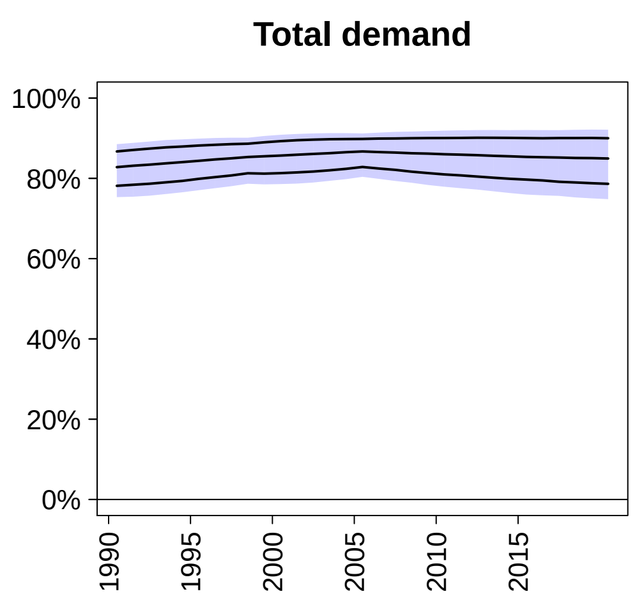


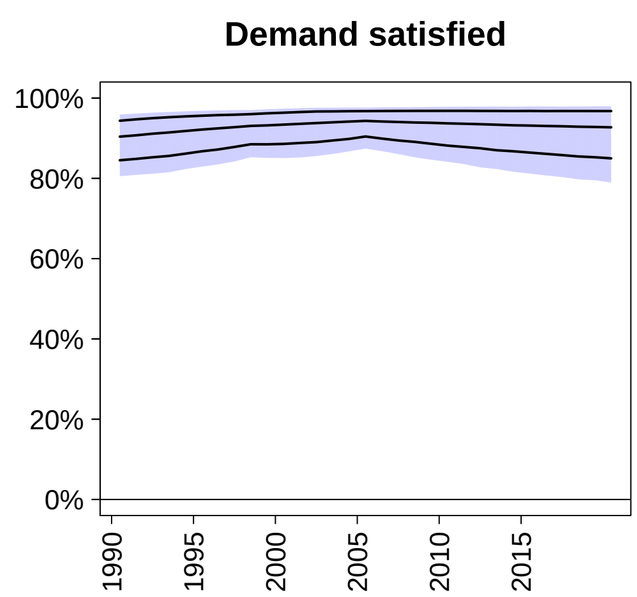












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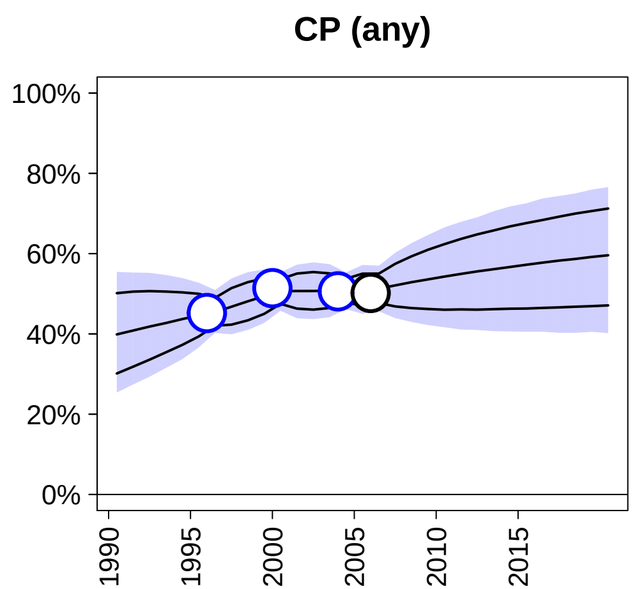
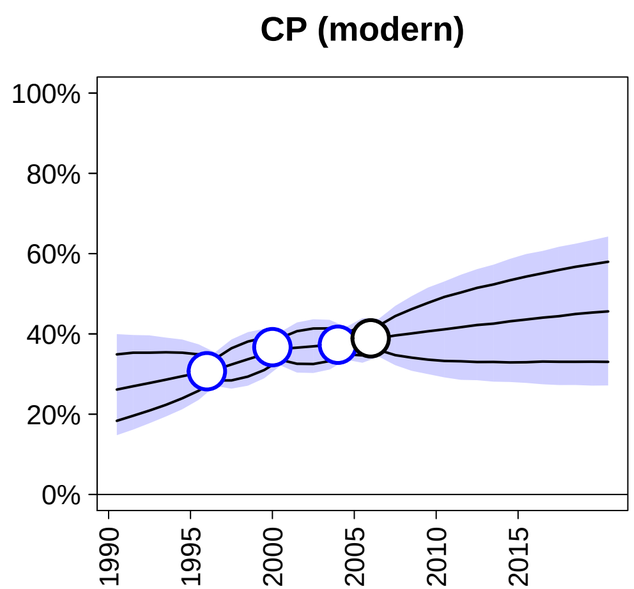
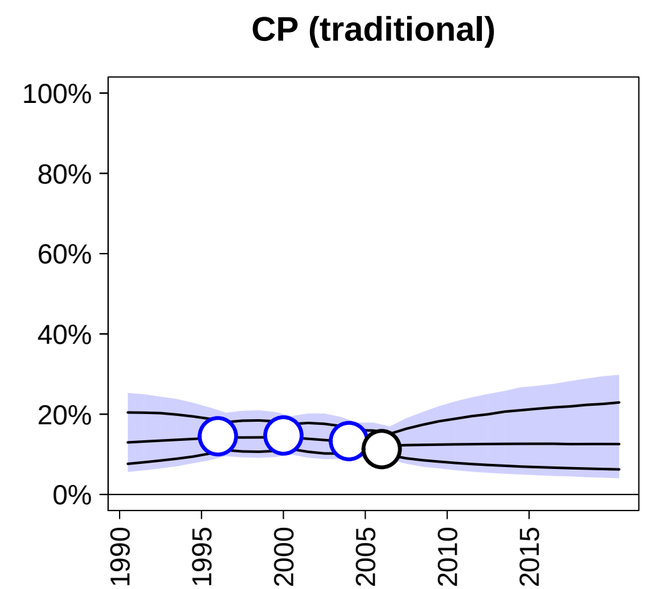
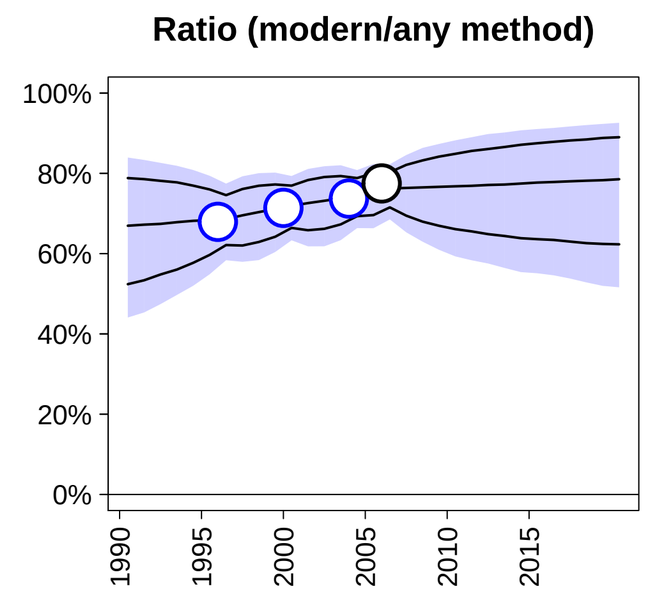
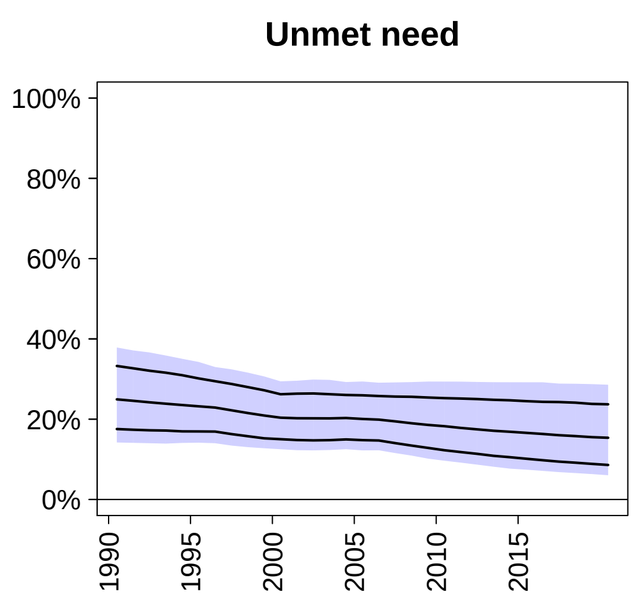
State of Palestine (Western Asia)

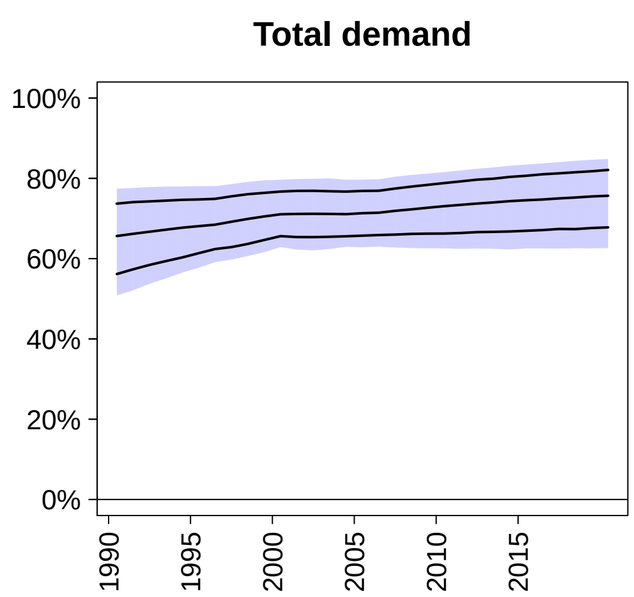


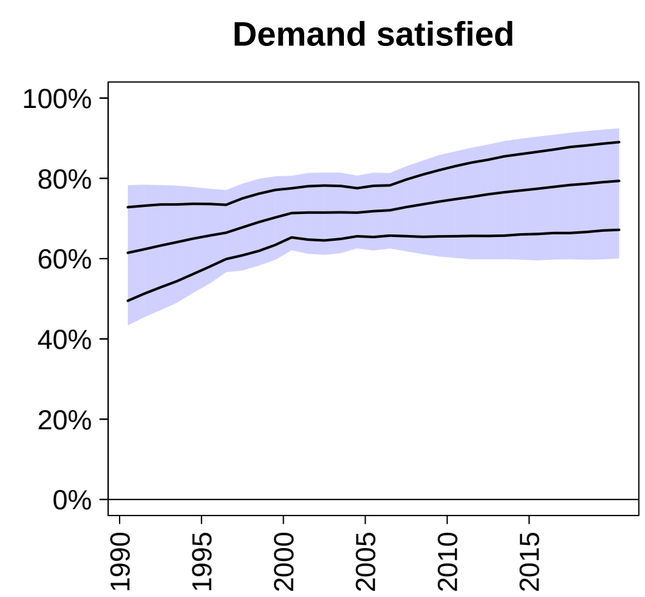












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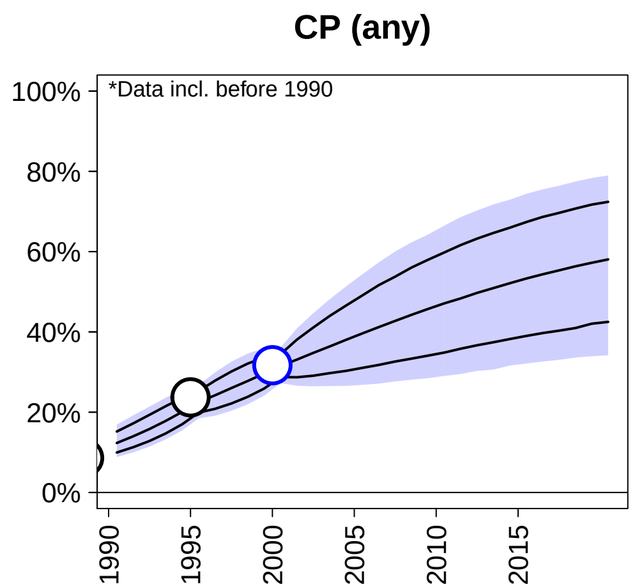
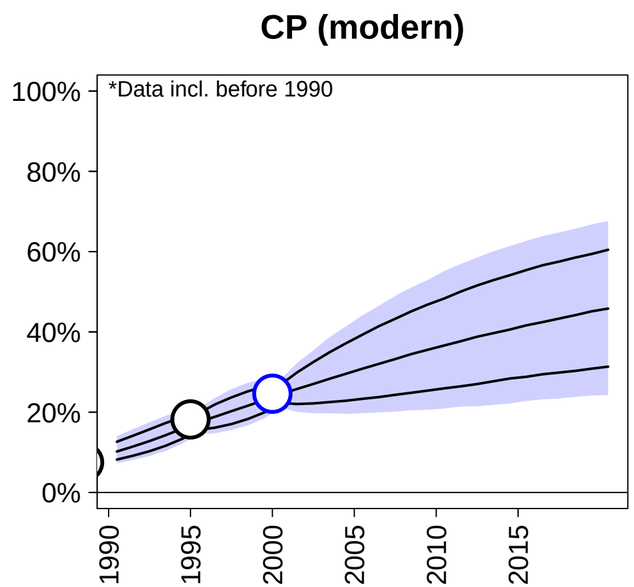
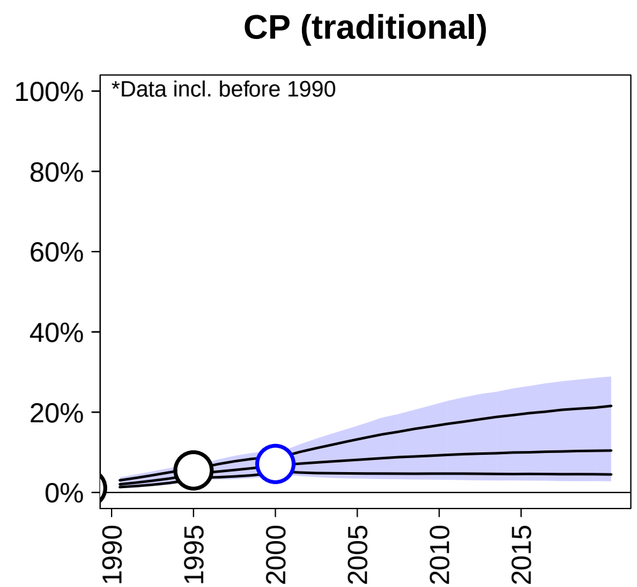
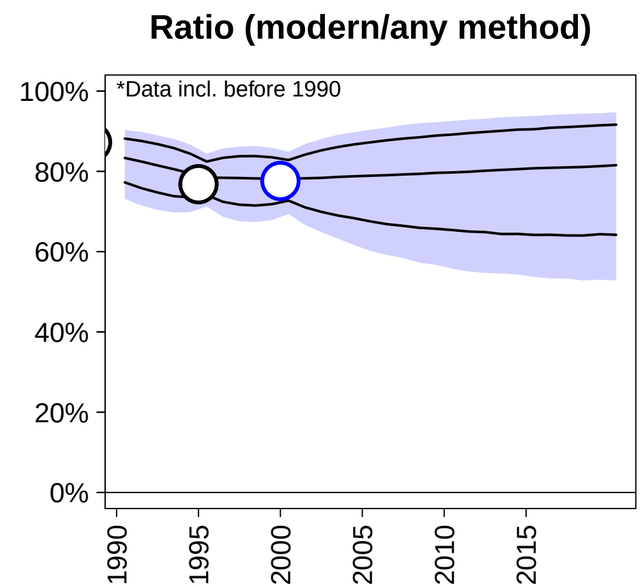
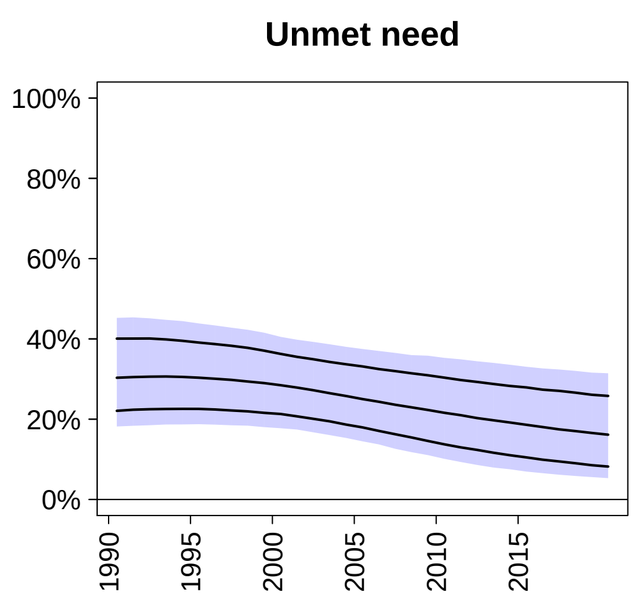
Oman (Western Asia)

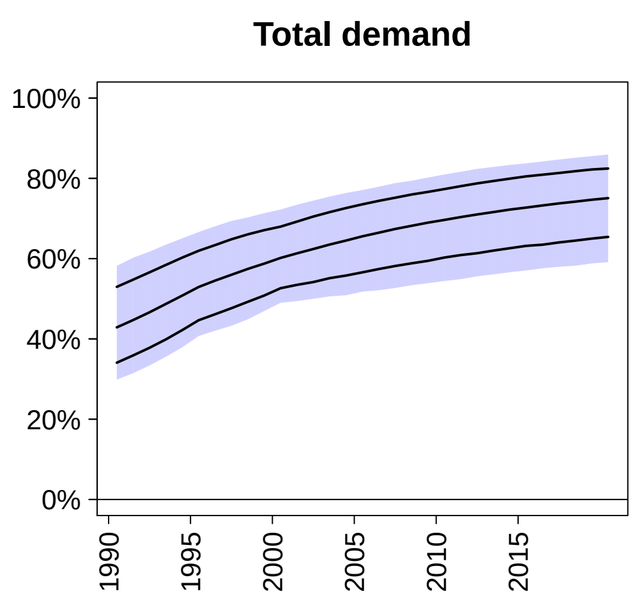


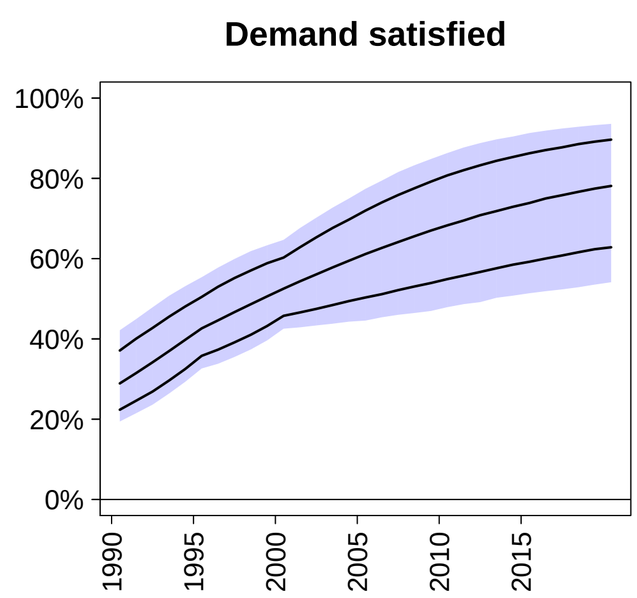












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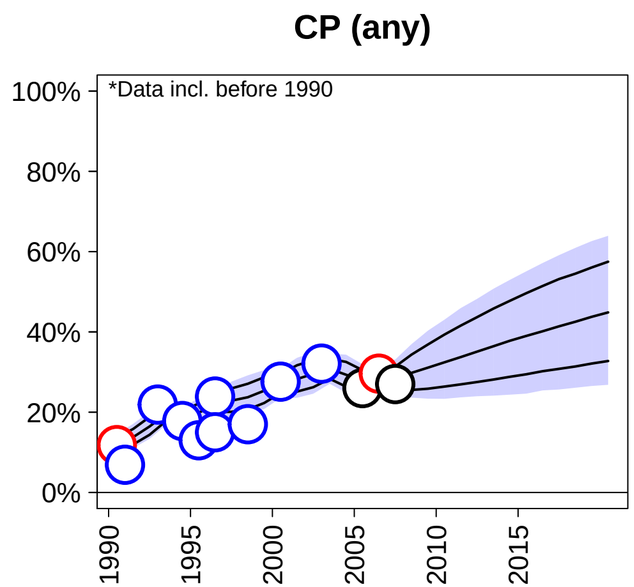
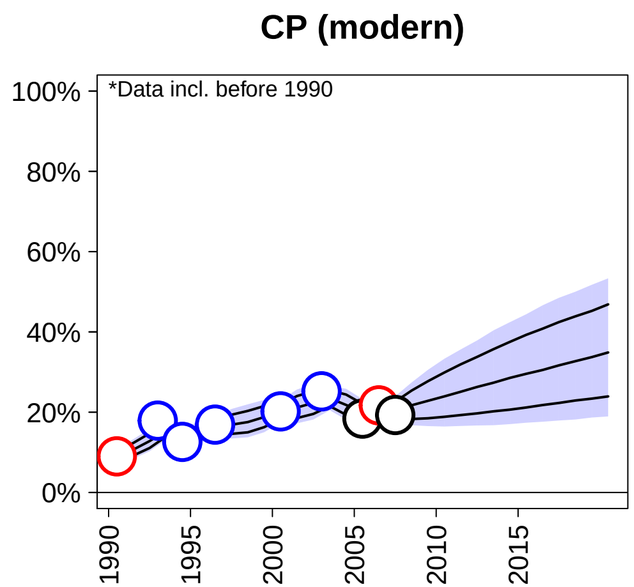
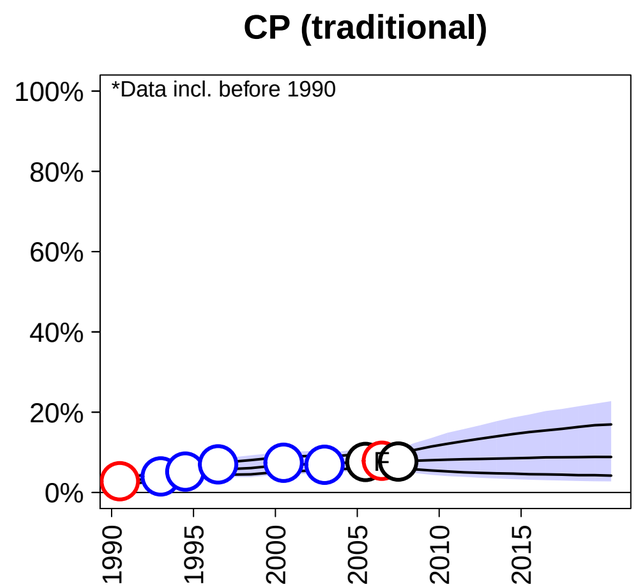
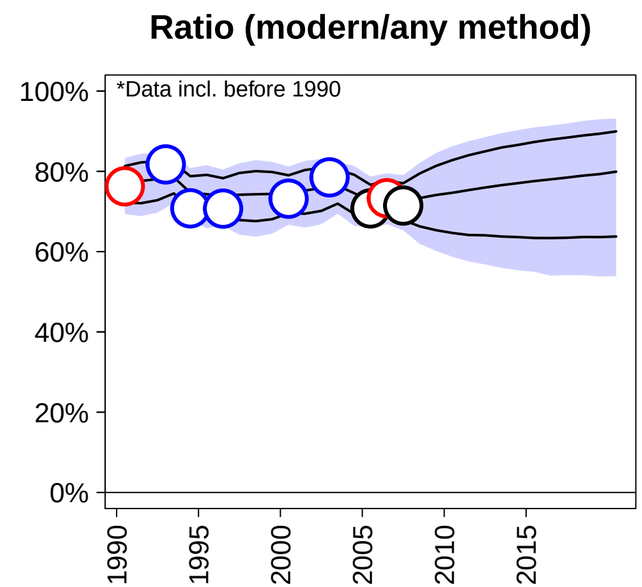
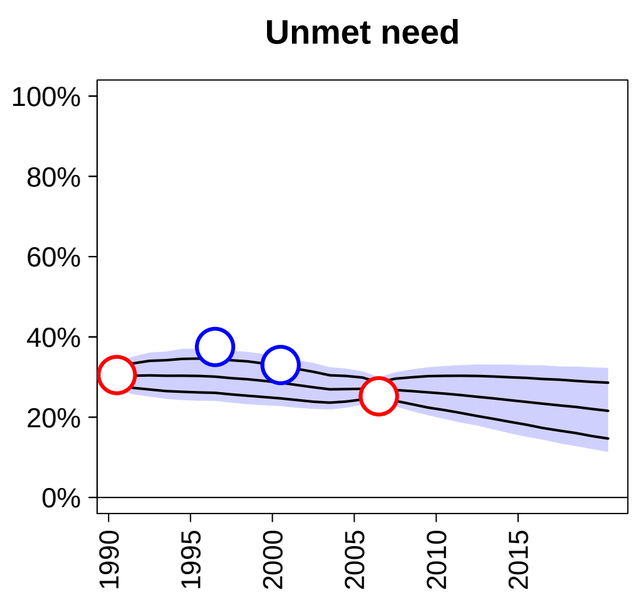
Pakistan (Southern Asia)

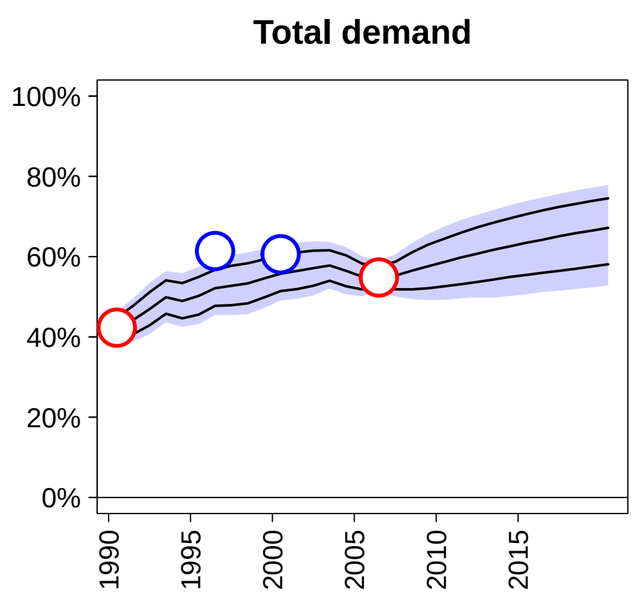


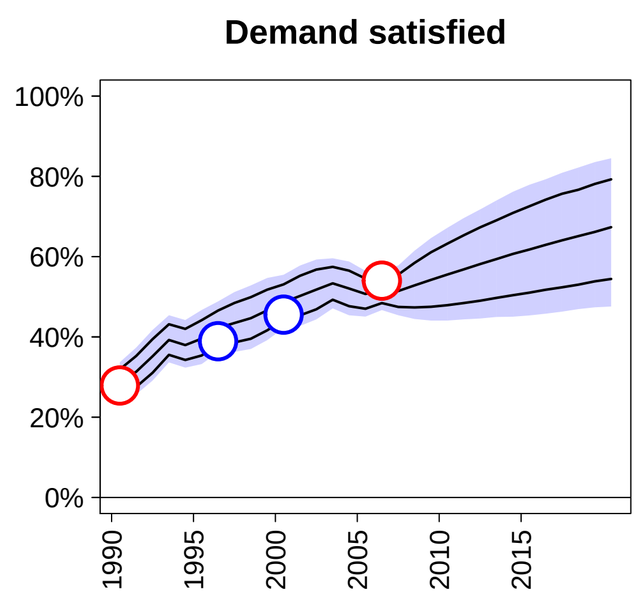












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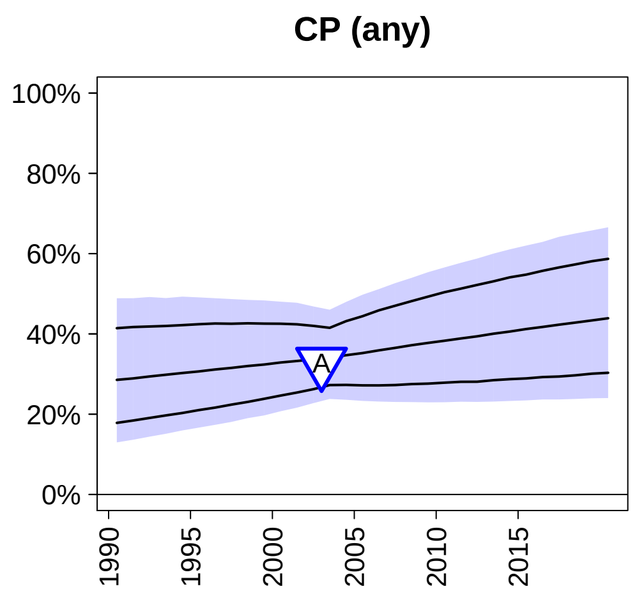
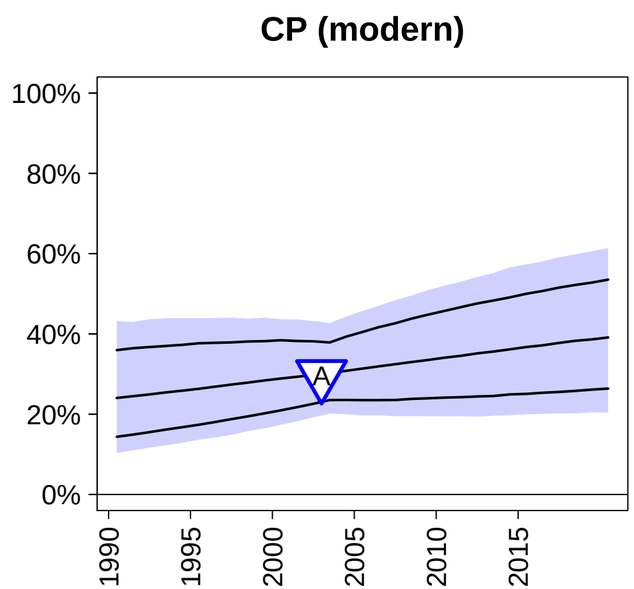
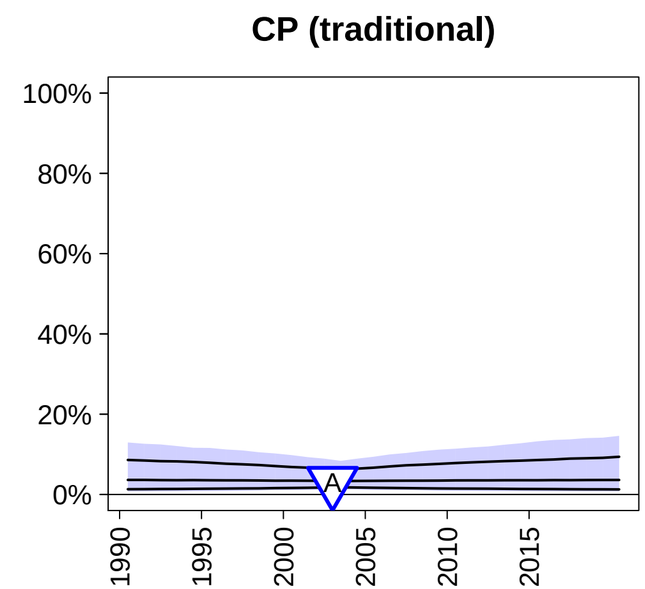
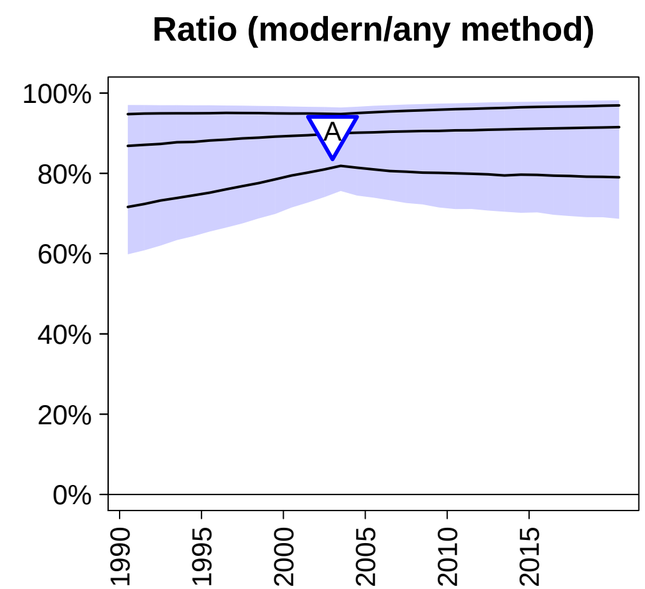
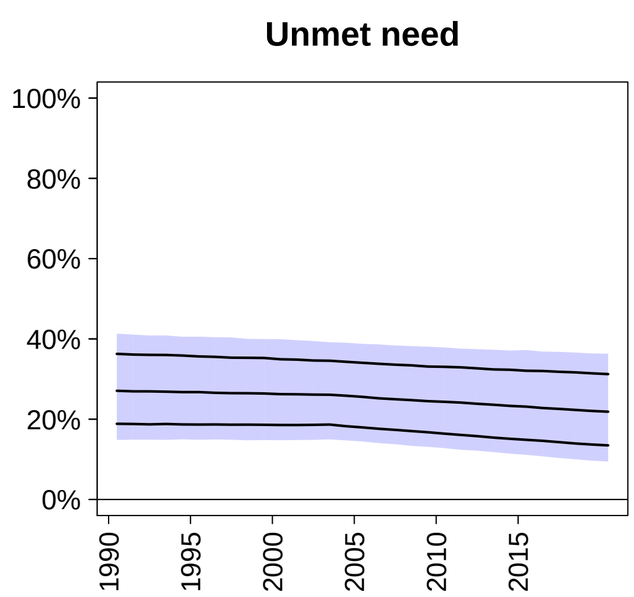
Palau (Micronesia)

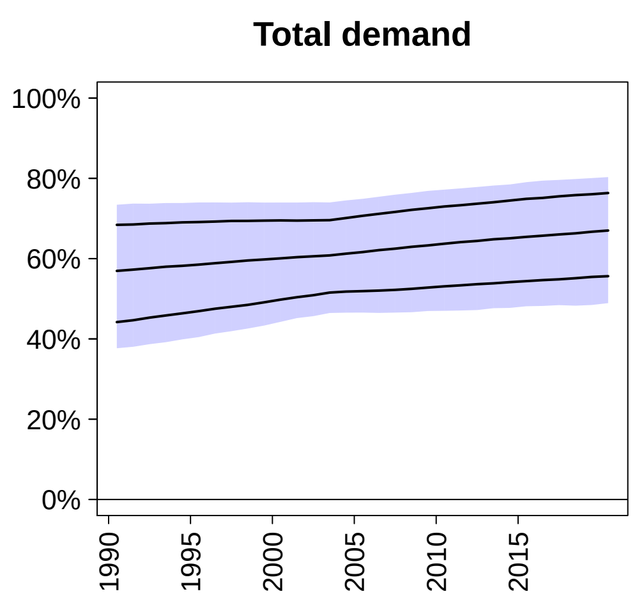


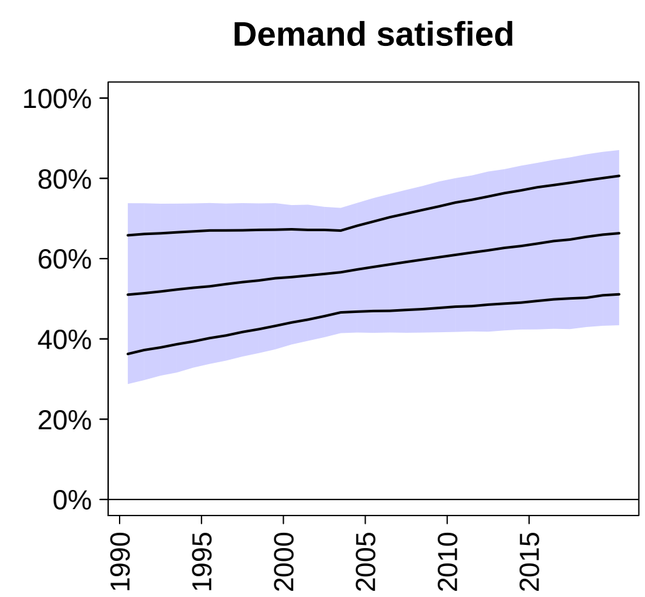












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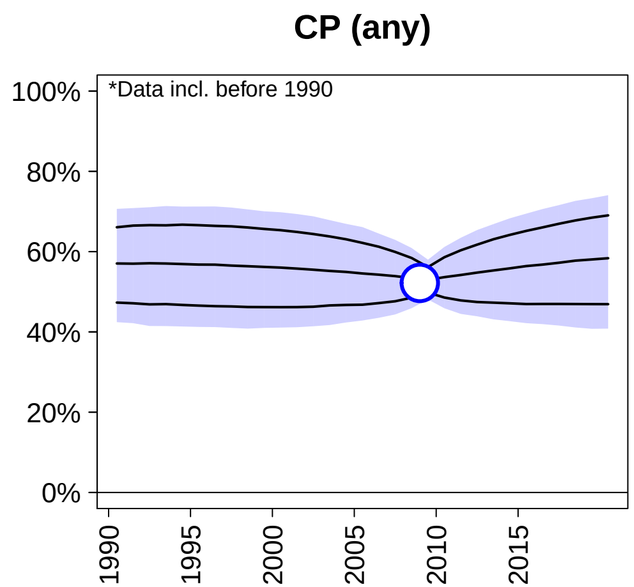
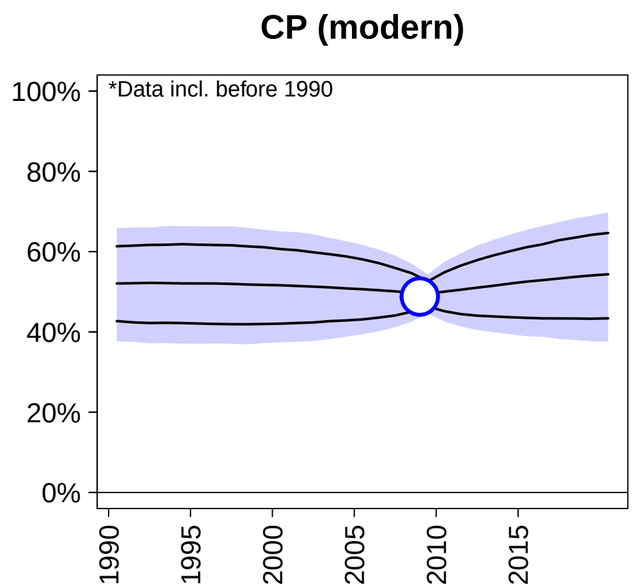
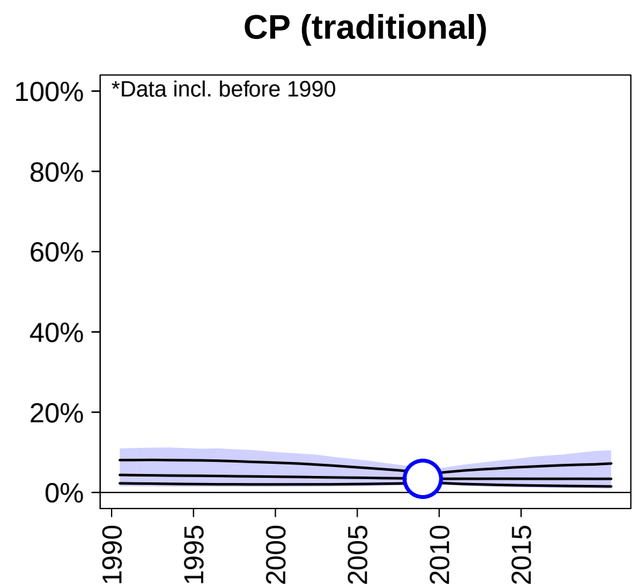
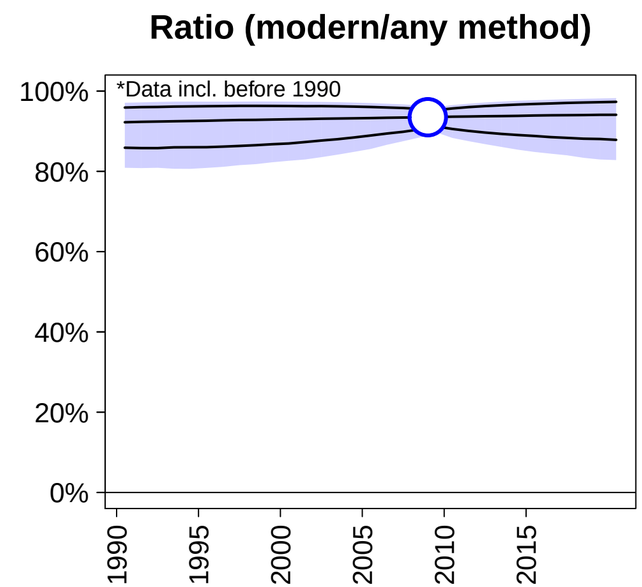
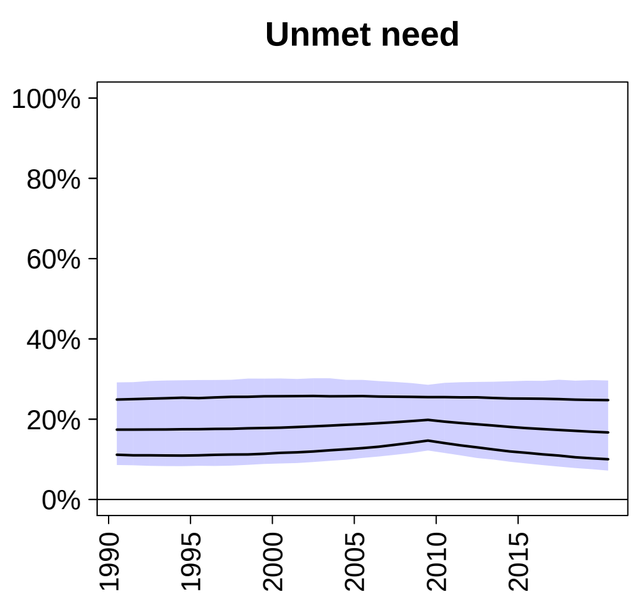
Panama (Central America)

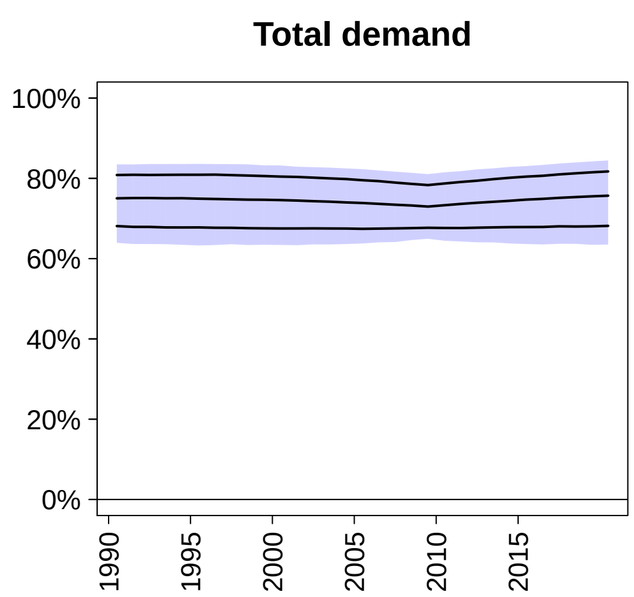


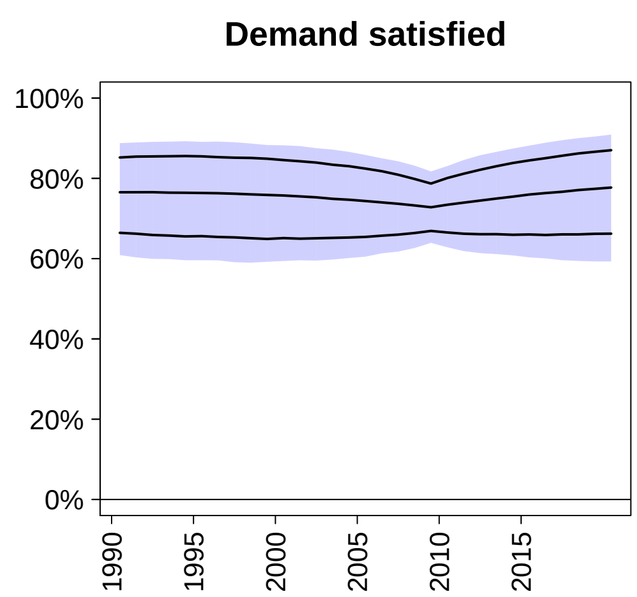












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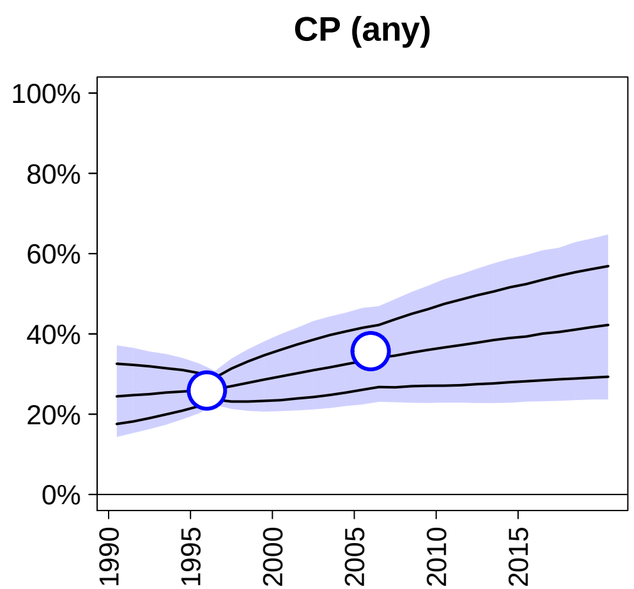
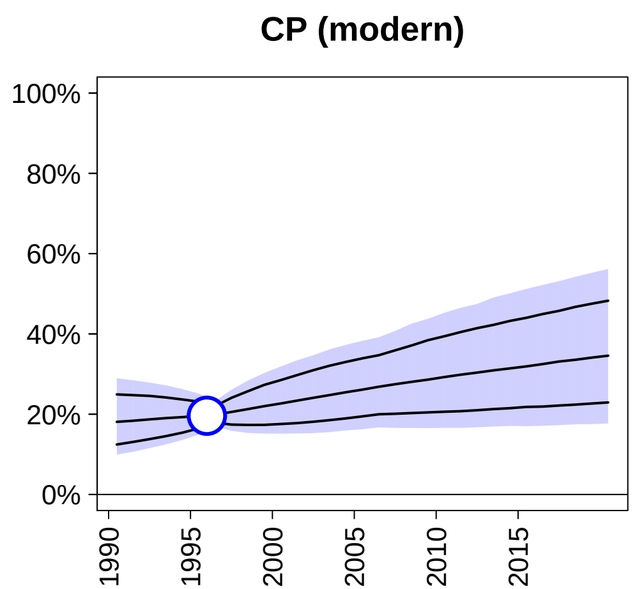
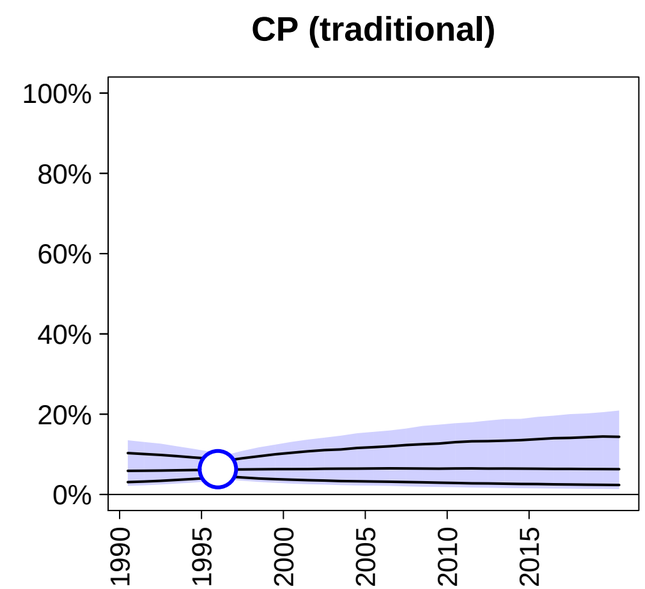
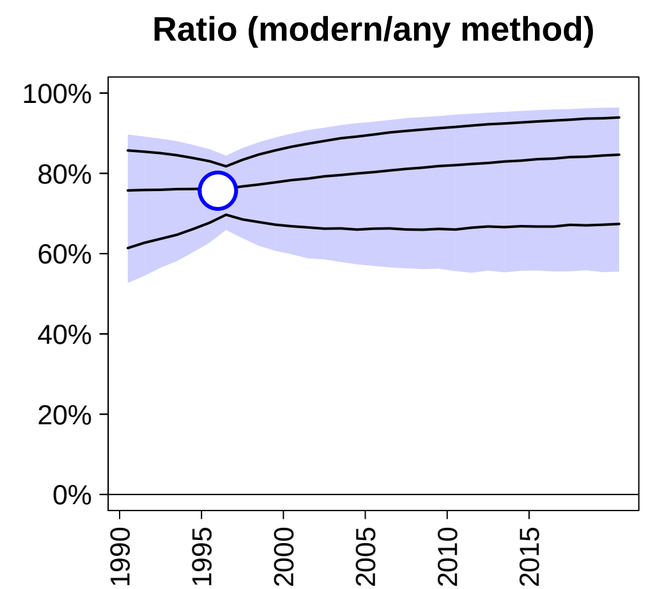
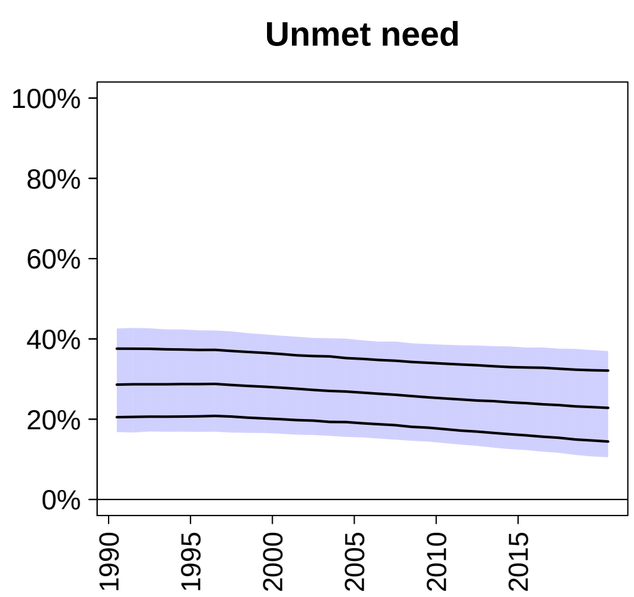
Papua New Guinea (Melanesia)

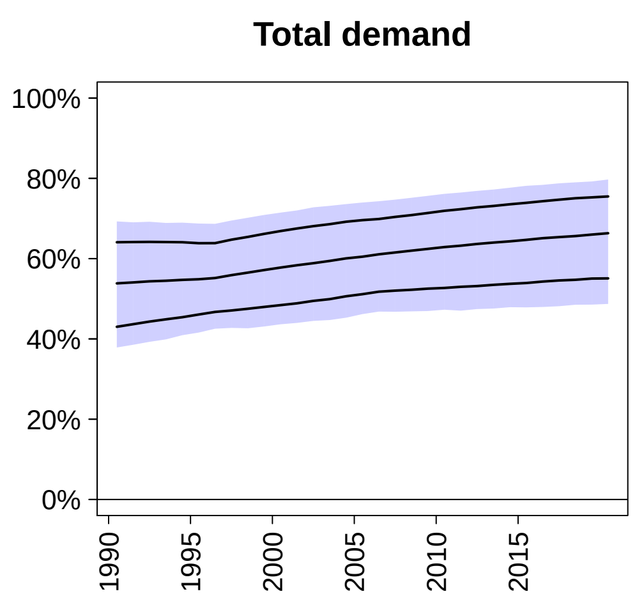


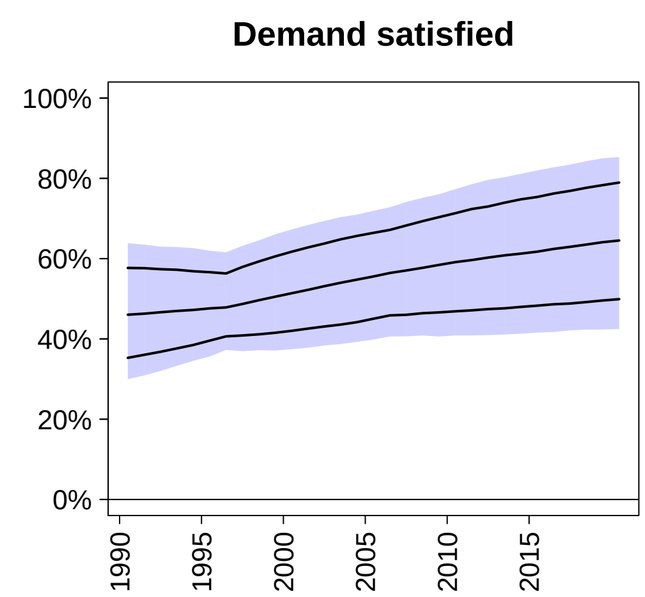












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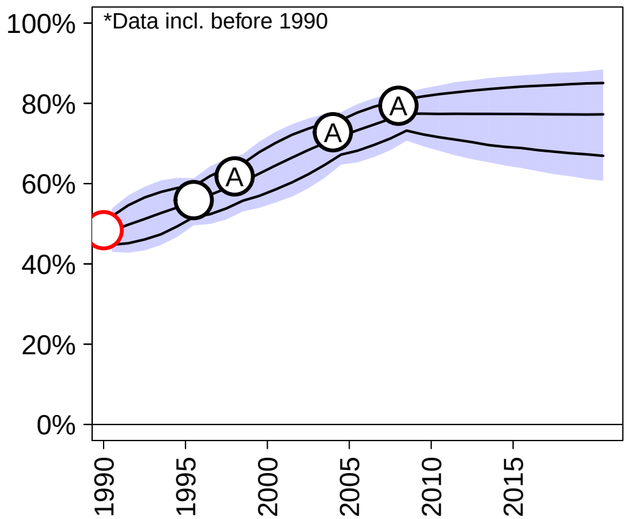
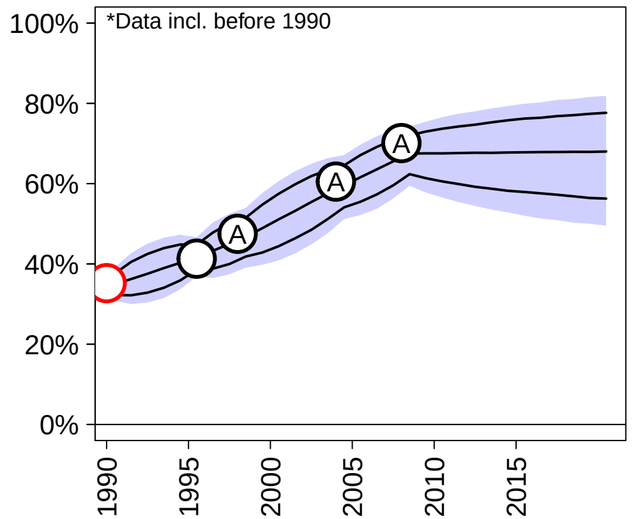
Paraguay (South America)

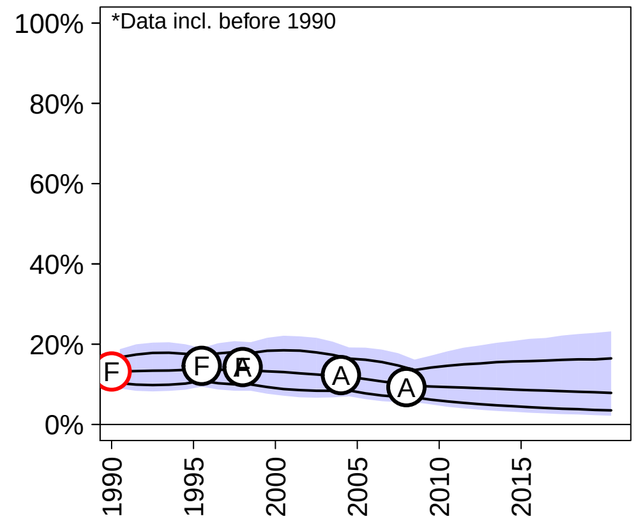
CP (any)



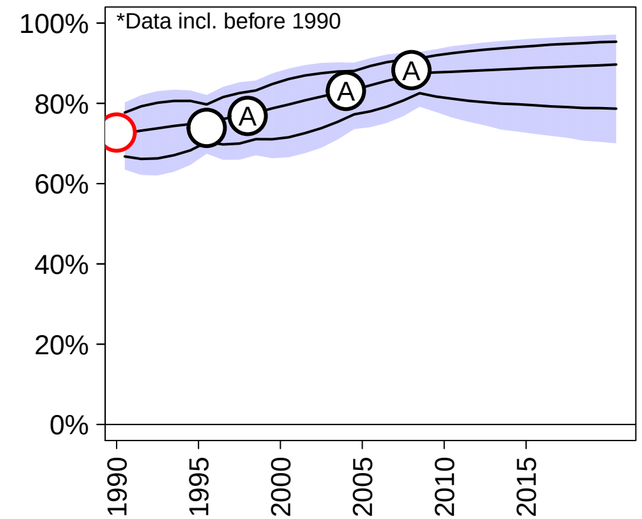
CP (modern)



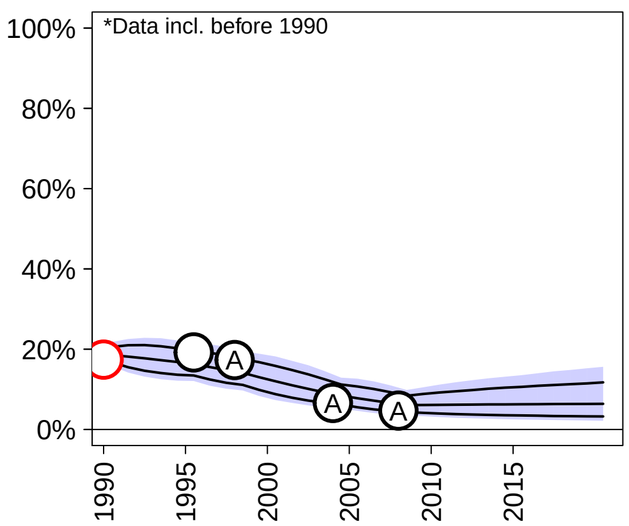
CP (traditional)



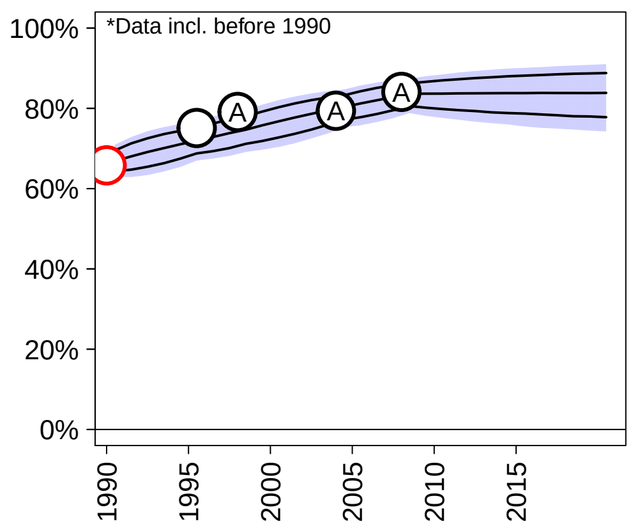
Ratio (modern/any method)



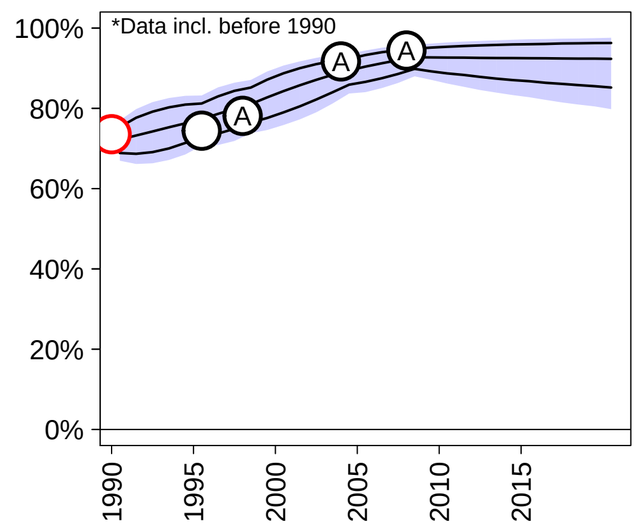
Unmet need



Total demand



Demand satisfied



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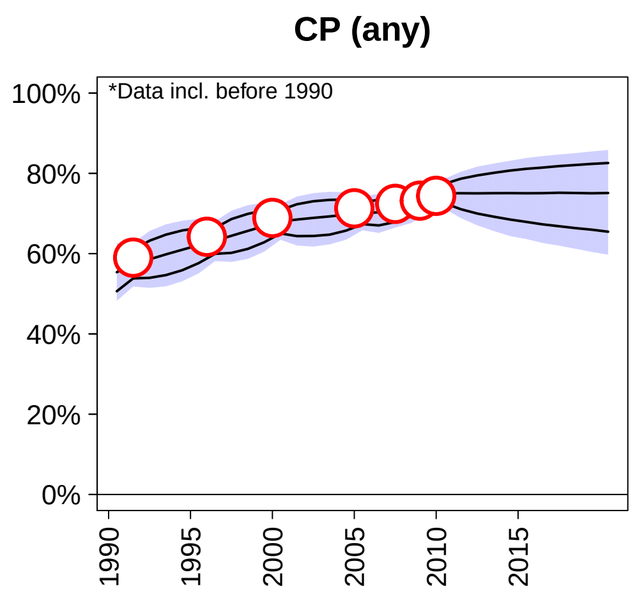
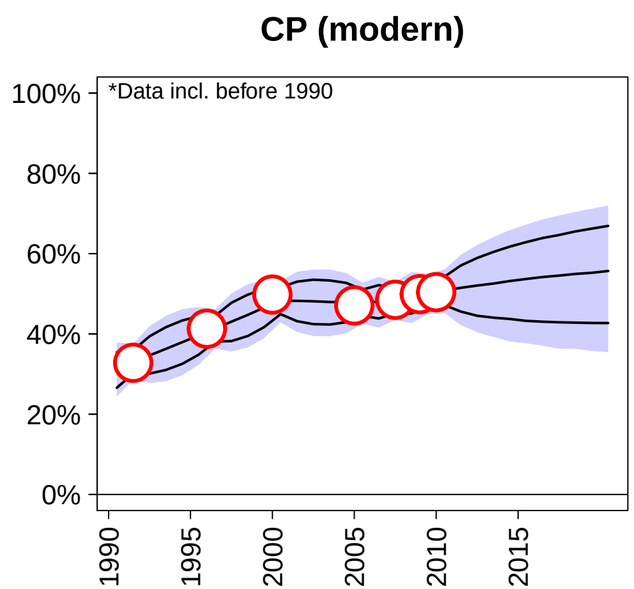
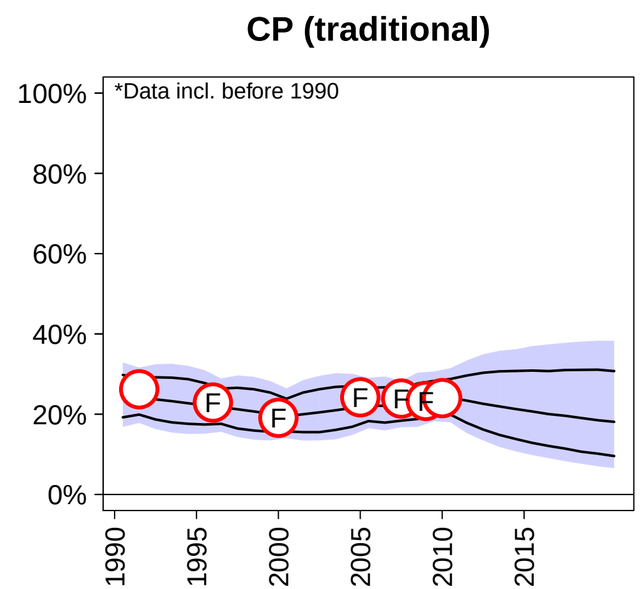
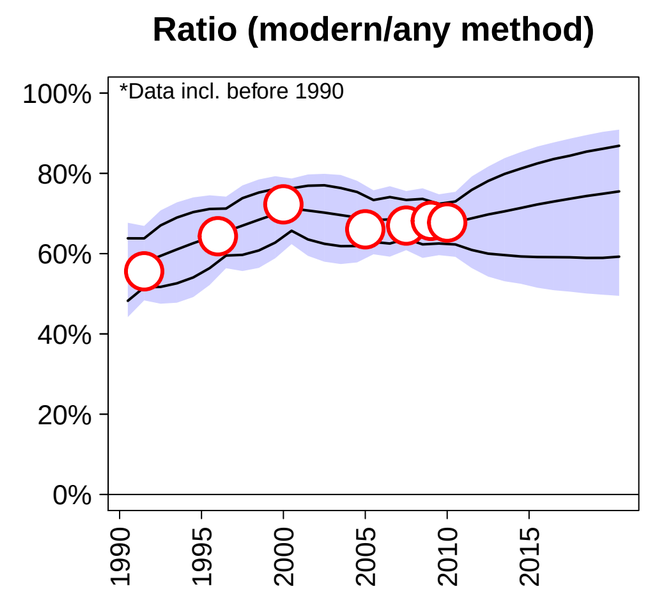
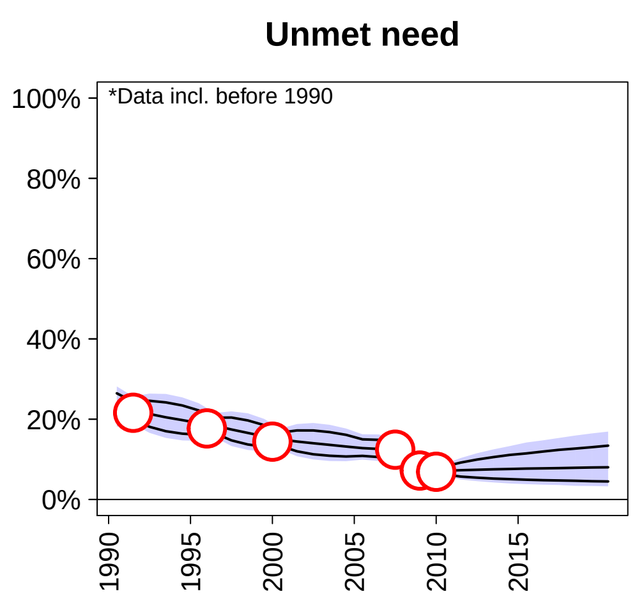
Peru (South America)

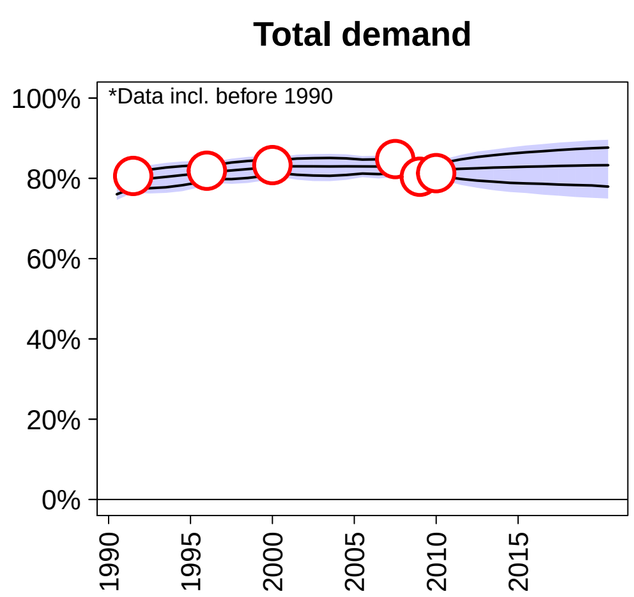


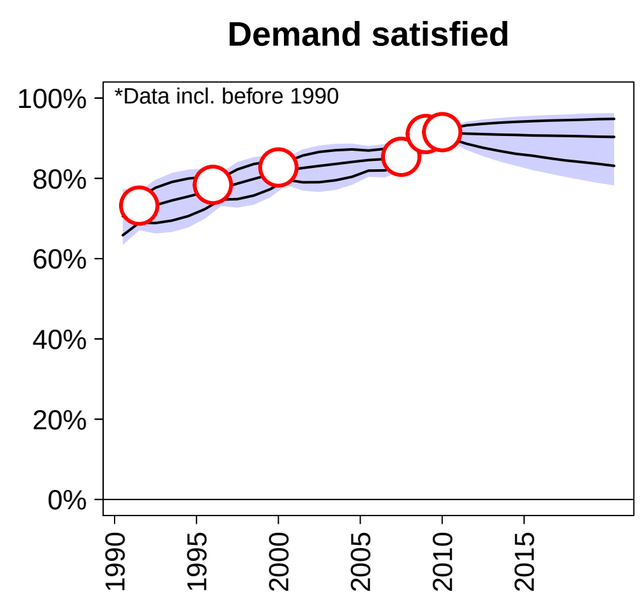












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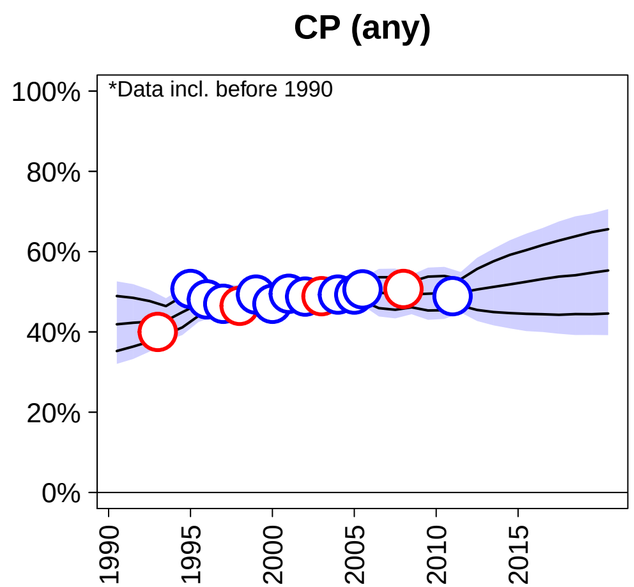
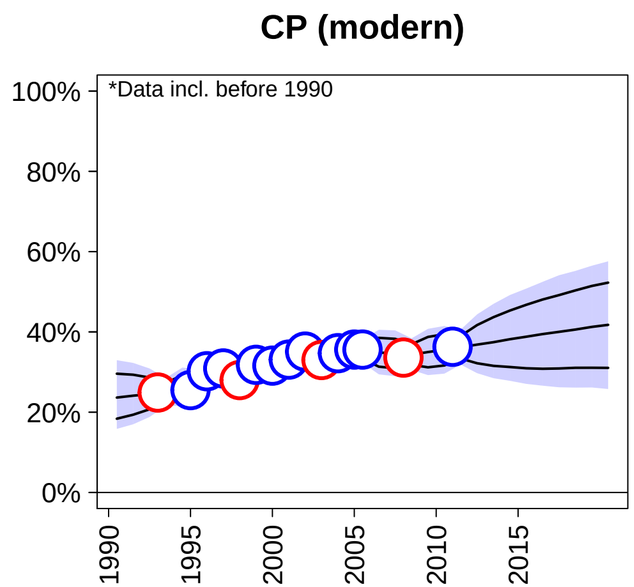
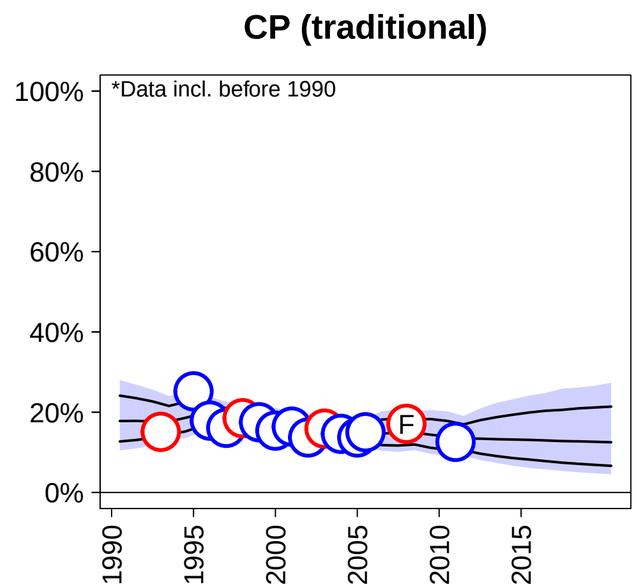
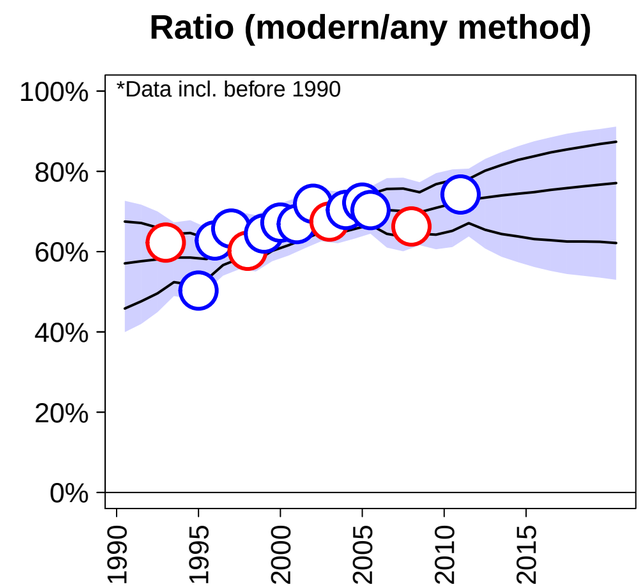
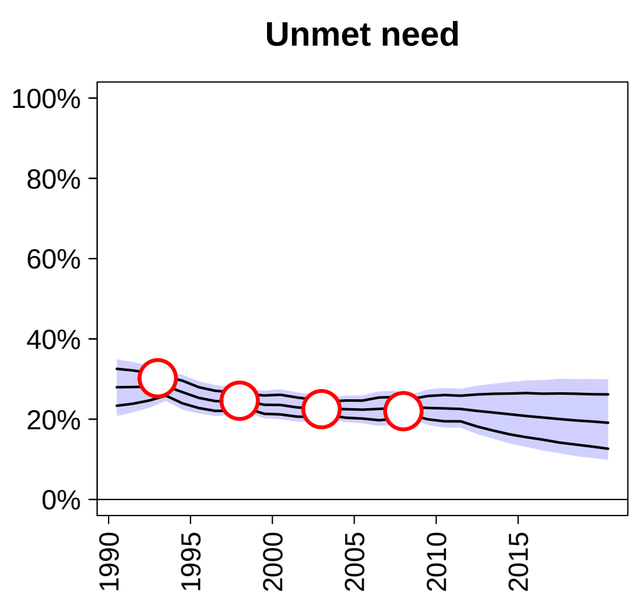
Philippines (South−Eastern Asia)

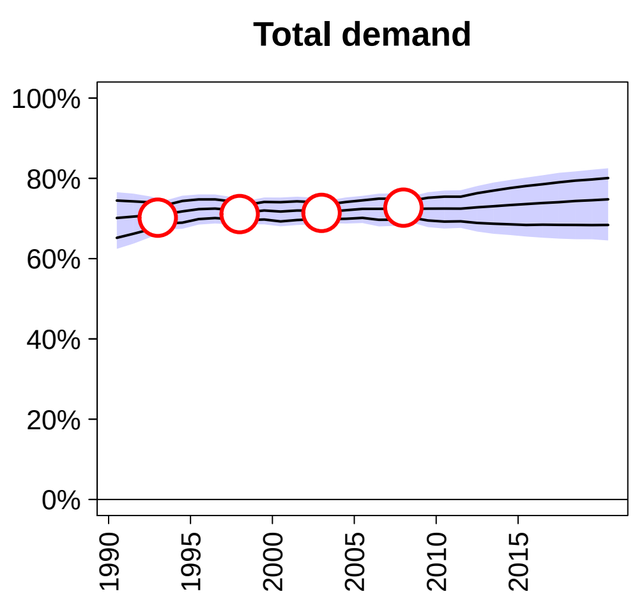


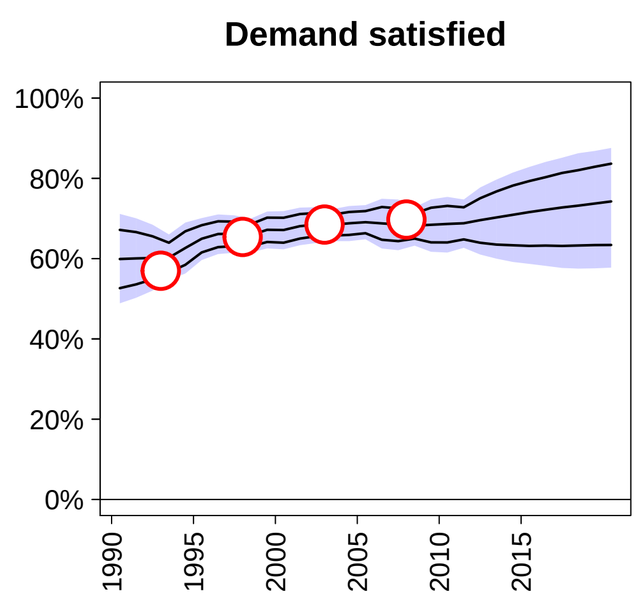












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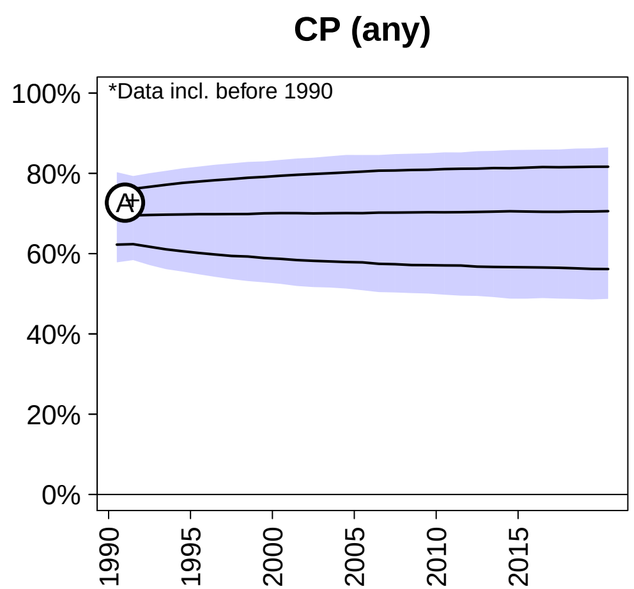
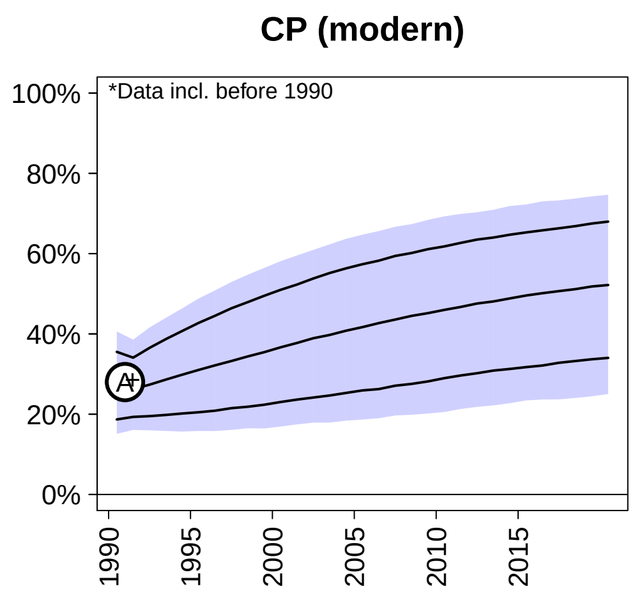
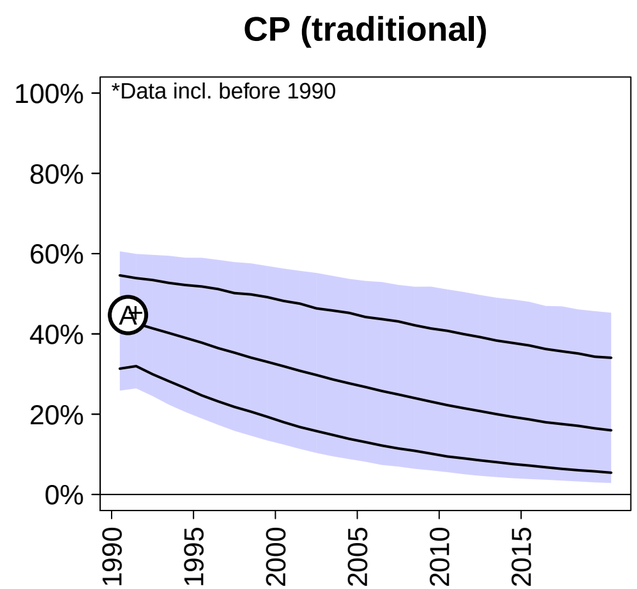
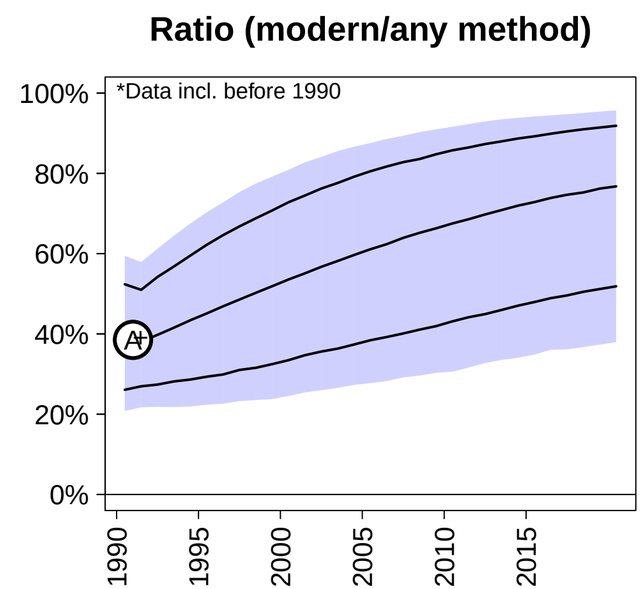
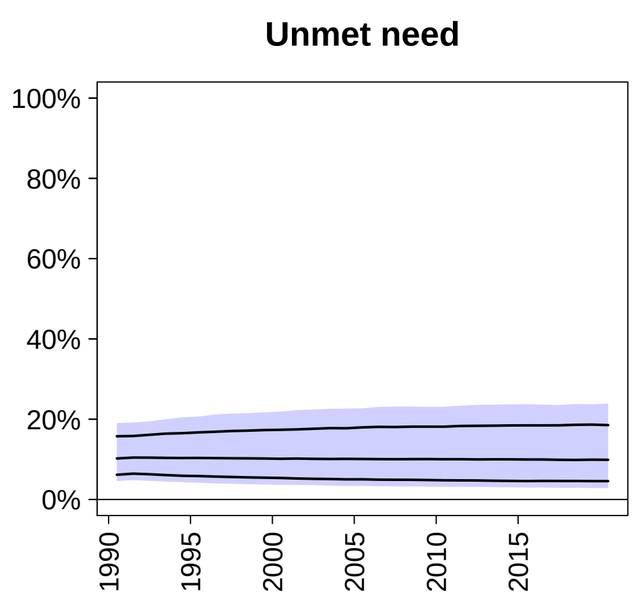
Poland (Eastern Europe)

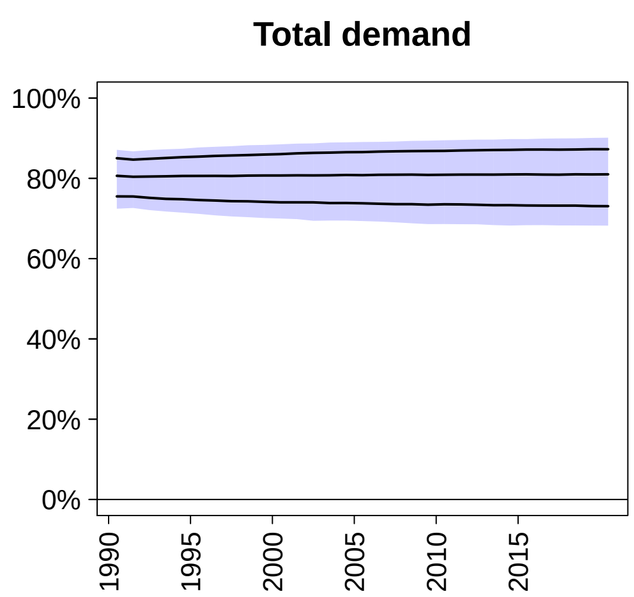


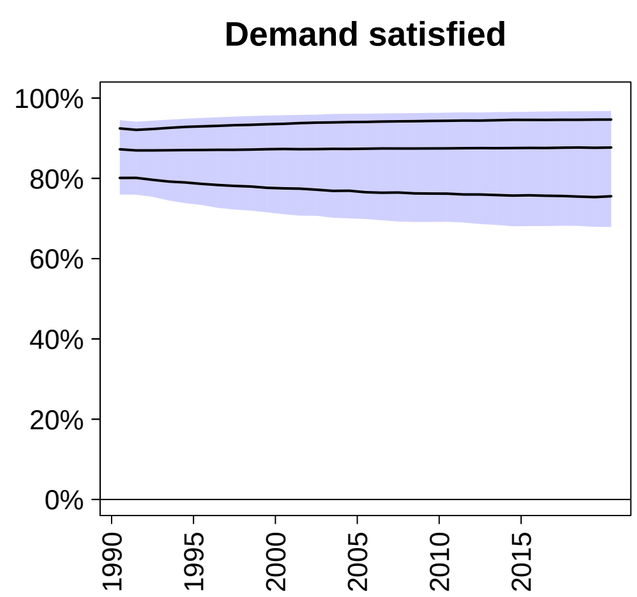












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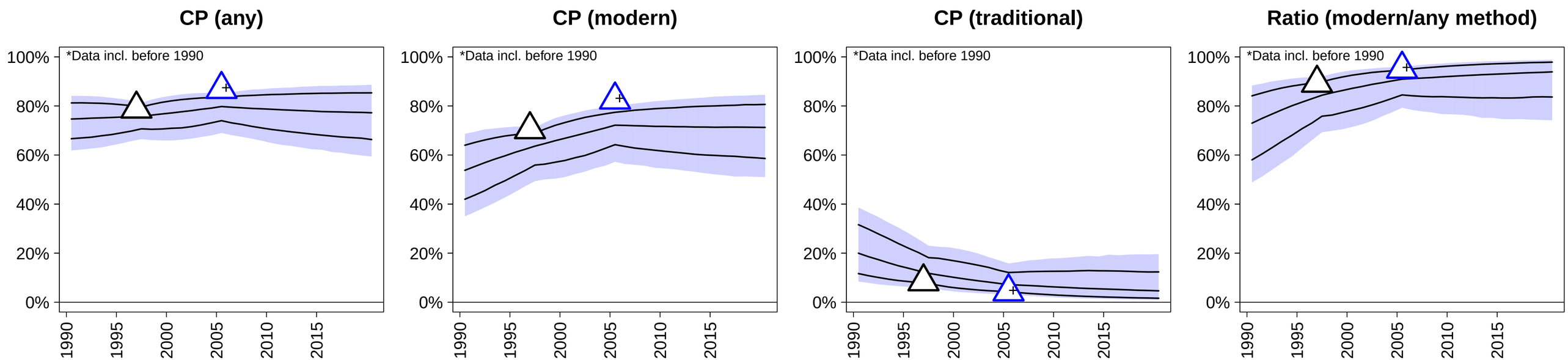
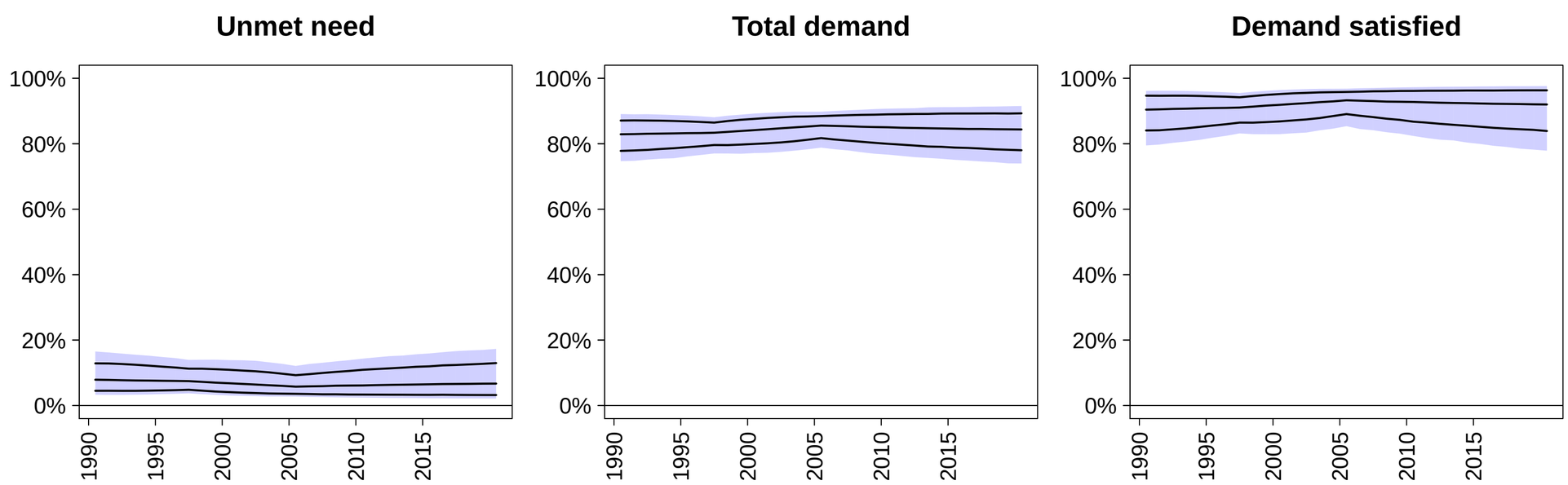
Portugal (Southern Europe)





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Ever married/All women
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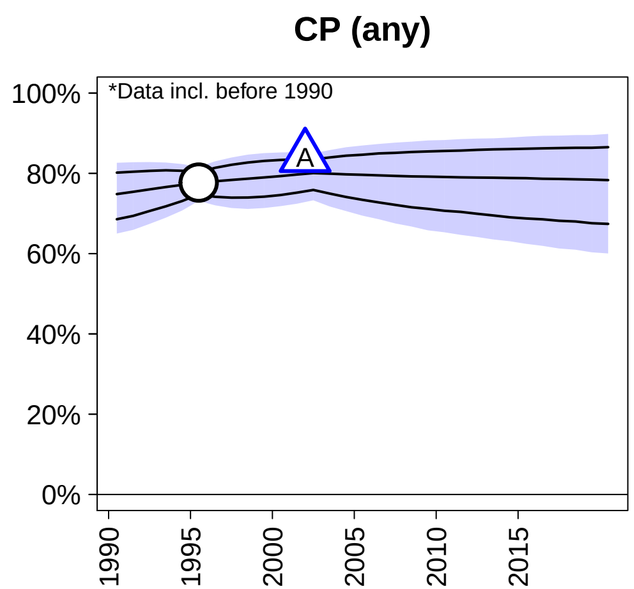
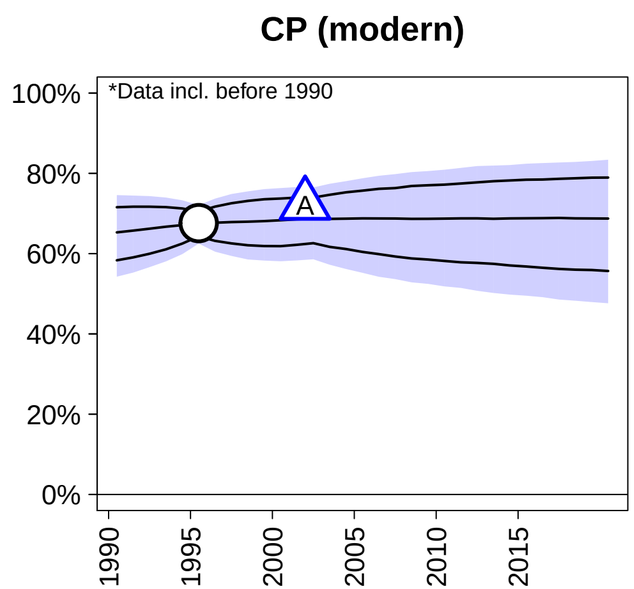
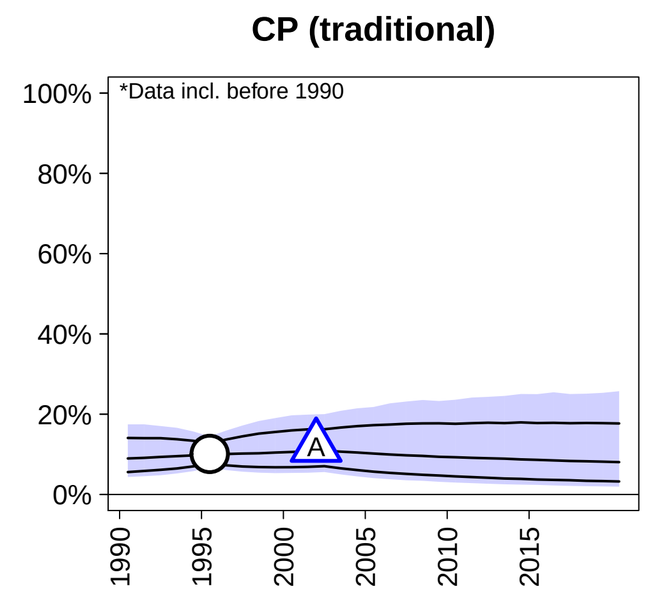
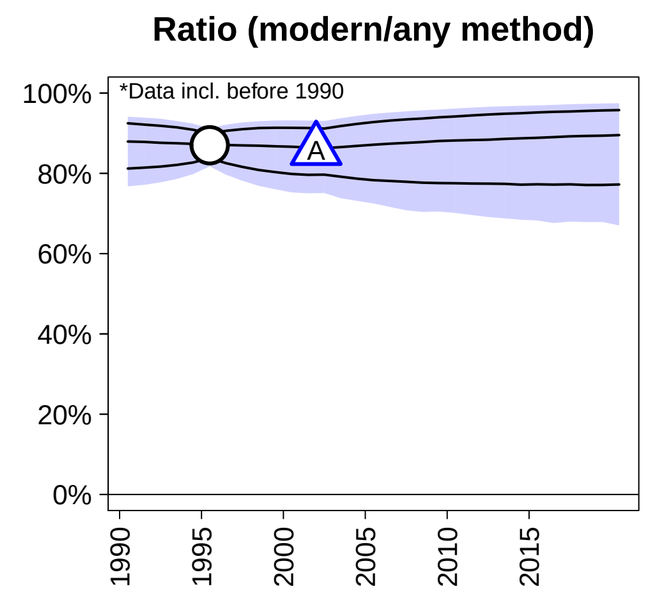
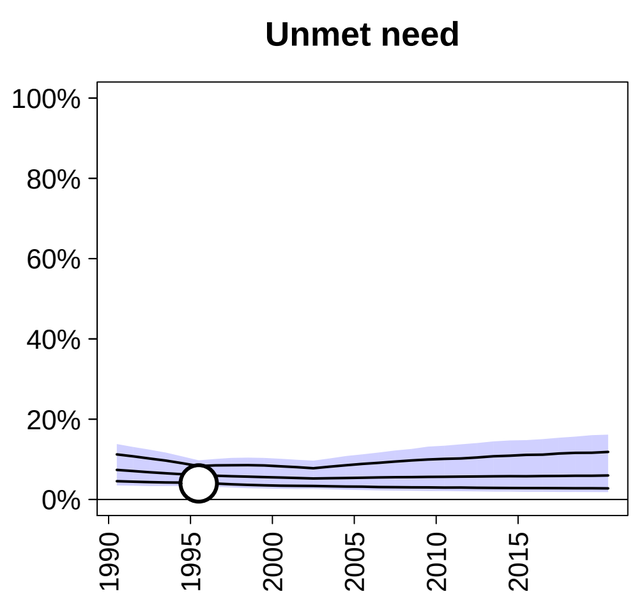
Puerto Rico (Caribbean)

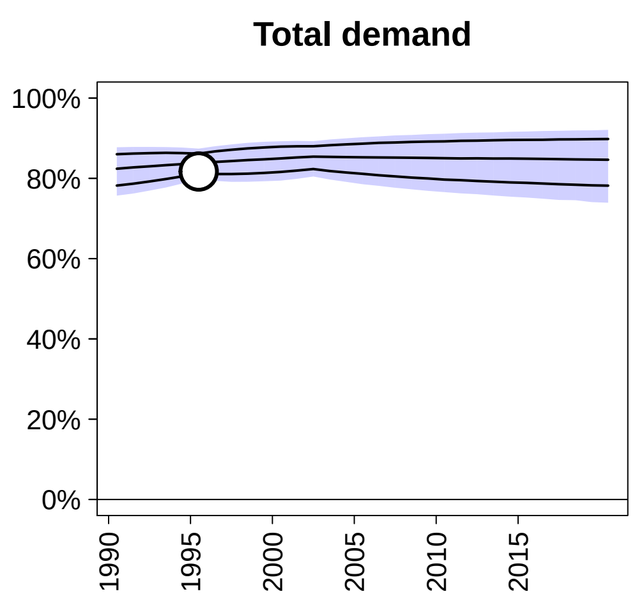


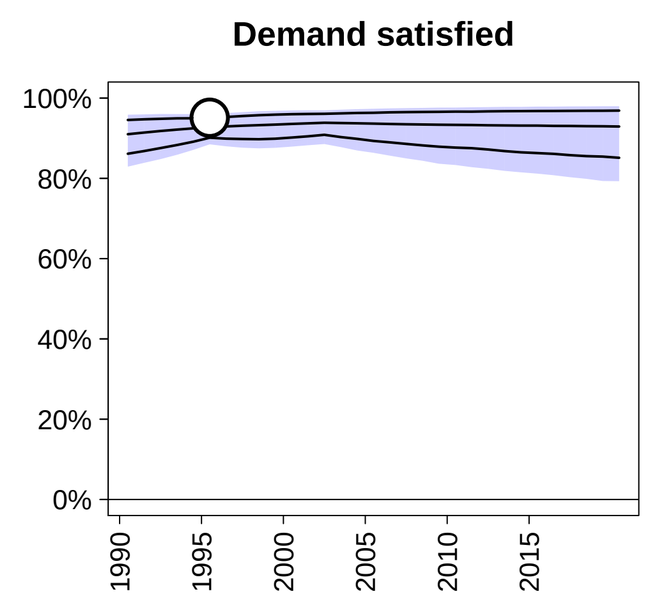












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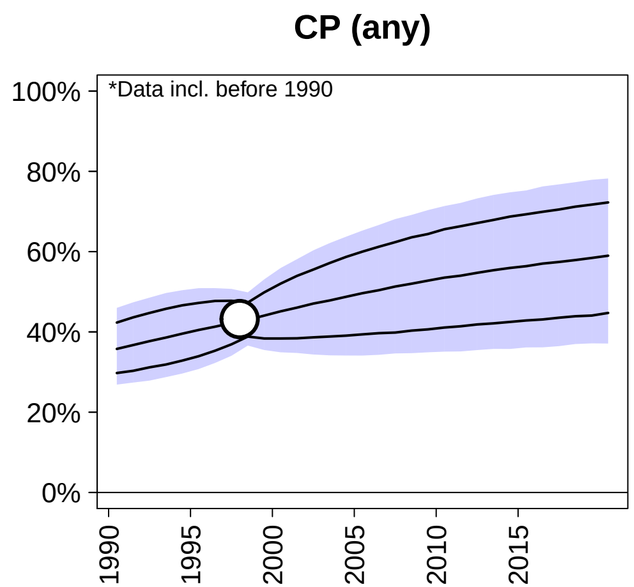
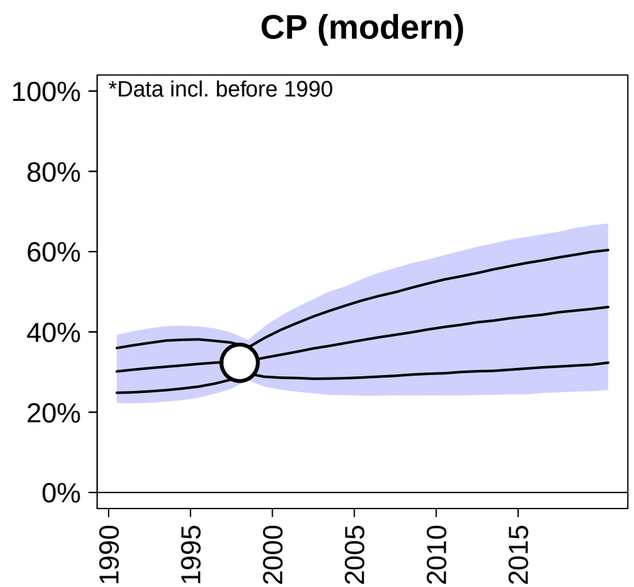
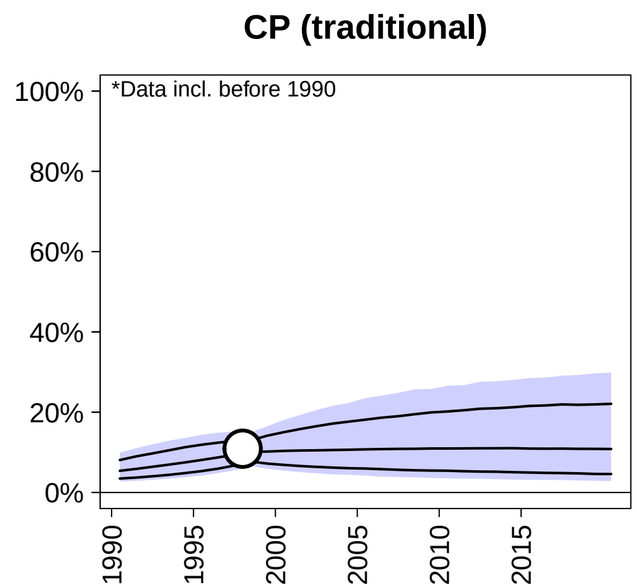
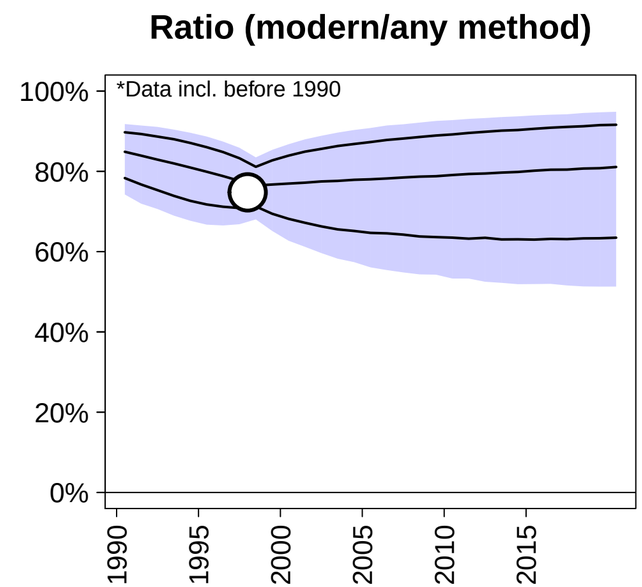
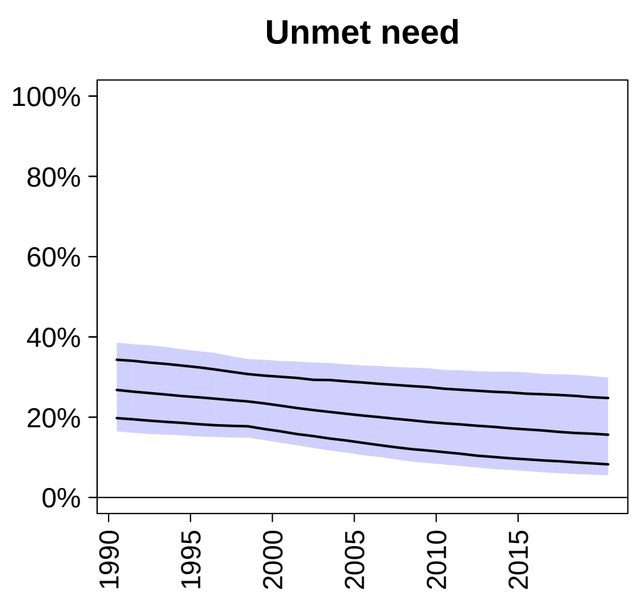
Qatar (Western Asia)

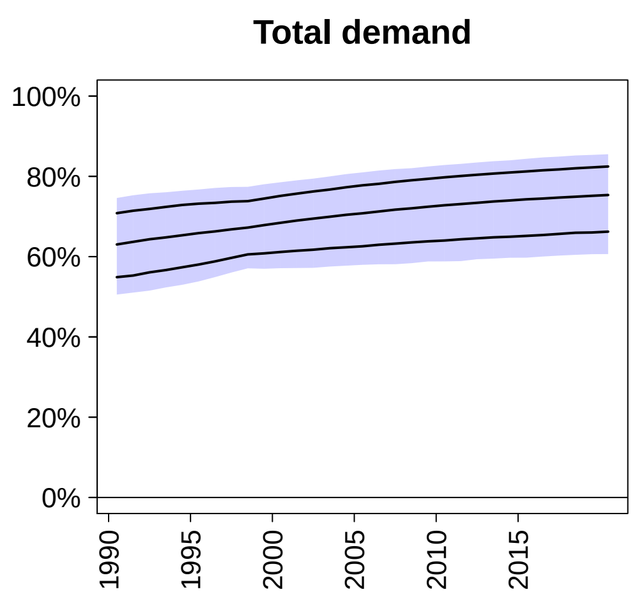


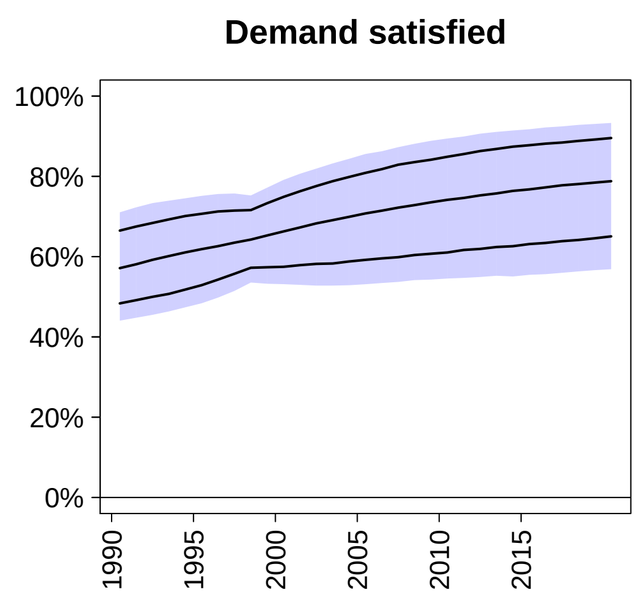












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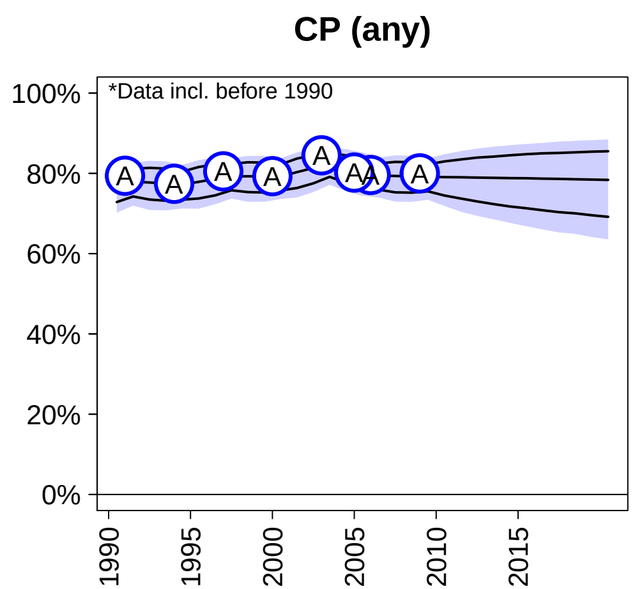
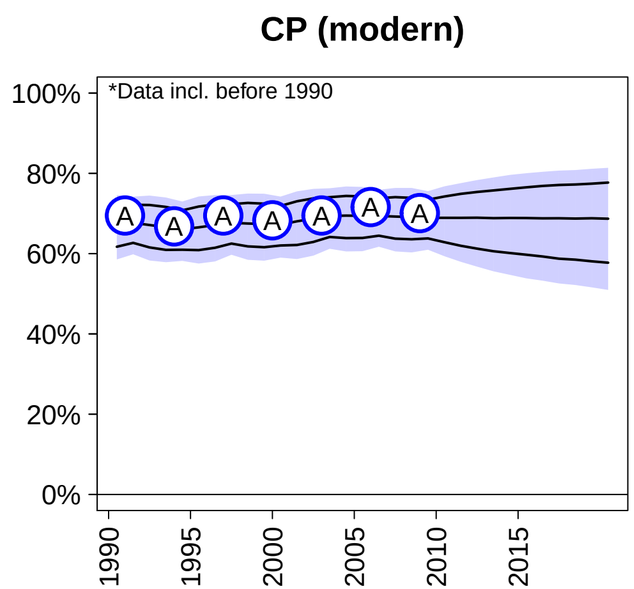
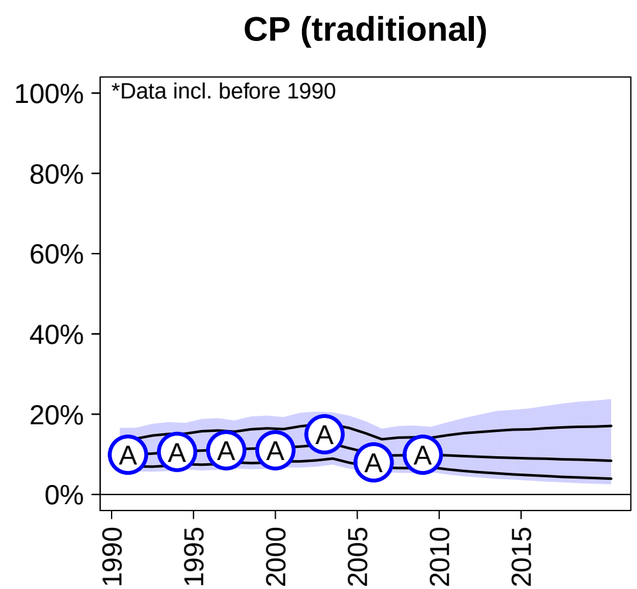
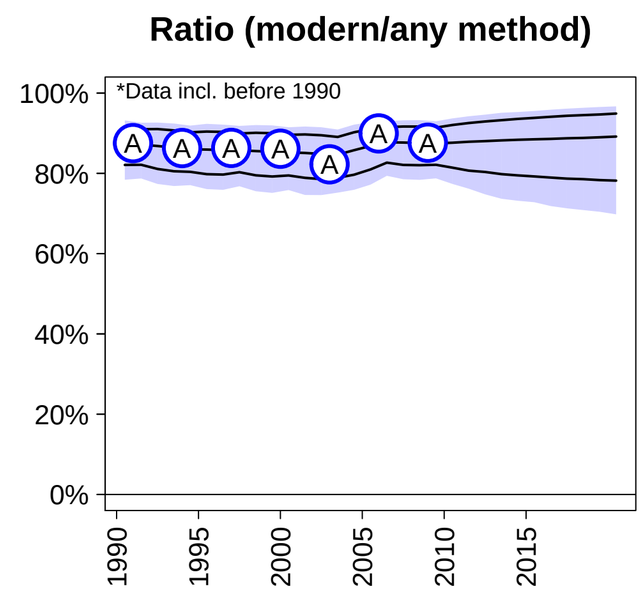
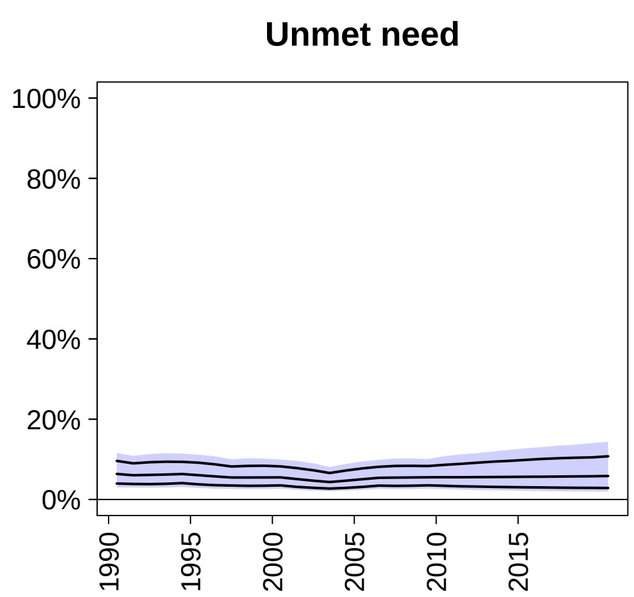
Republic of Korea (Eastern Asia)

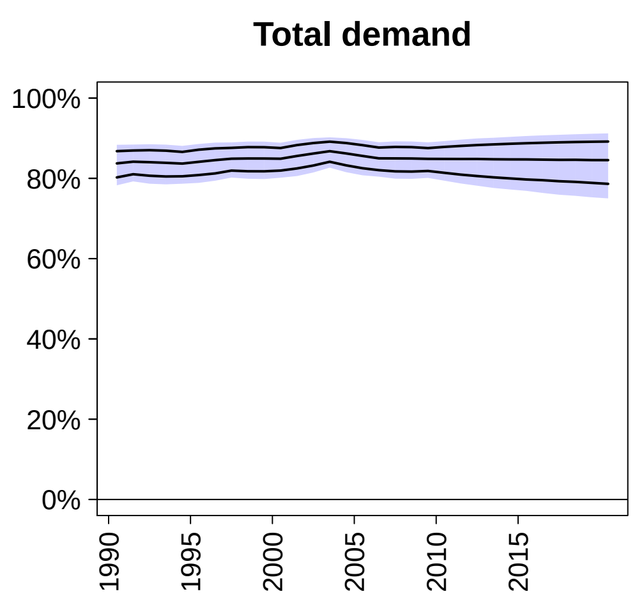


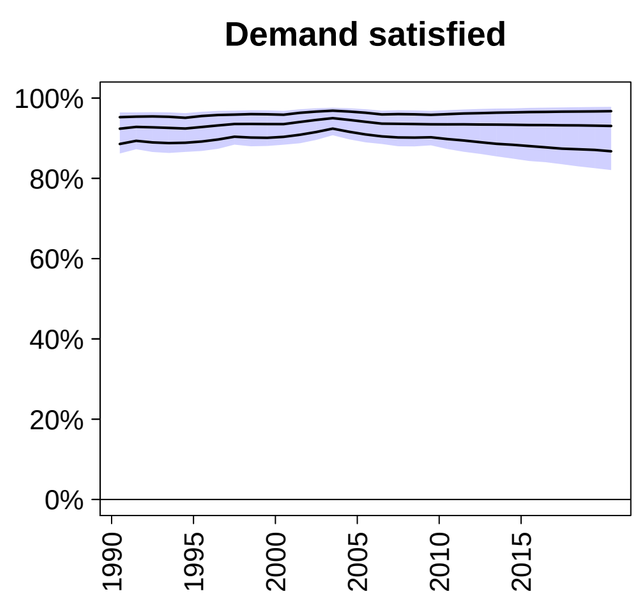












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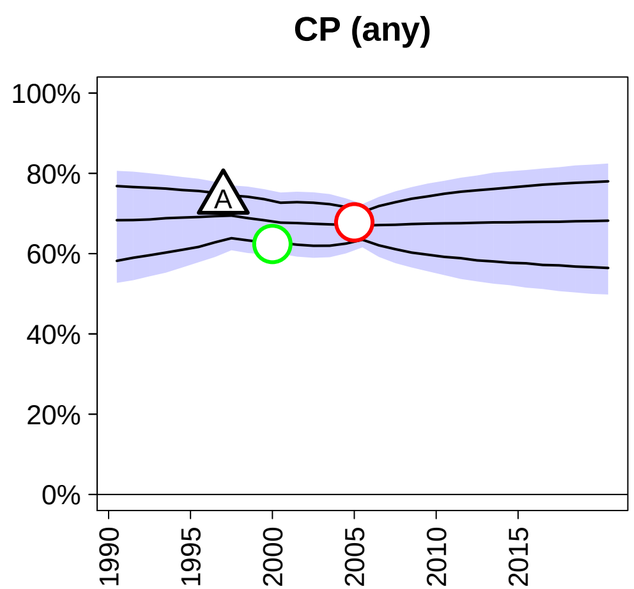
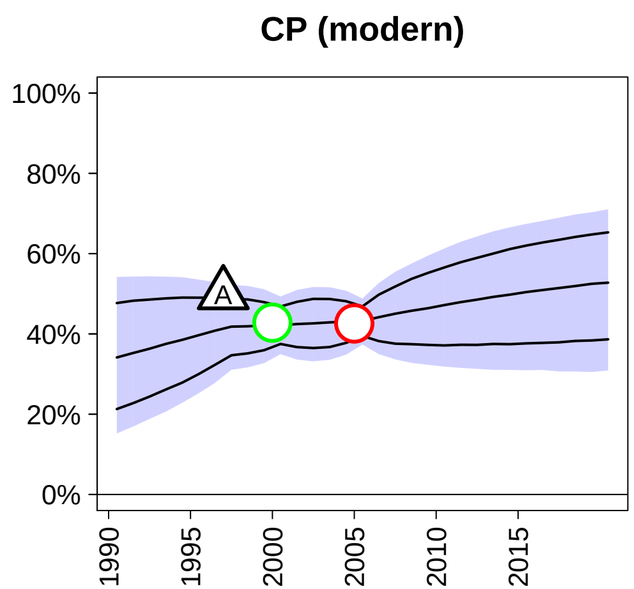
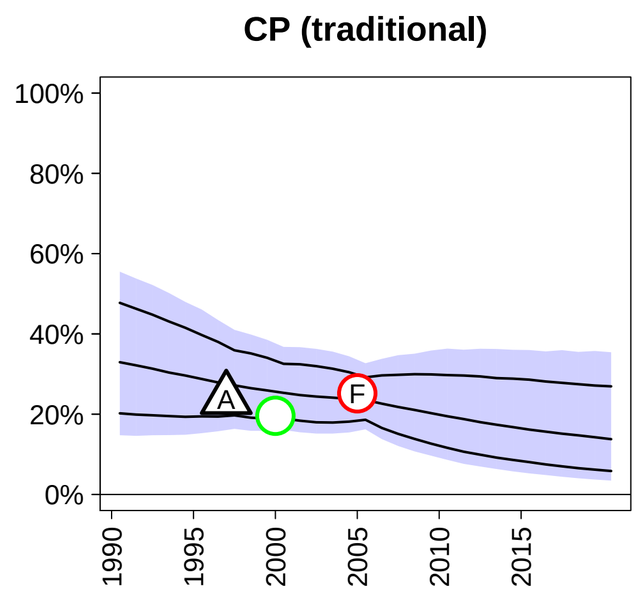
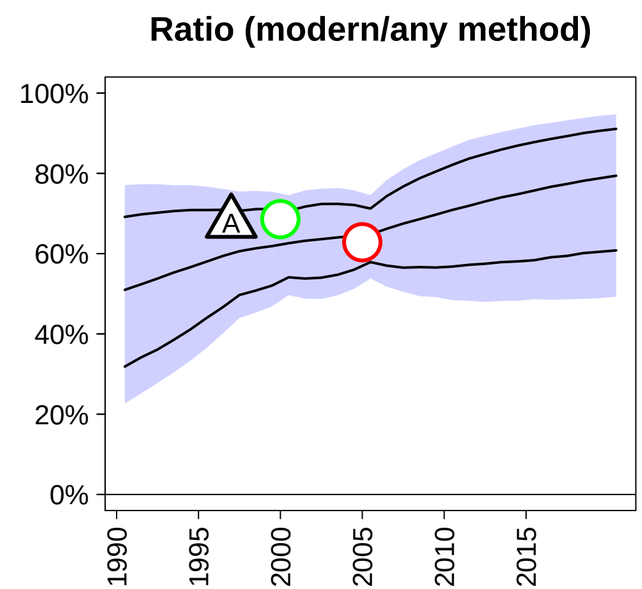
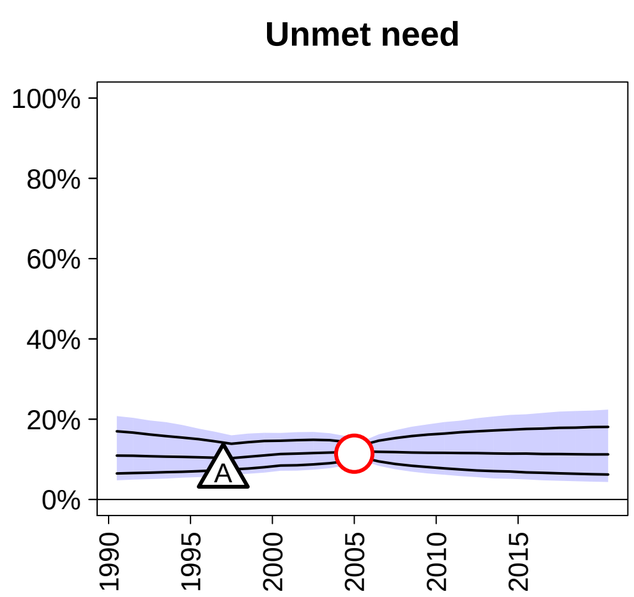
Republic of Moldova (Eastern Europe)

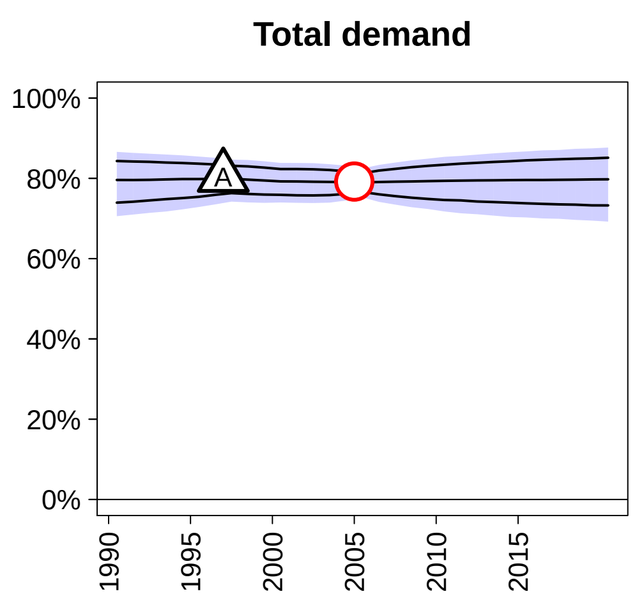


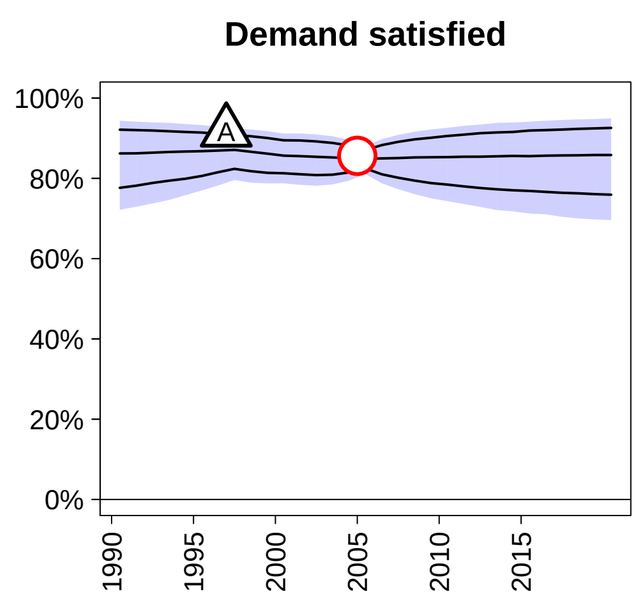












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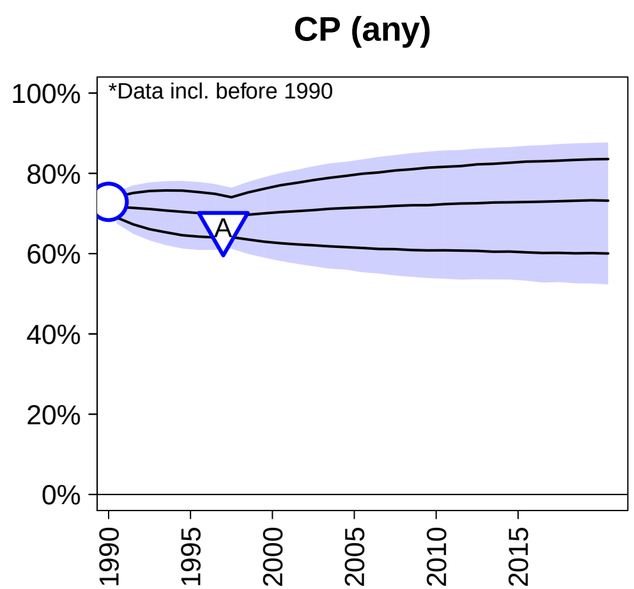
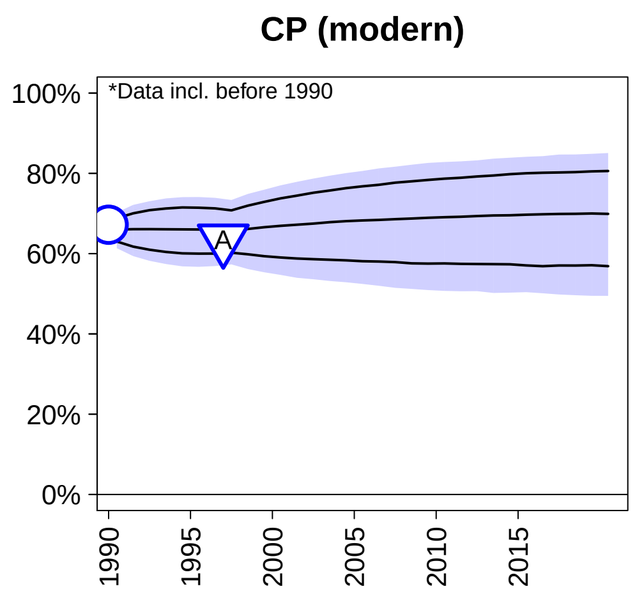
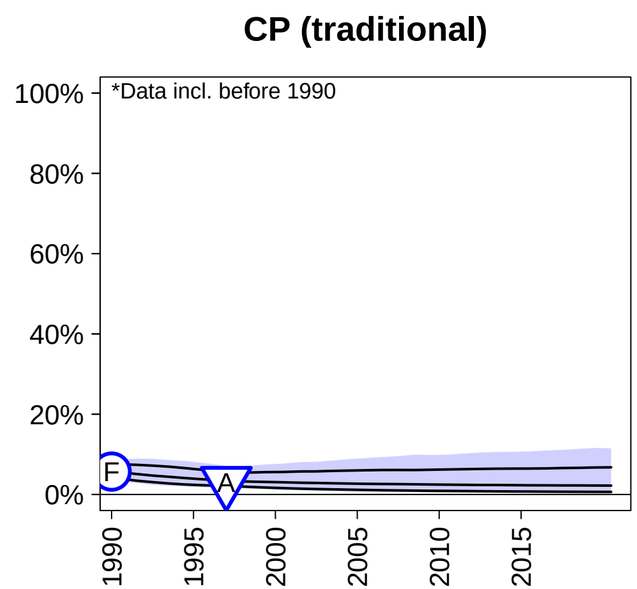
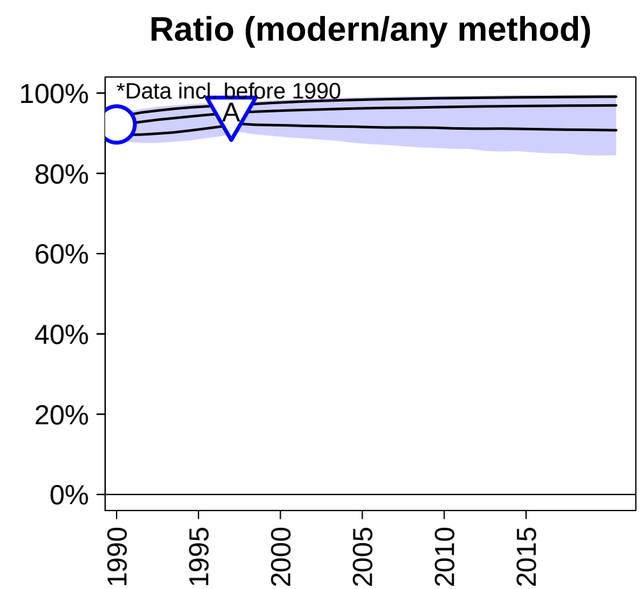
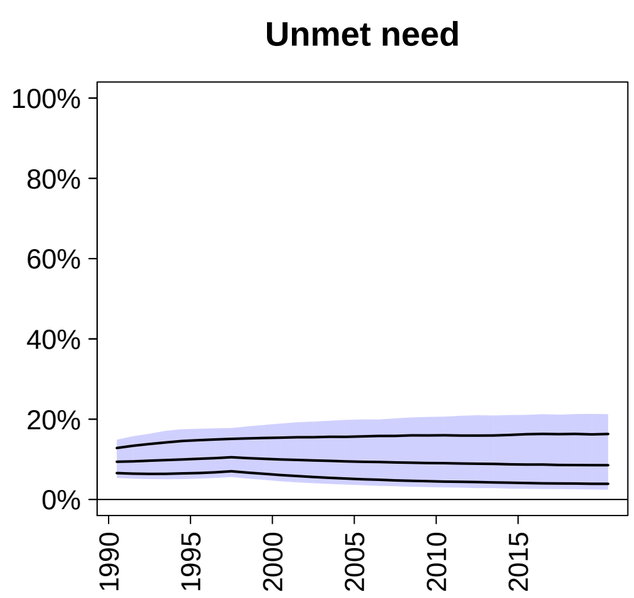
Reunion (Eastern Africa)

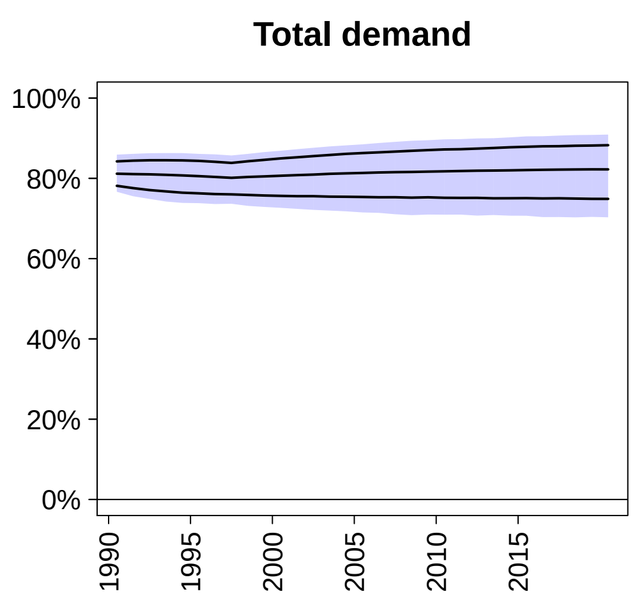


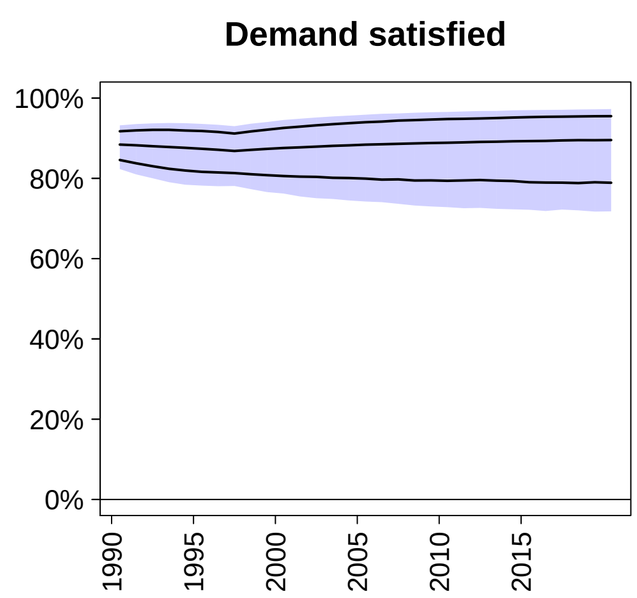












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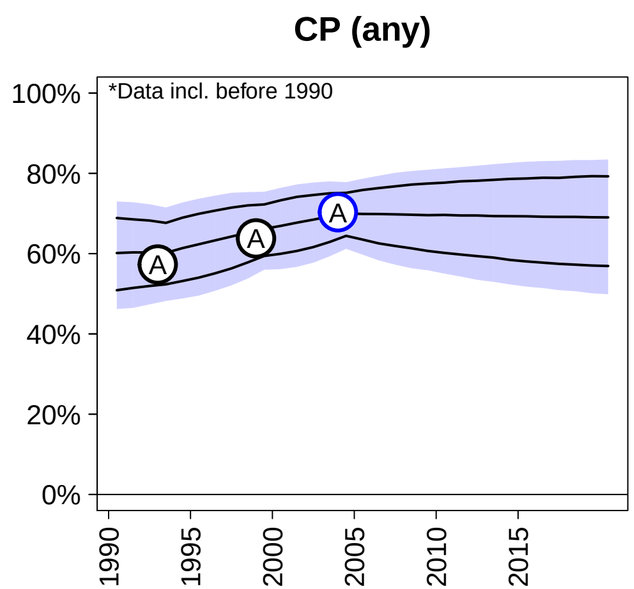
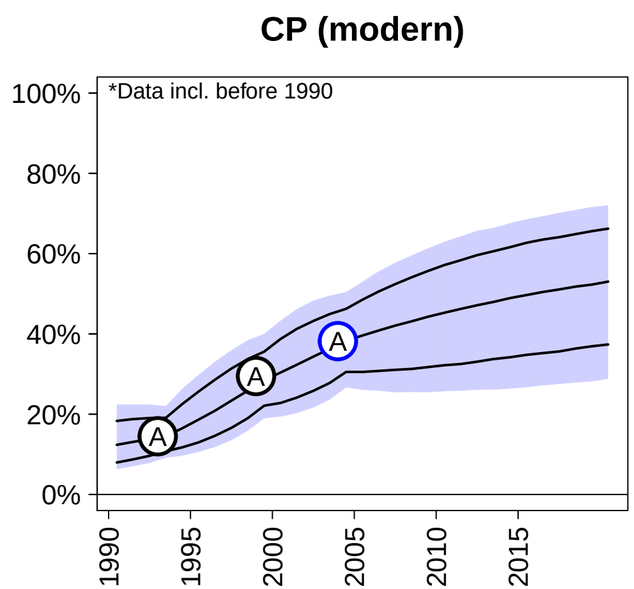
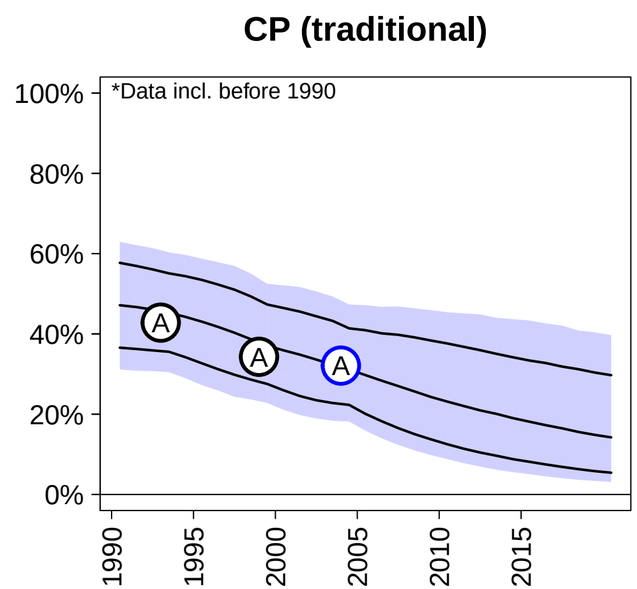
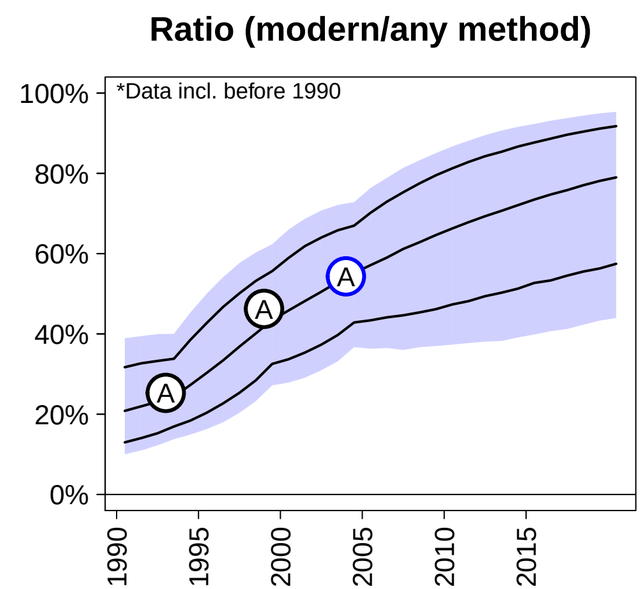
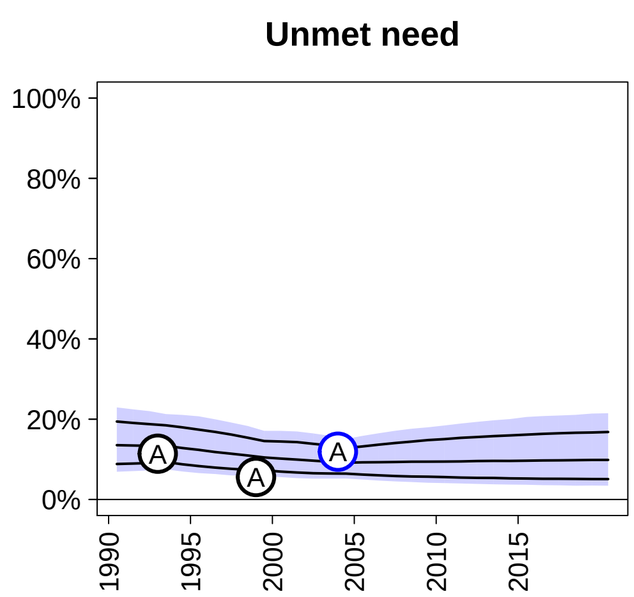
Romania (Eastern Europe)

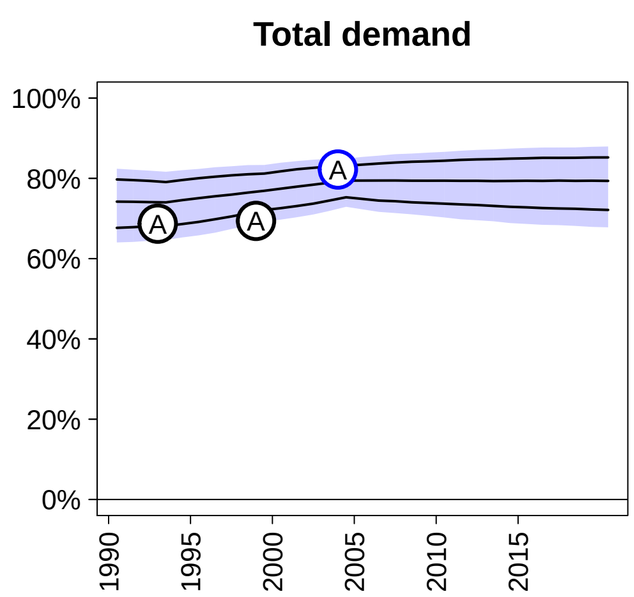


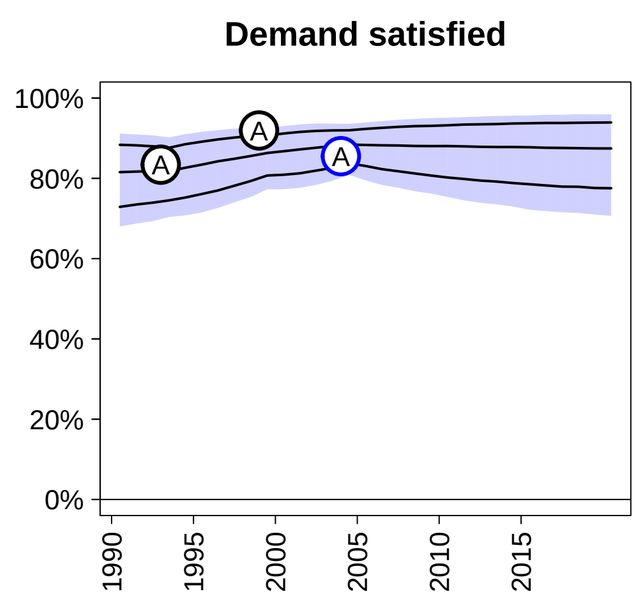












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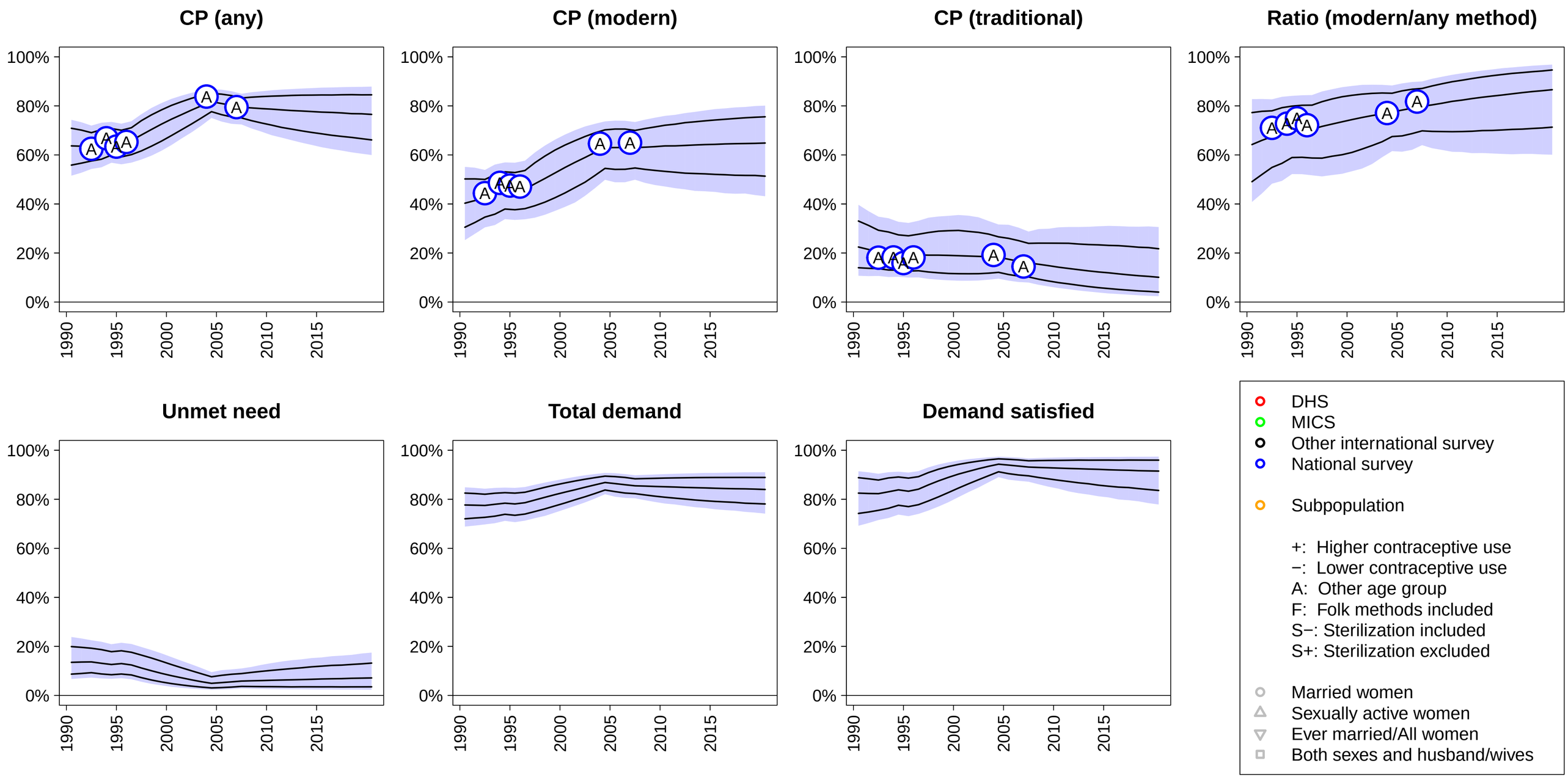
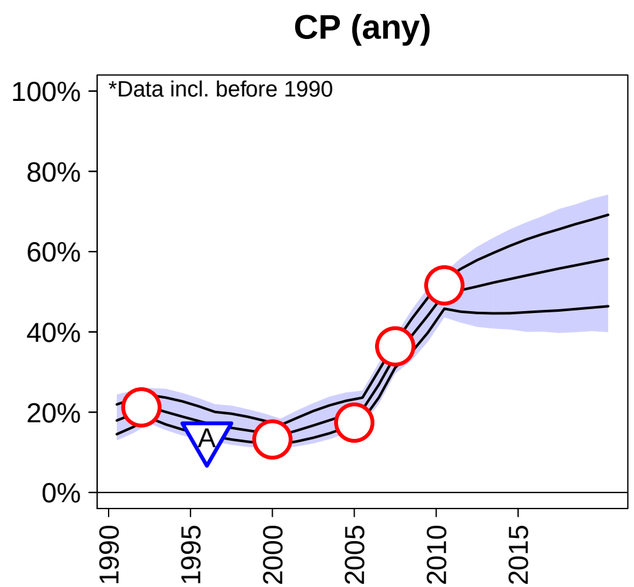
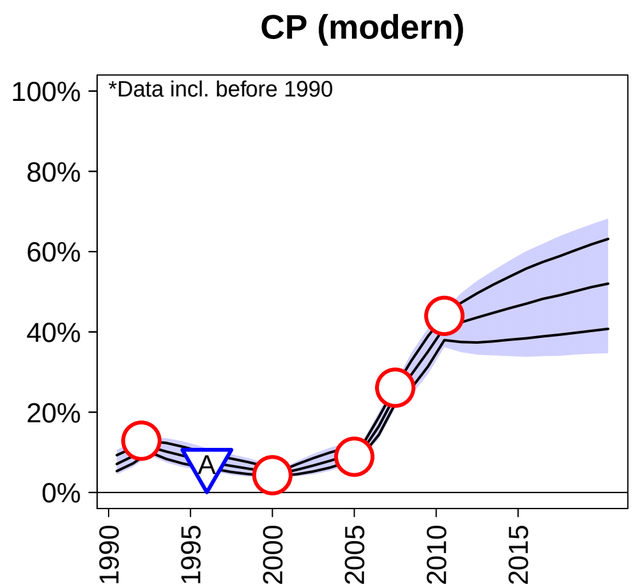
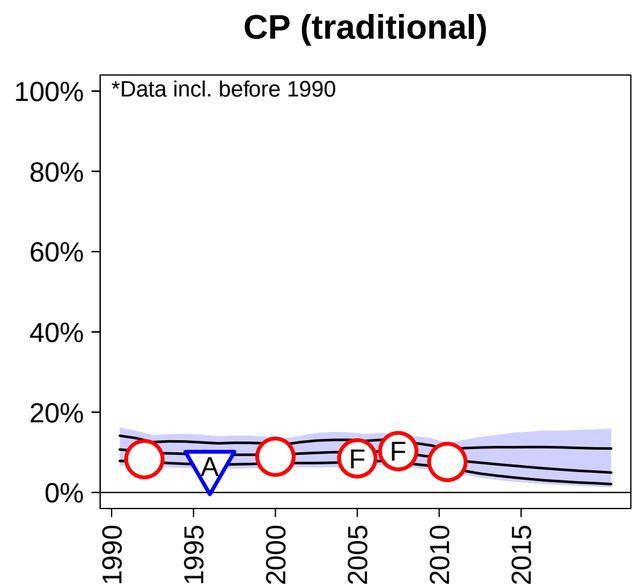
Russian Federation (Eastern Europe)

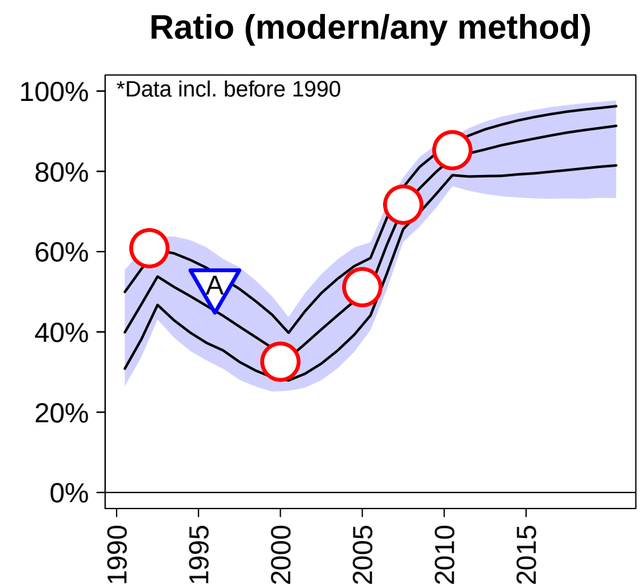


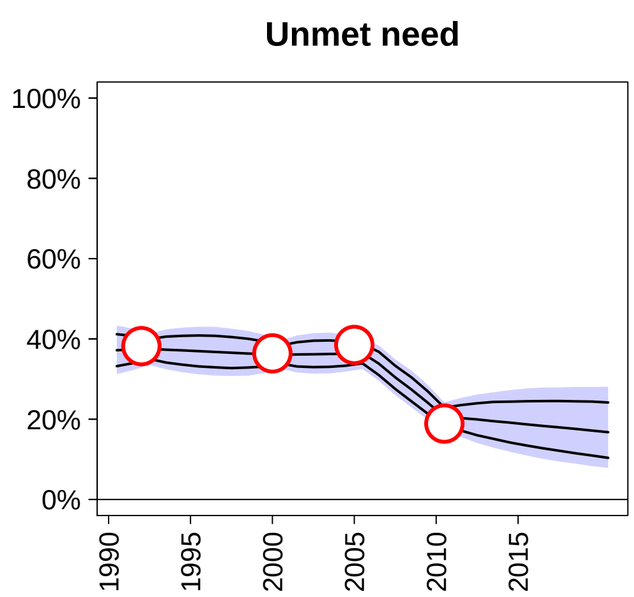
Rwanda (Eastern Africa)

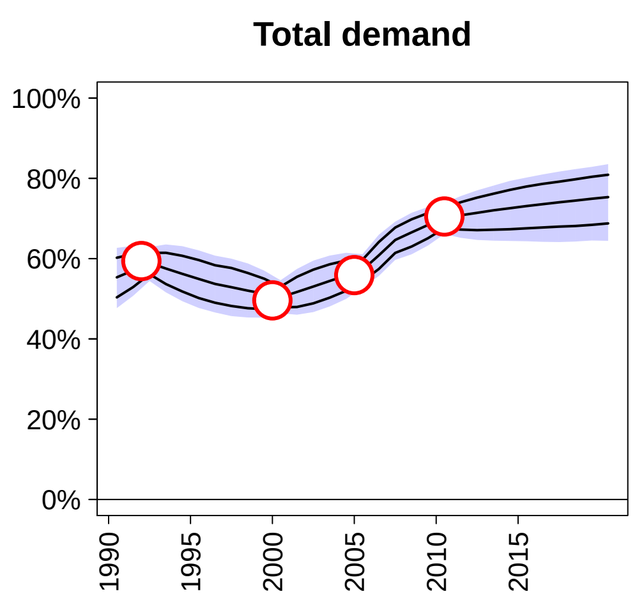


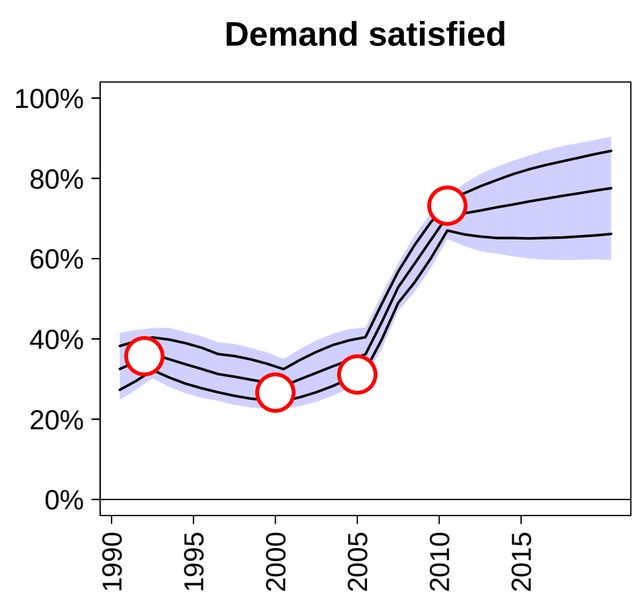












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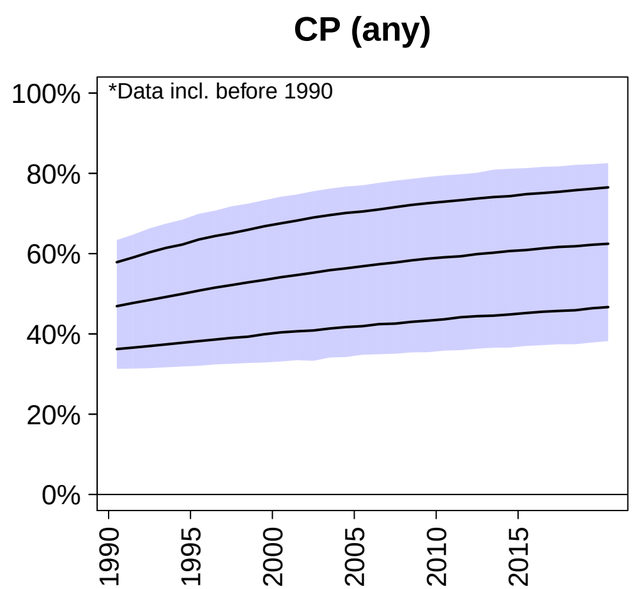
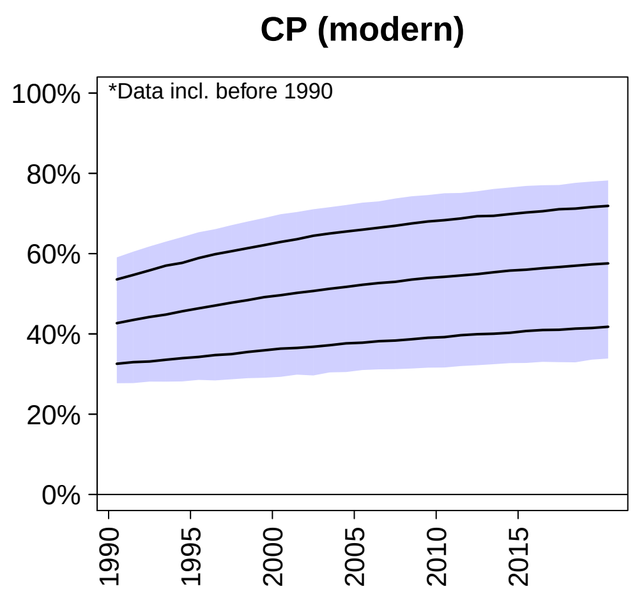
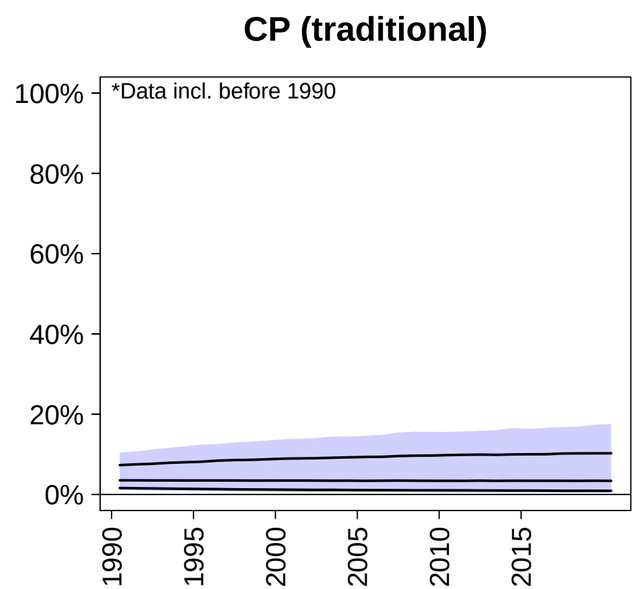
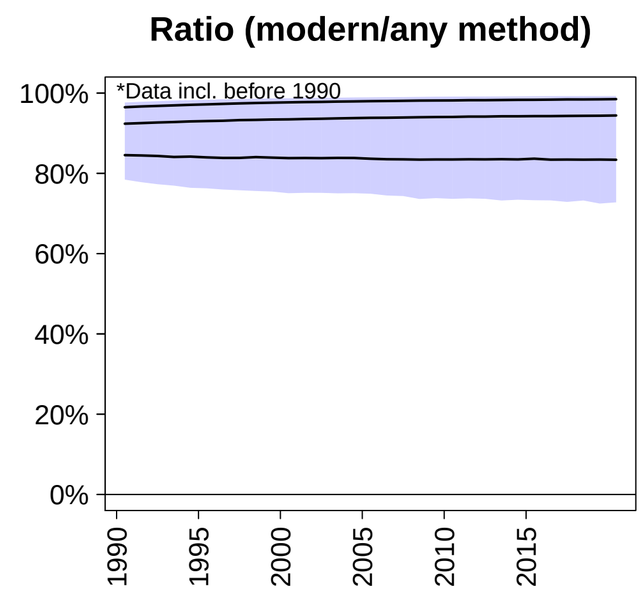
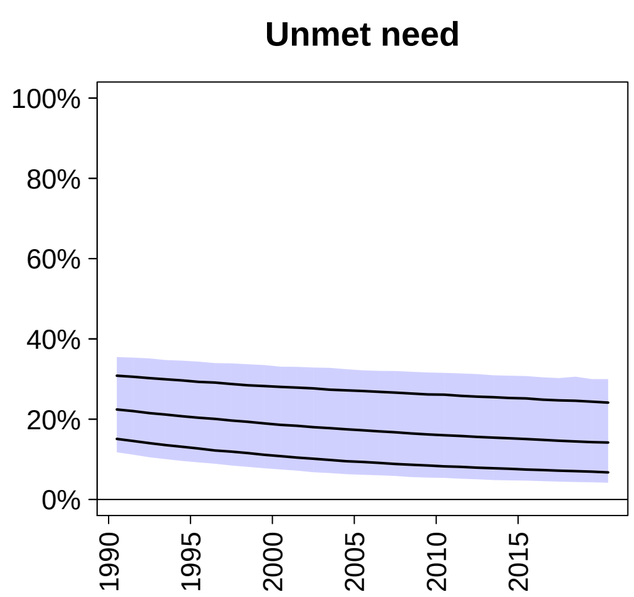
Saint Kitts and Nevis (Caribbean)

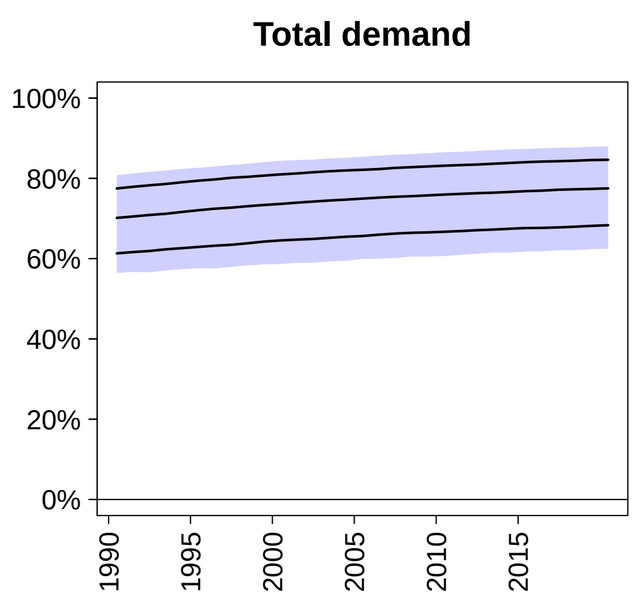


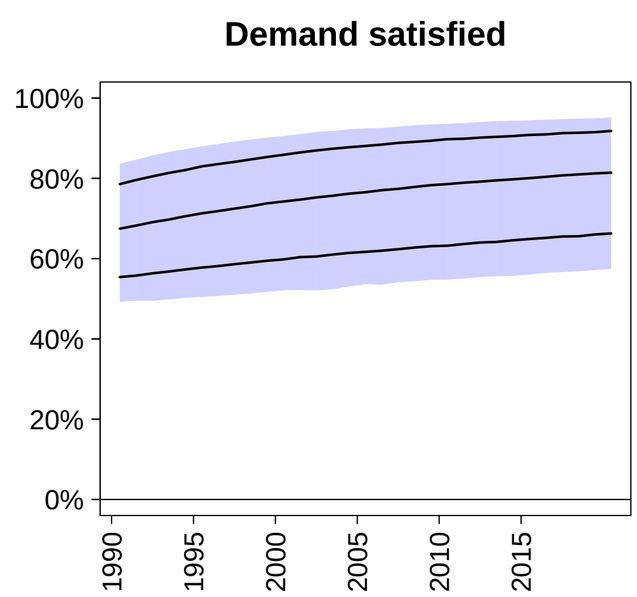












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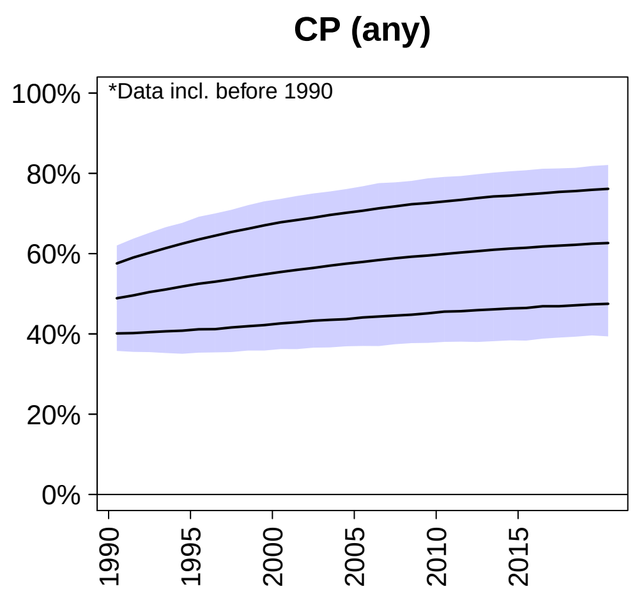
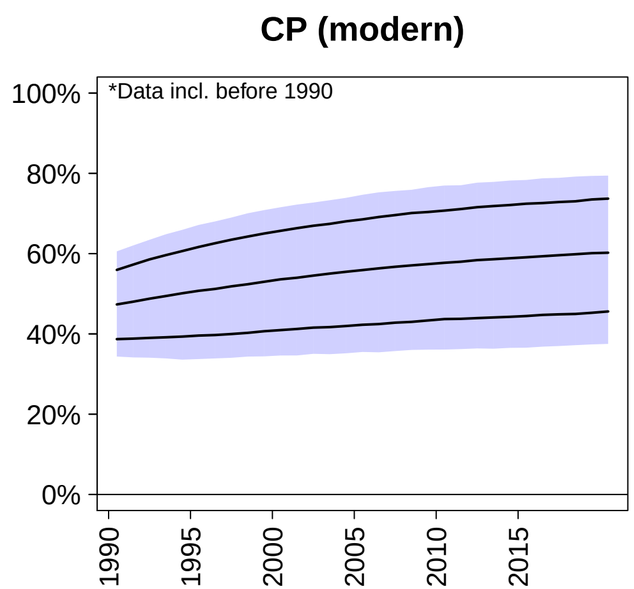
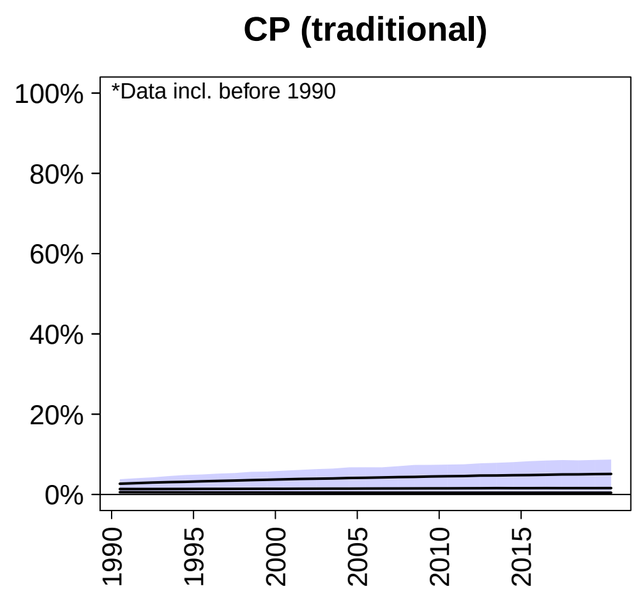
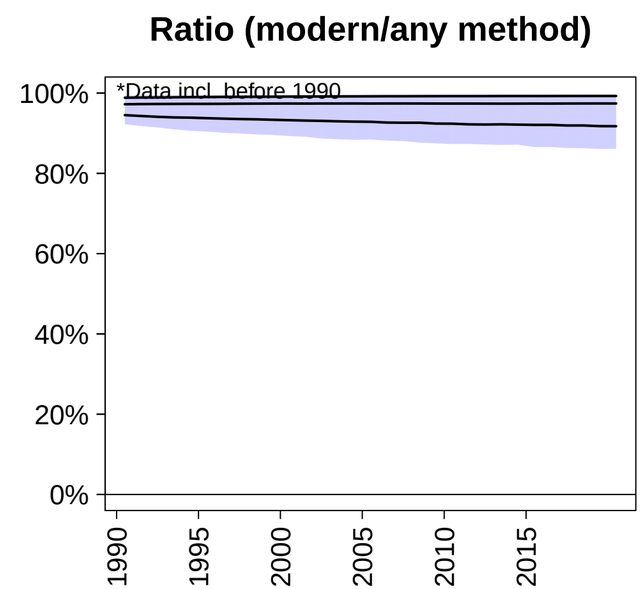
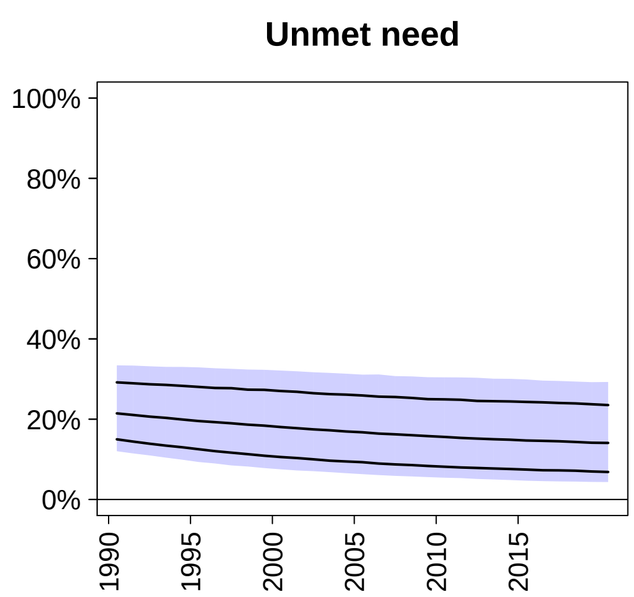
Saint Lucia (Caribbean)

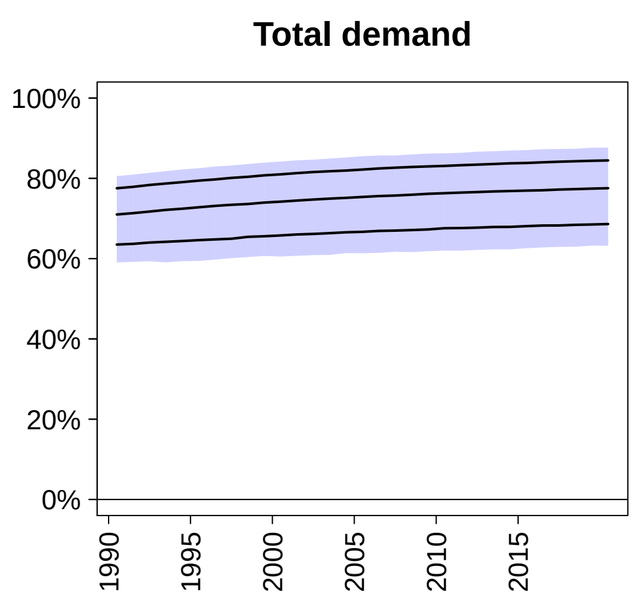


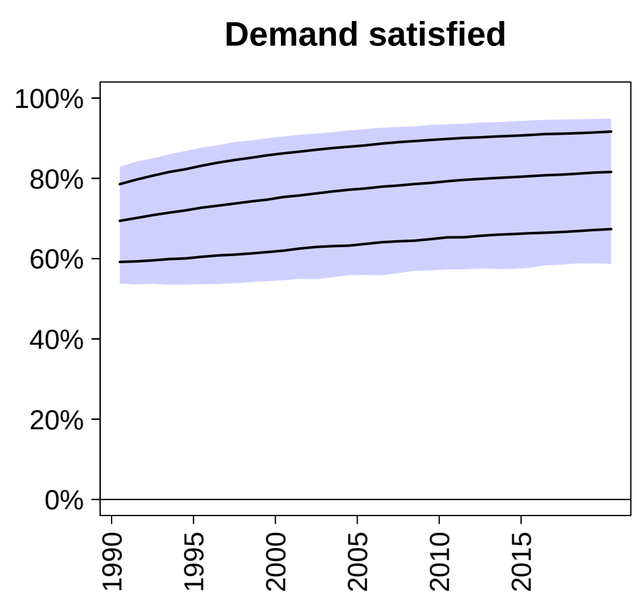












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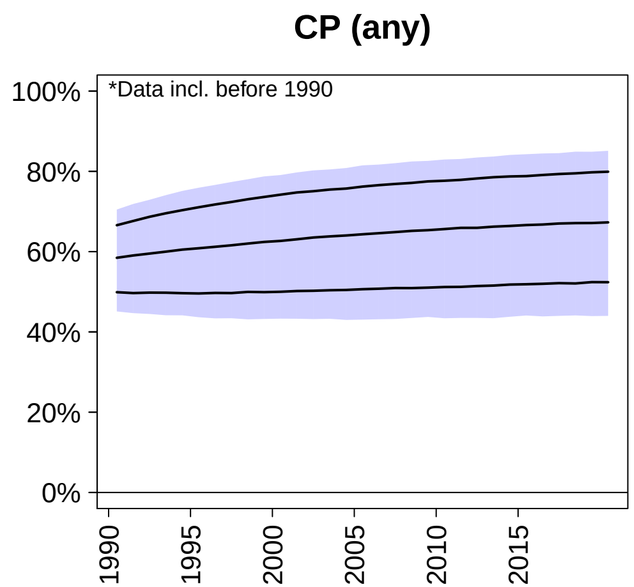
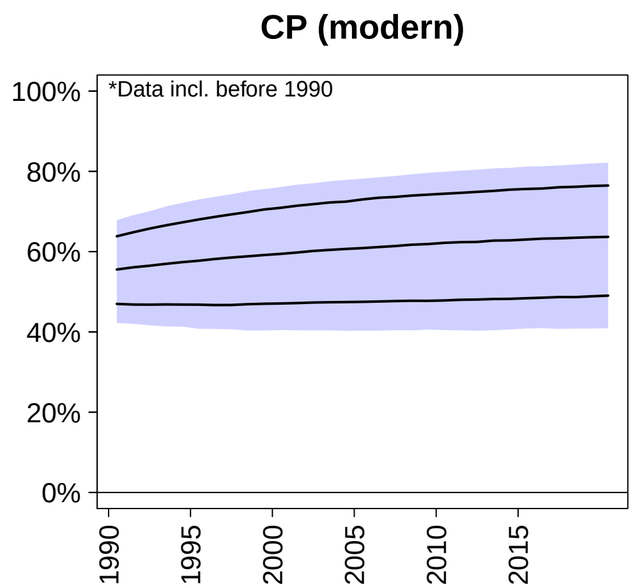
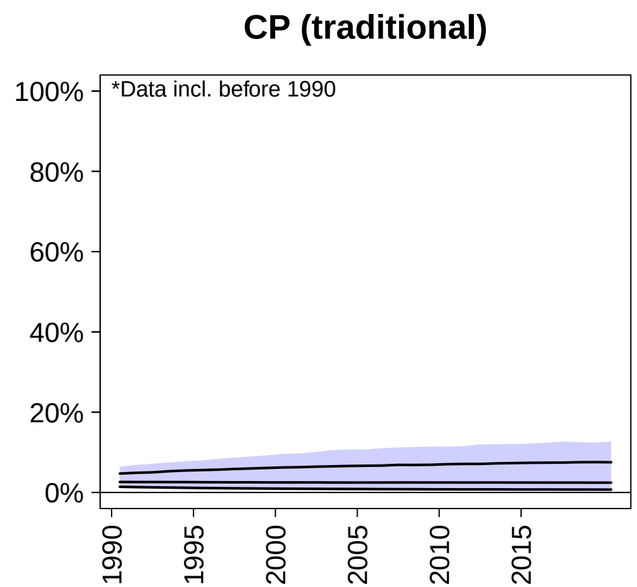
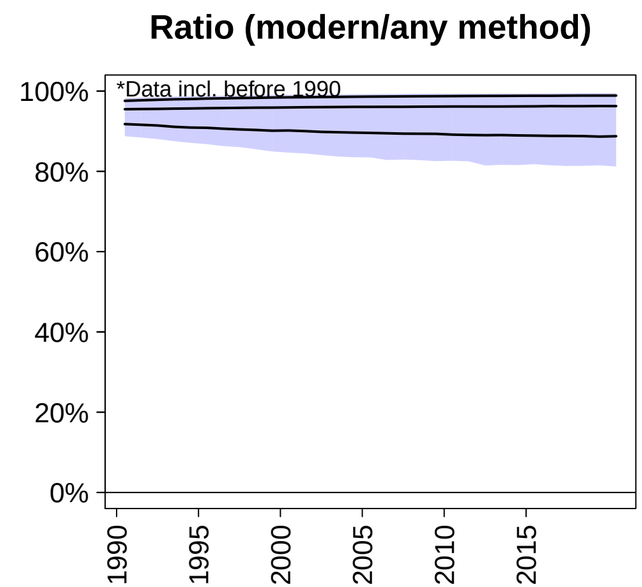
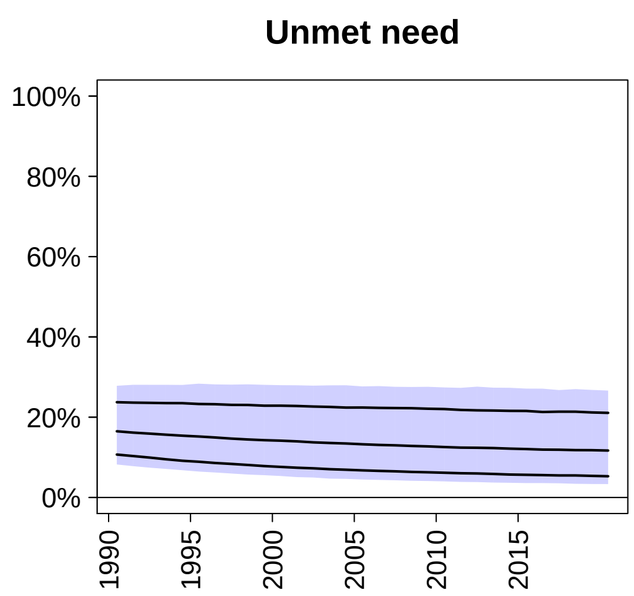
Saint Vincent and the Grenadines (Caribbean)

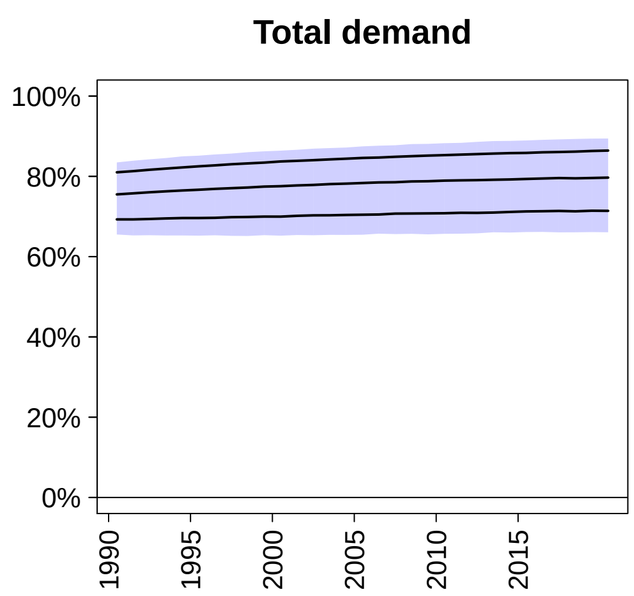


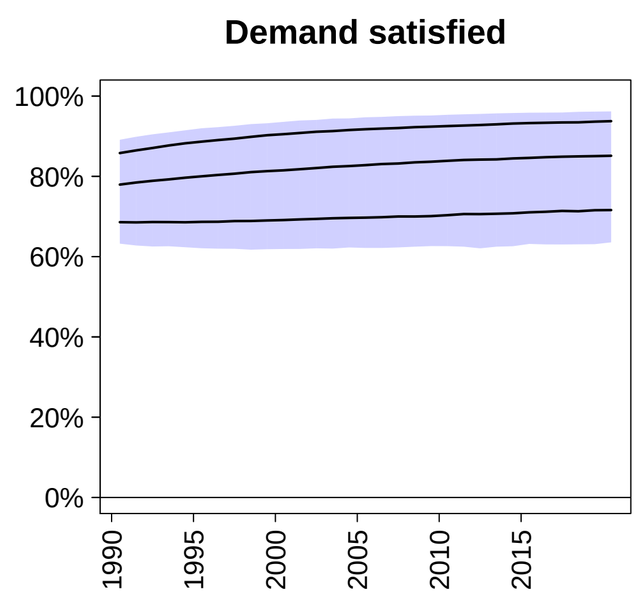












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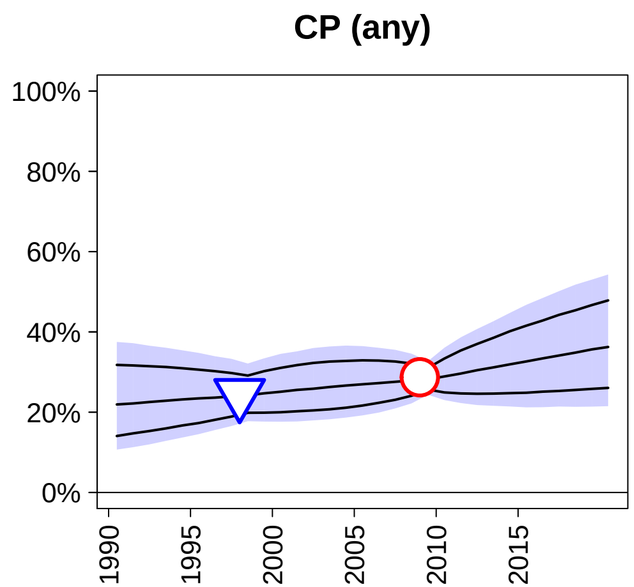
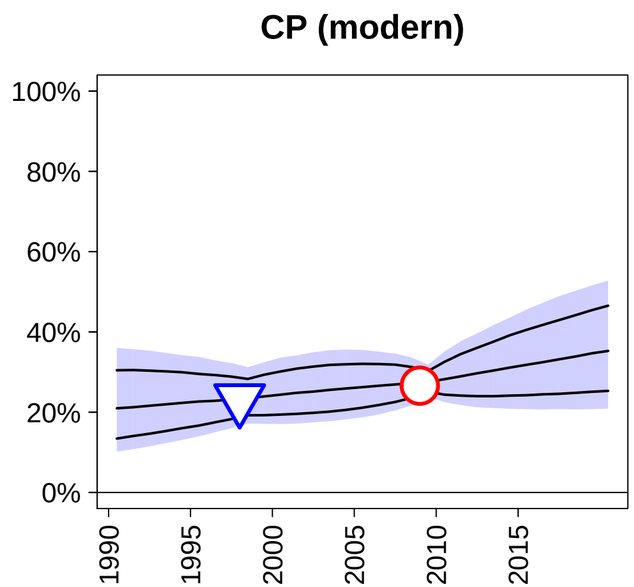
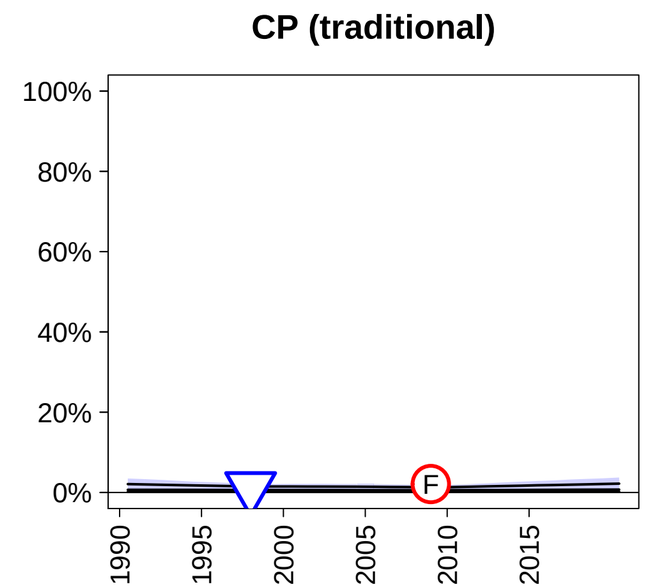
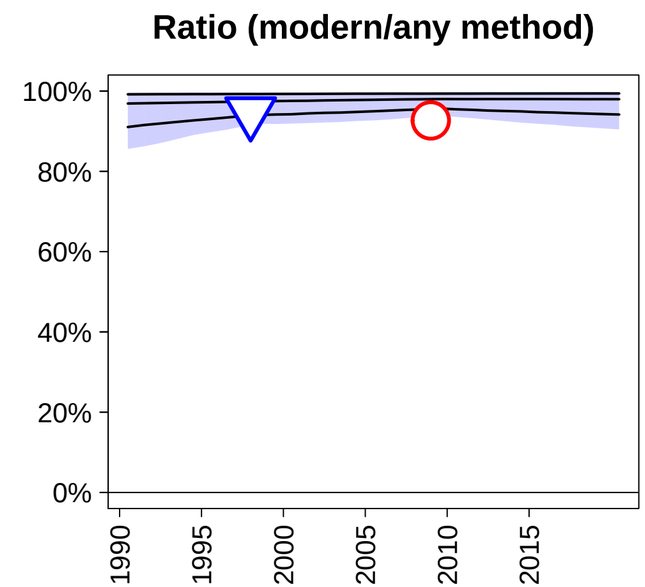
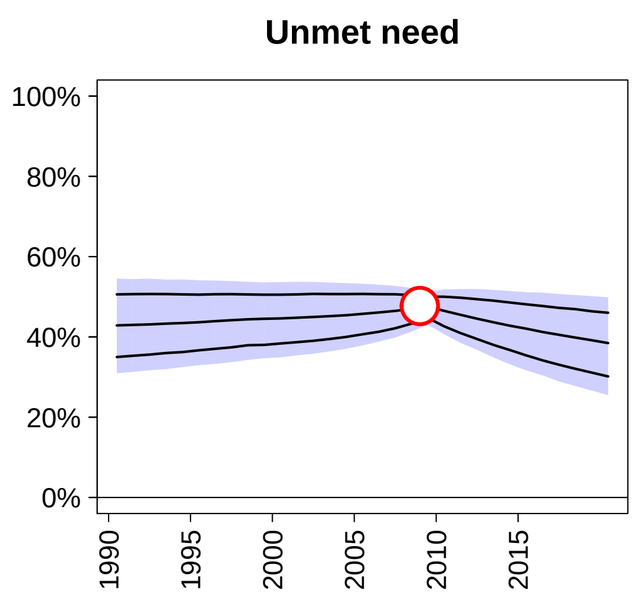
Samoa (Polynesia)

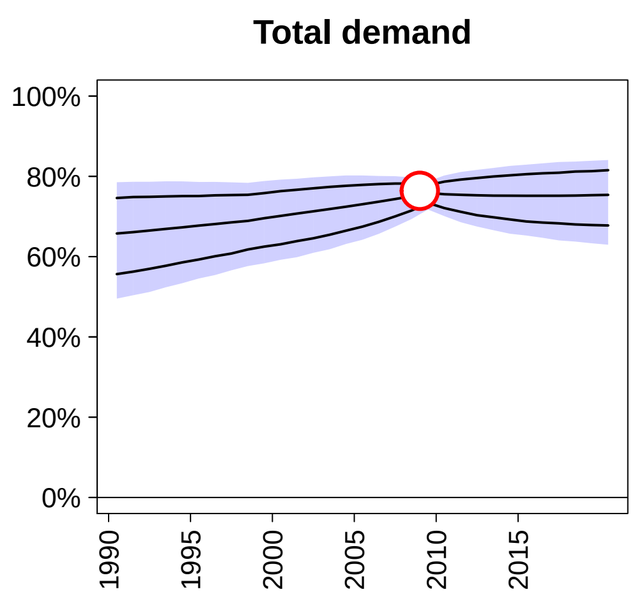


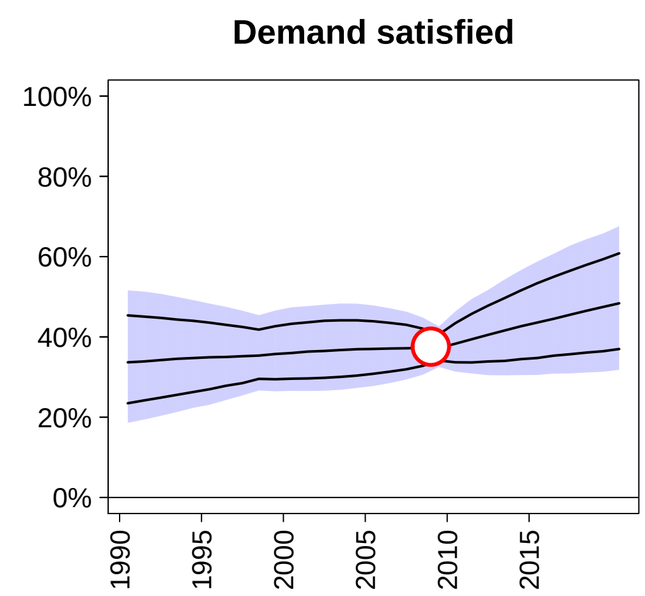












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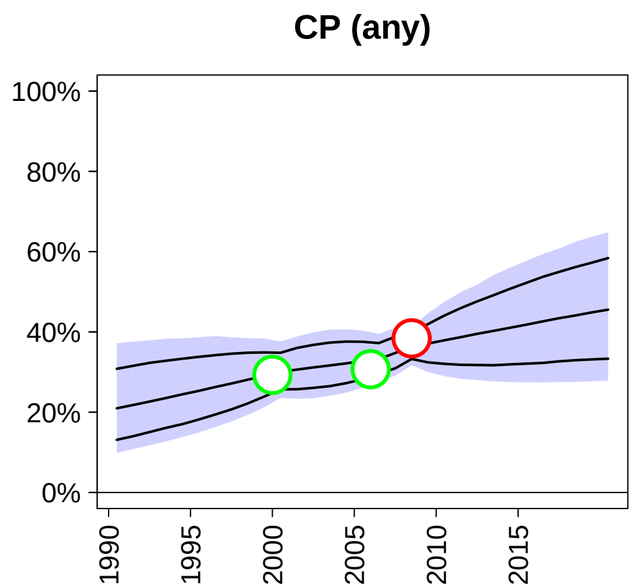
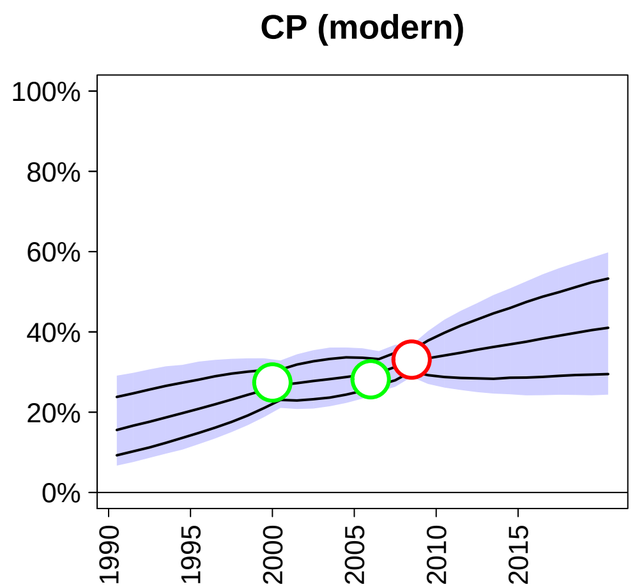
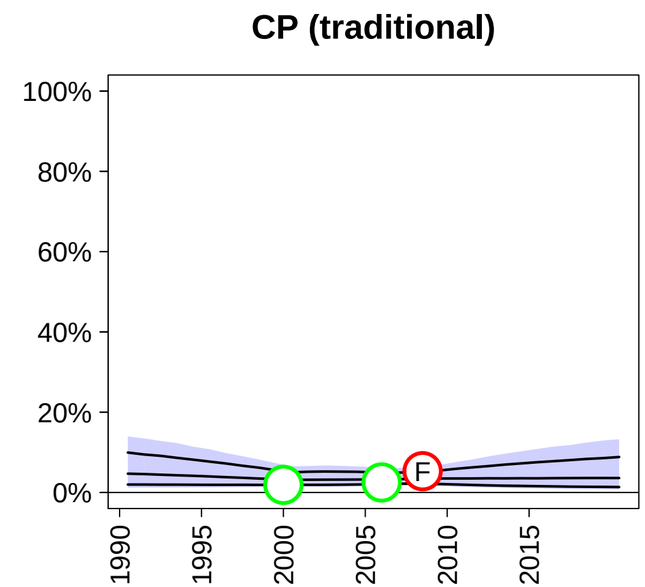
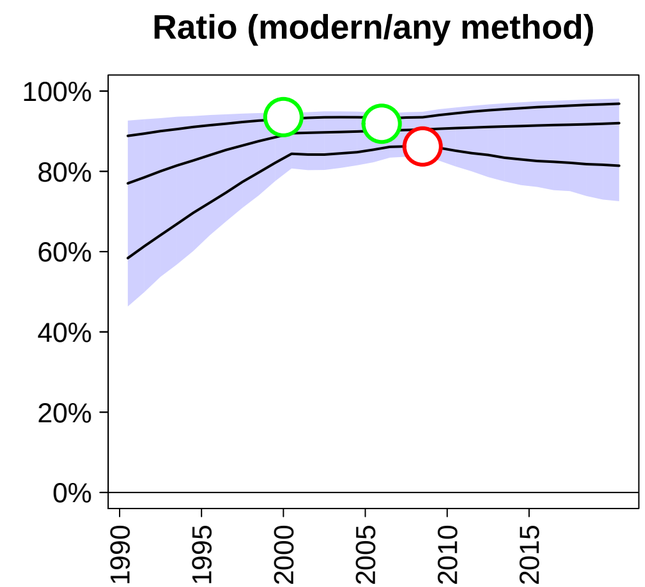
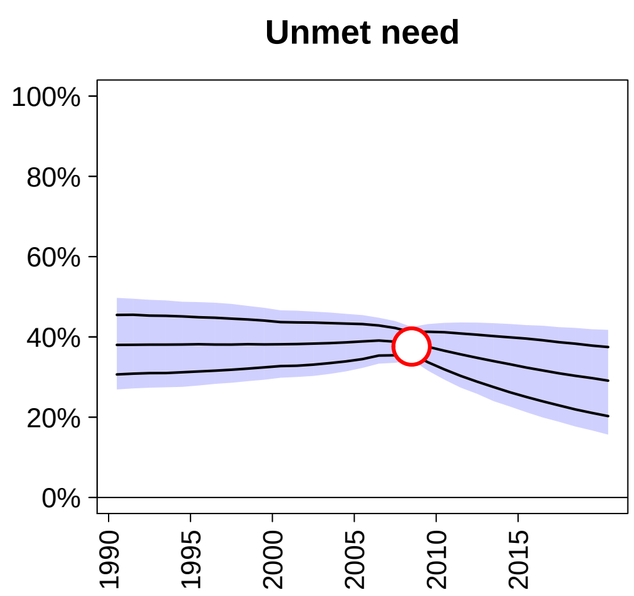
Sao Tome and Principe (Middle Africa)

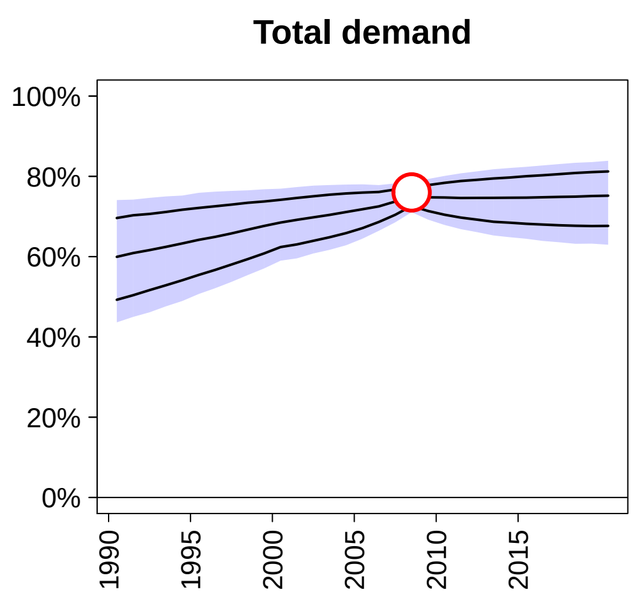


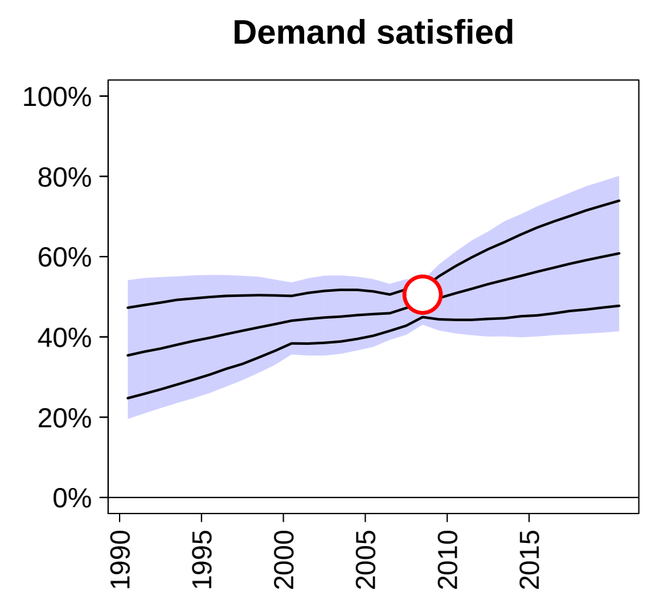












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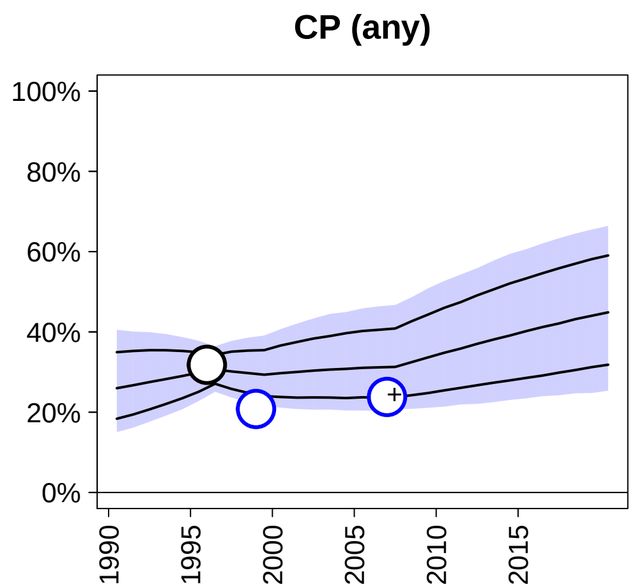
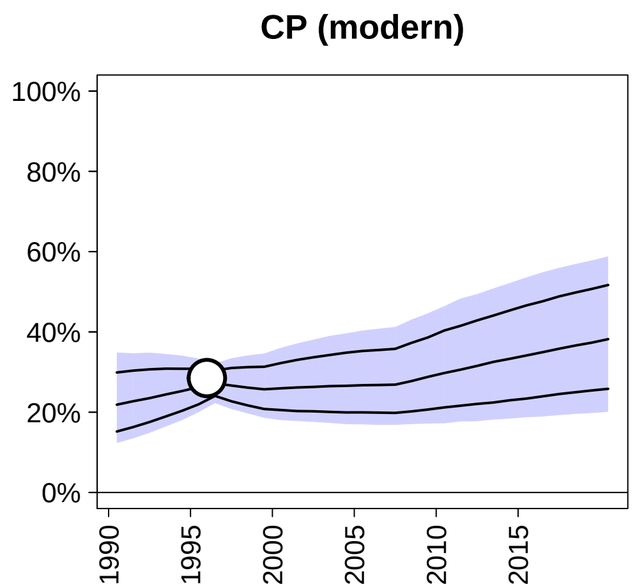
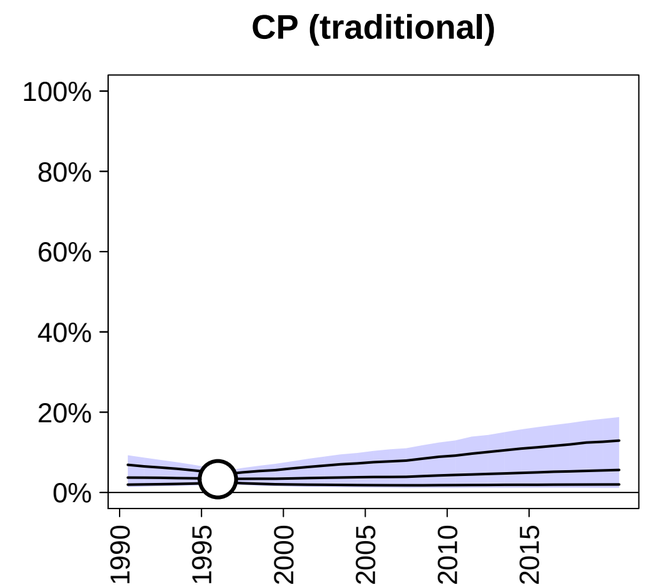
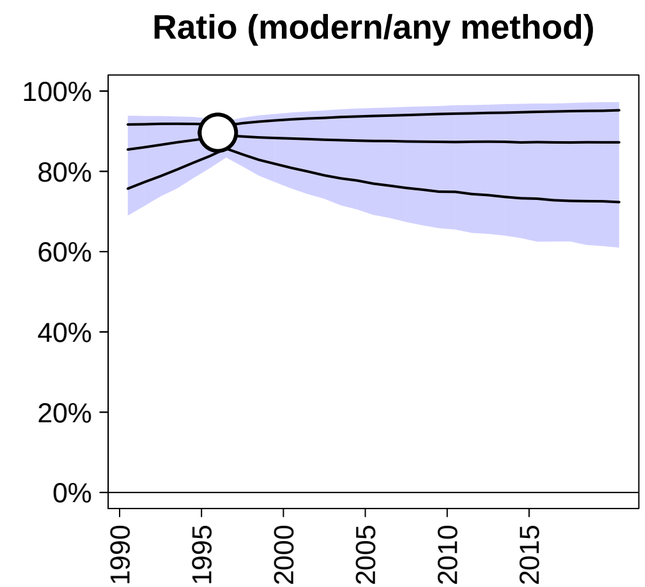
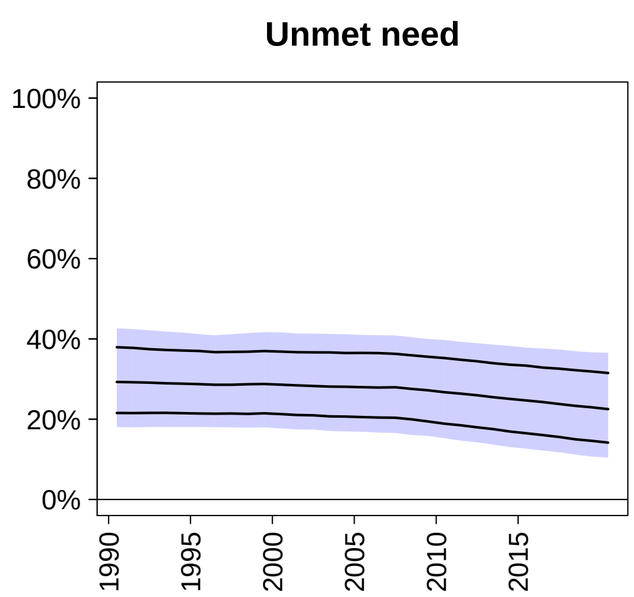
Saudi Arabia (Western Asia)

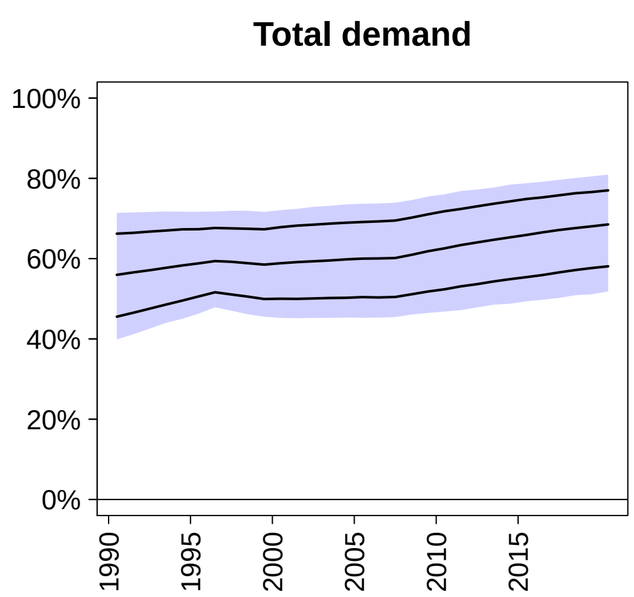


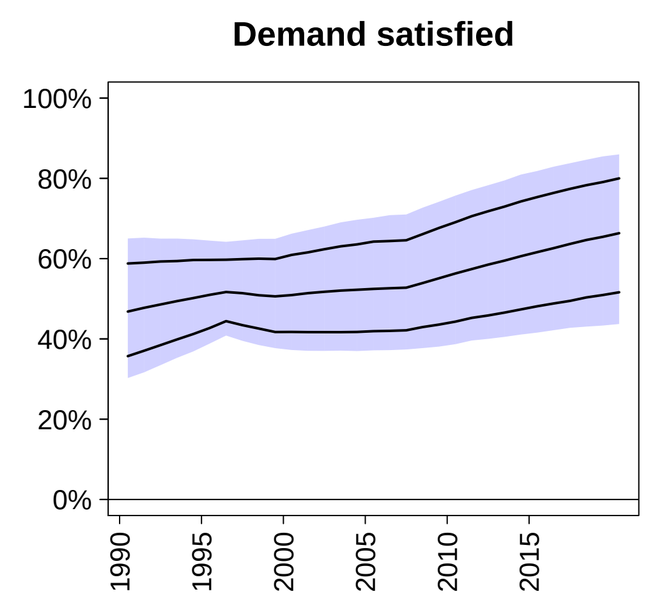












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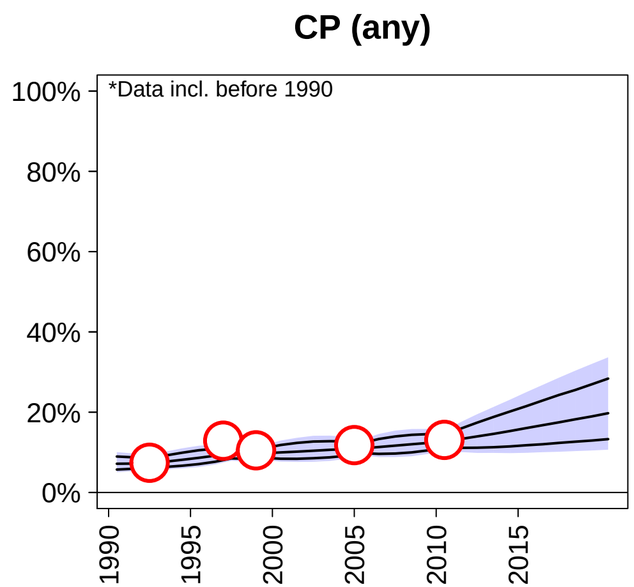
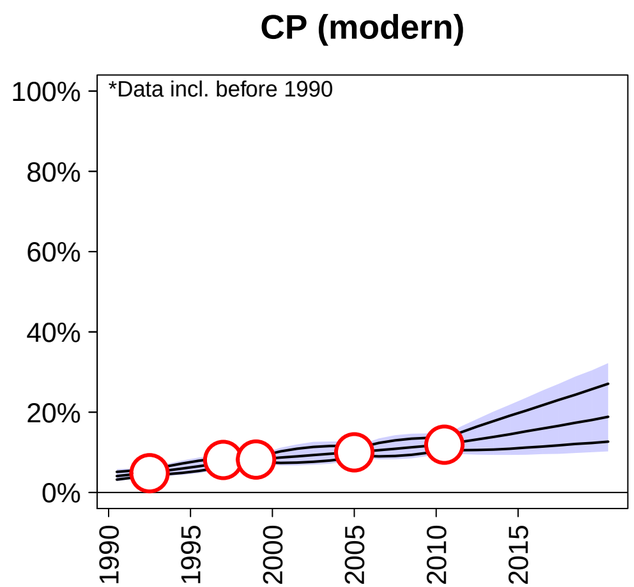
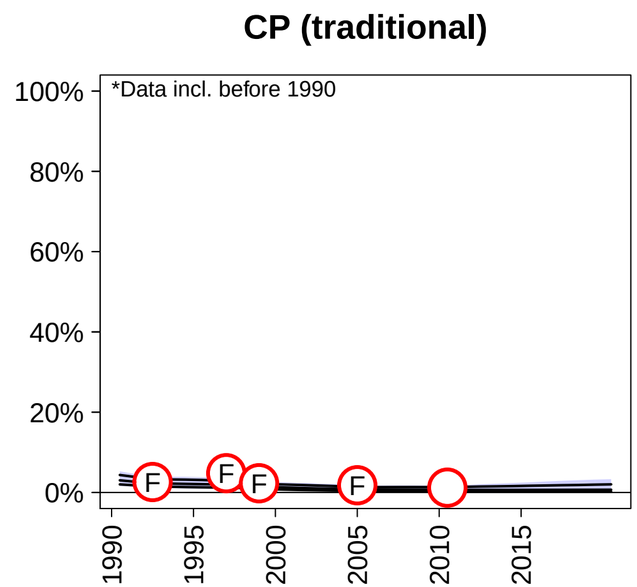
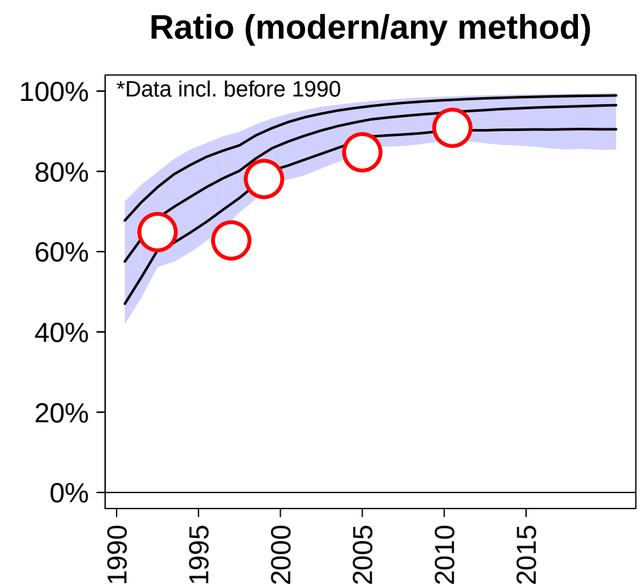
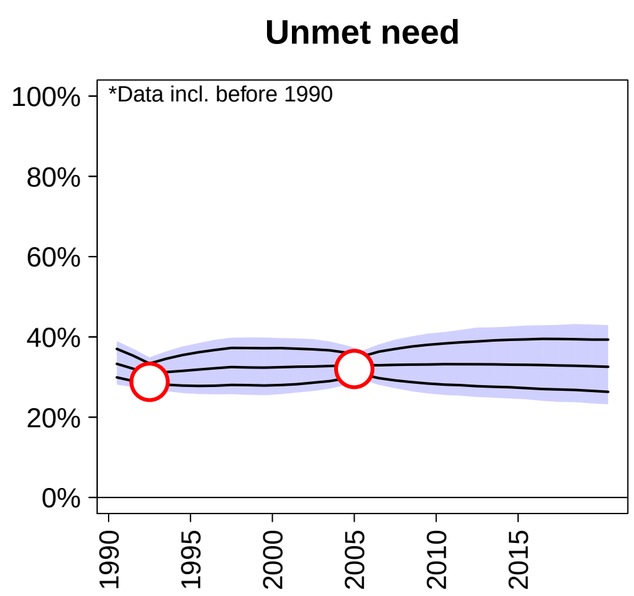
Senegal (Western Africa)

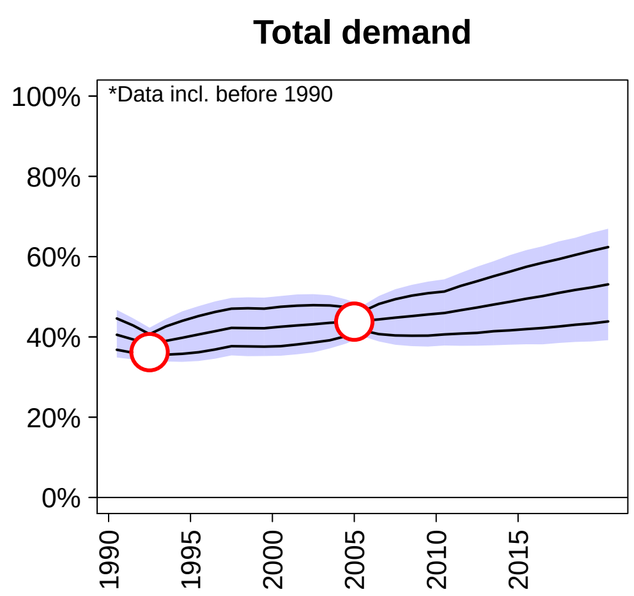


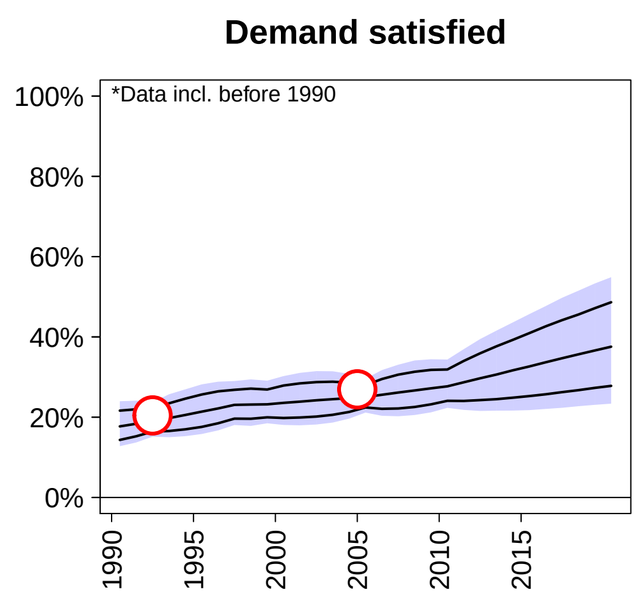












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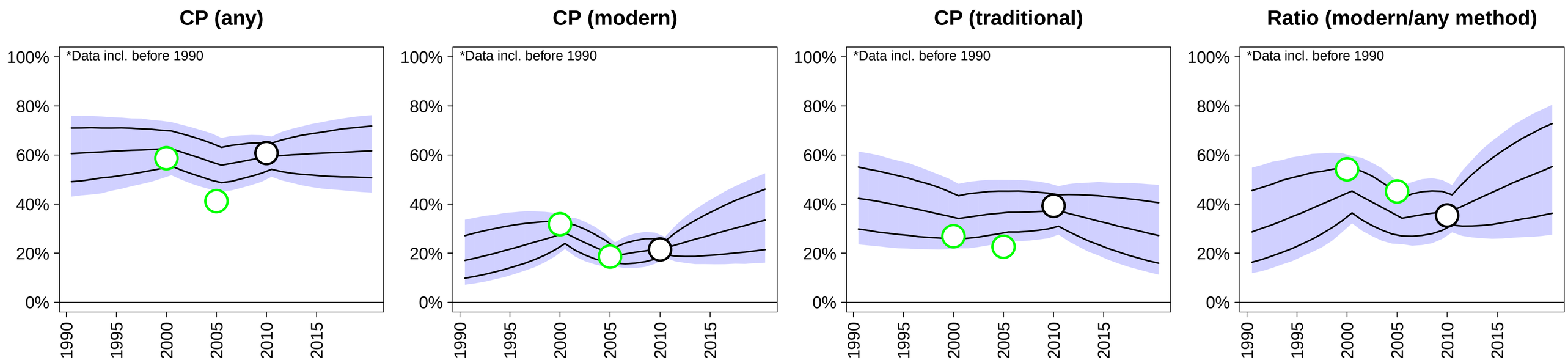
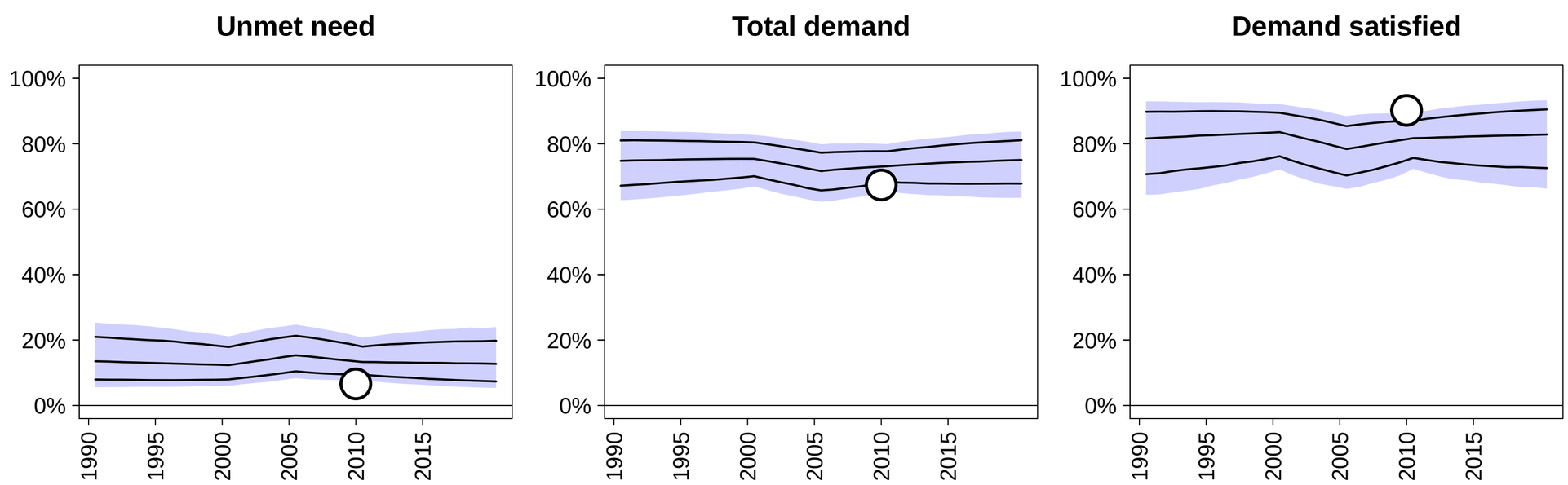
Serbia (Southern Europe)





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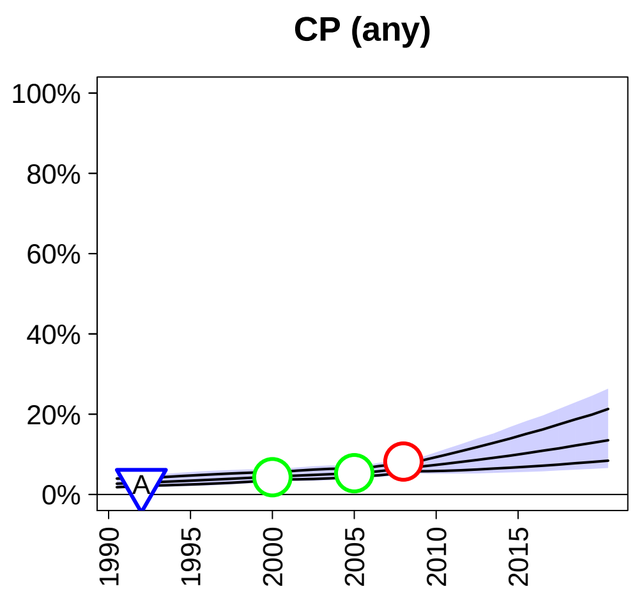
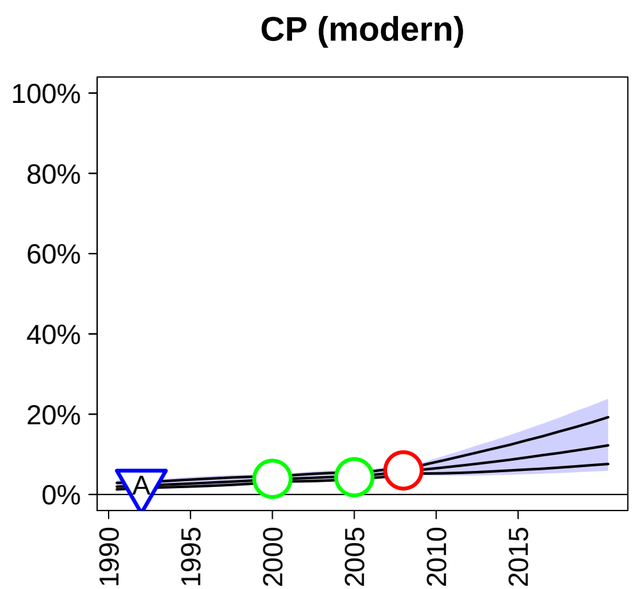
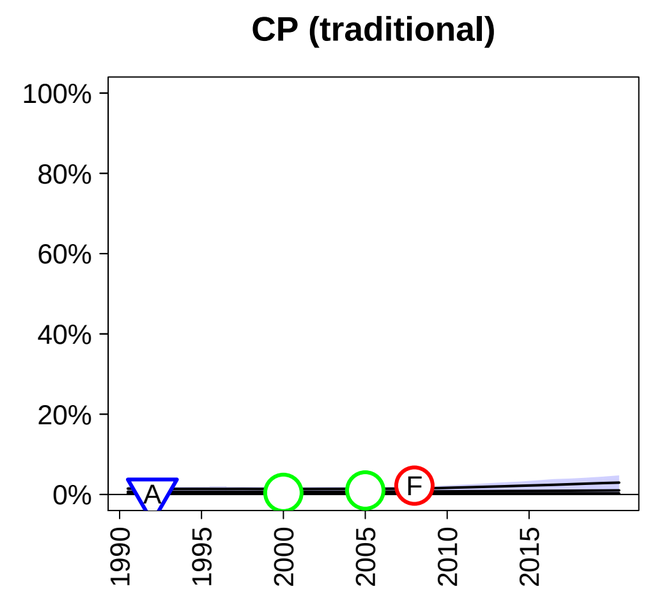
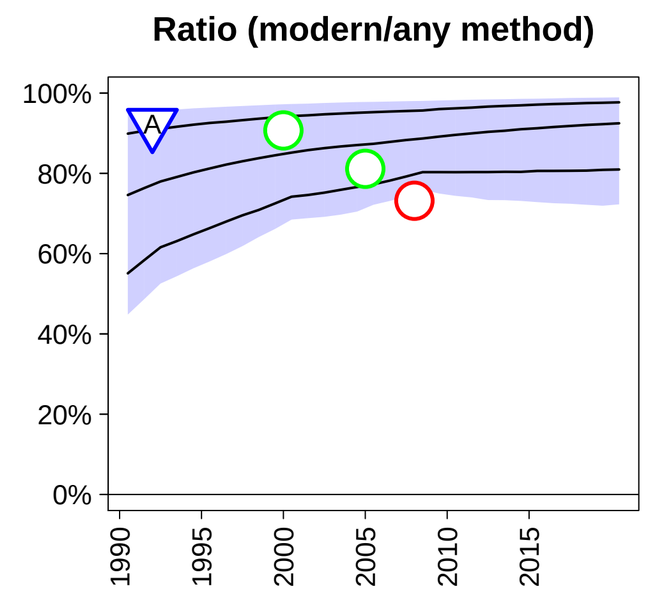
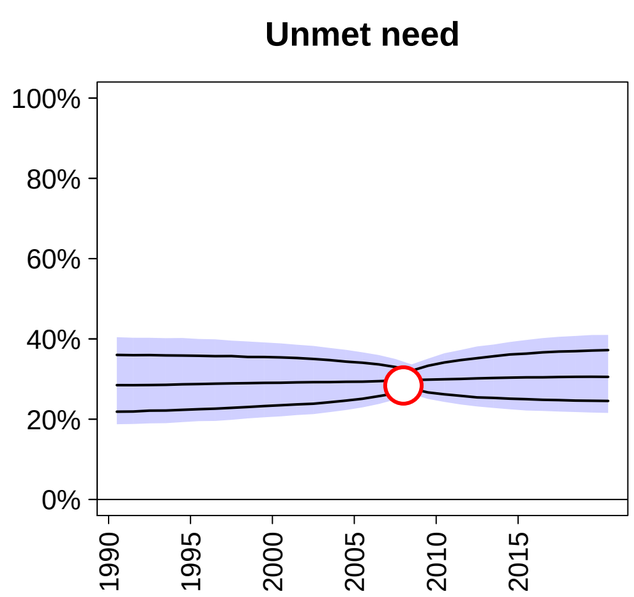
Sierra Leone (Western Africa)

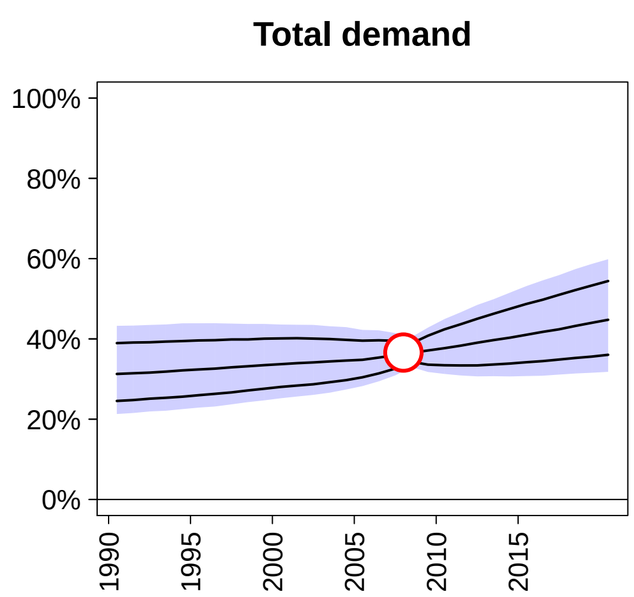


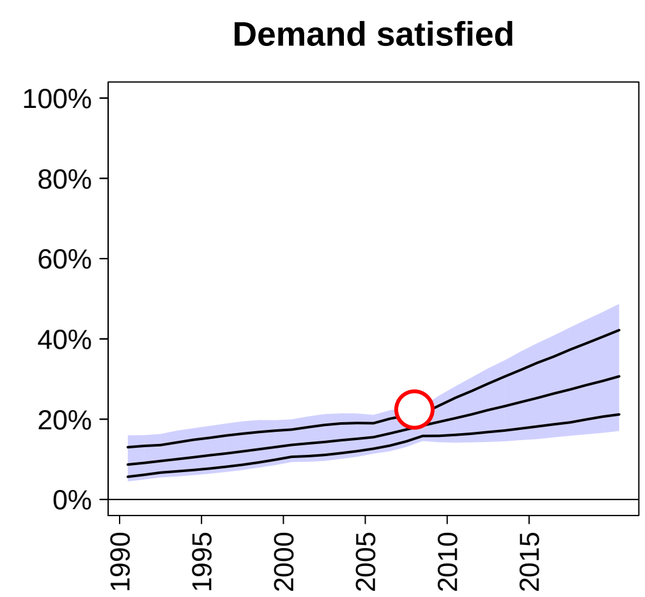












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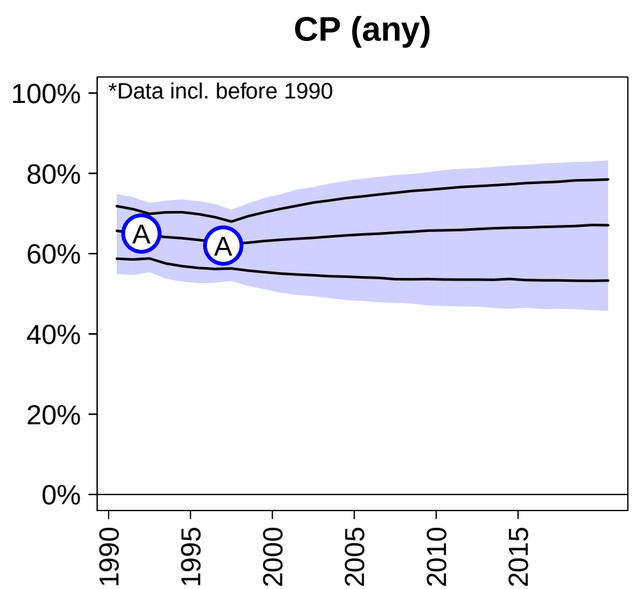
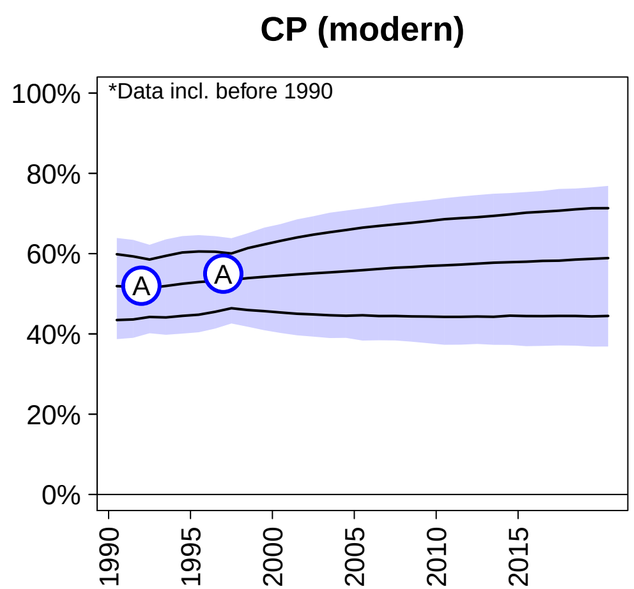
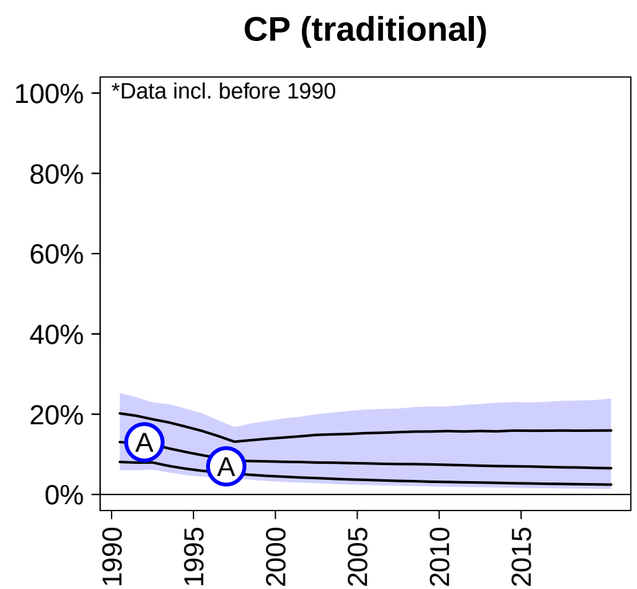
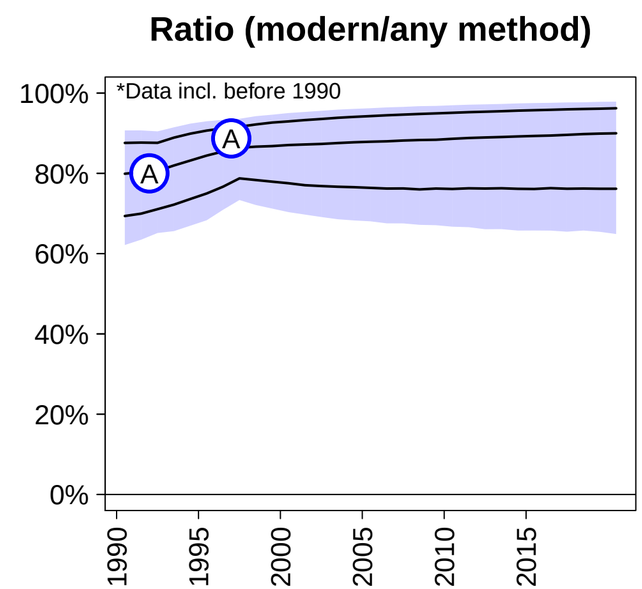
Married women
Sexually active women
Ever married/All women
Both sexes and husband/wives

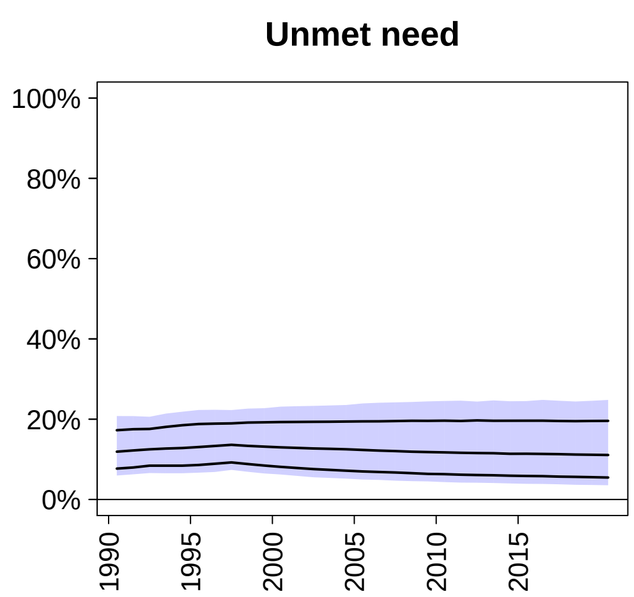
Singapore (South−Eastern Asia)

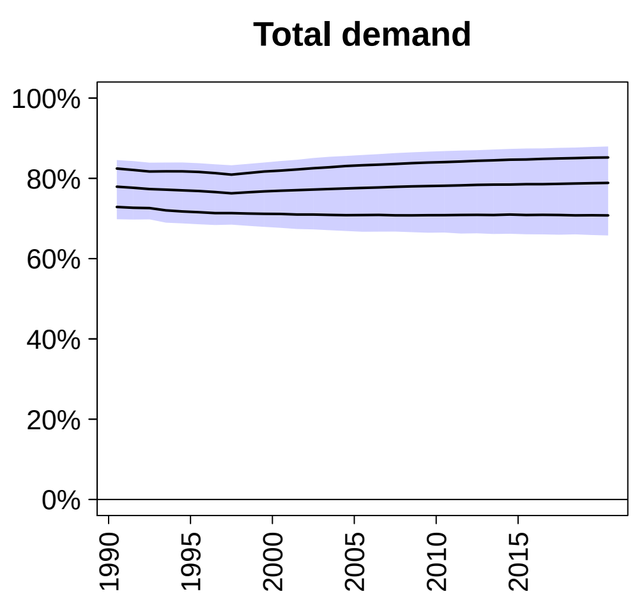


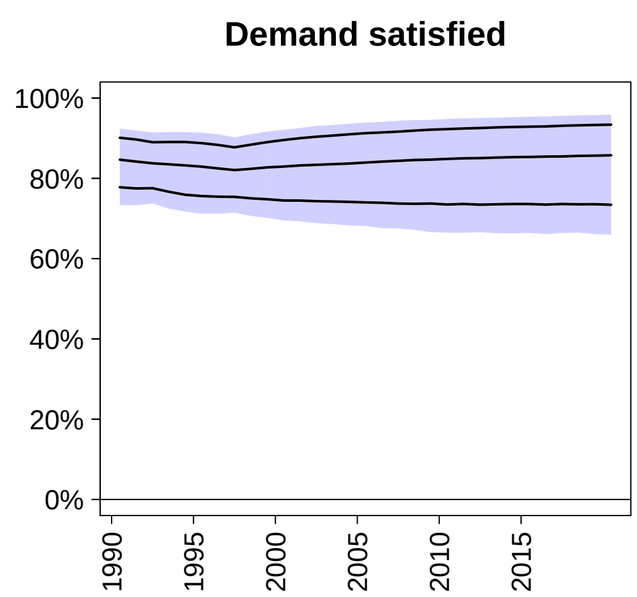












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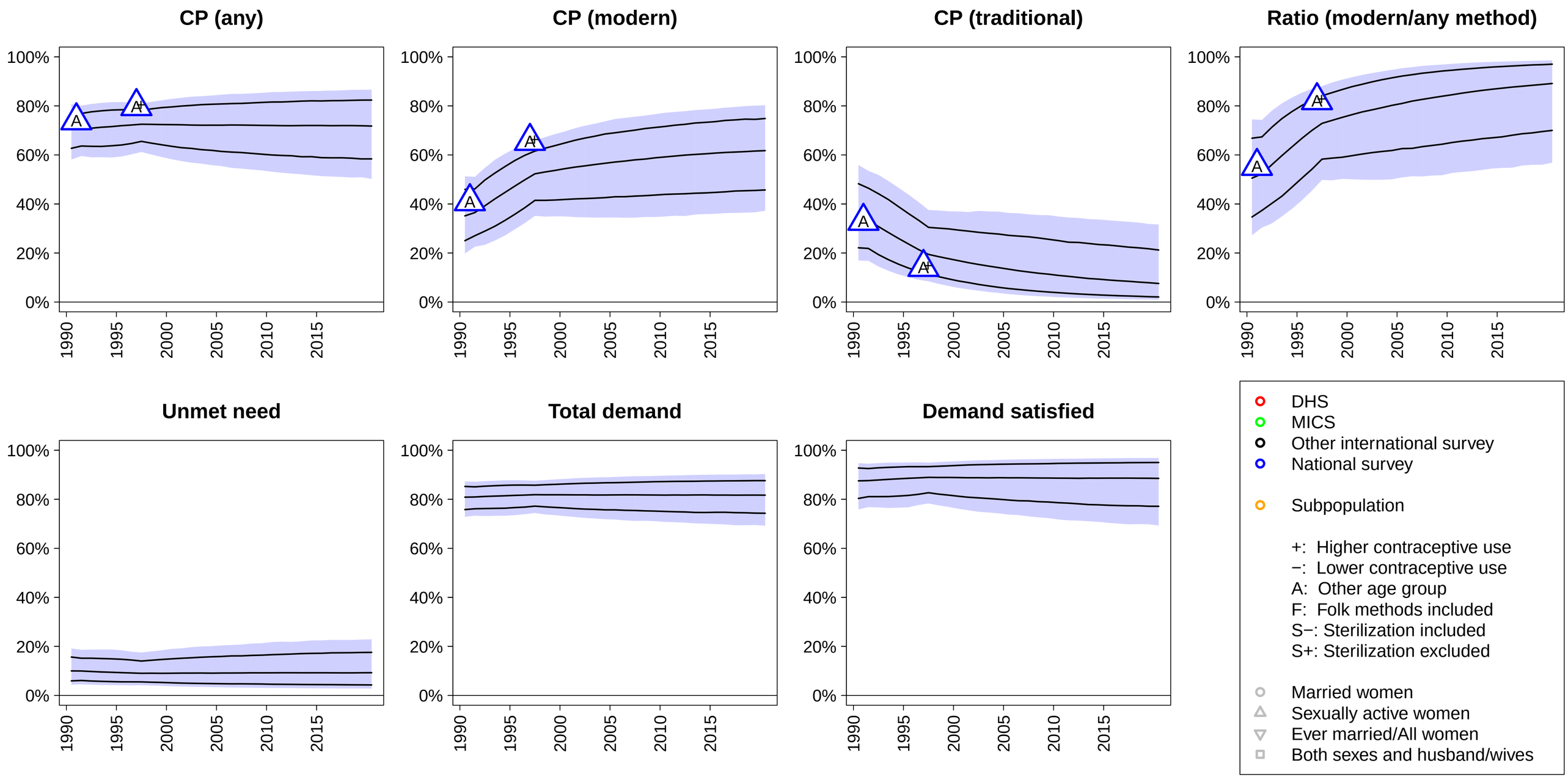
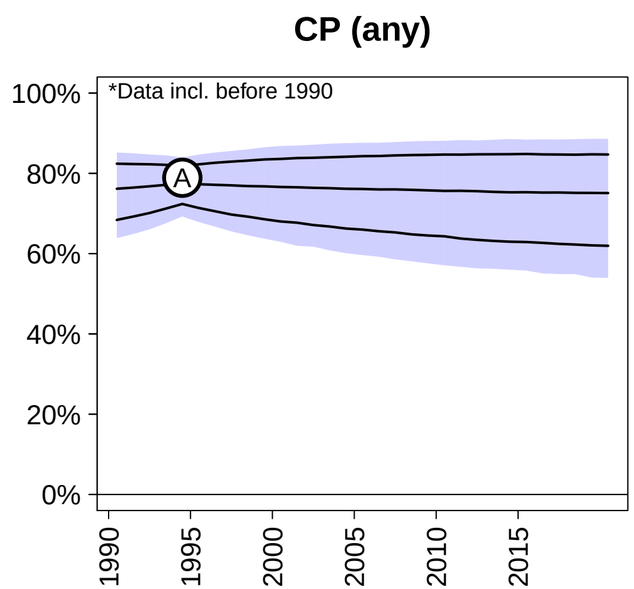
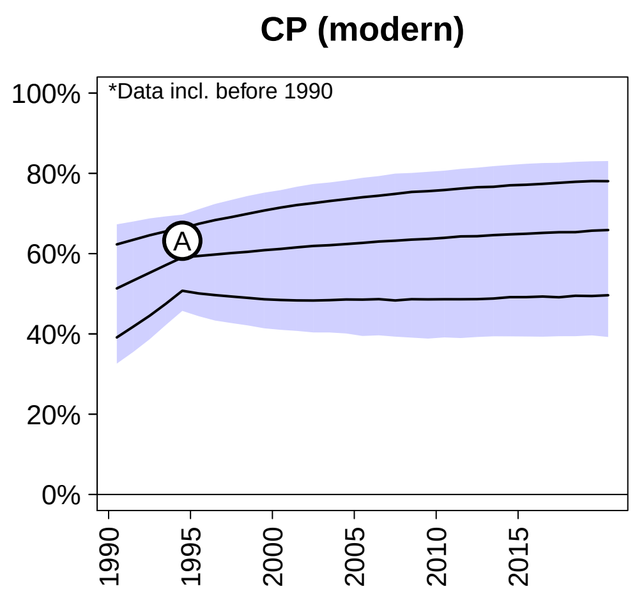
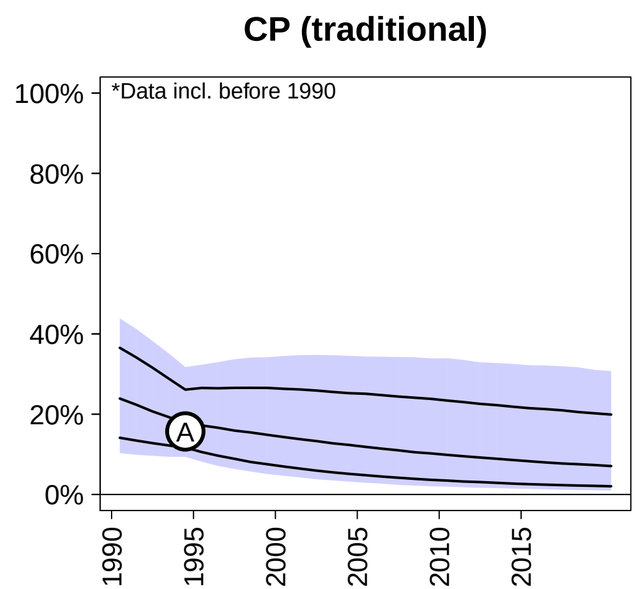
Slovakia (Eastern Europe)

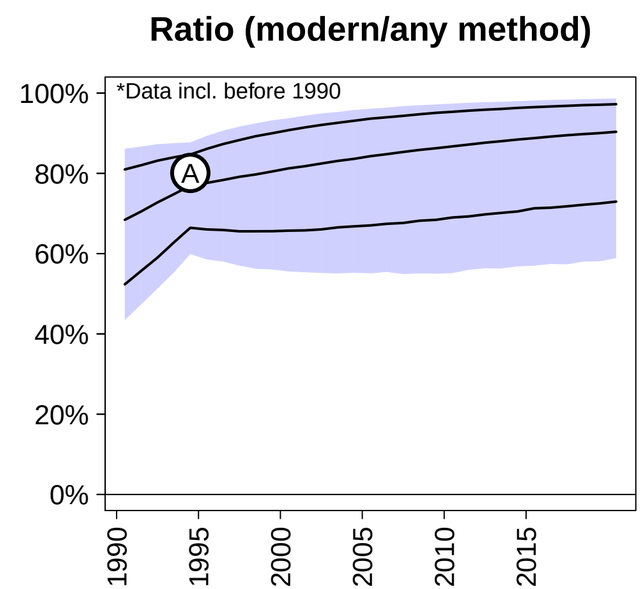


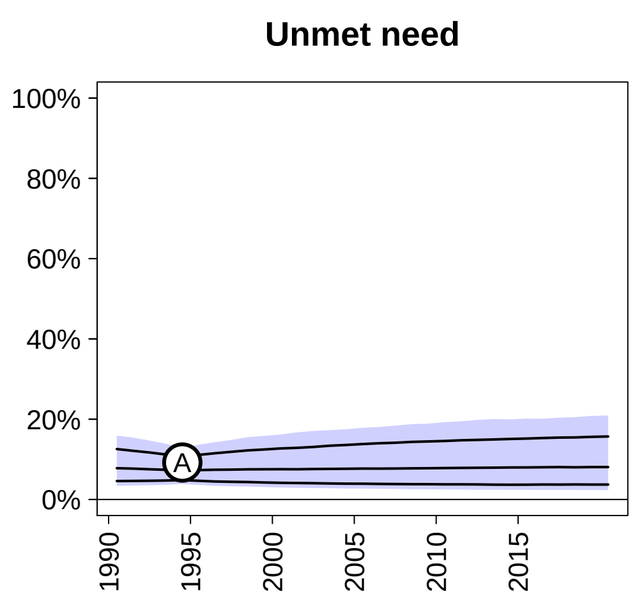
Slovenia (Southern Europe)

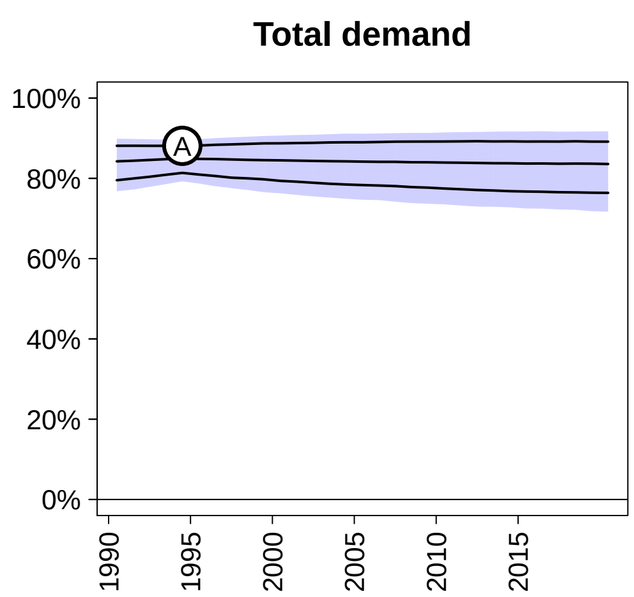


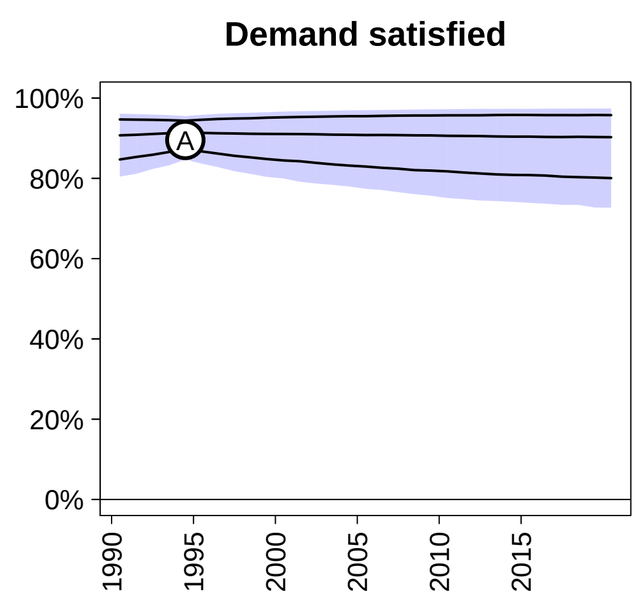












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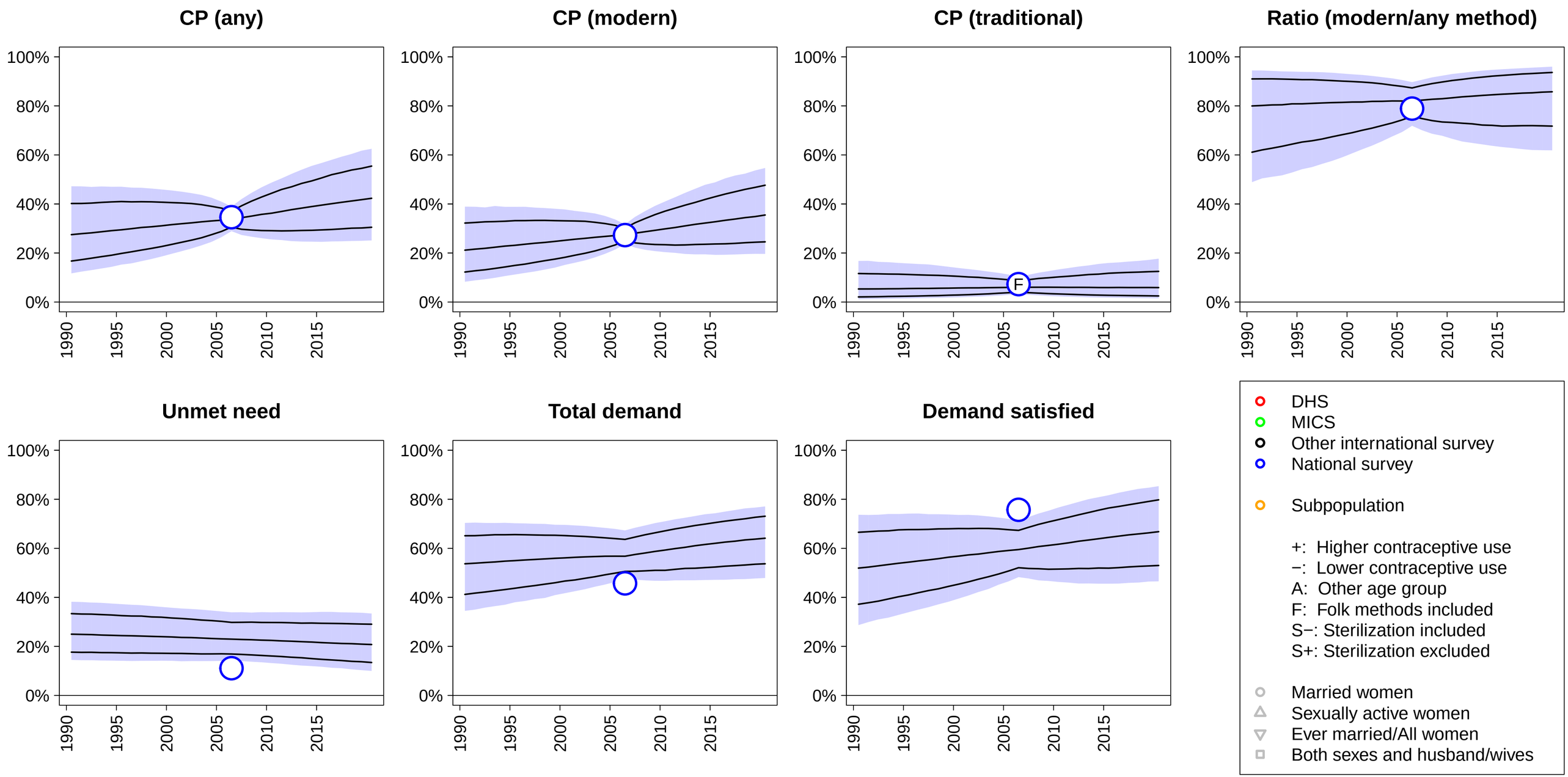
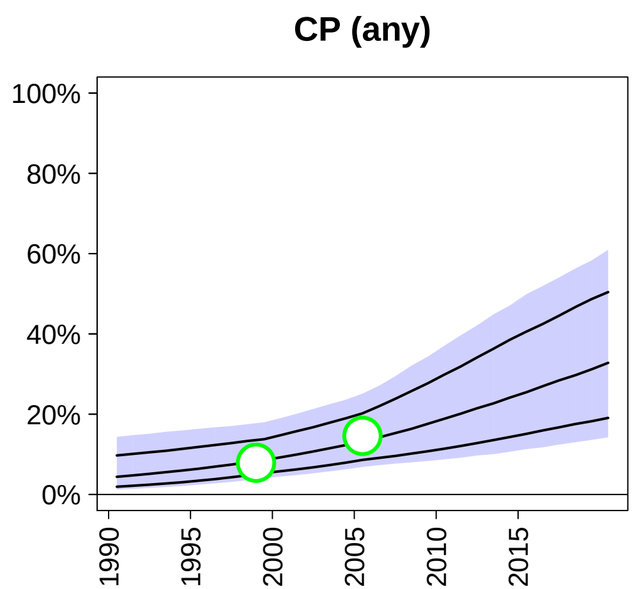
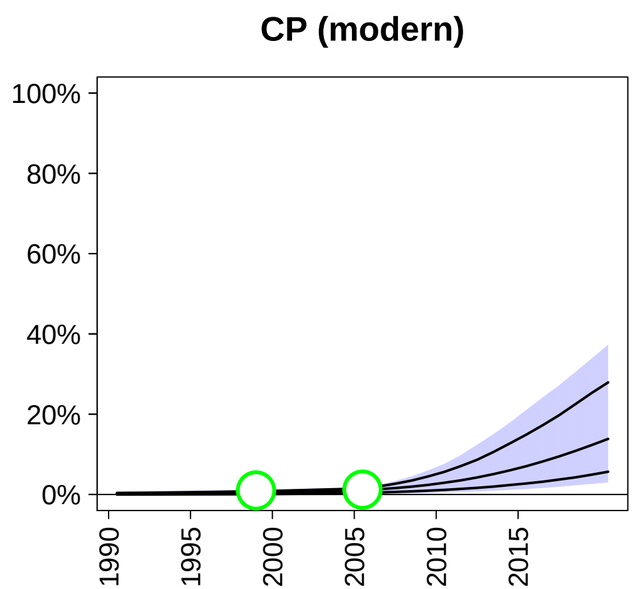
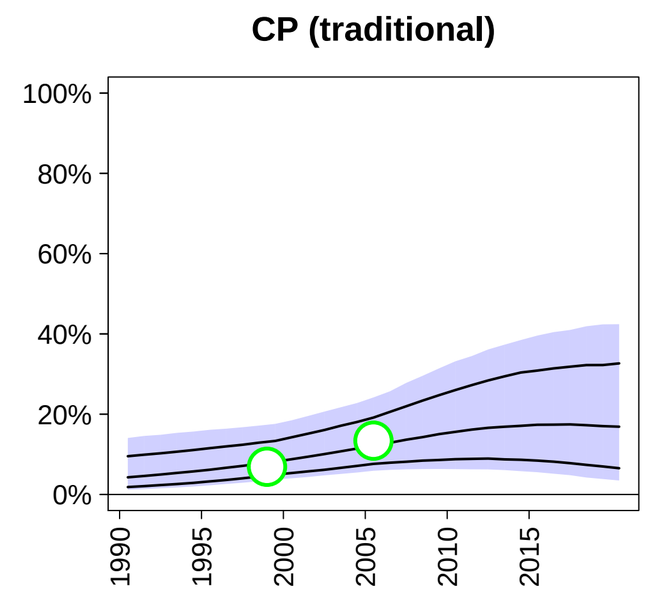
Solomon Islands (Melanesia)

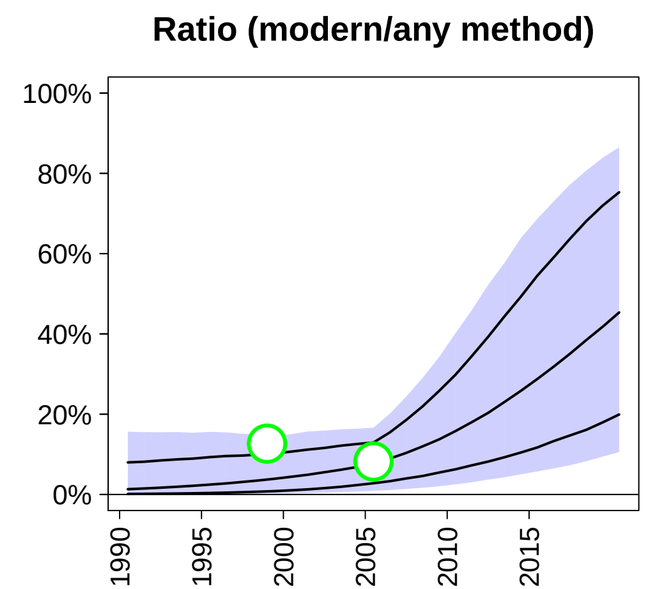


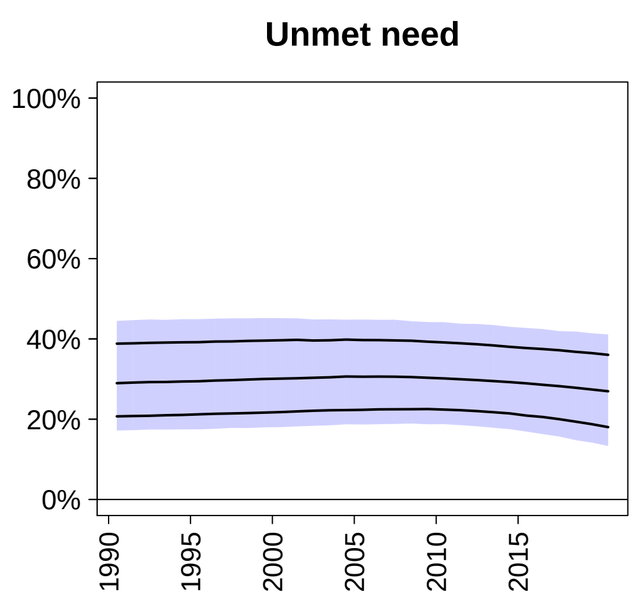
Somalia (Eastern Africa)

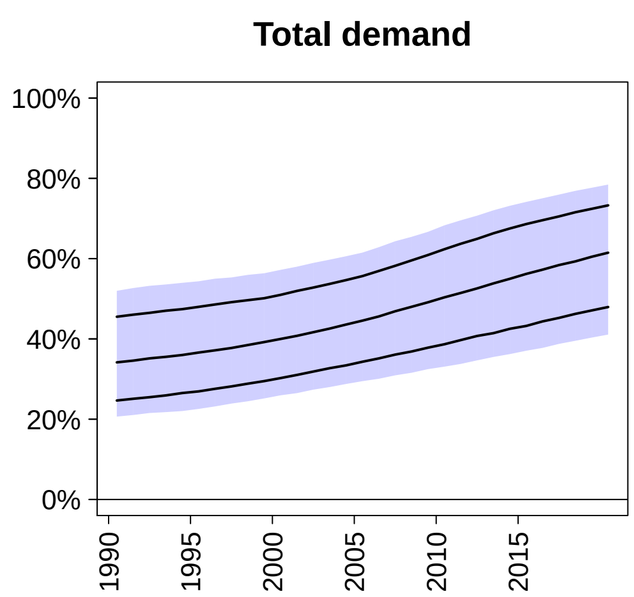


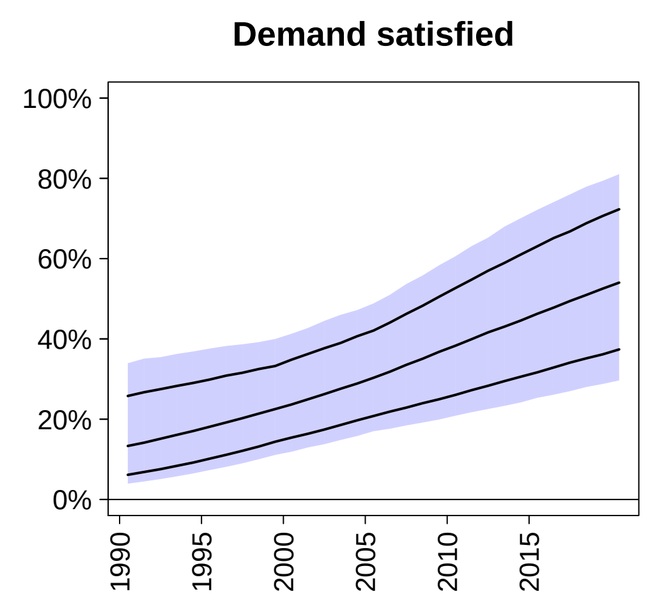












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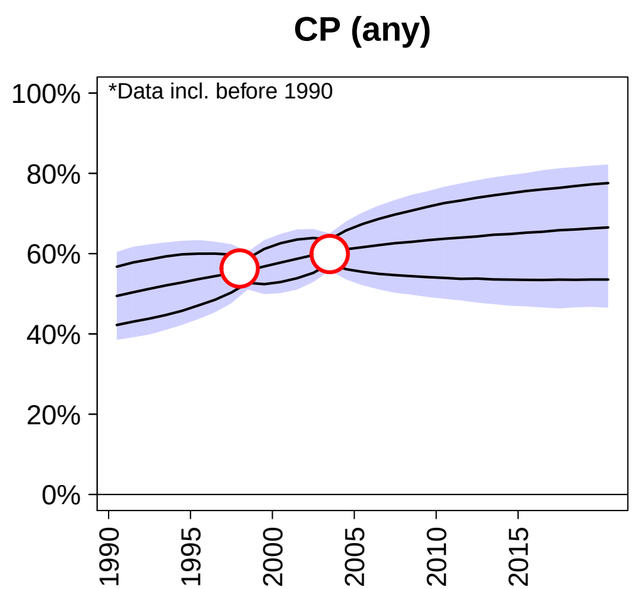
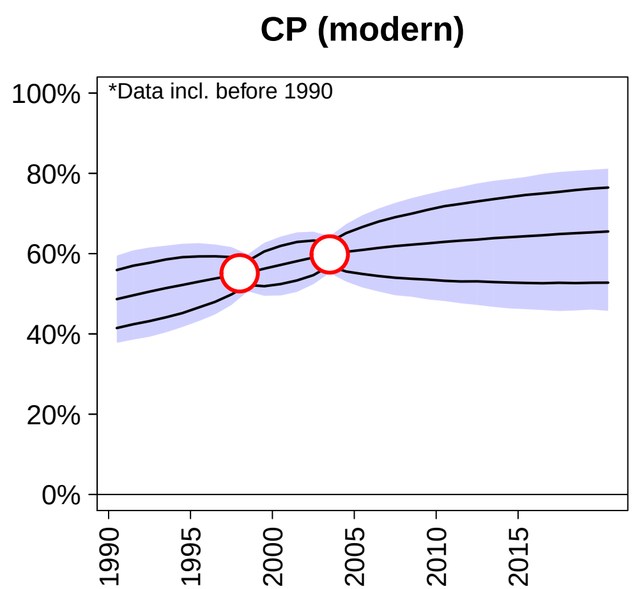
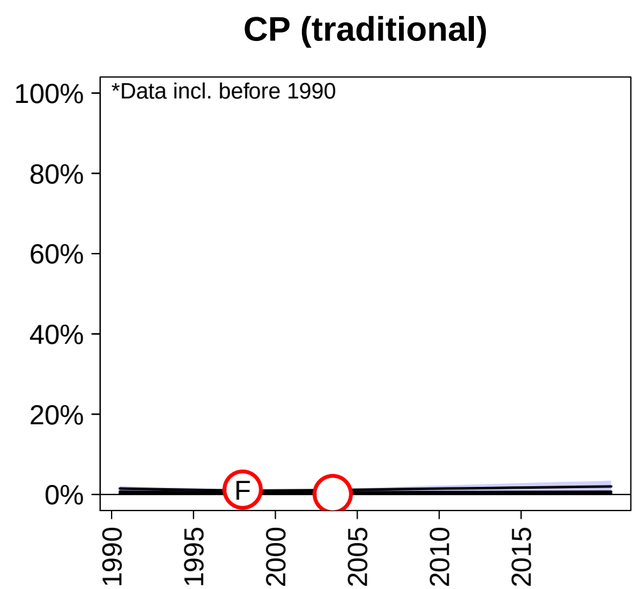
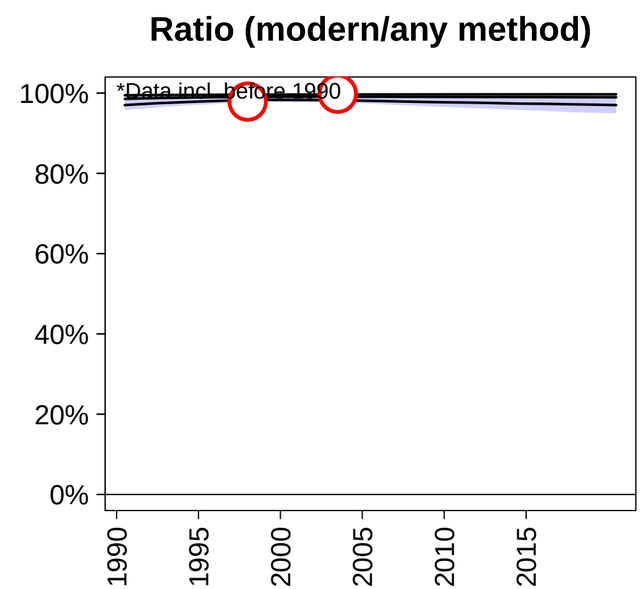
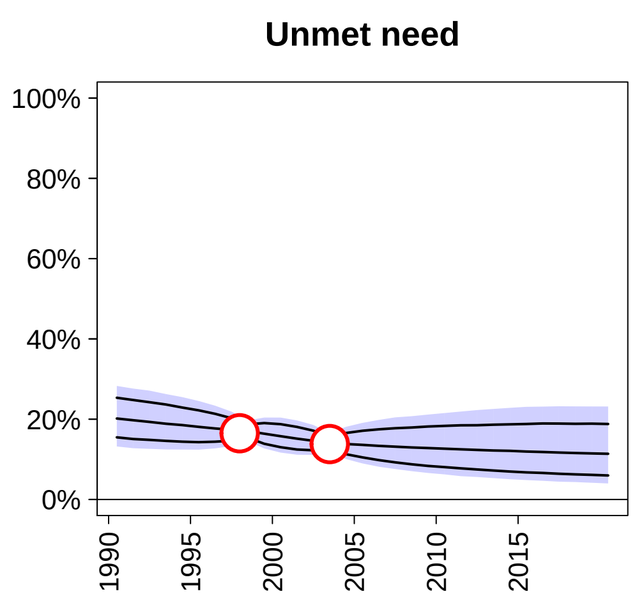
South Africa (Southern Africa)

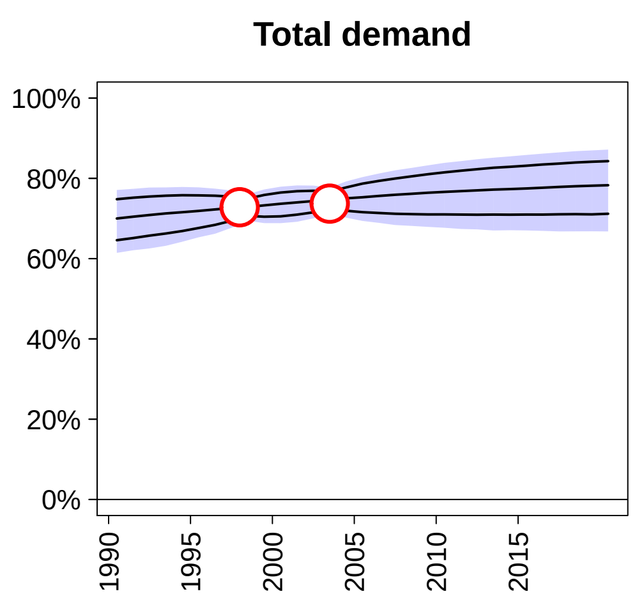


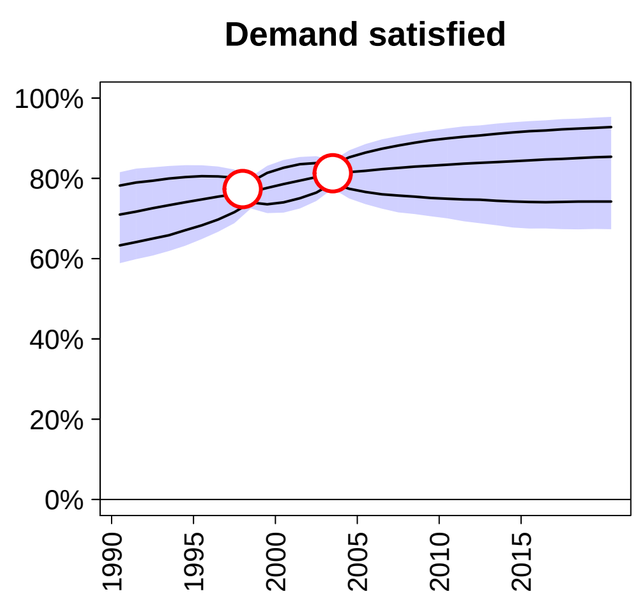












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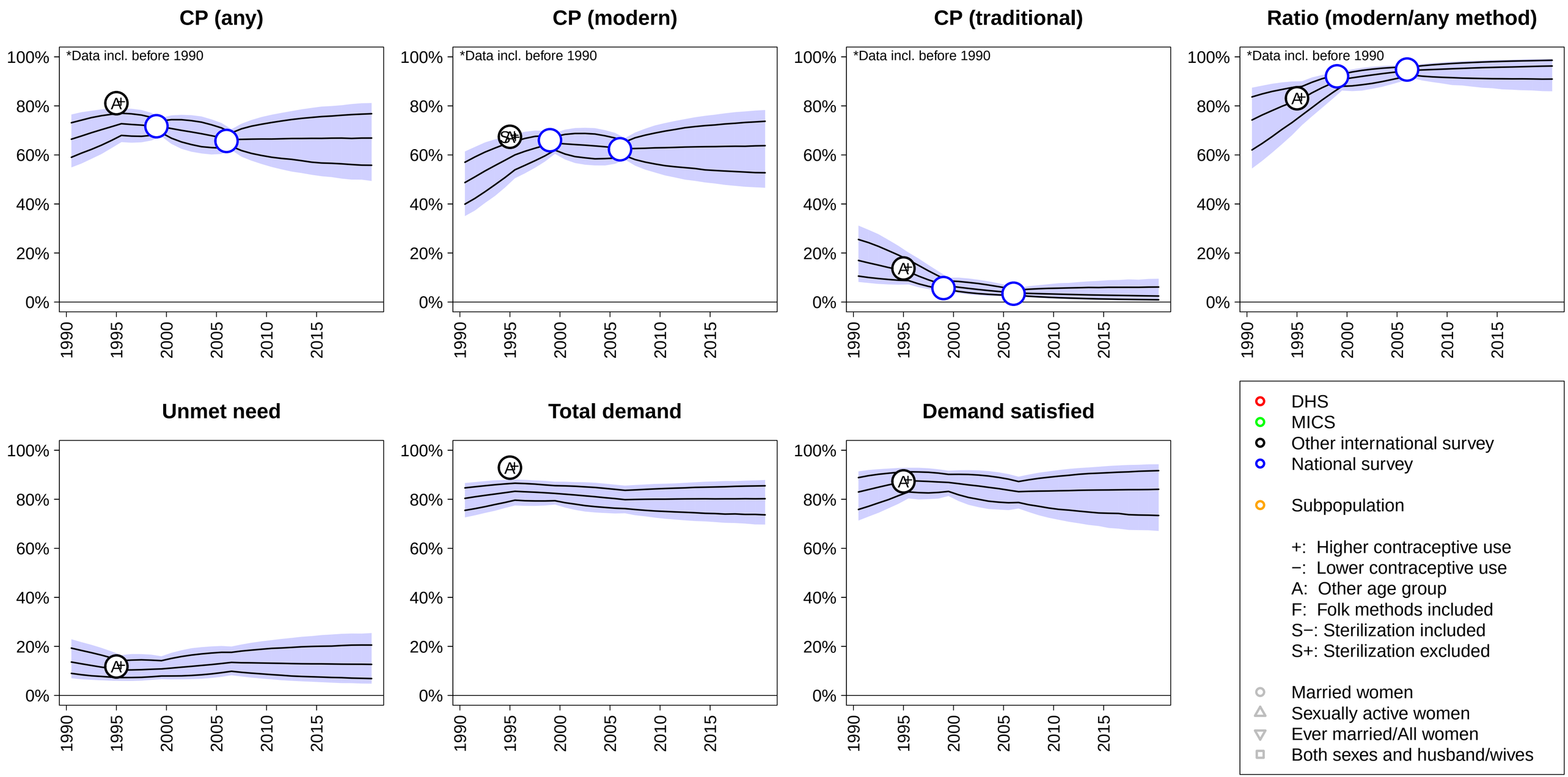
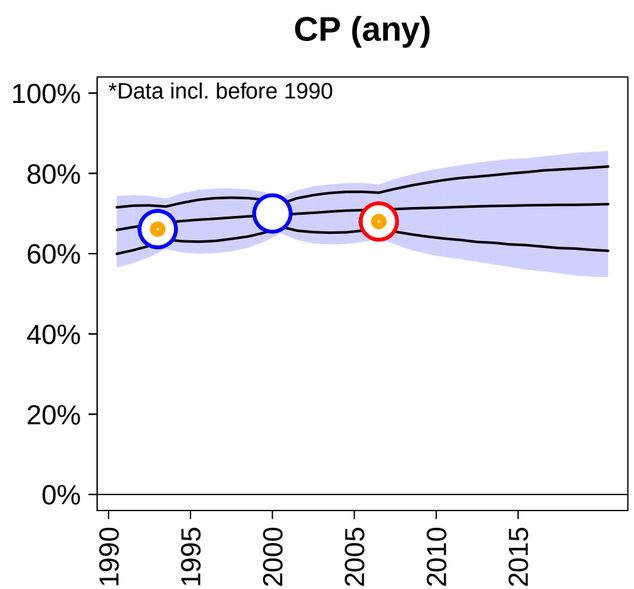
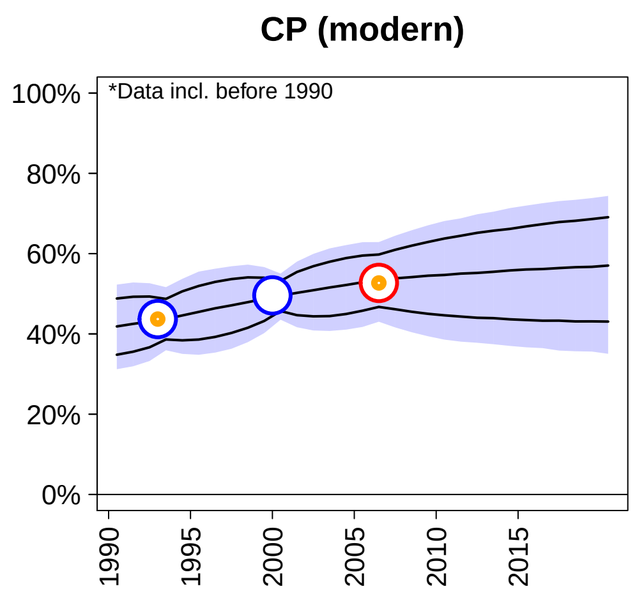
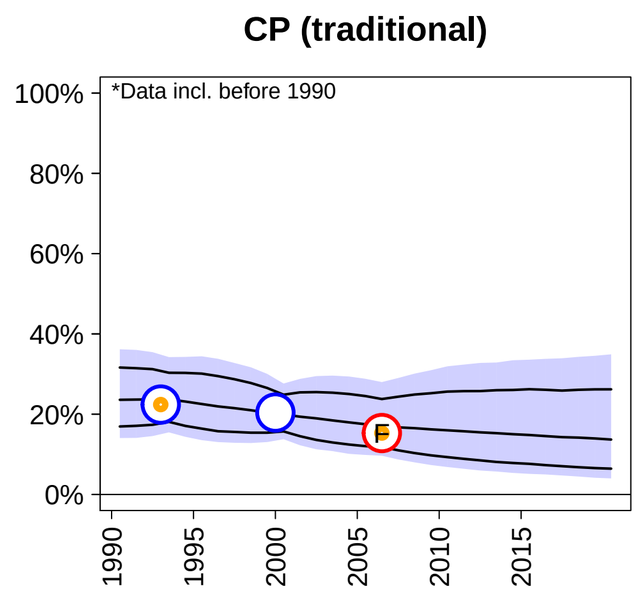
Spain (Southern Europe)

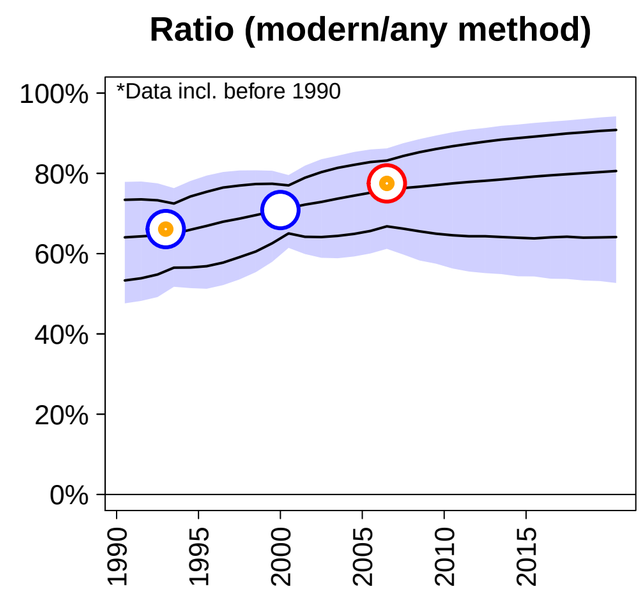


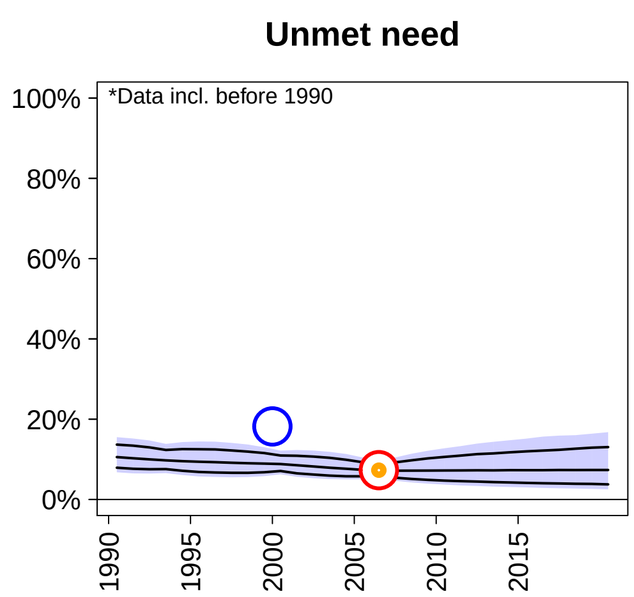
Sri Lanka (Southern Asia)

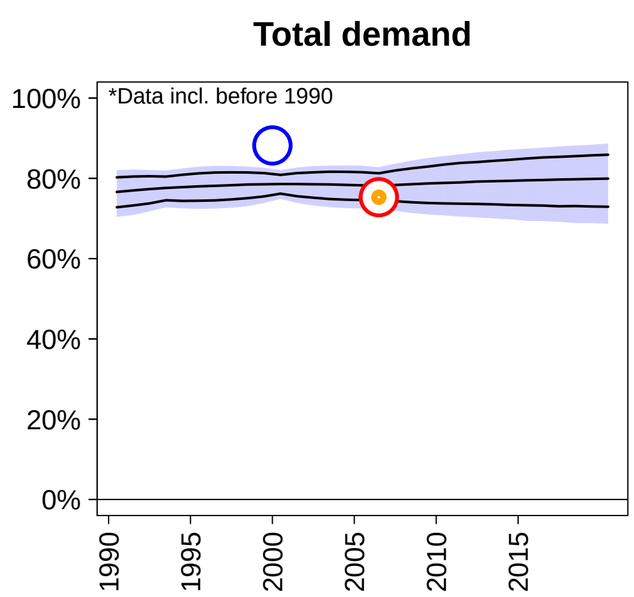


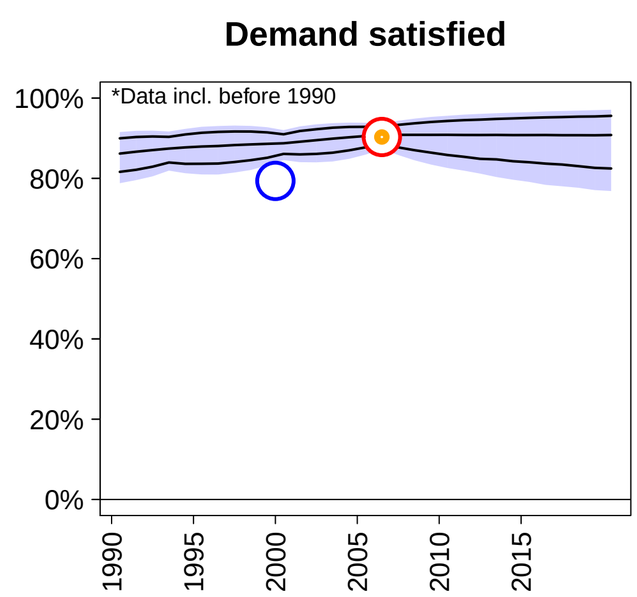












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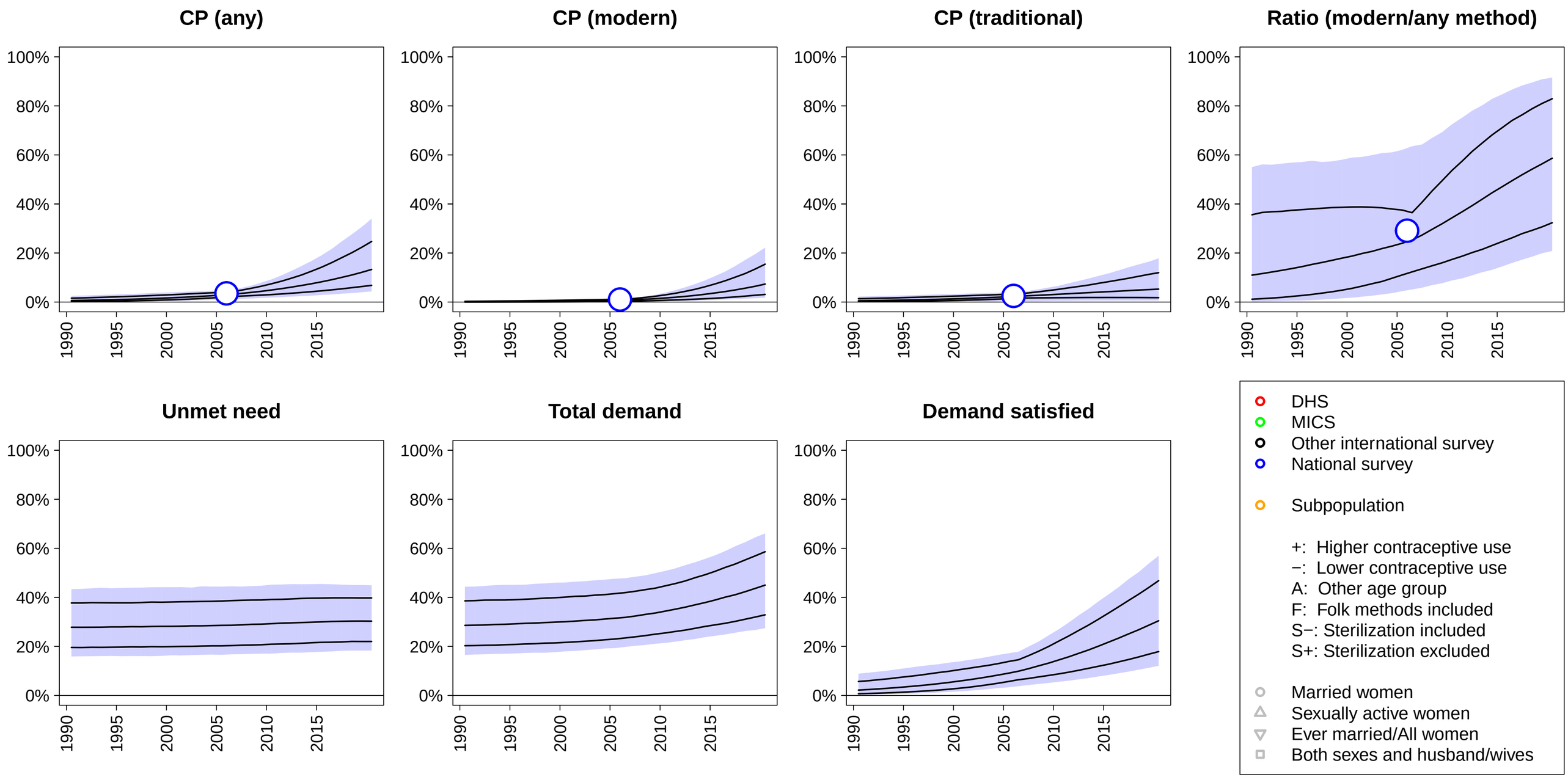
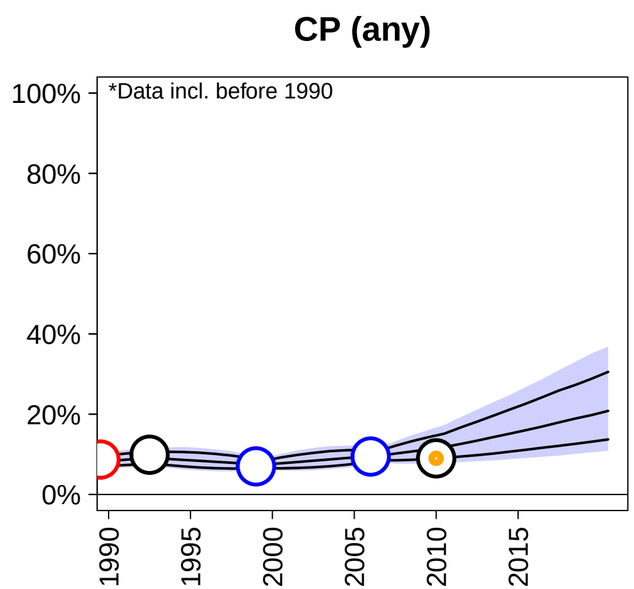
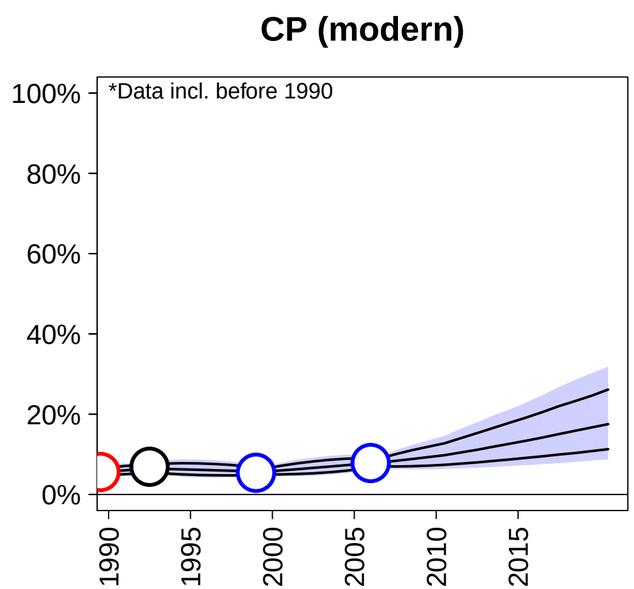
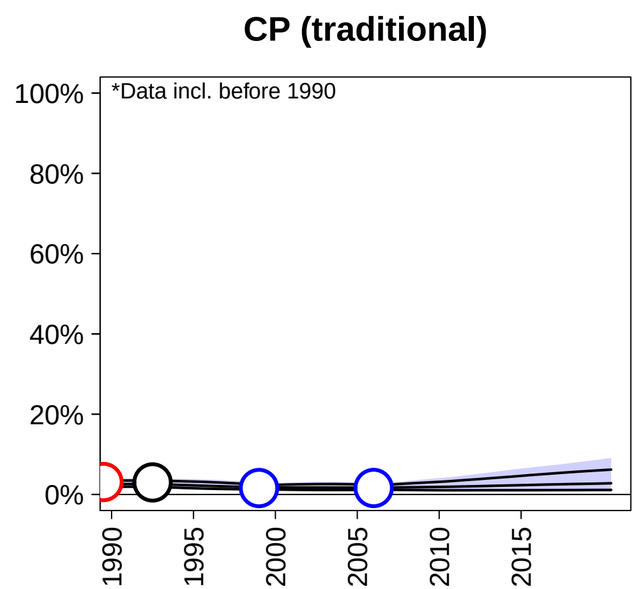
South Sudan (Eastern Africa)

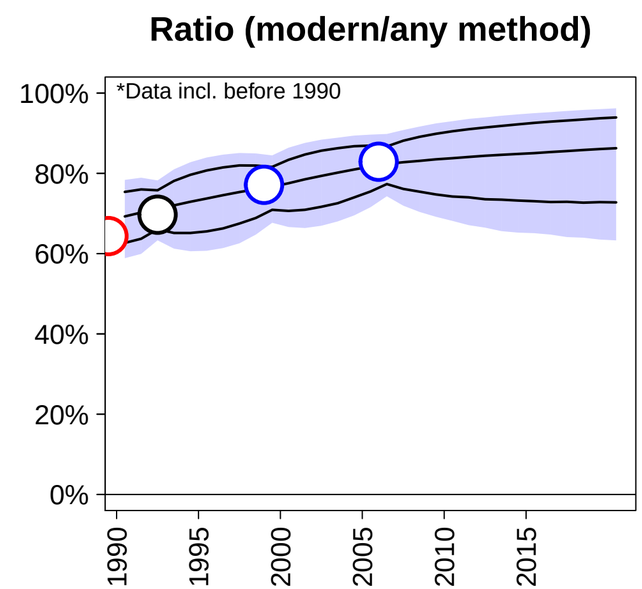


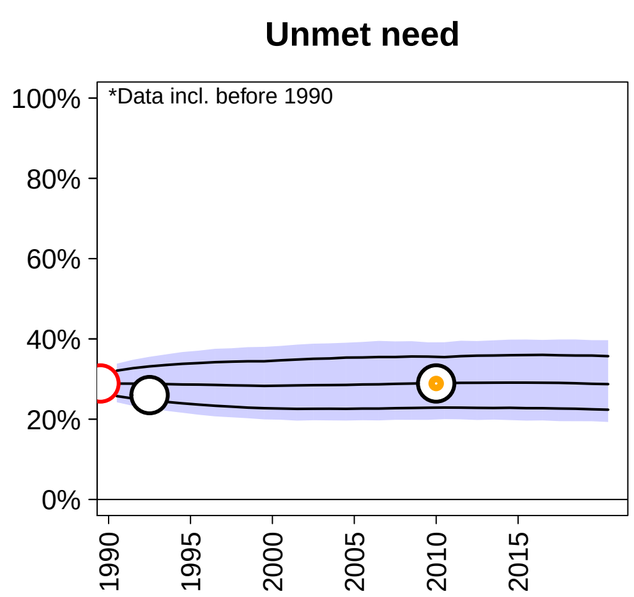
Sudan (Northern Africa)

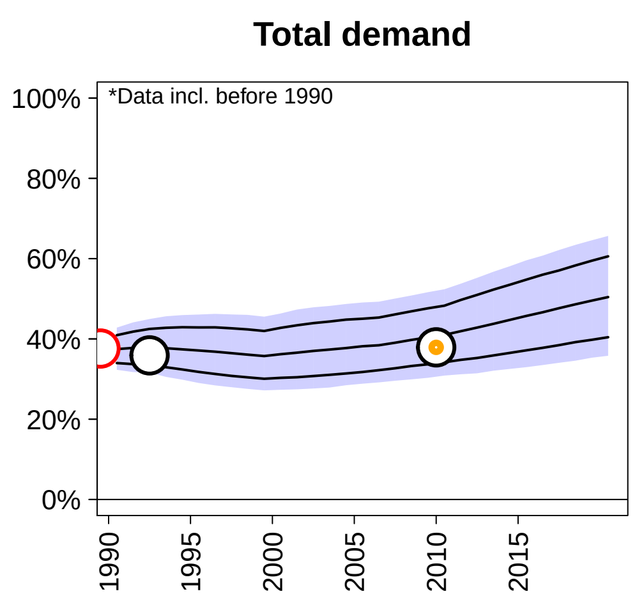


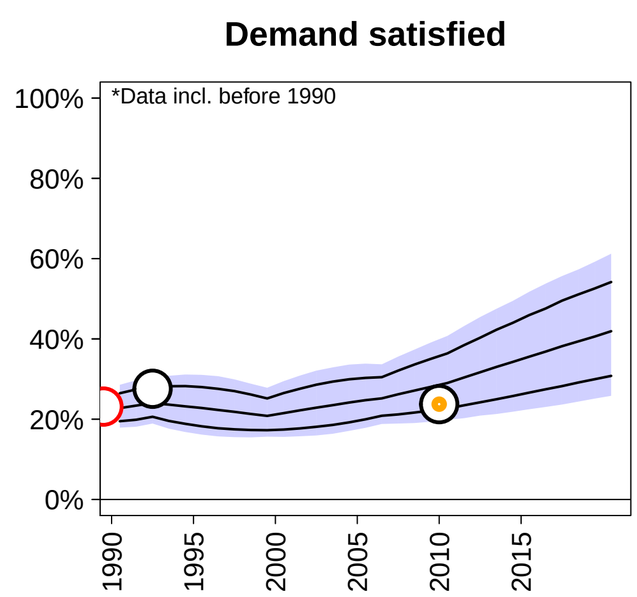












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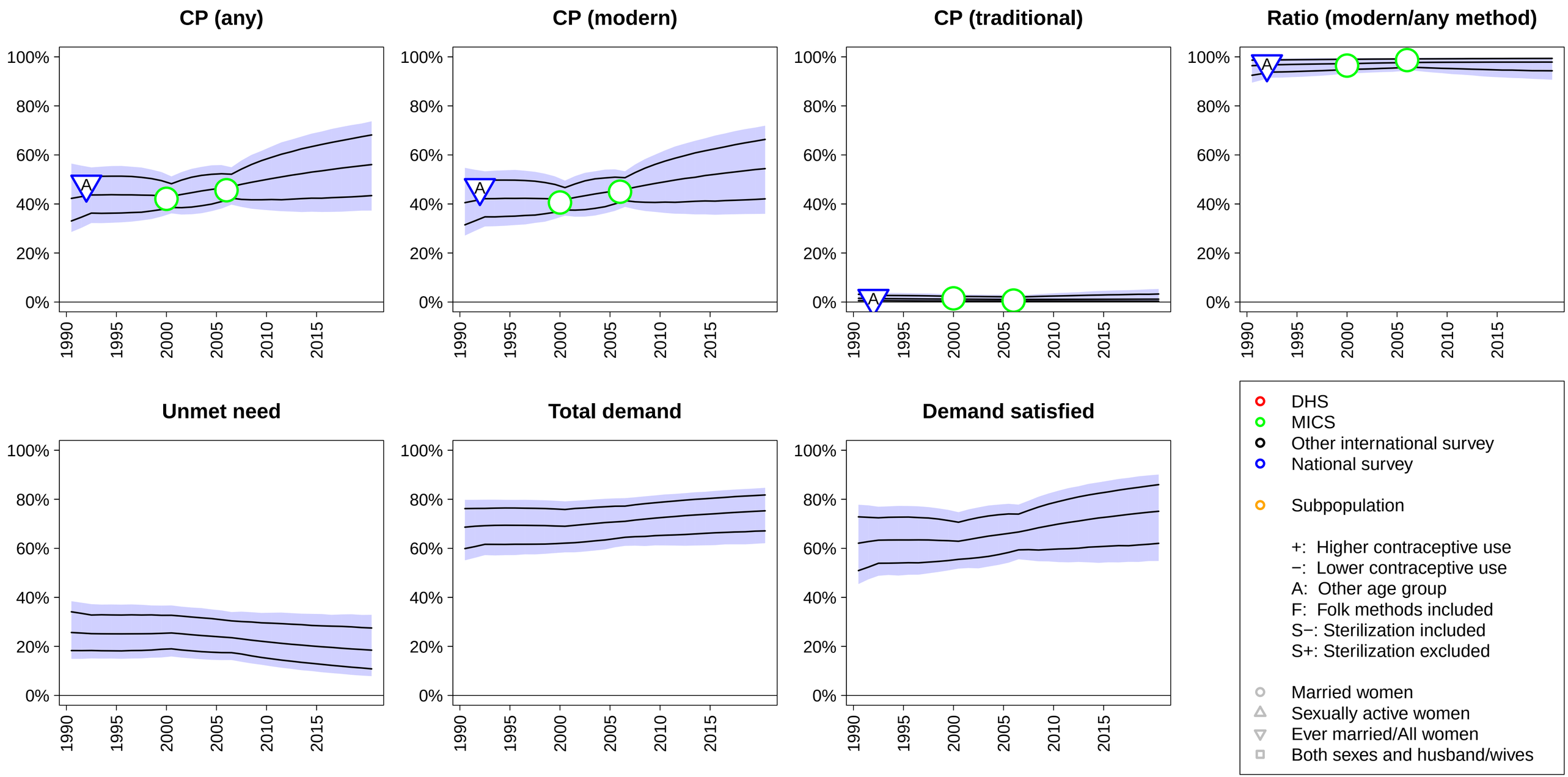
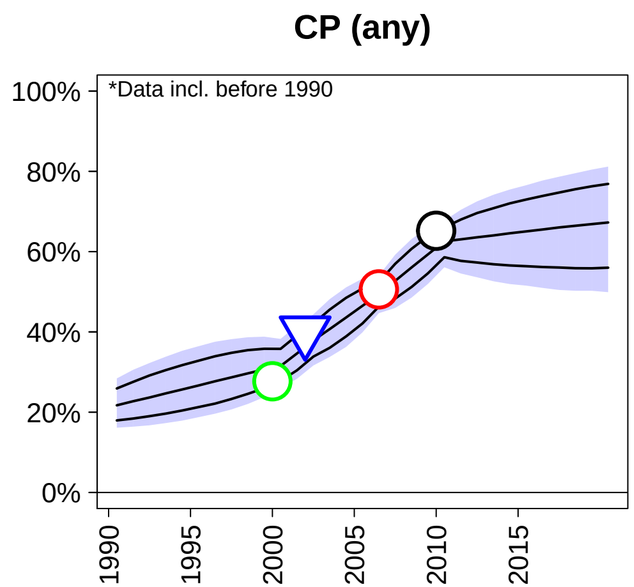
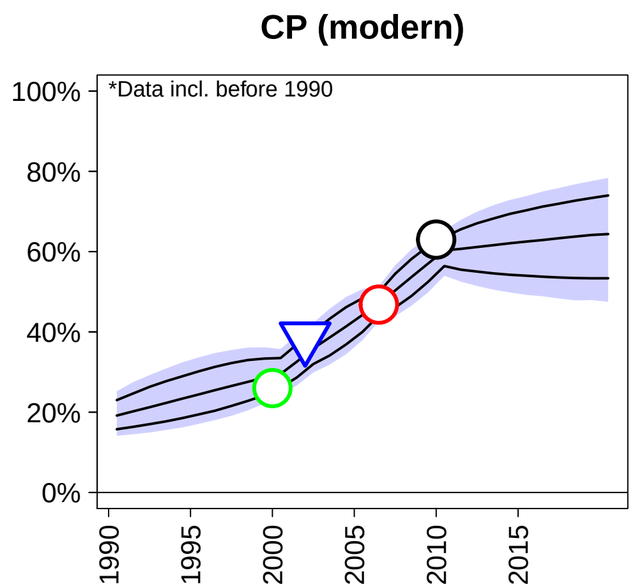
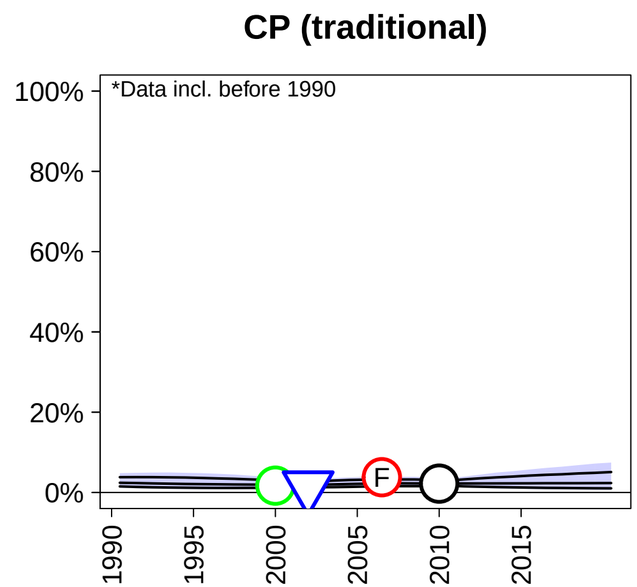
Suriname (South America)

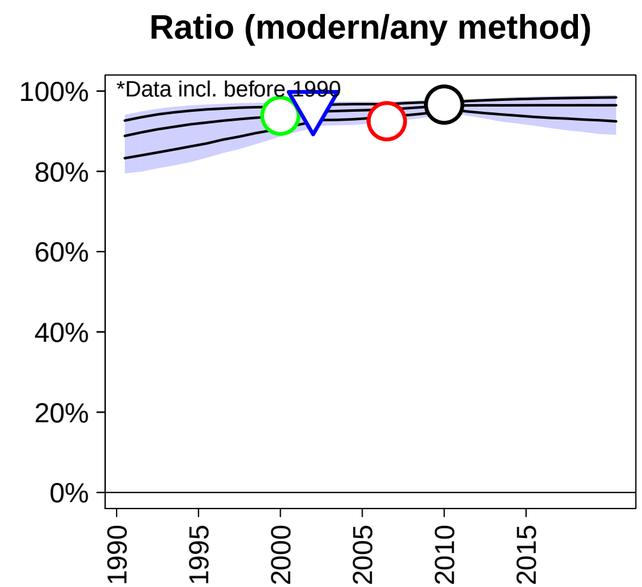


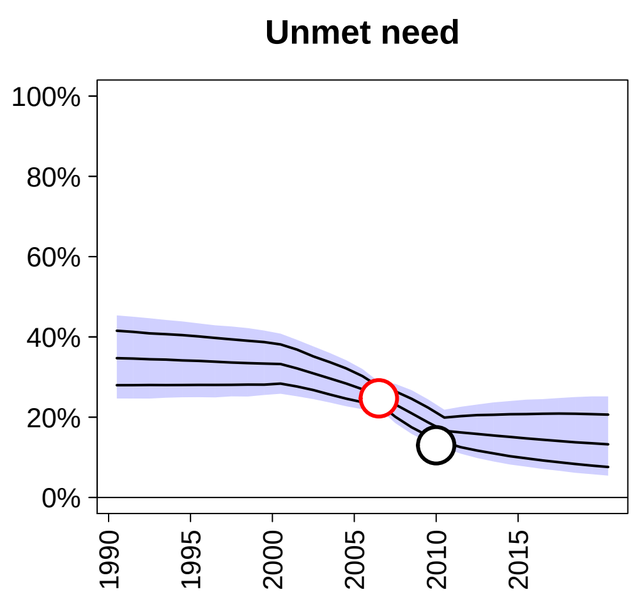
Swaziland (Southern Africa)

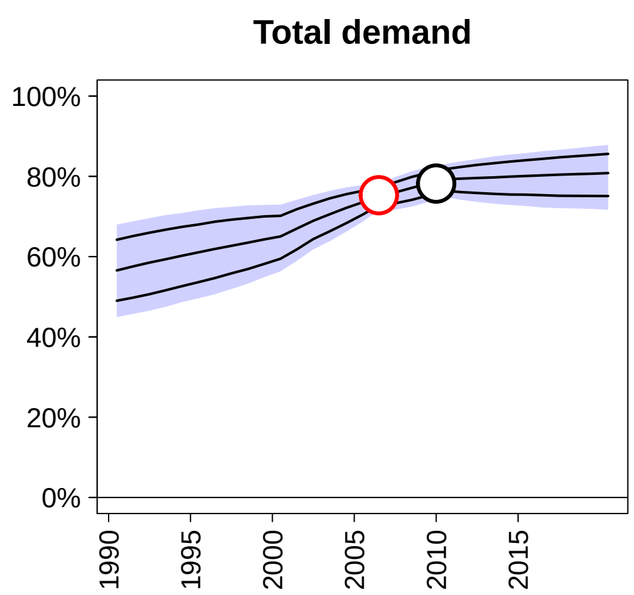


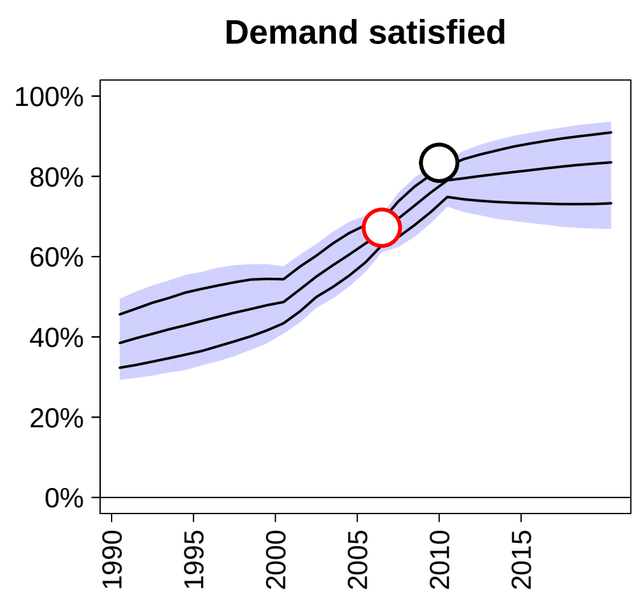












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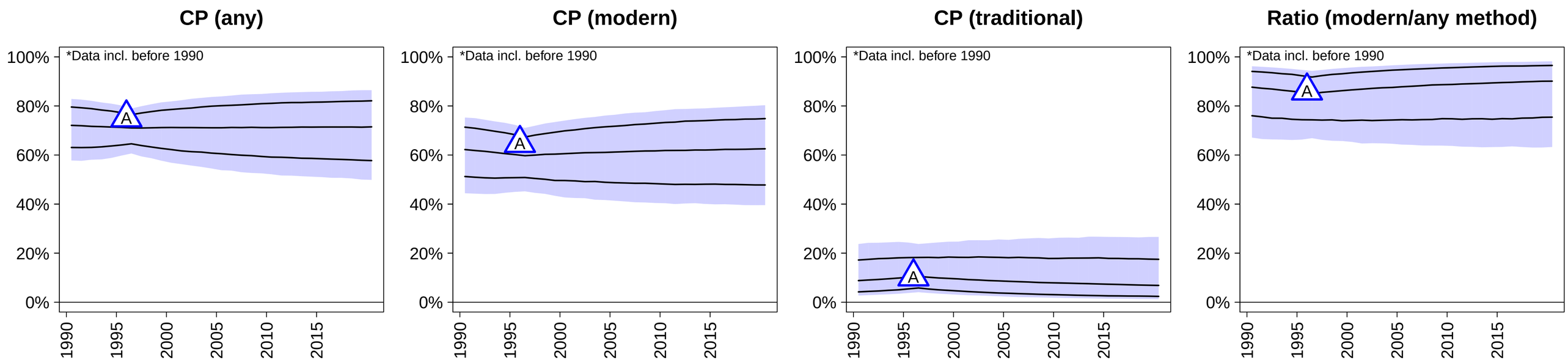
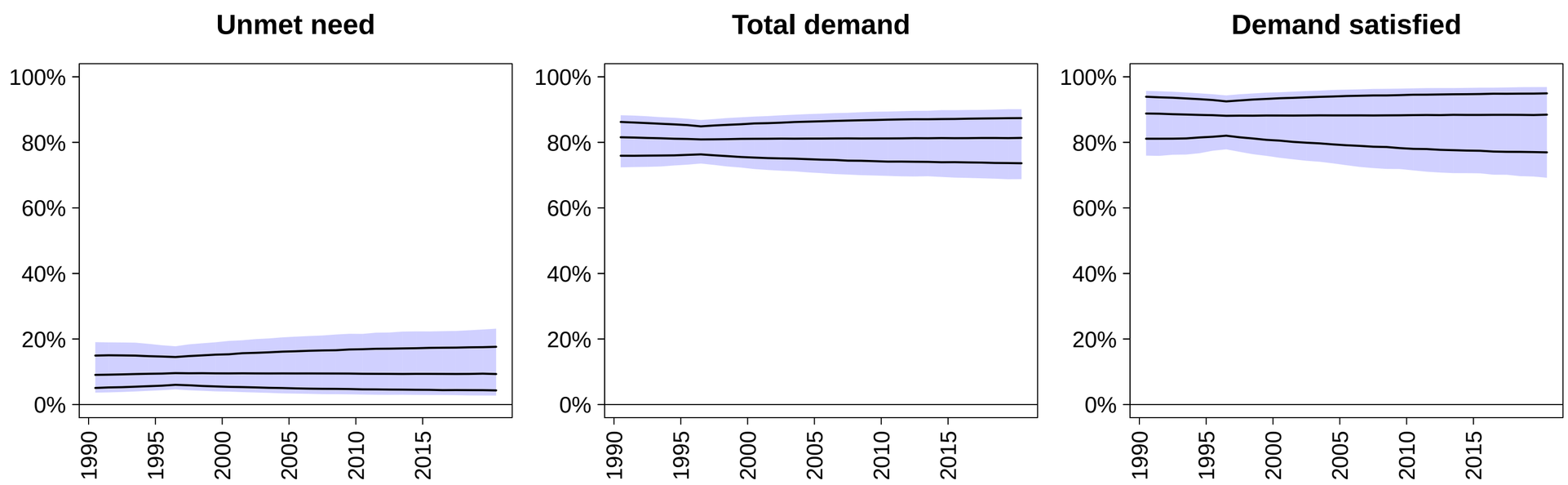
Sweden (Northern Europe)





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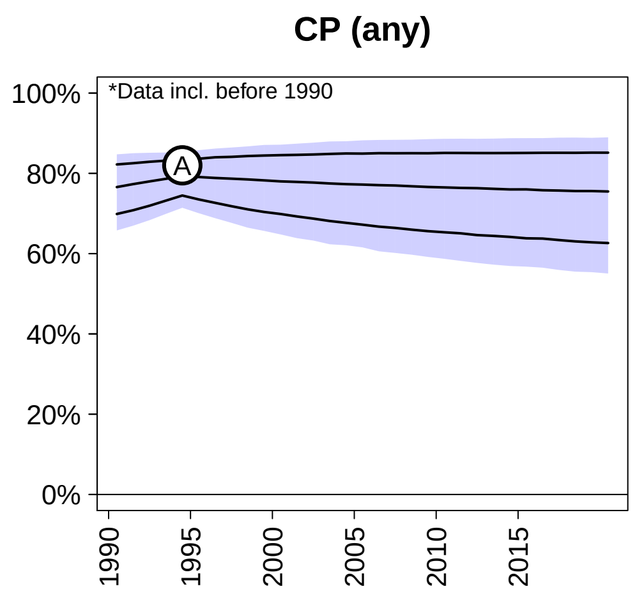
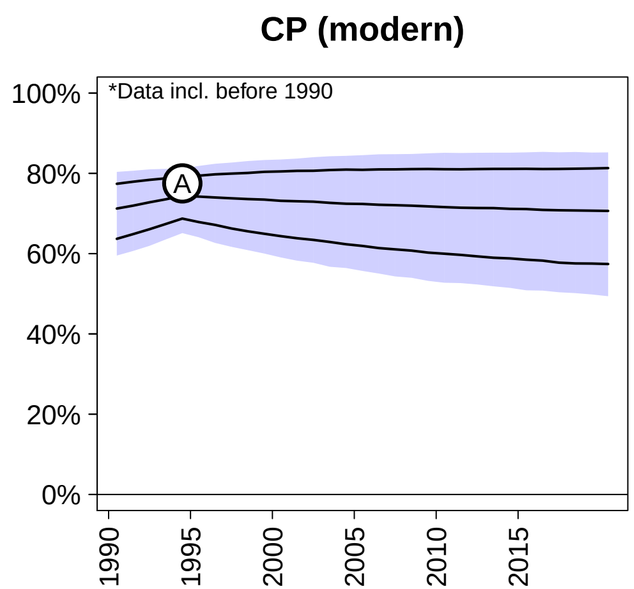
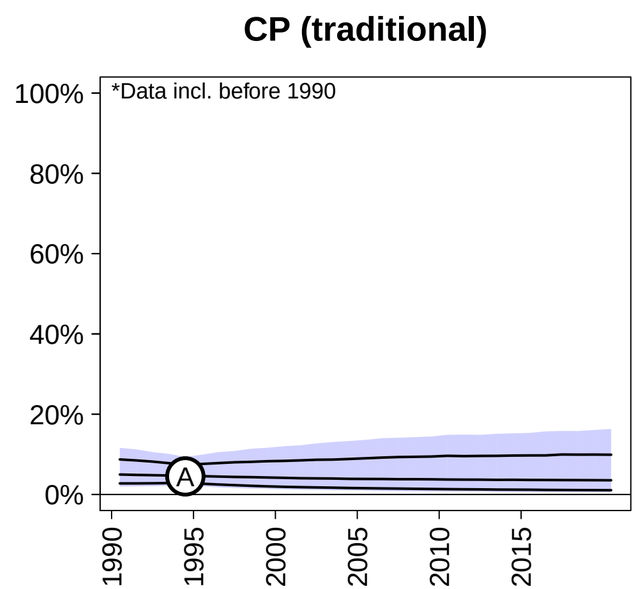
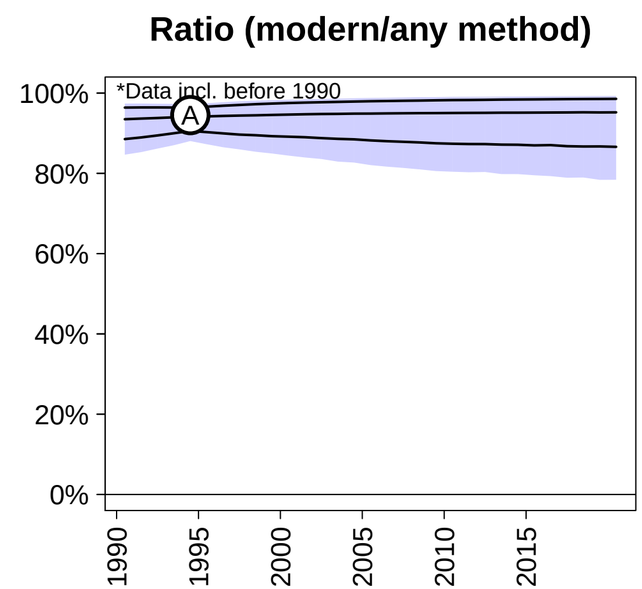
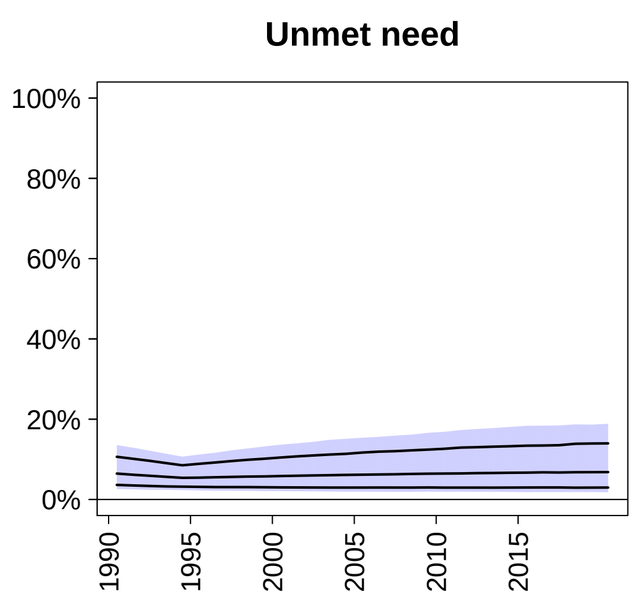
Switzerland (Western Europe)

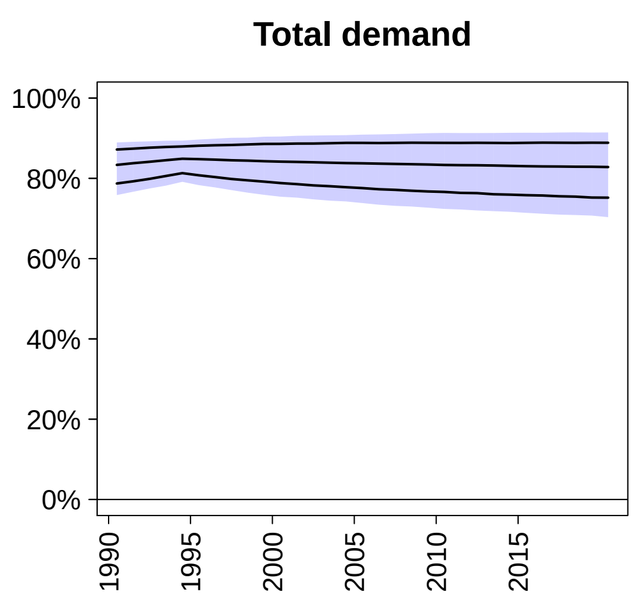


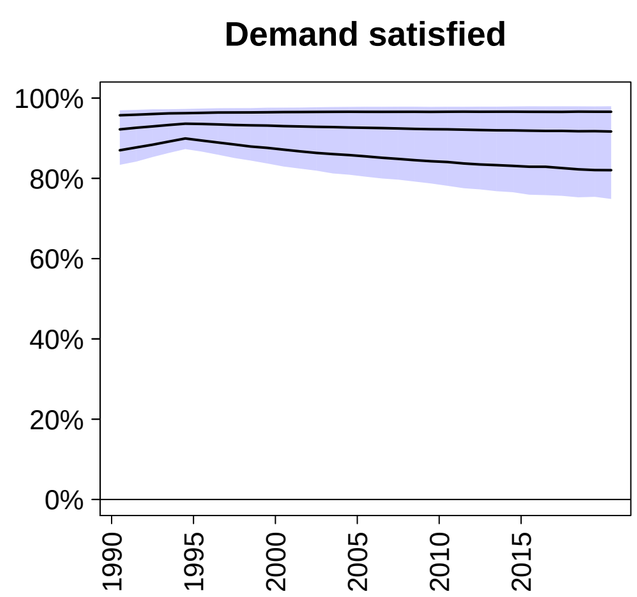












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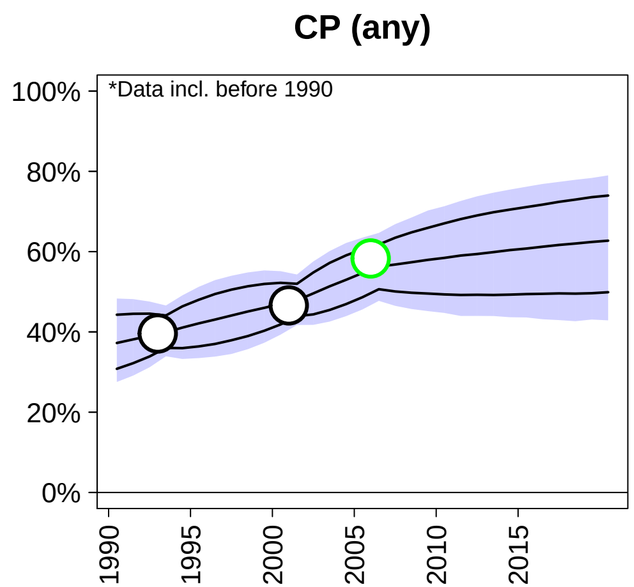
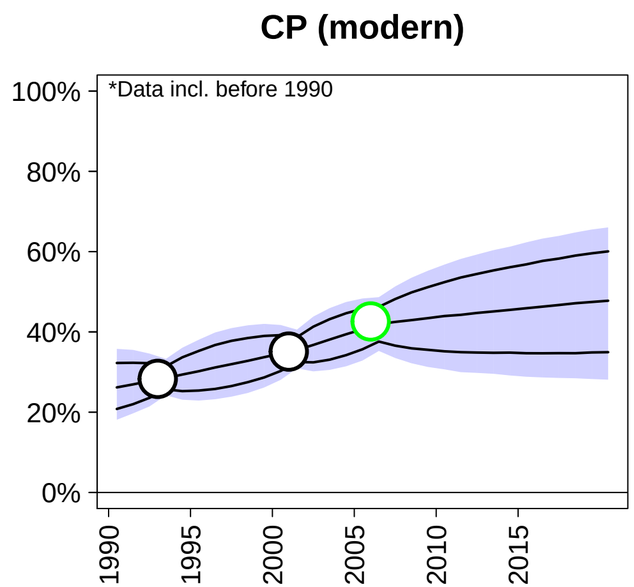
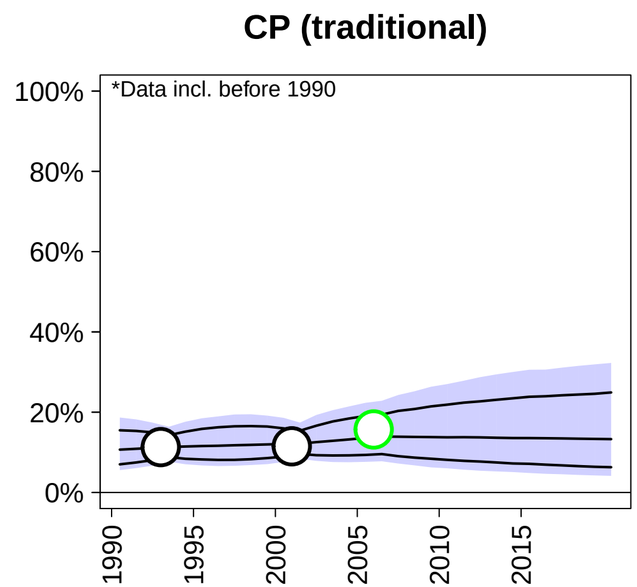
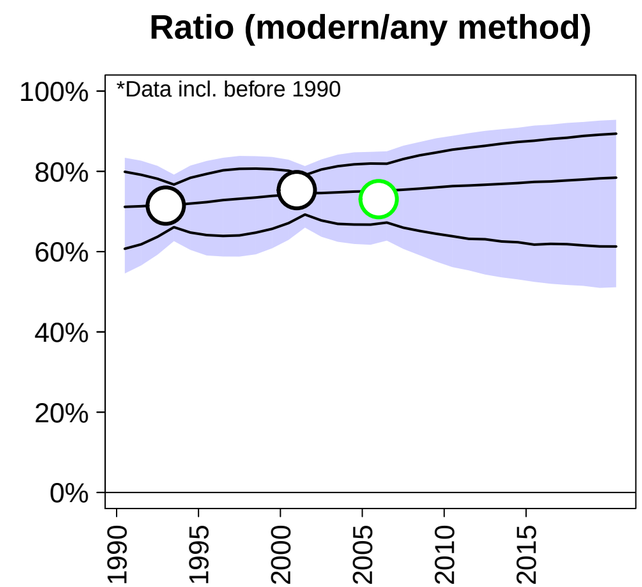
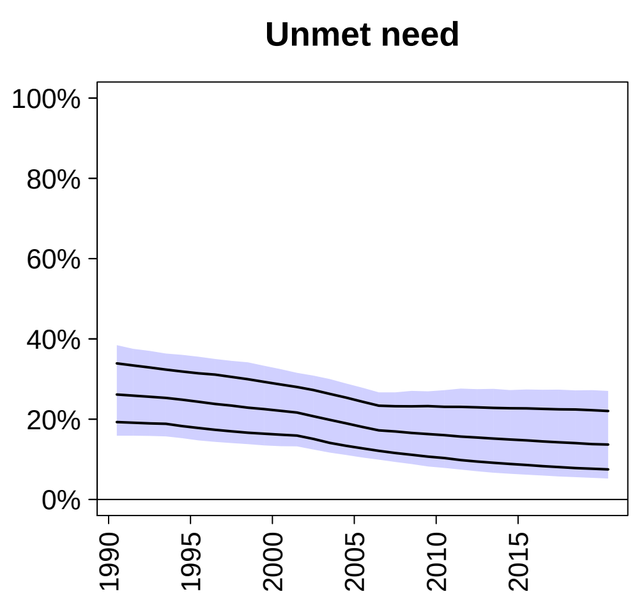
Syrian Arab Republic (Western Asia)

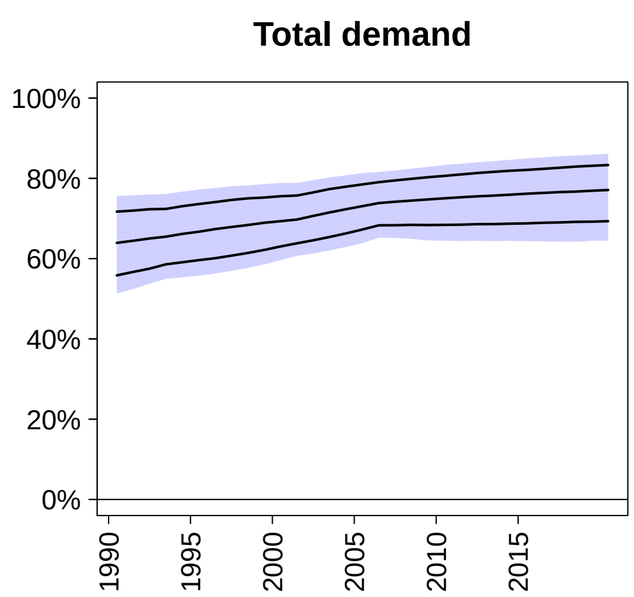


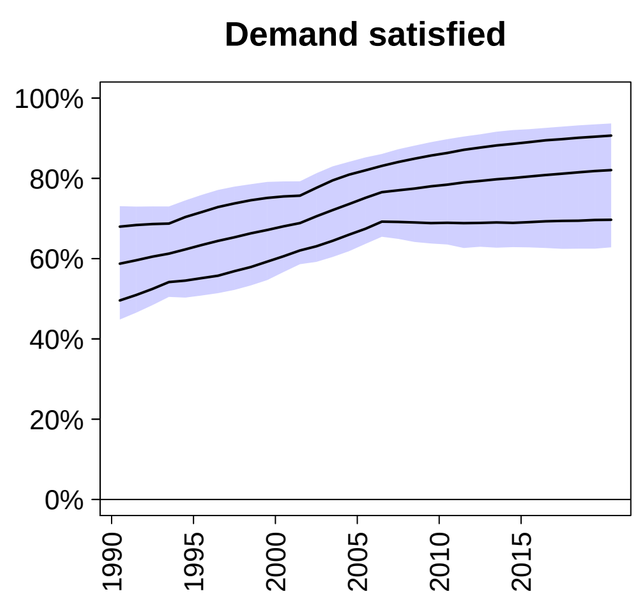












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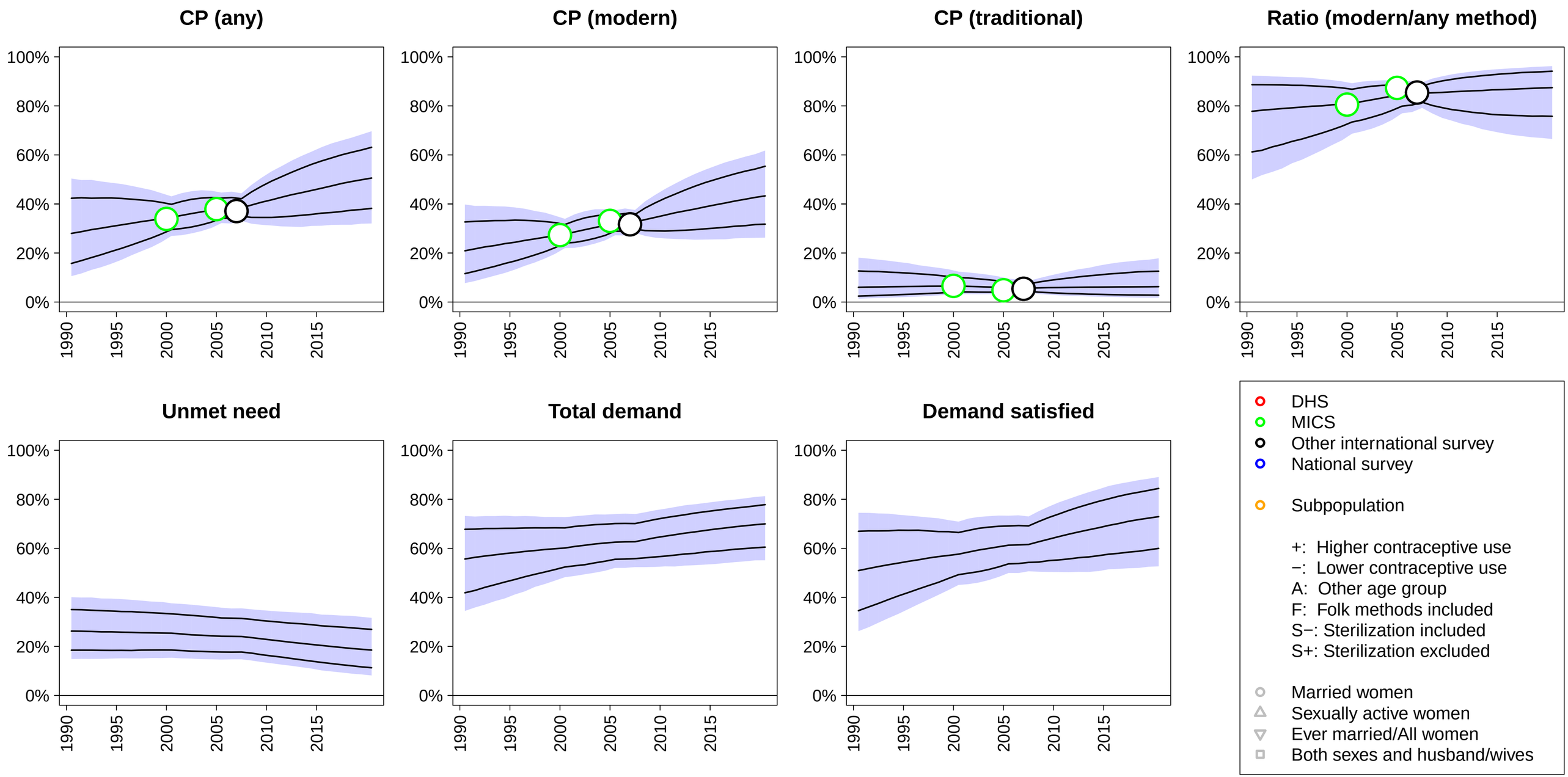
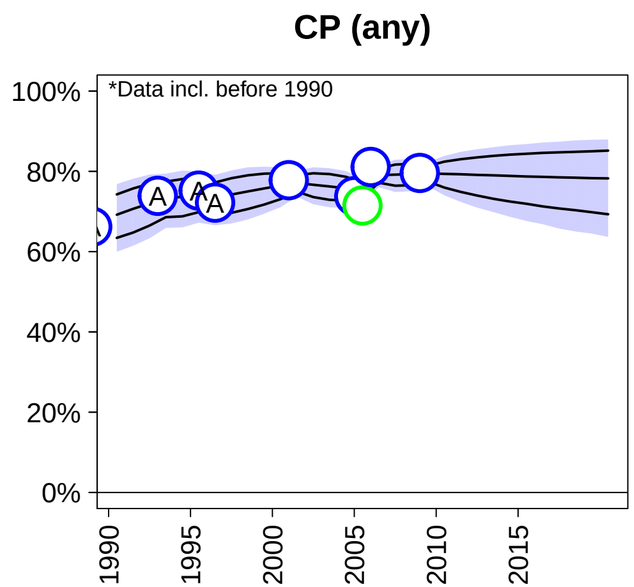
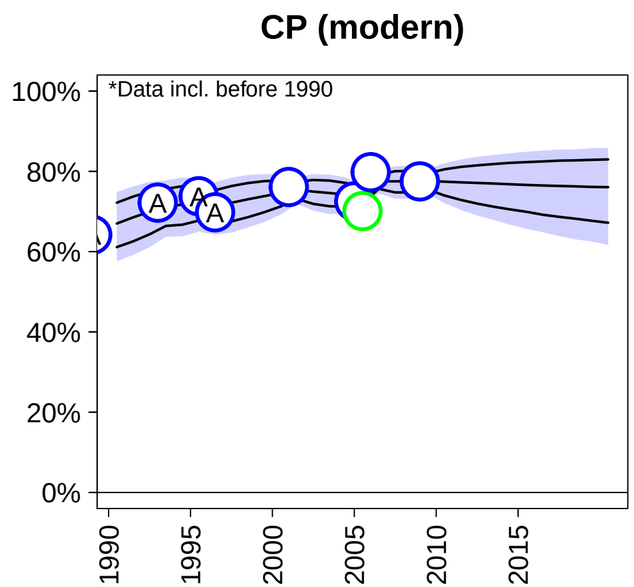
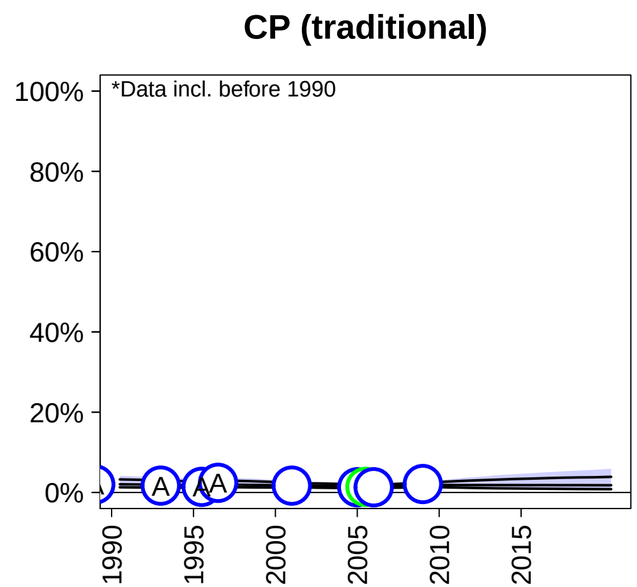
Tajikistan (Central Asia)

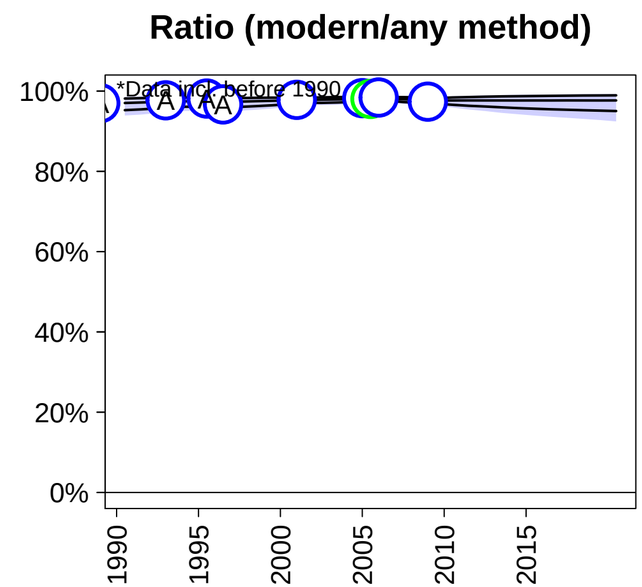


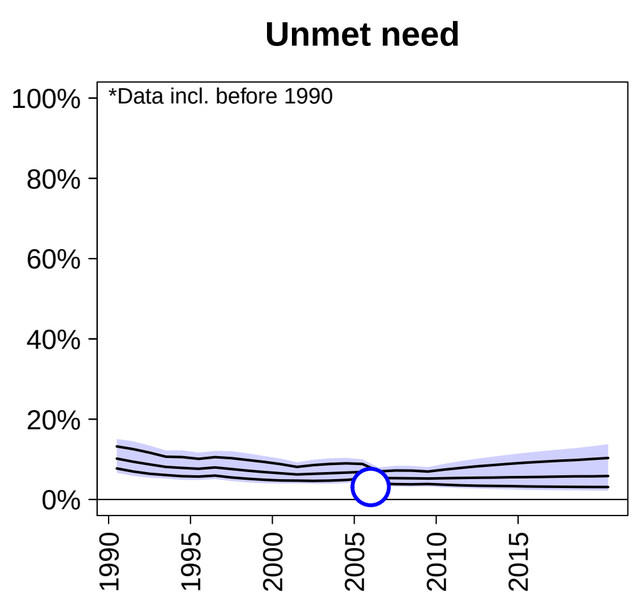
Thailand (South−Eastern Asia)

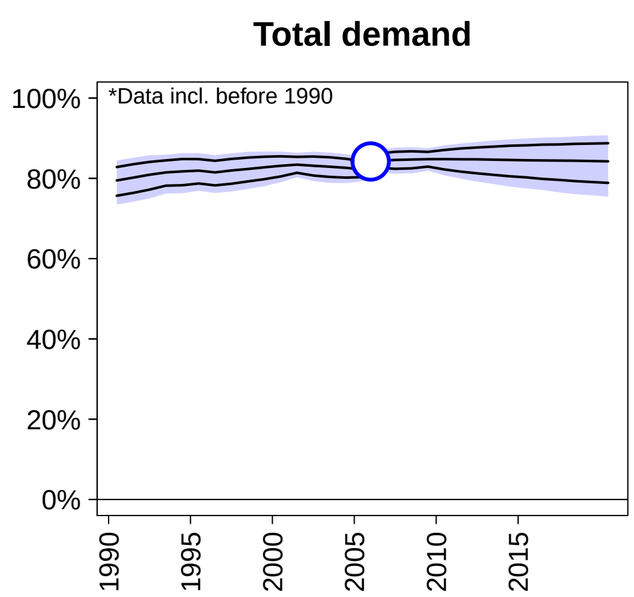


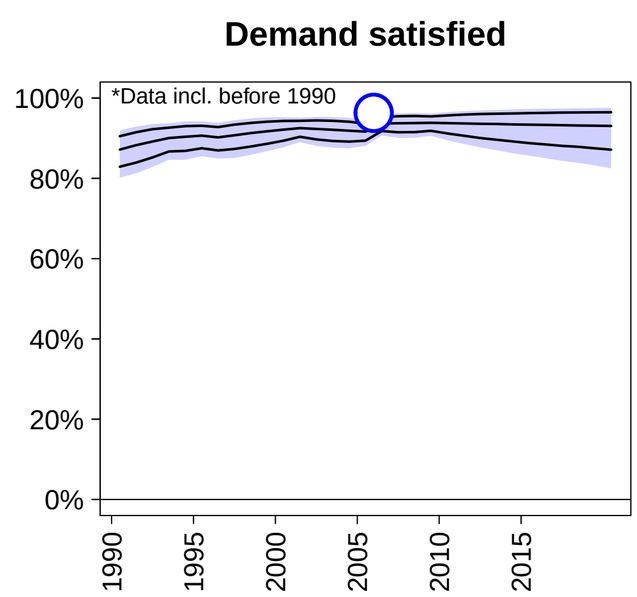












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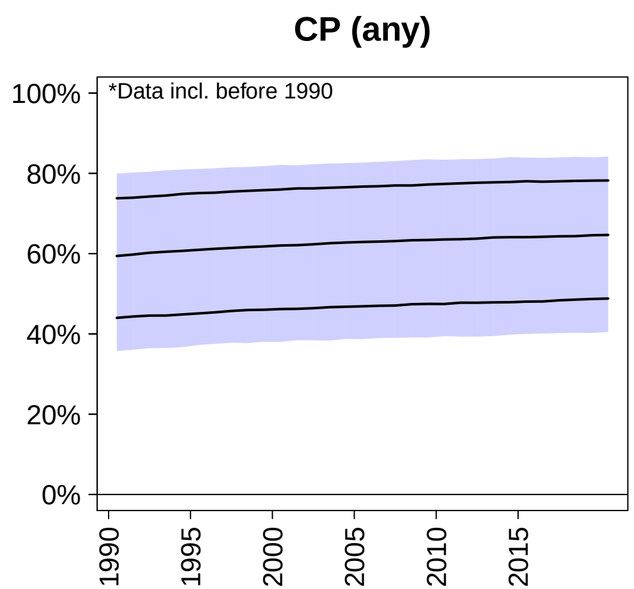
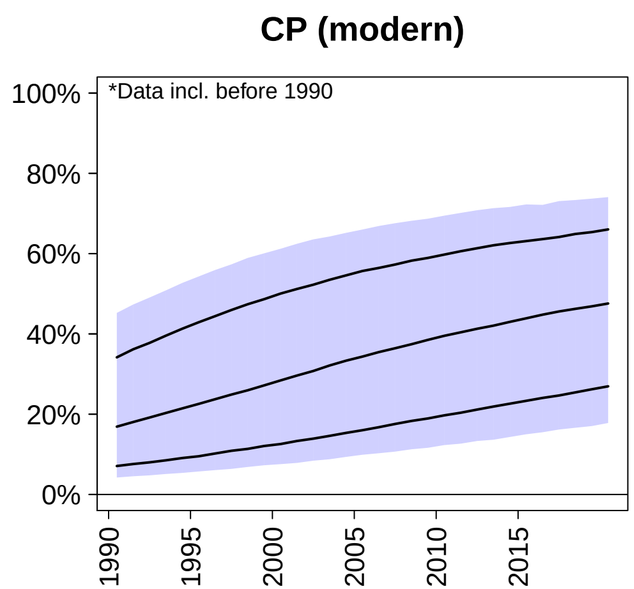
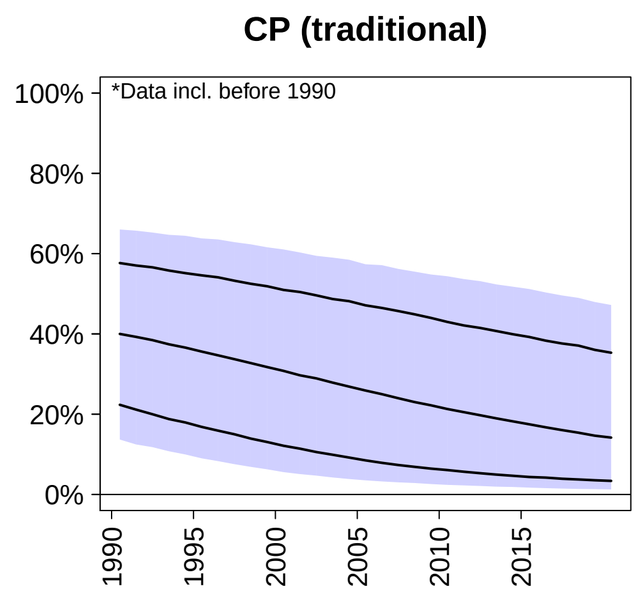
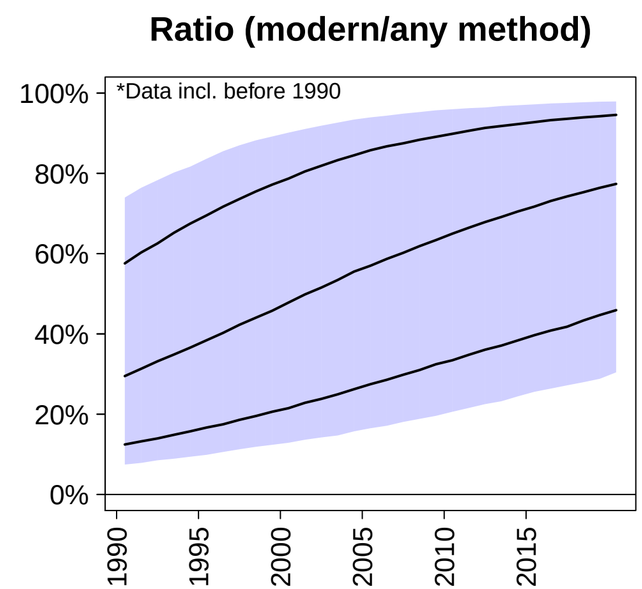
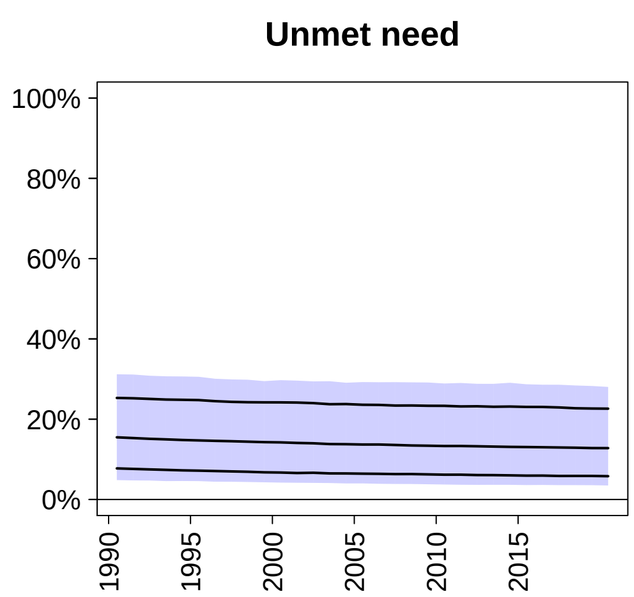
The former Yugoslav Republic of Macedonia (Southern Europe)

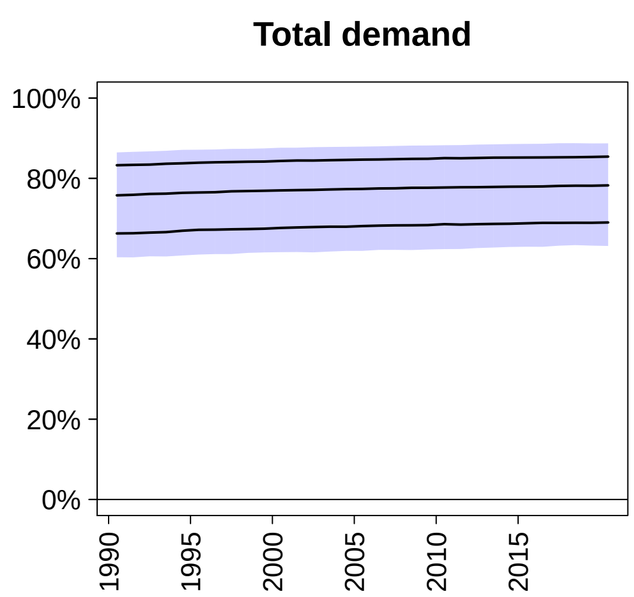


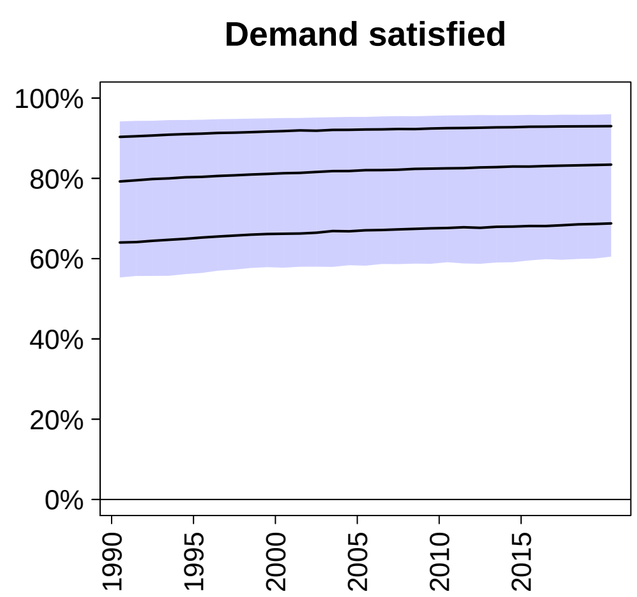












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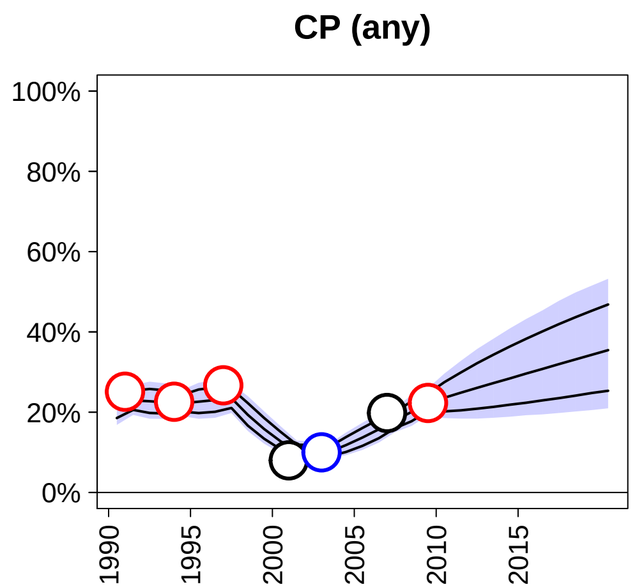
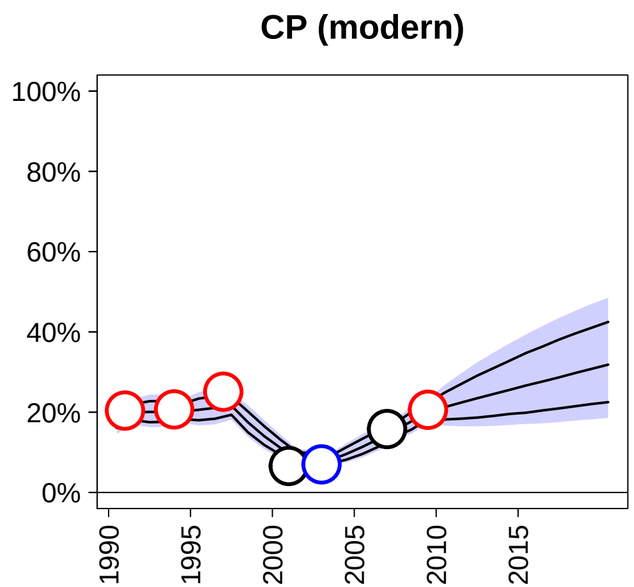
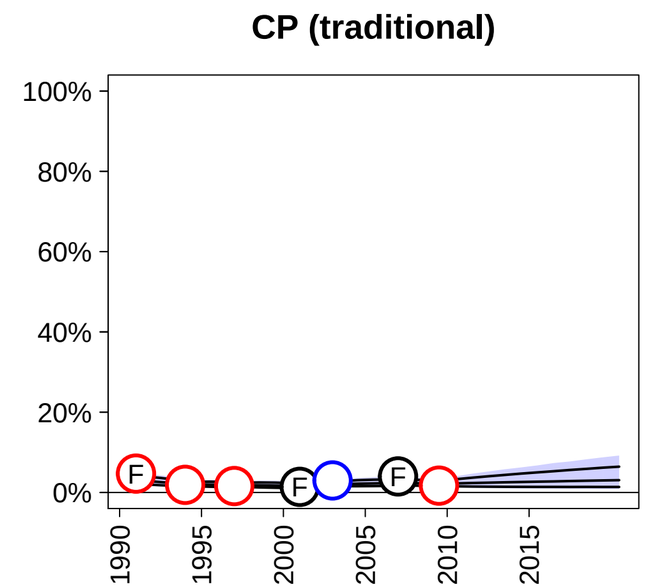
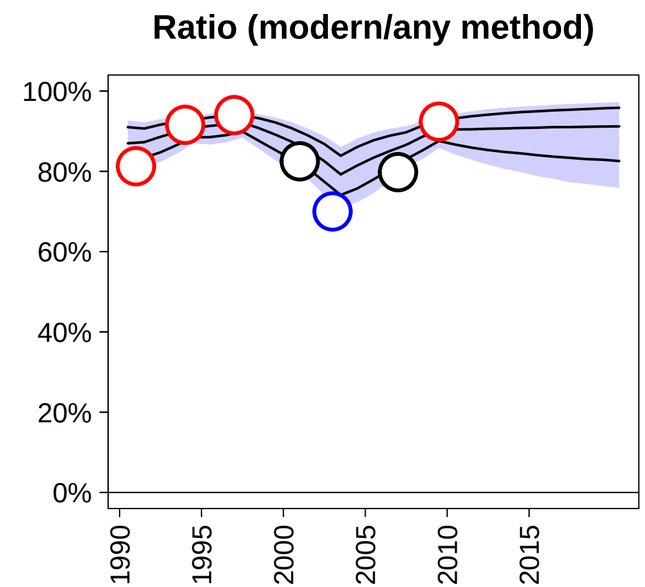
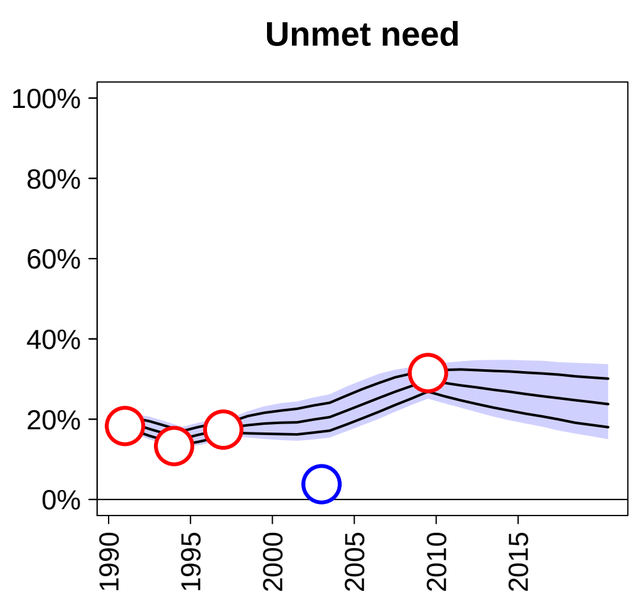
Timor−Leste (South−Eastern Asia)

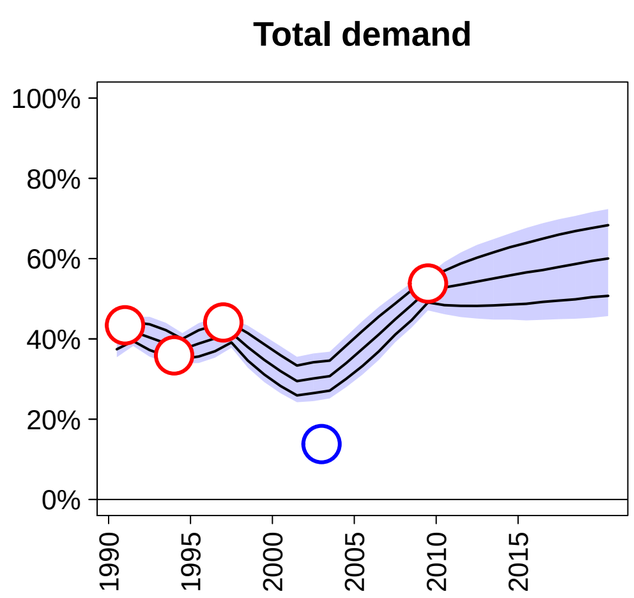


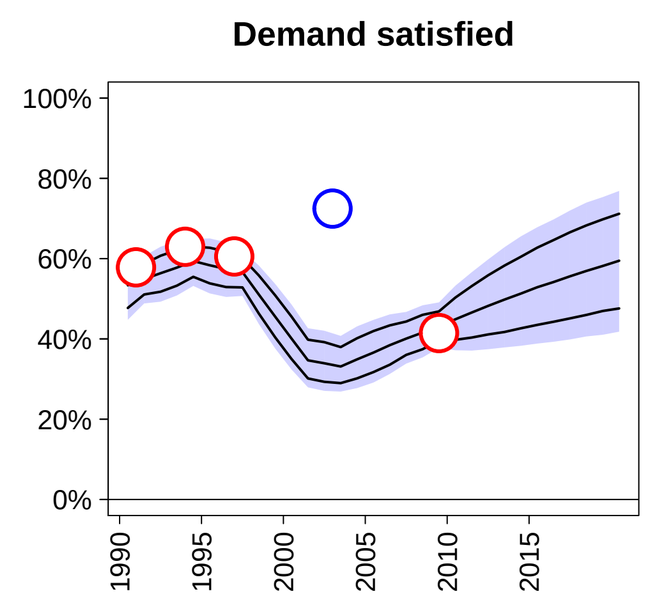












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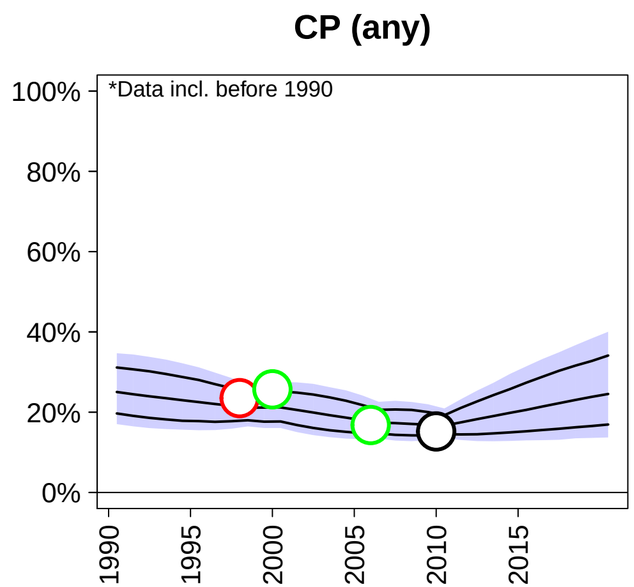
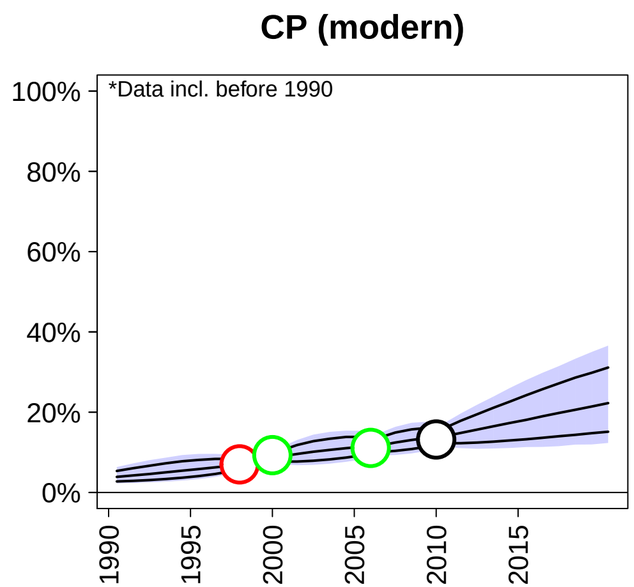
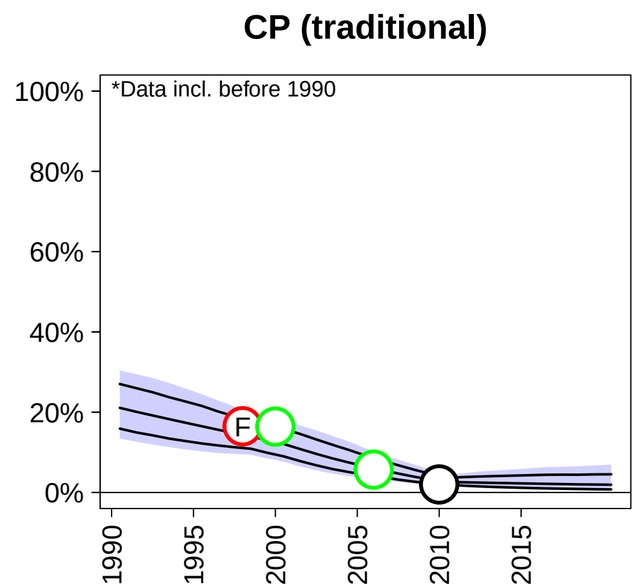
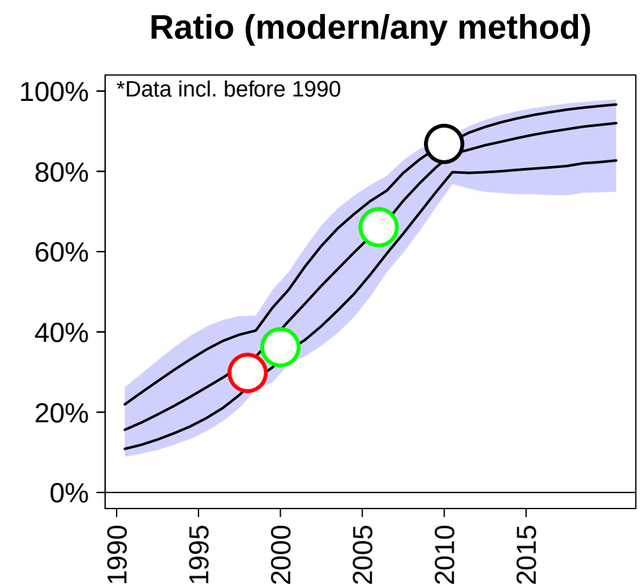
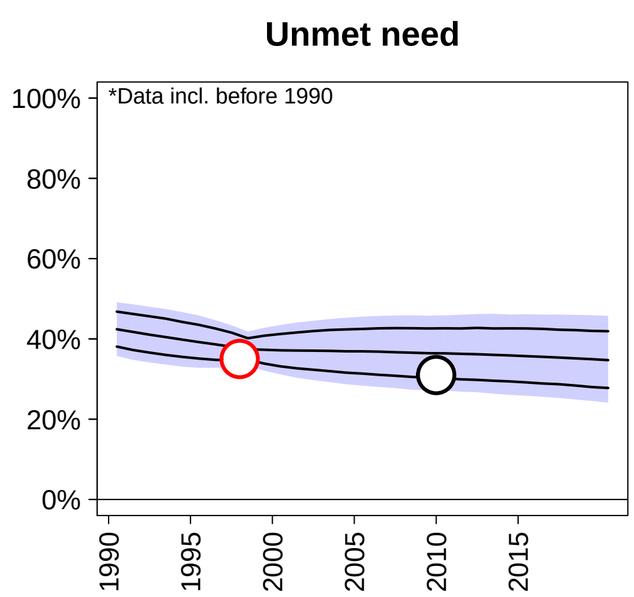
Togo (Western Africa)

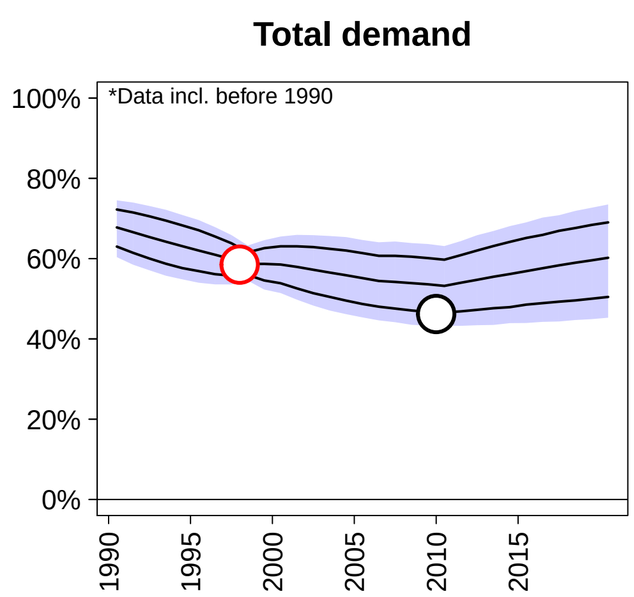


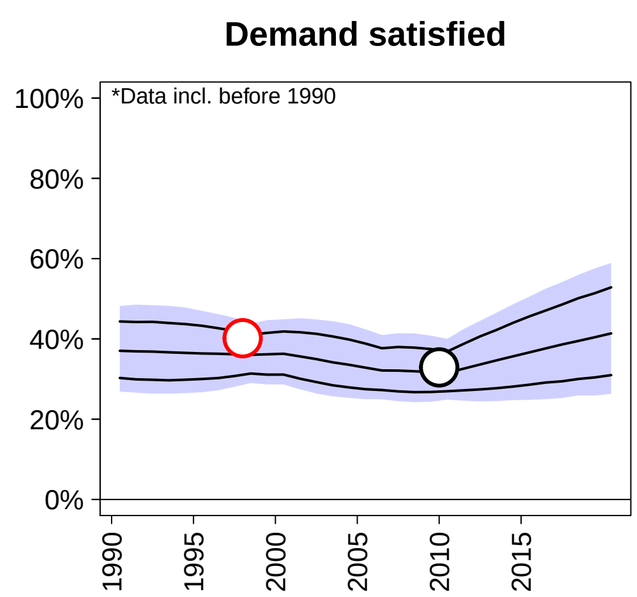












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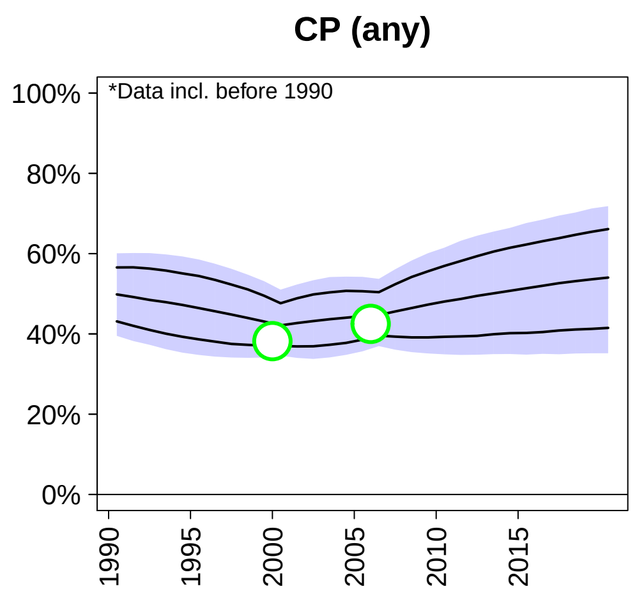
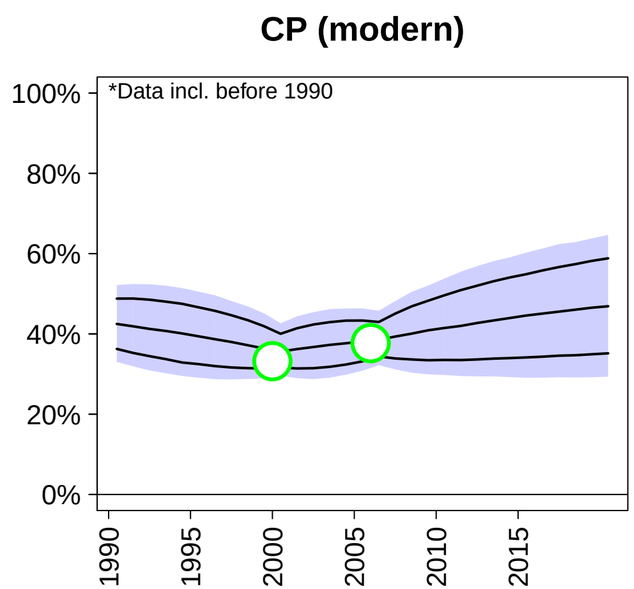
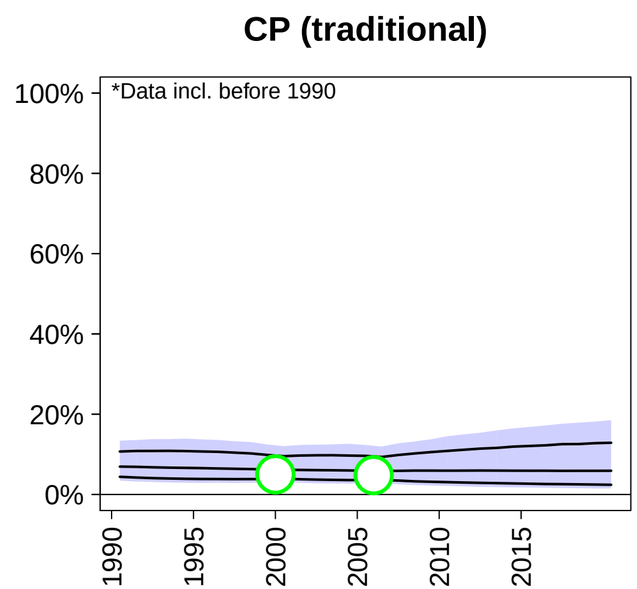
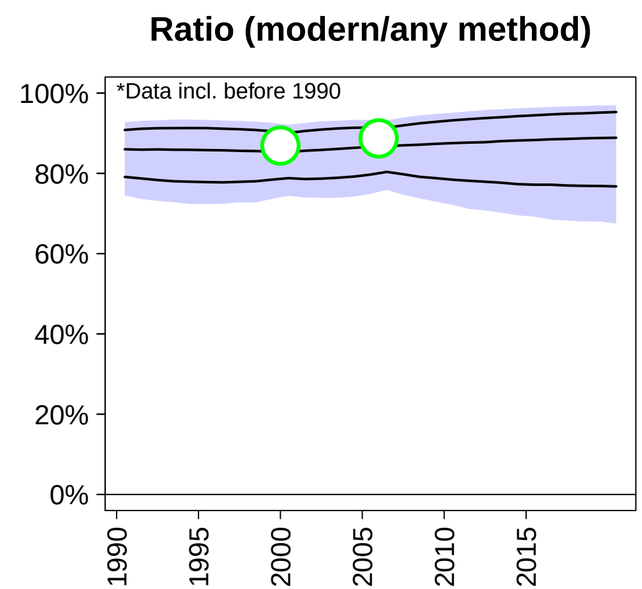
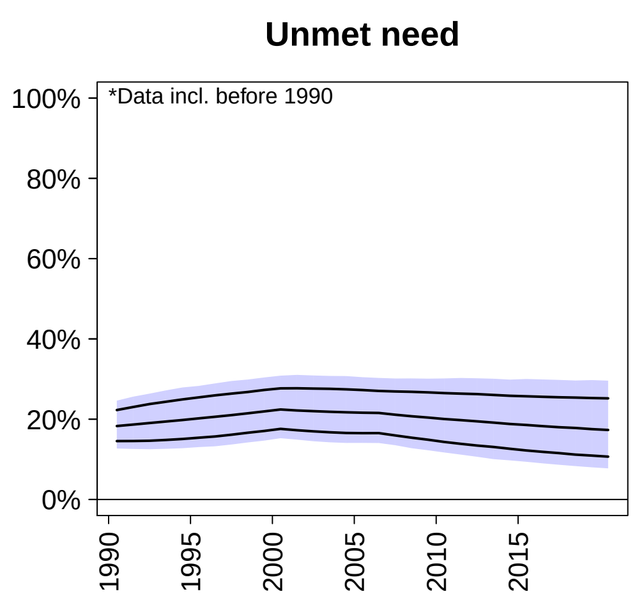
Trinidad and Tobago (Caribbean)

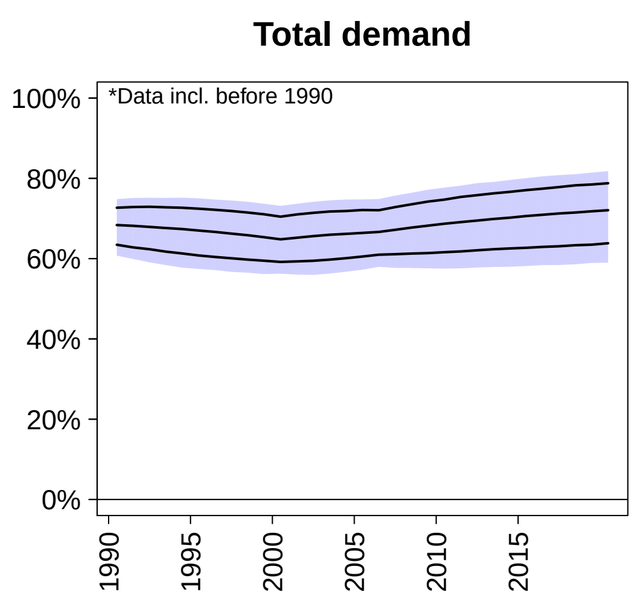


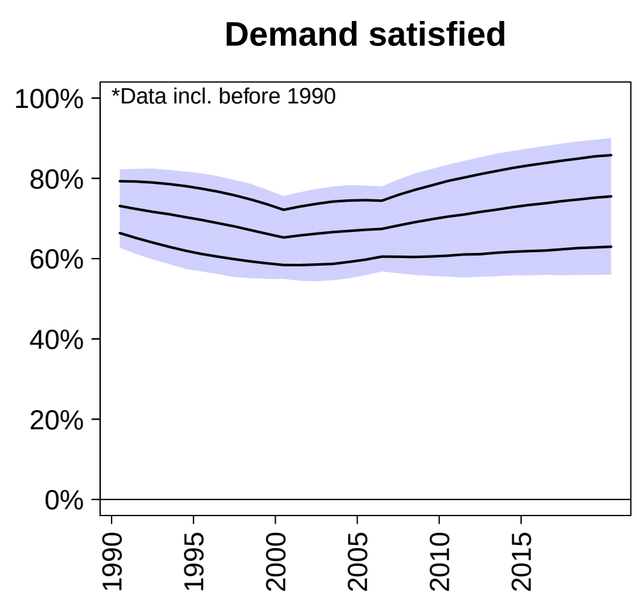












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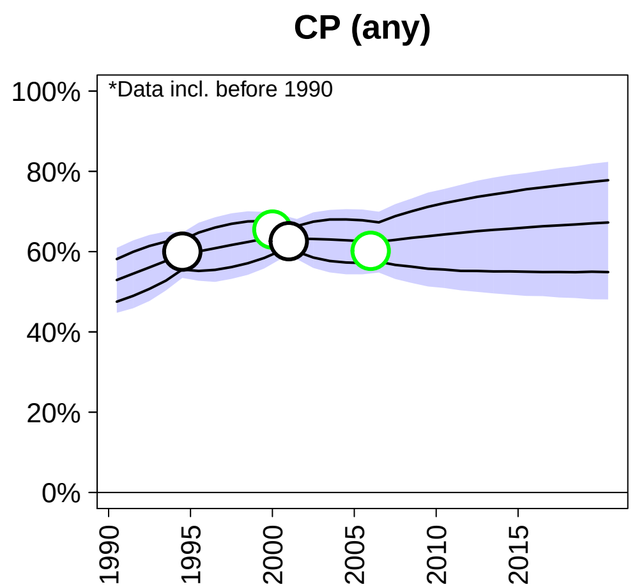
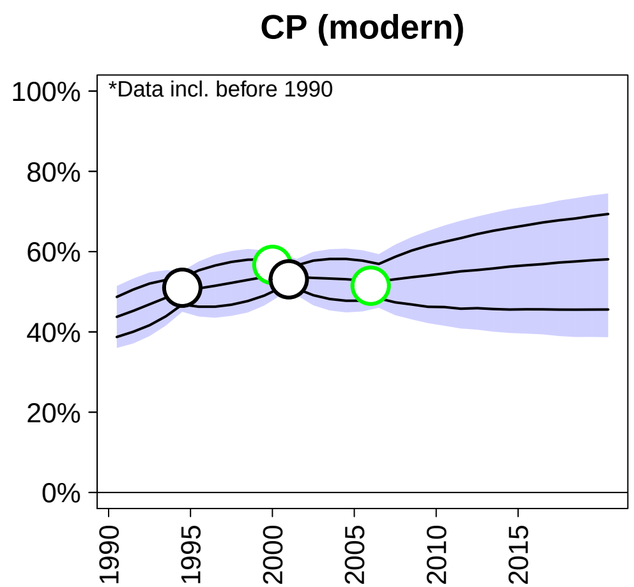
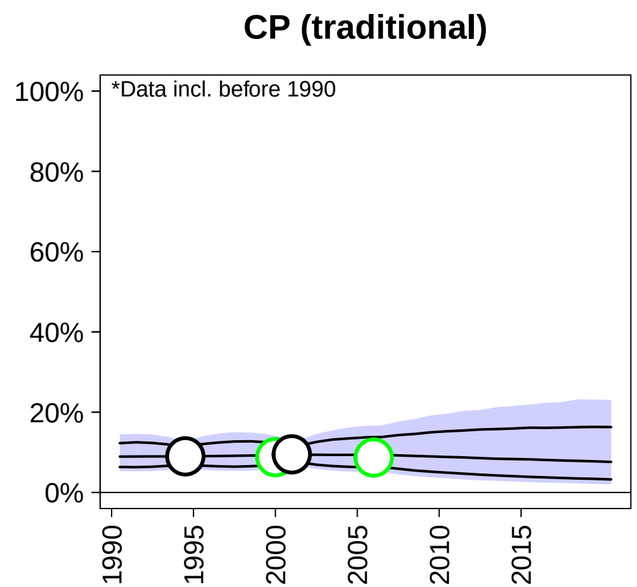
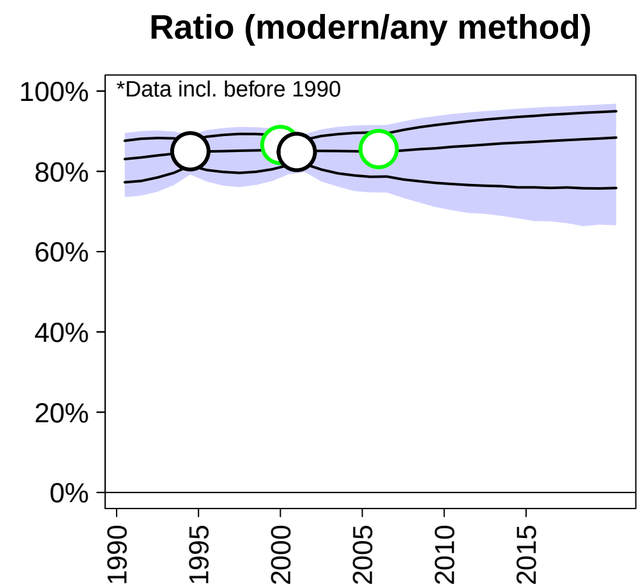
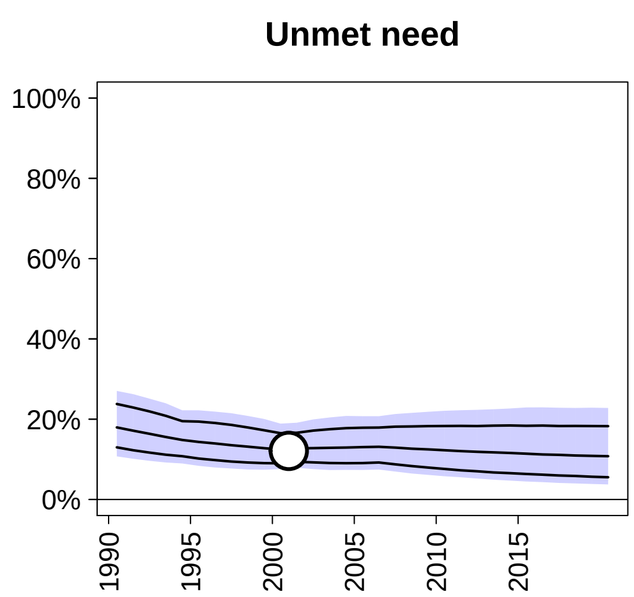
Tunisia (Northern Africa)

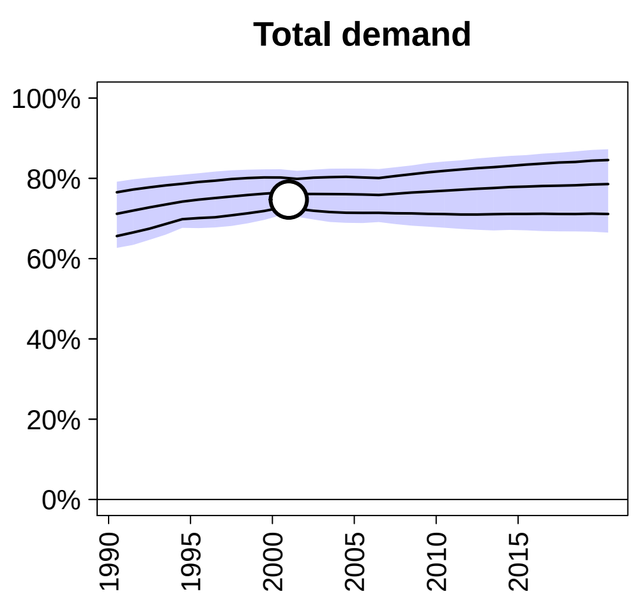


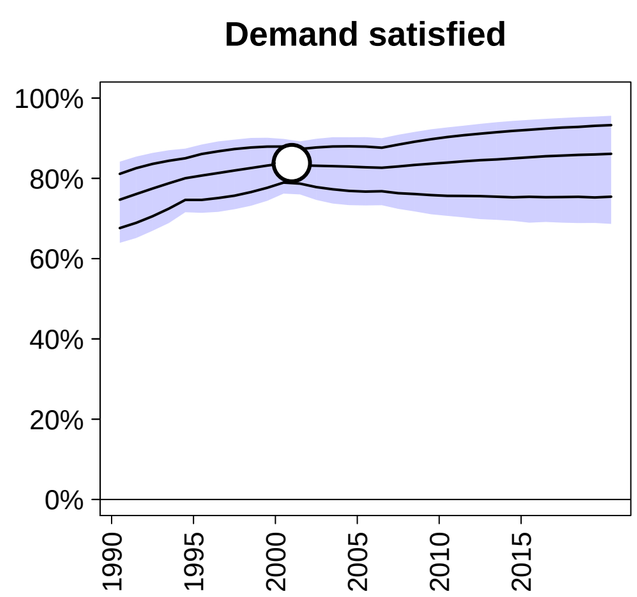












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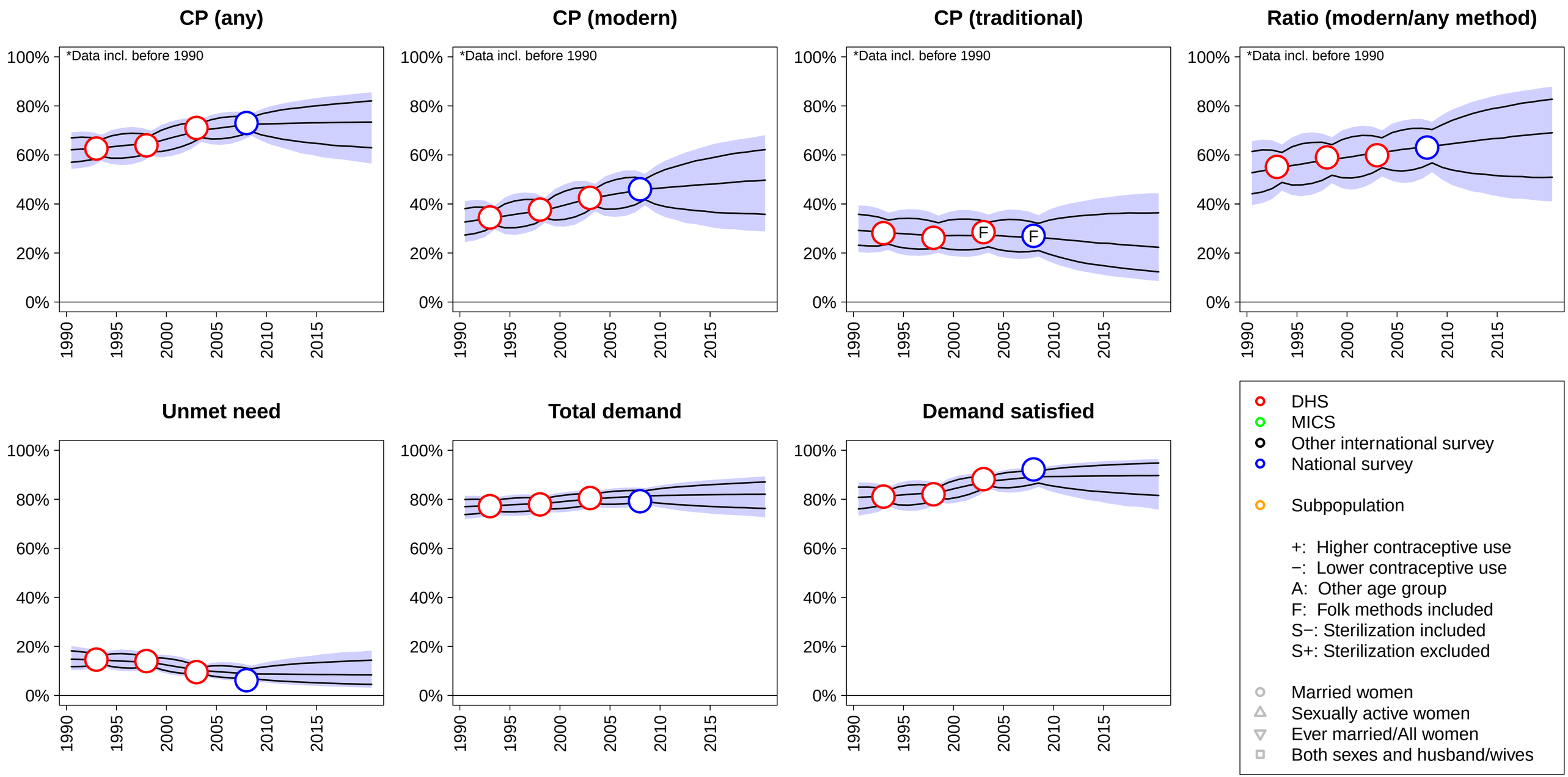
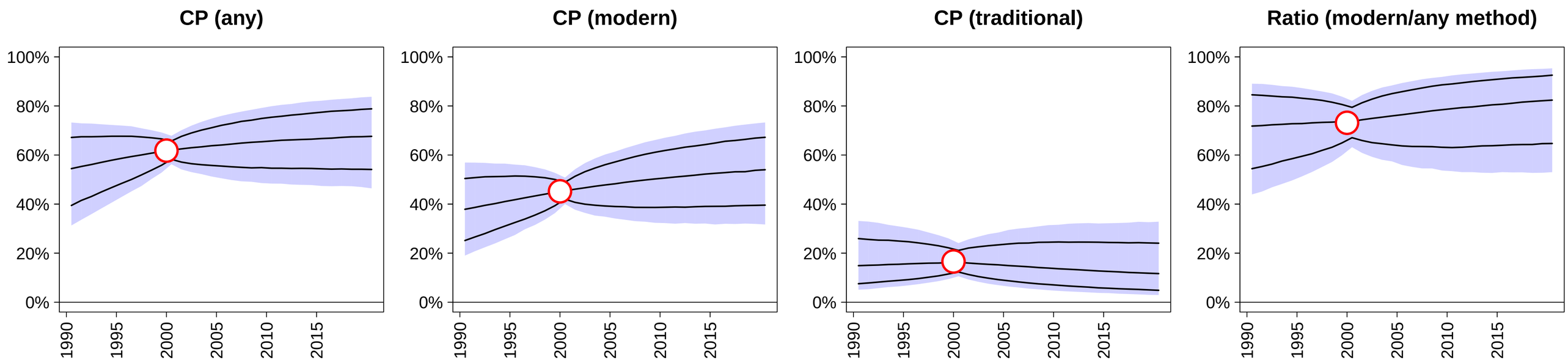
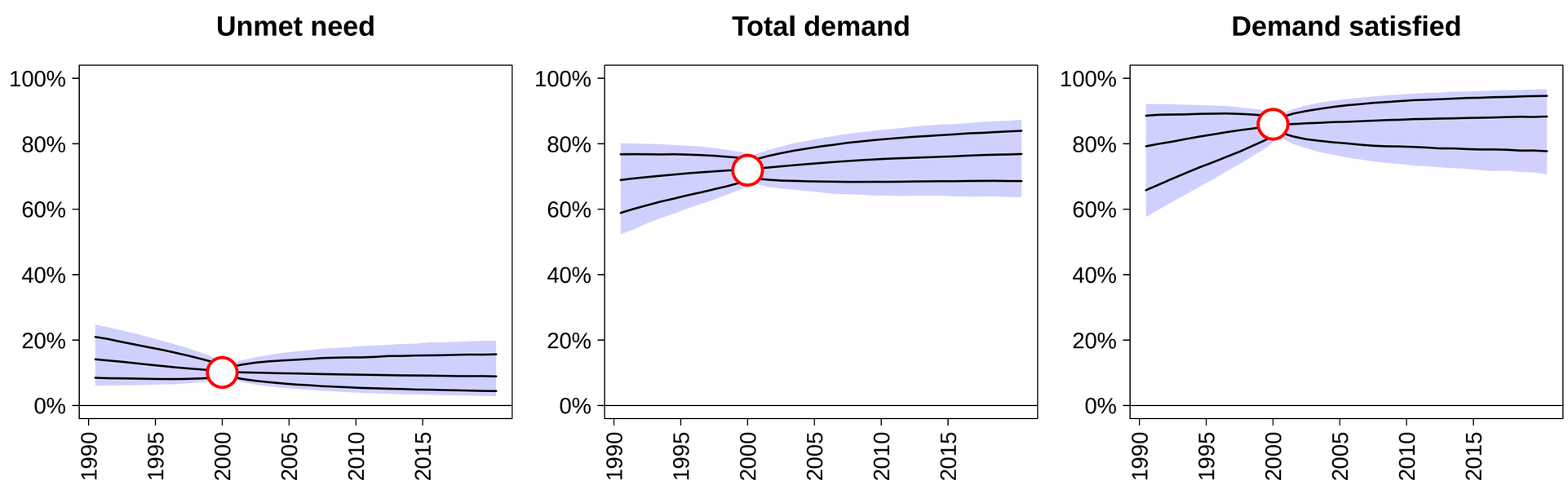
Turkey (Western Asia)



Turkmenistan (Central Asia)





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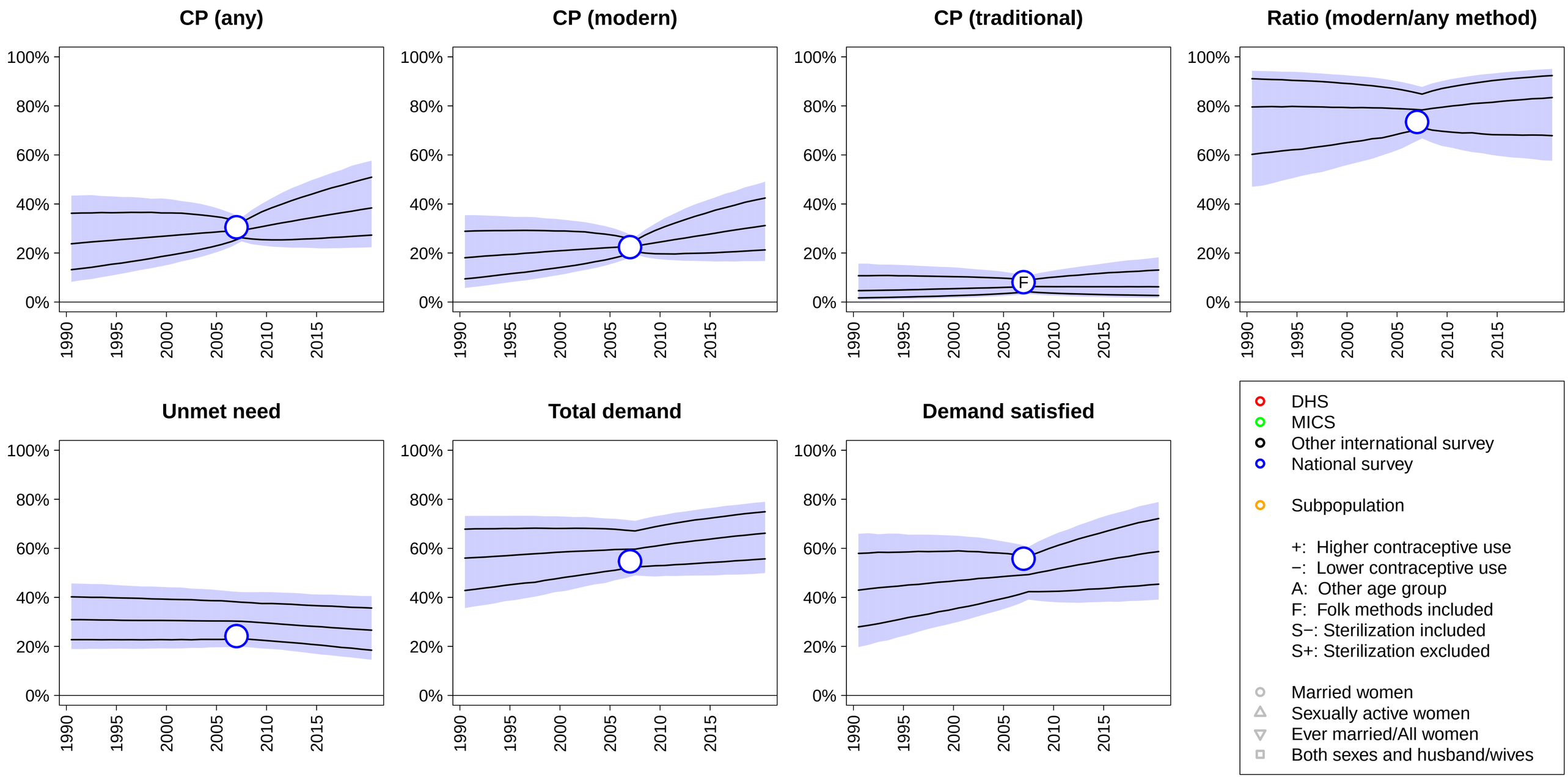
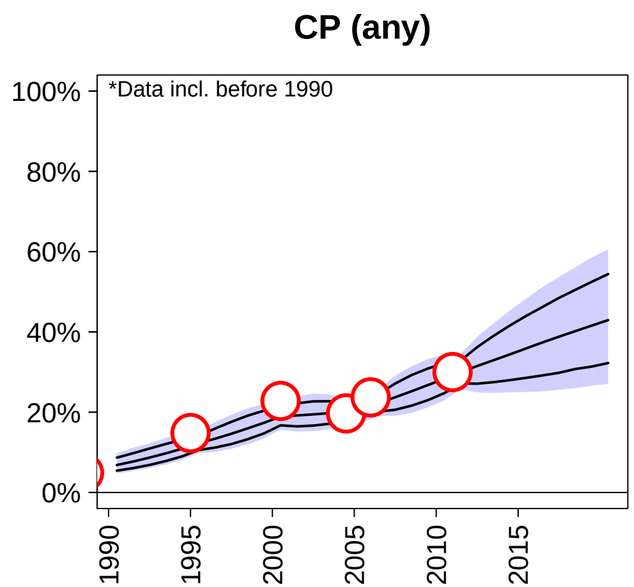
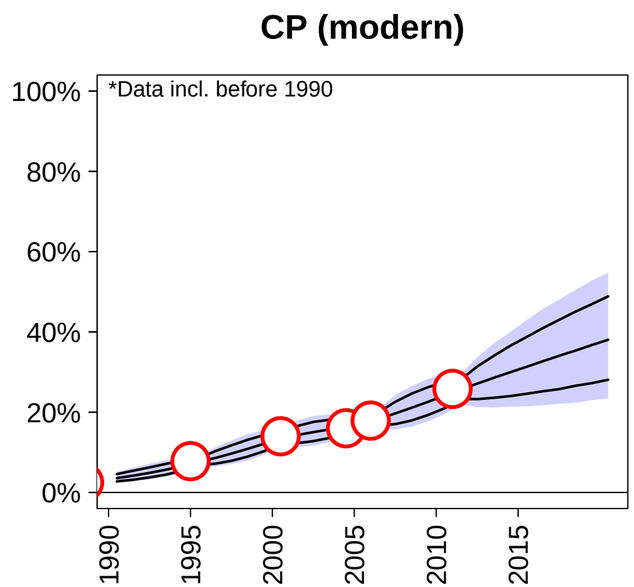
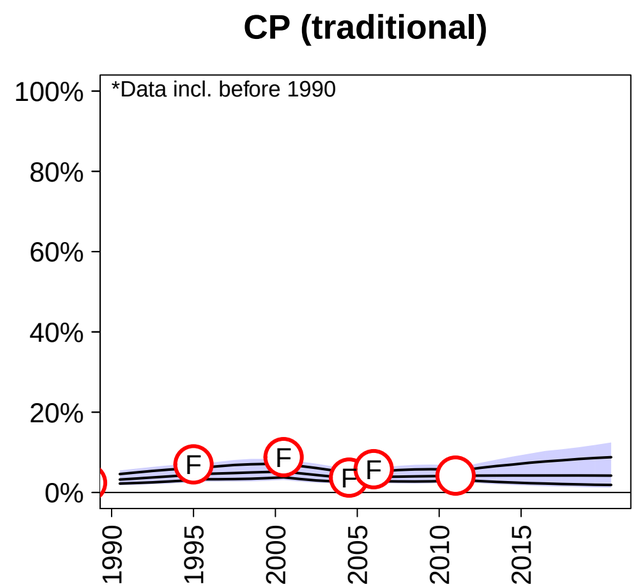
Tuvalu (Polynesia)

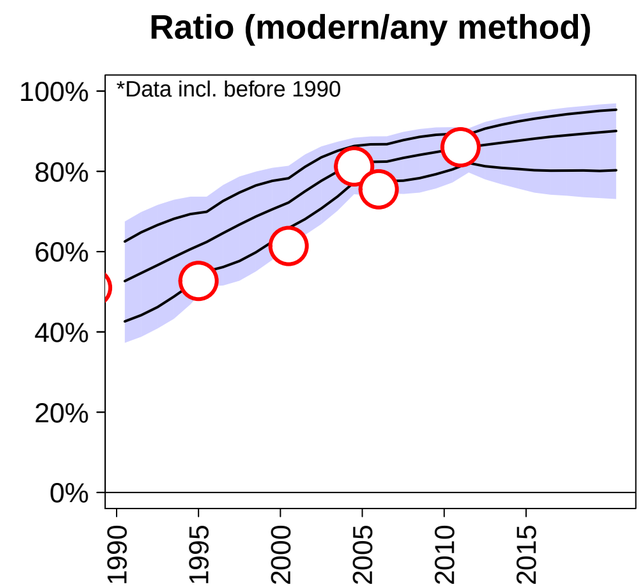


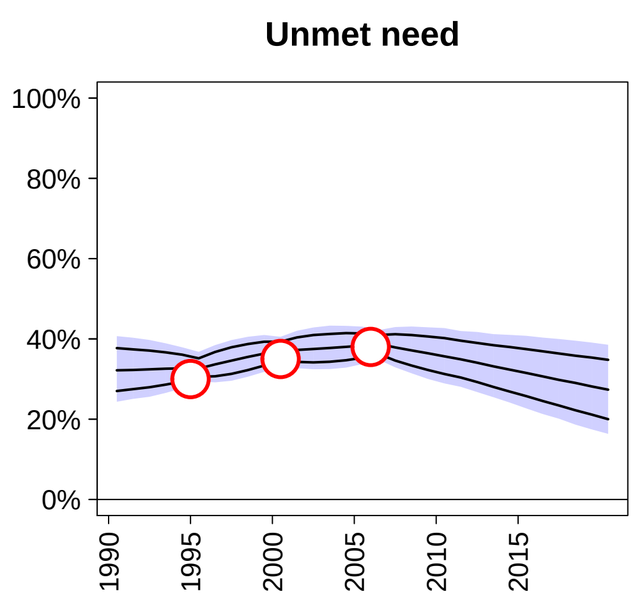
Uganda (Eastern Africa)

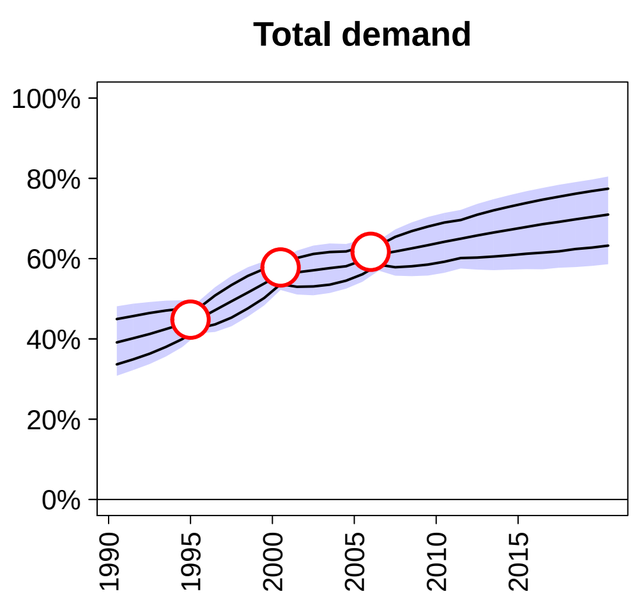


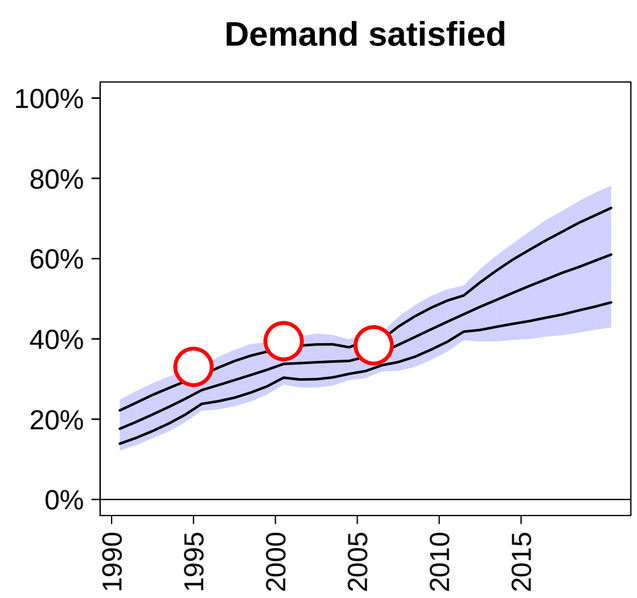












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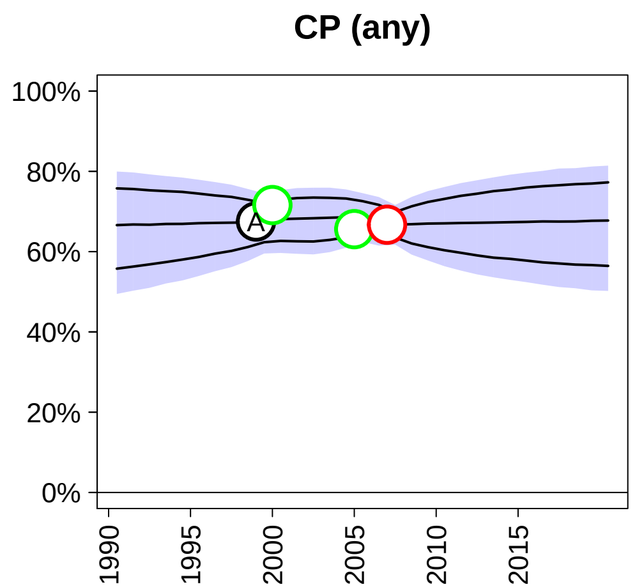
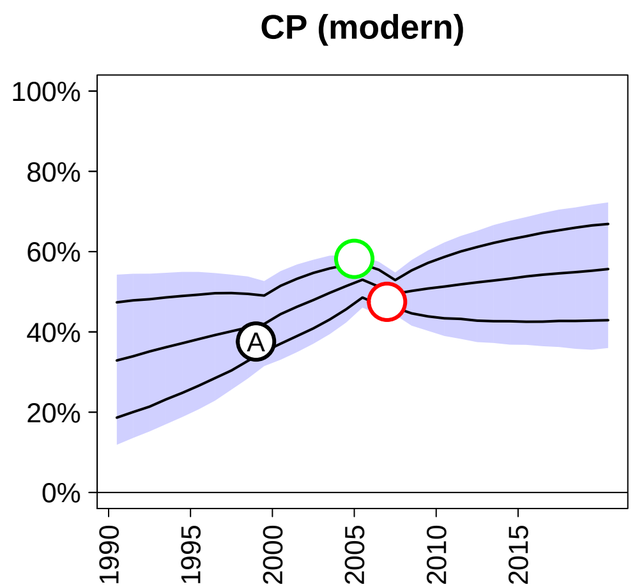
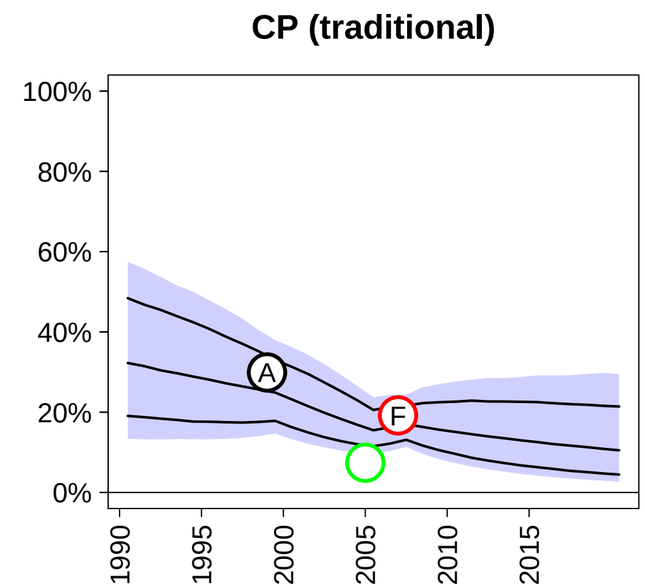
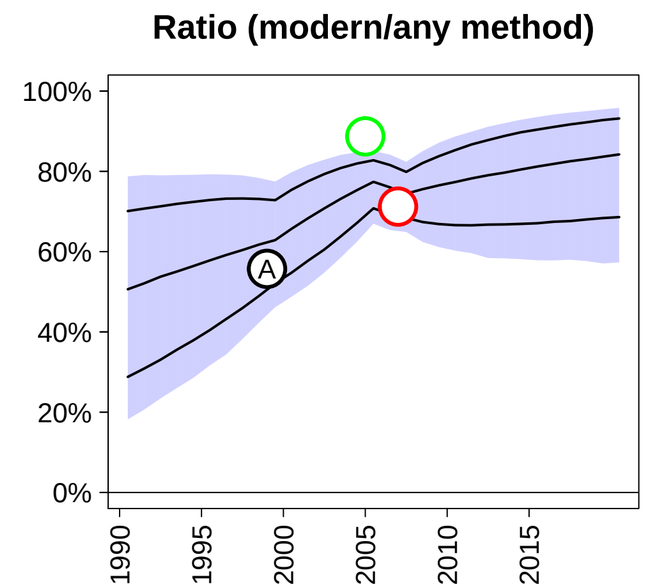
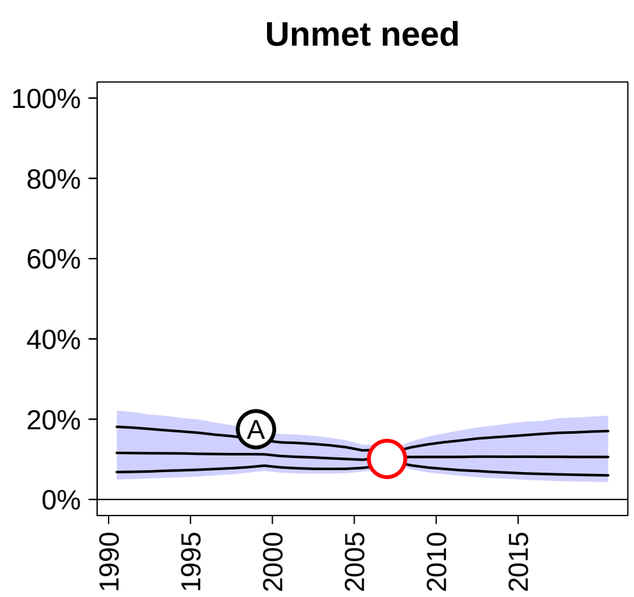
Ukraine (Eastern Europe)

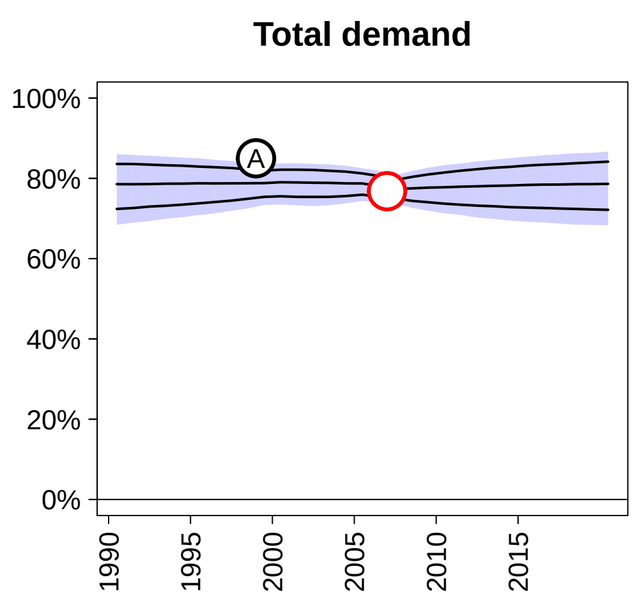


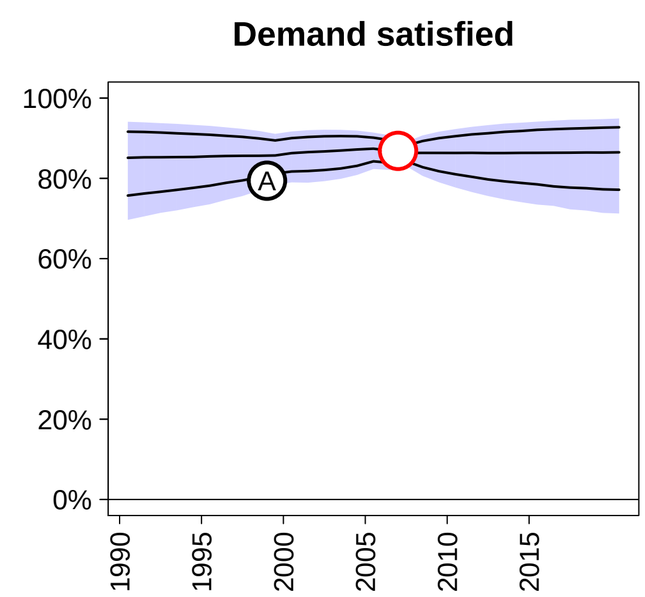












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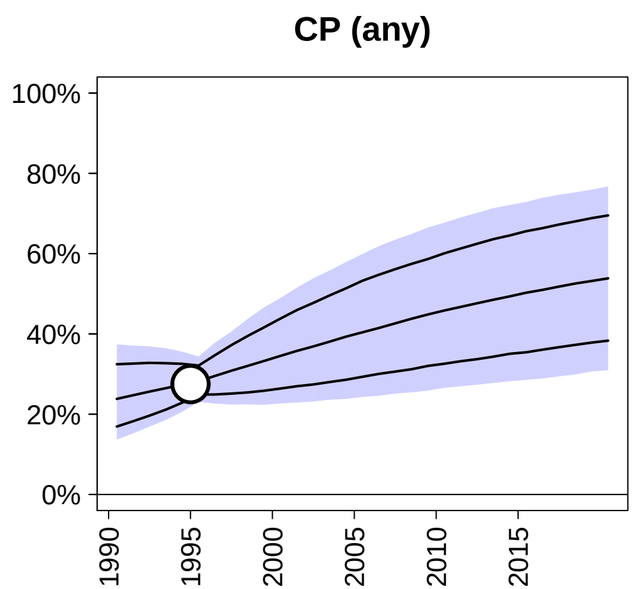
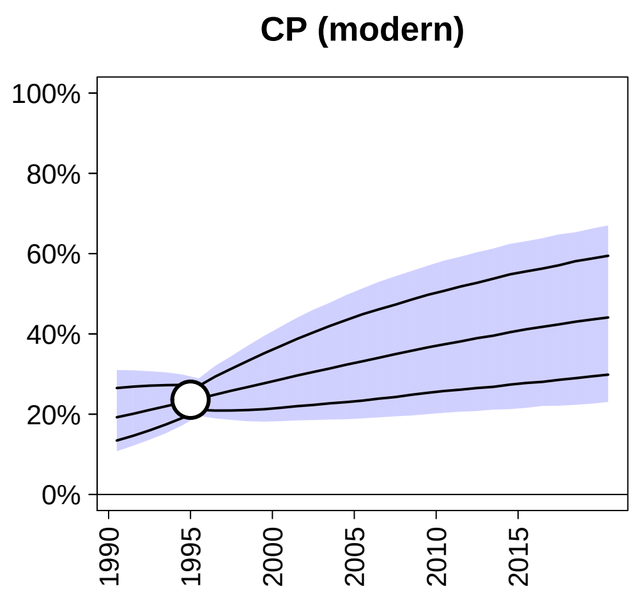
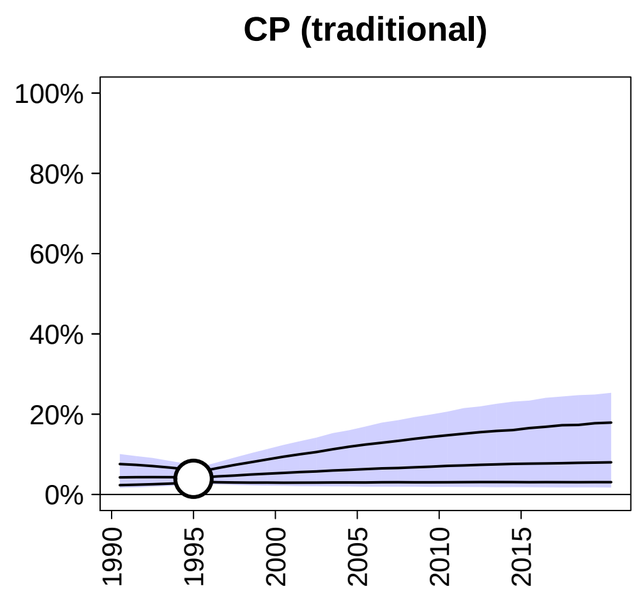
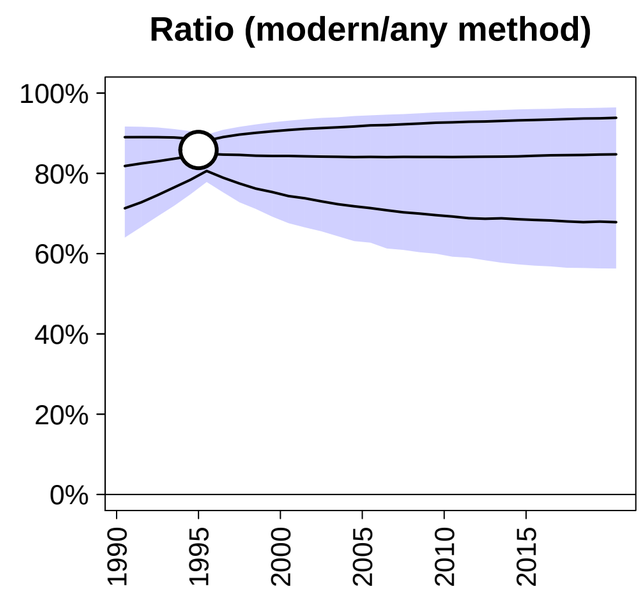
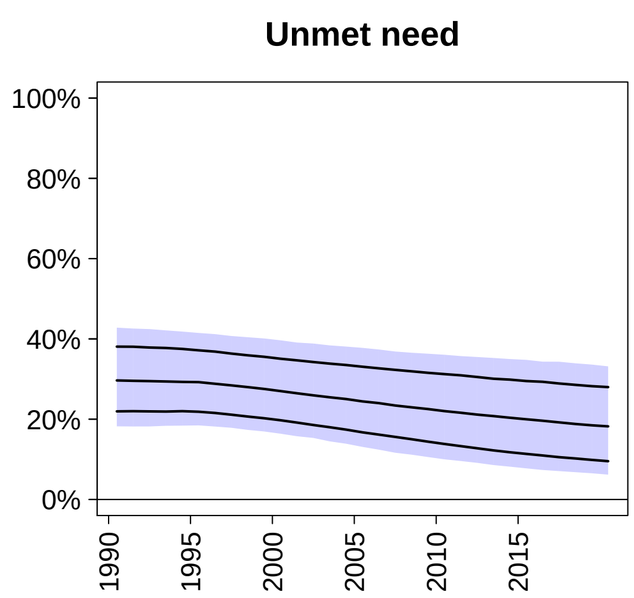
United Arab Emirates (Western Asia)

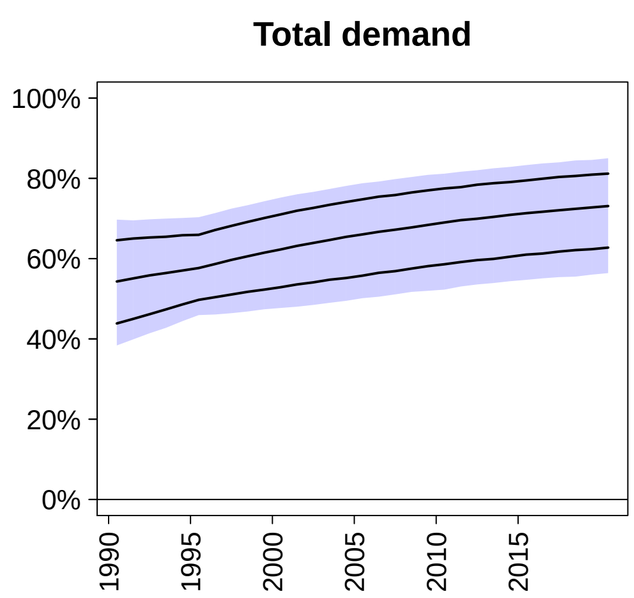












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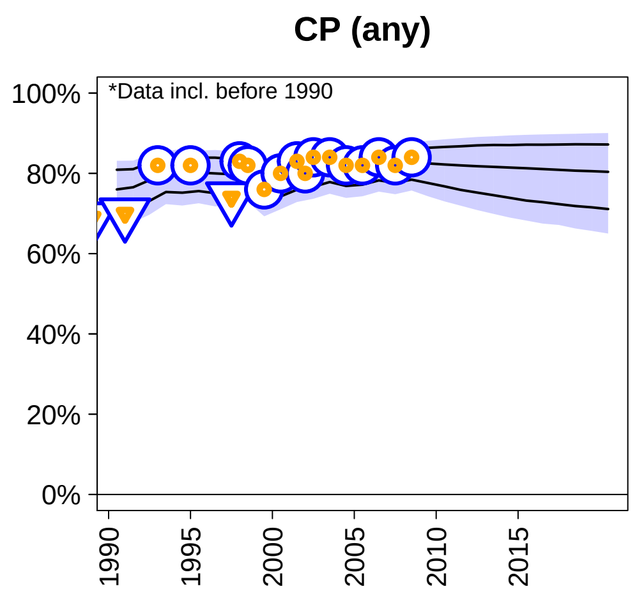
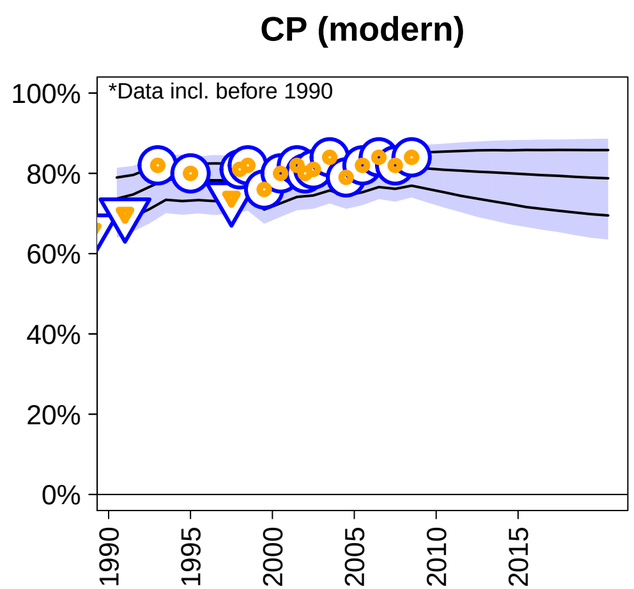
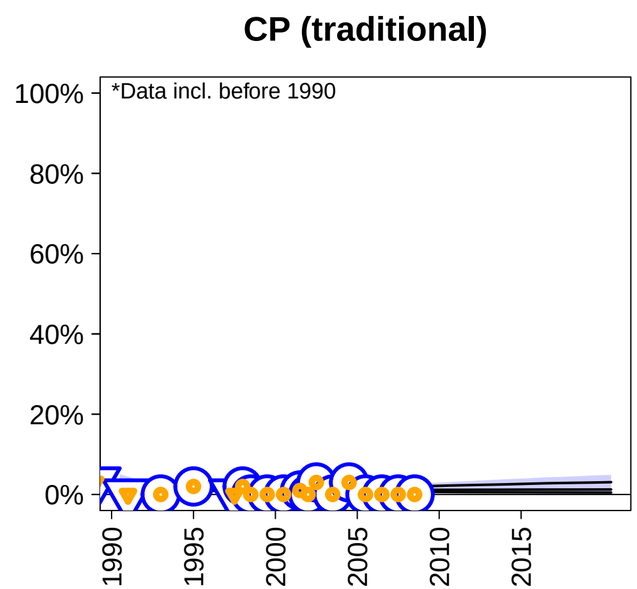
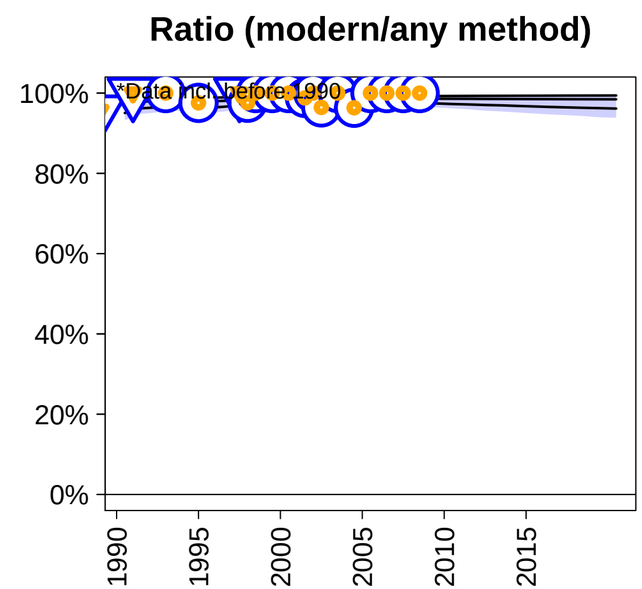
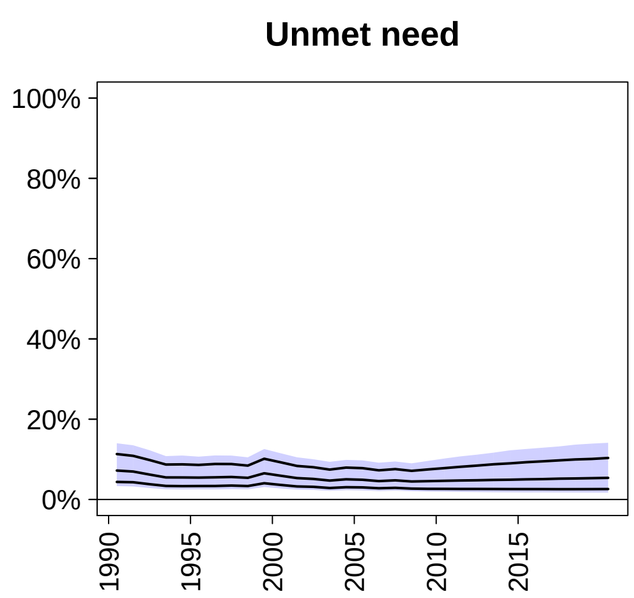
United Kingdom (Northern Europe)

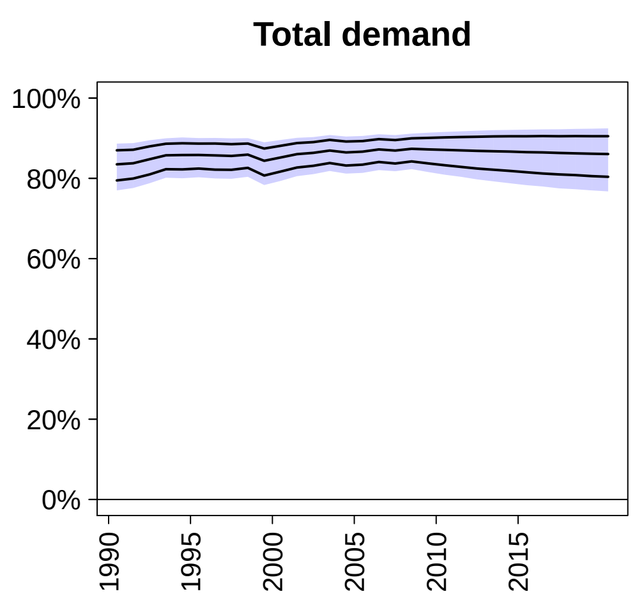


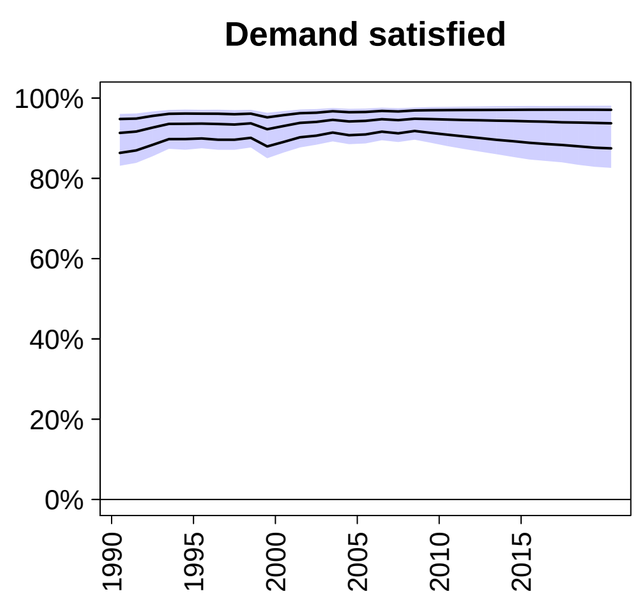












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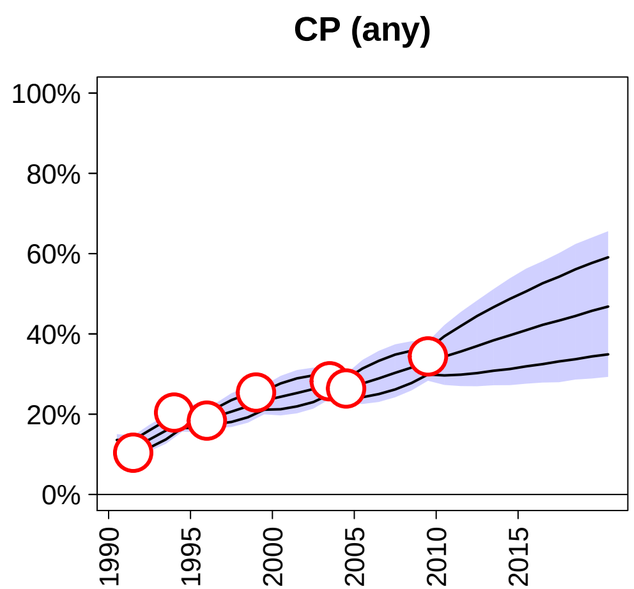
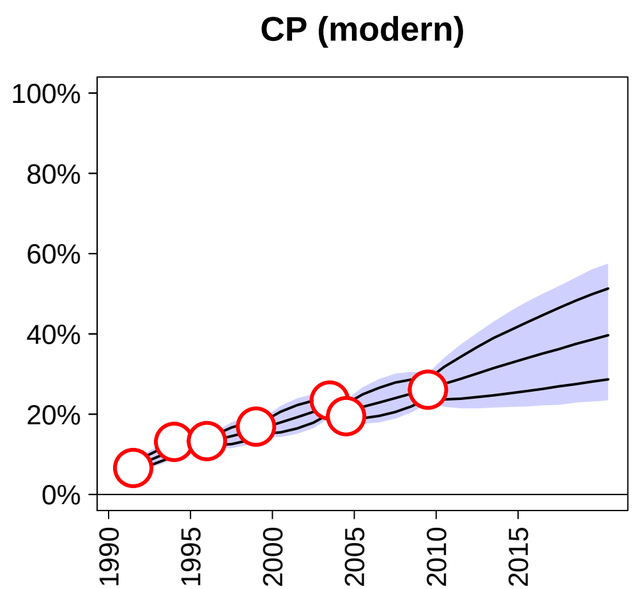
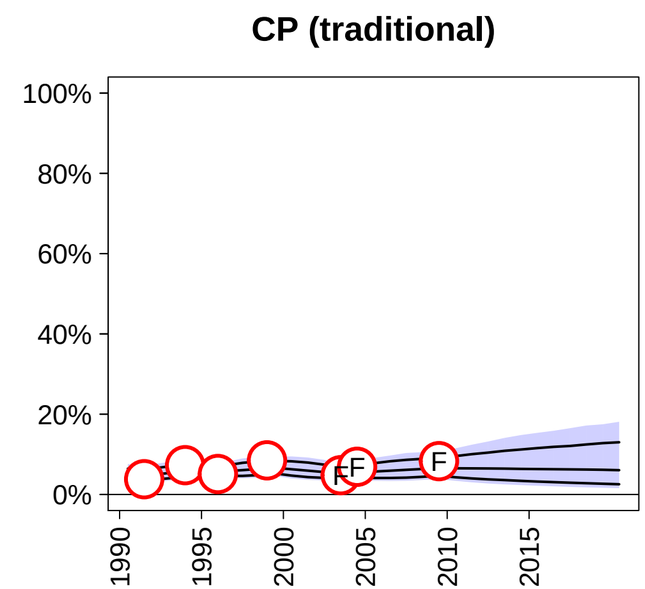
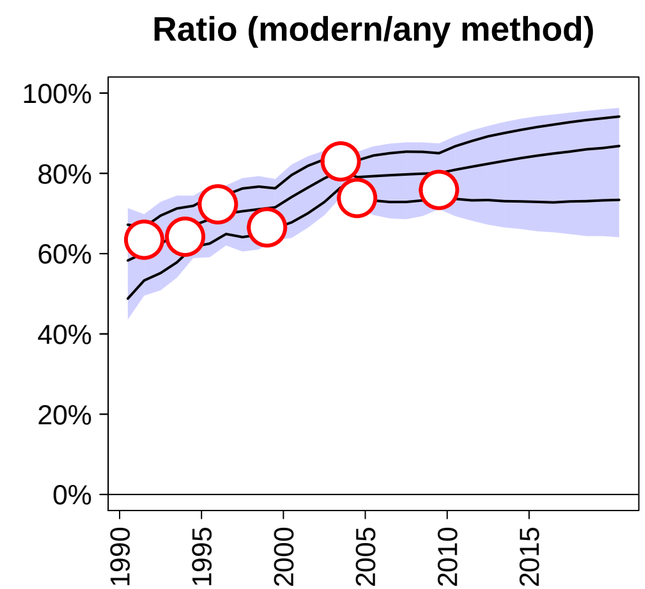
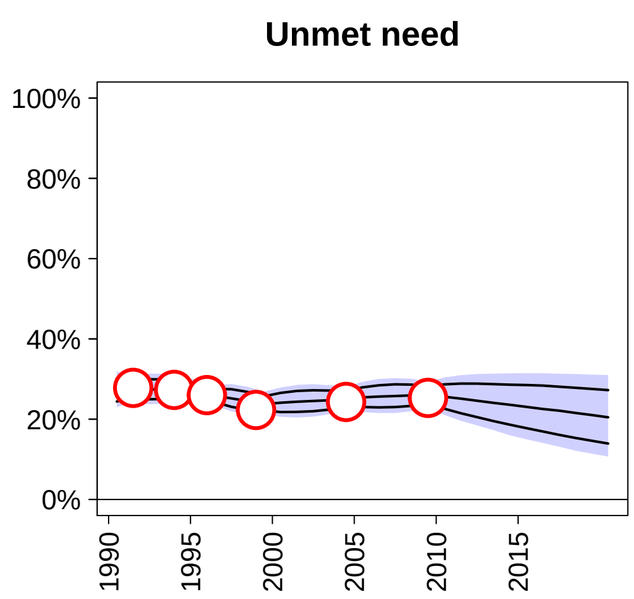
United Republic of Tanzania (Eastern Africa)

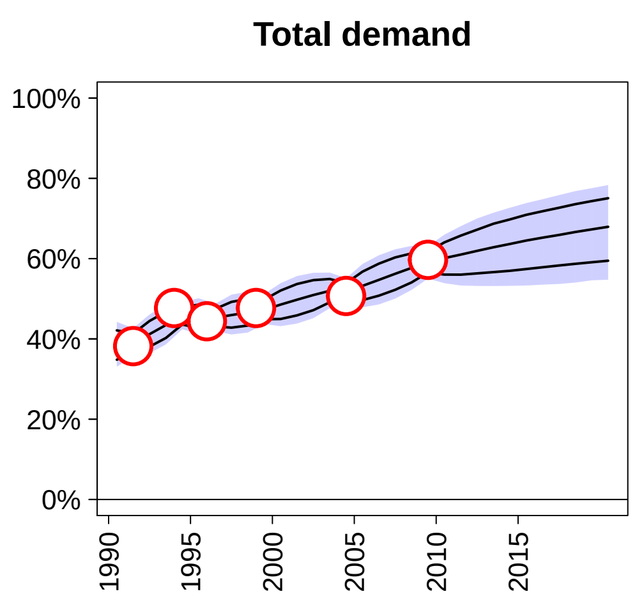


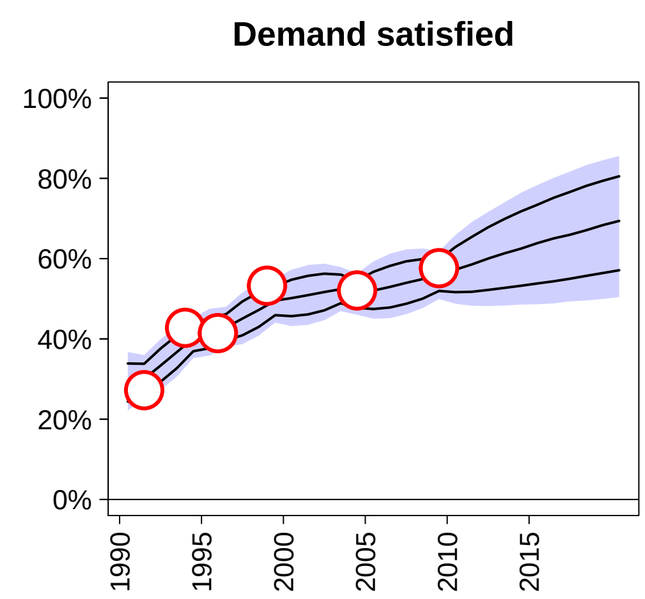












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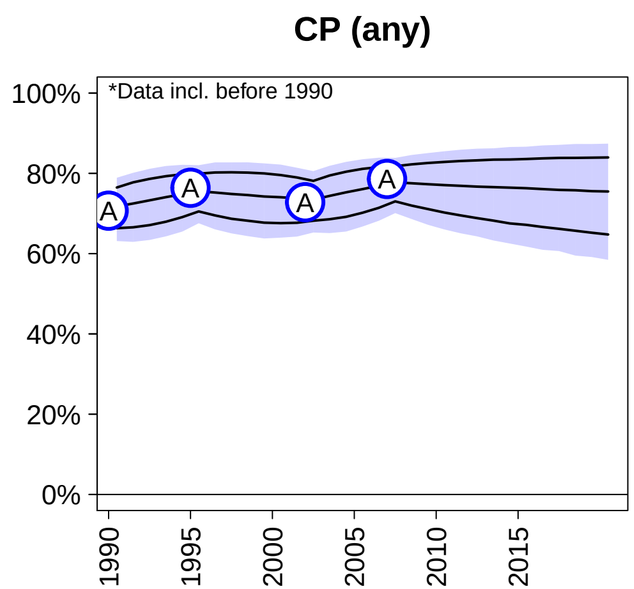
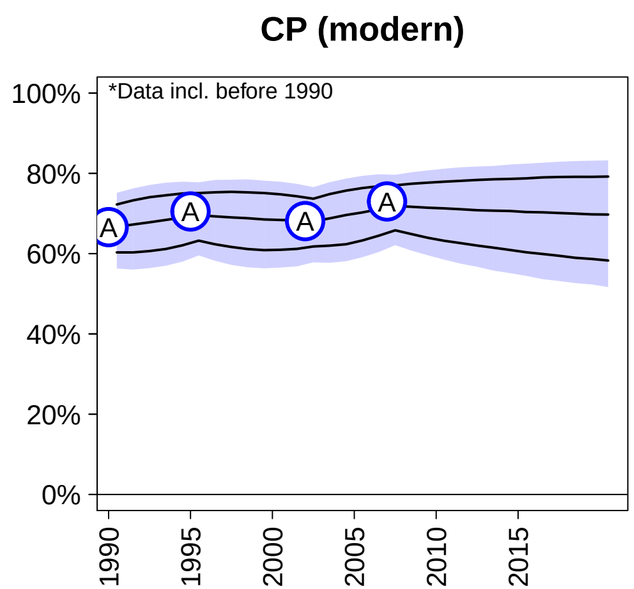
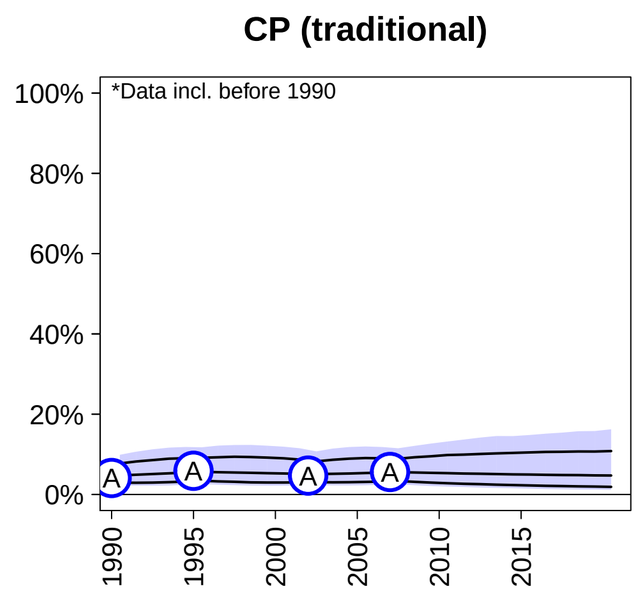
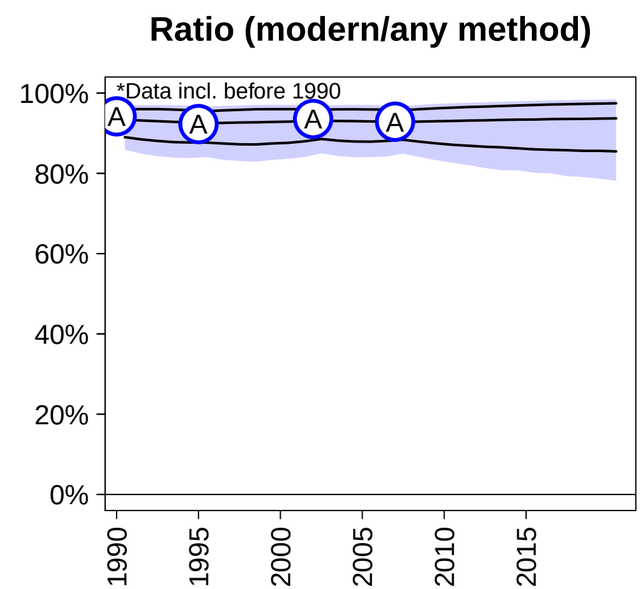
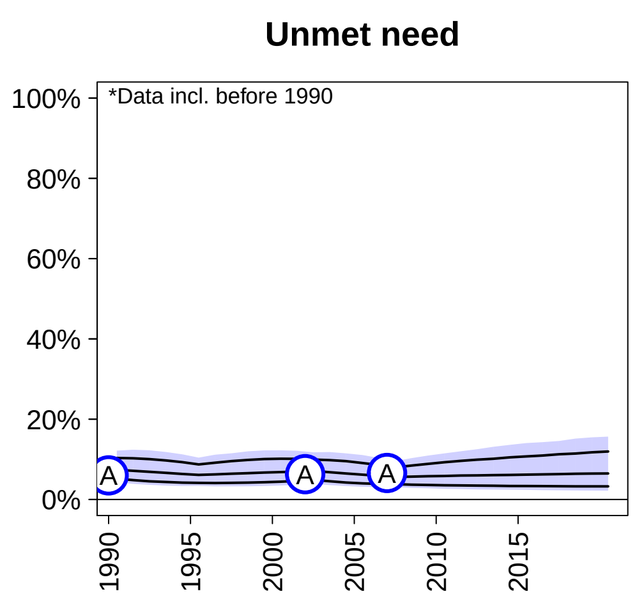
United States of America (Northern America)

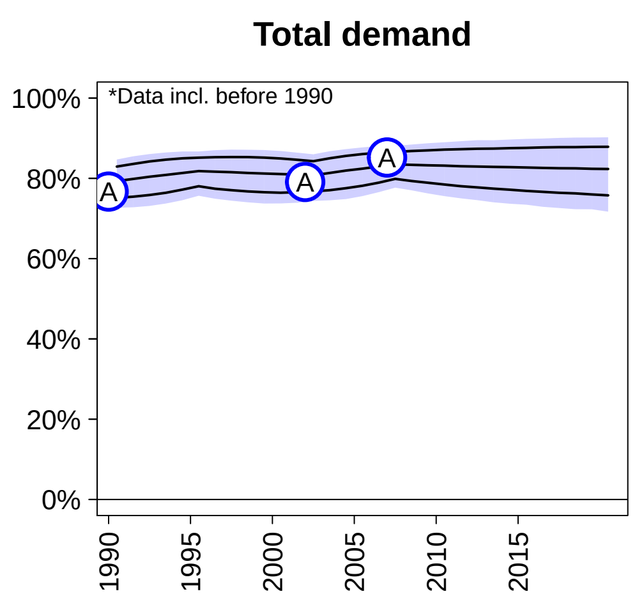


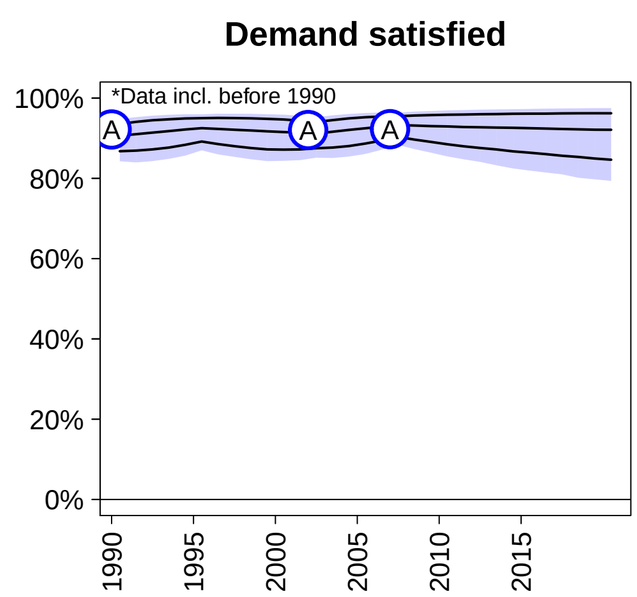












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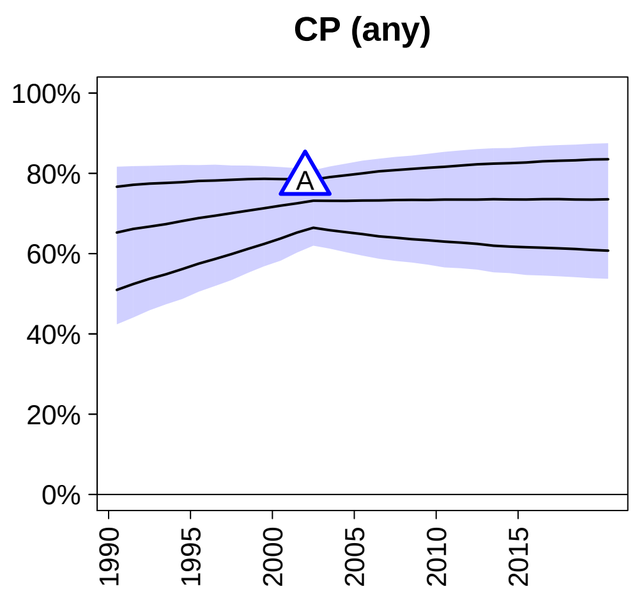
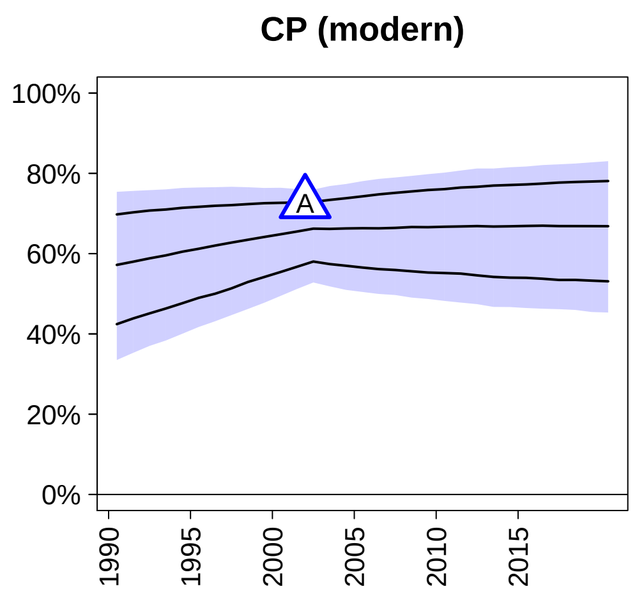
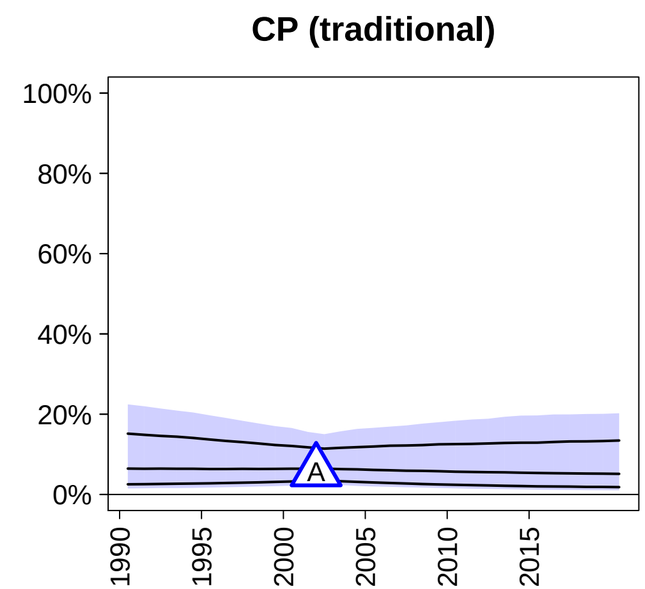
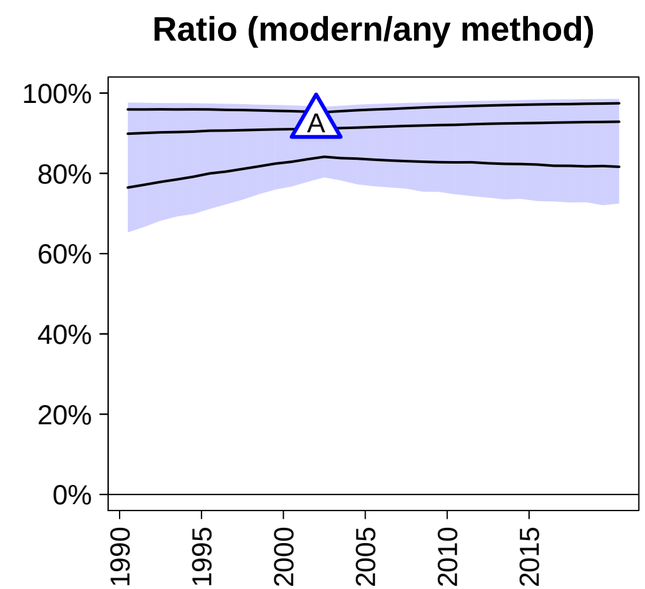
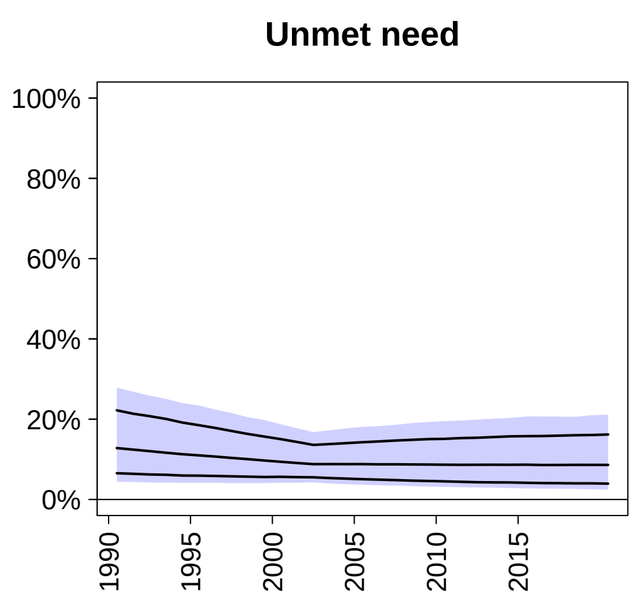
United States Virgin Islands (Caribbean)

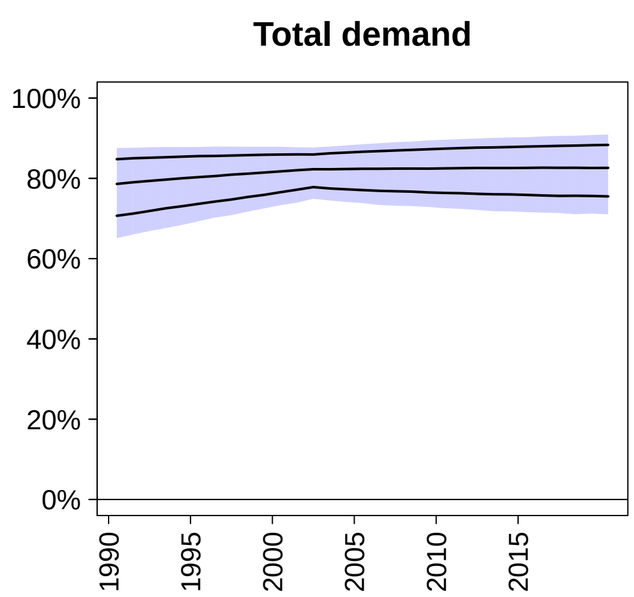


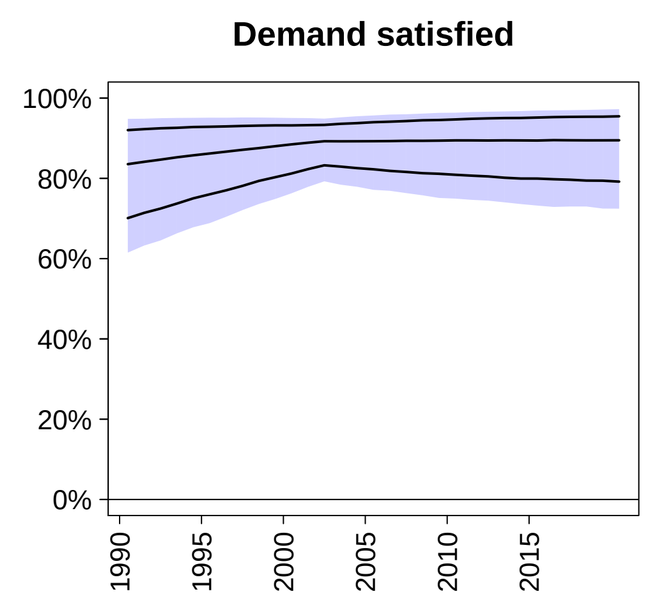












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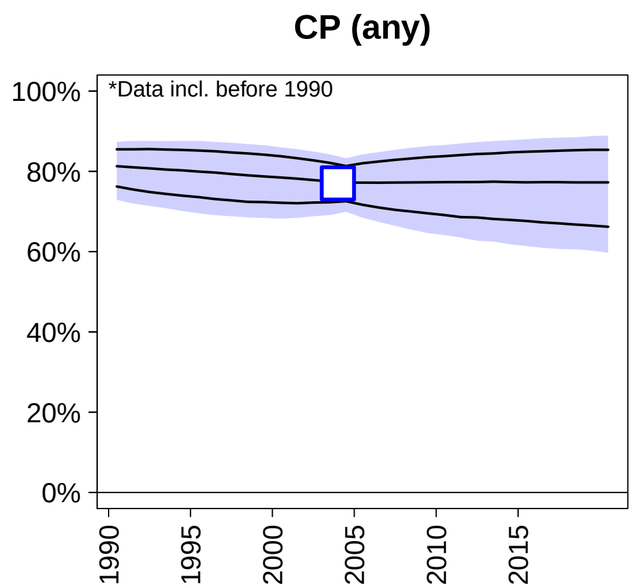
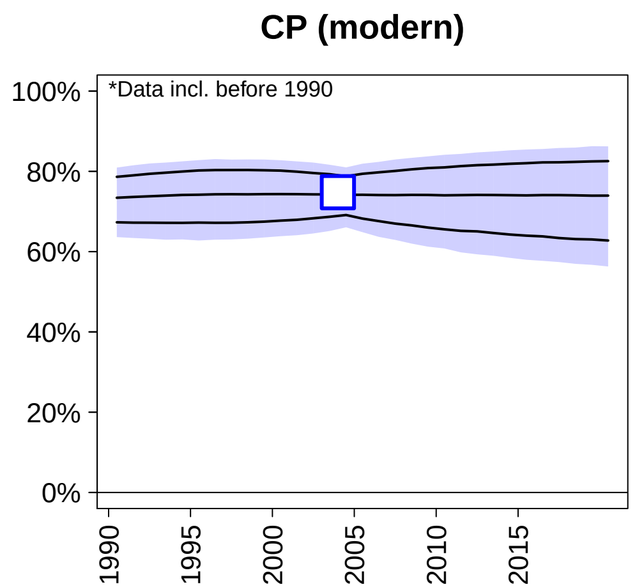
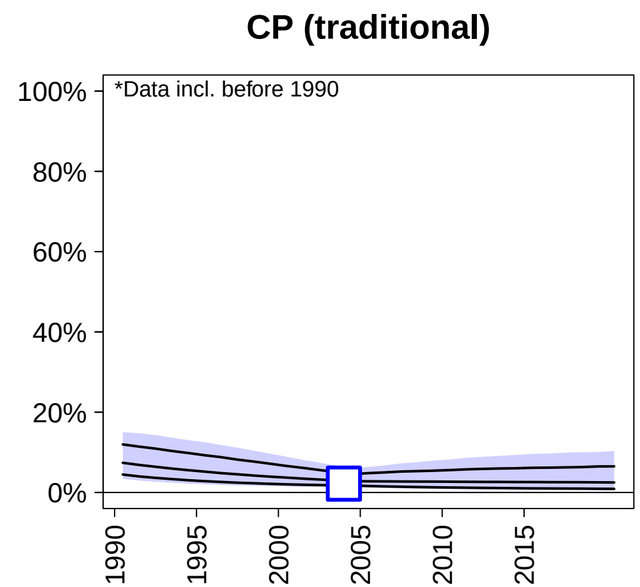
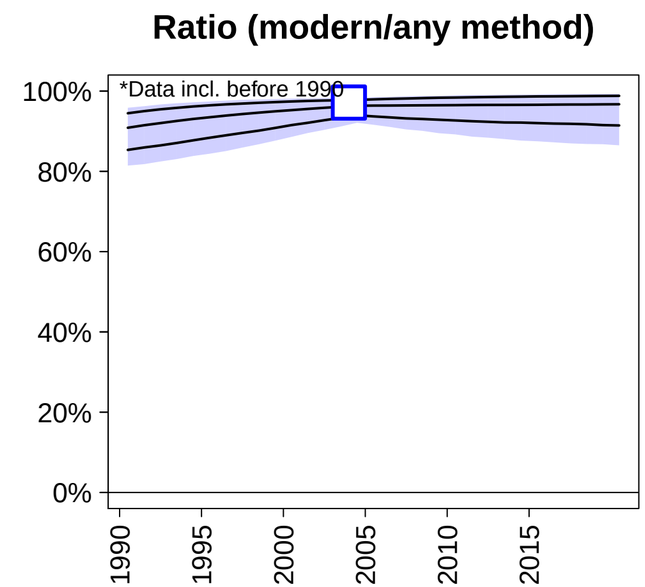
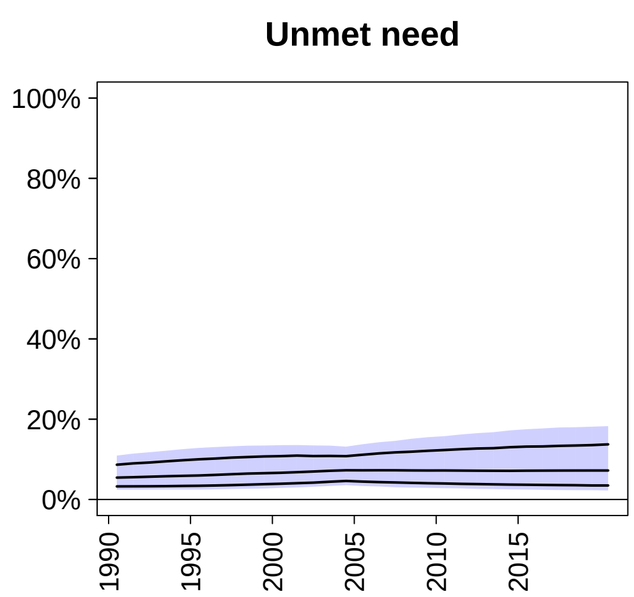
Uruguay (South America)

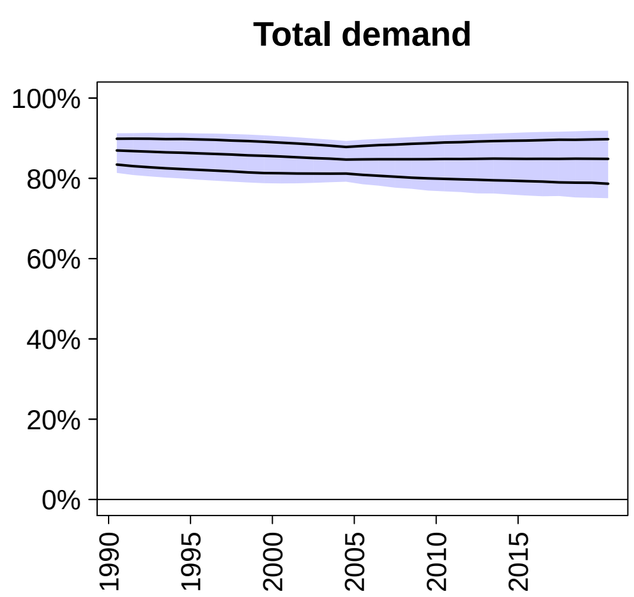


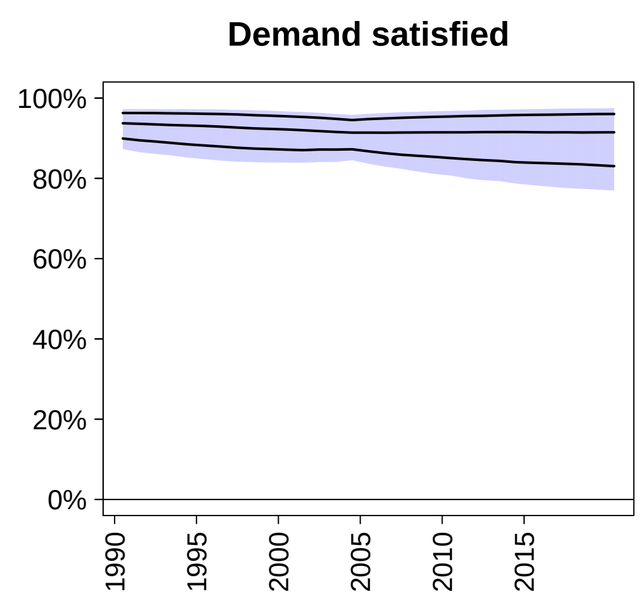












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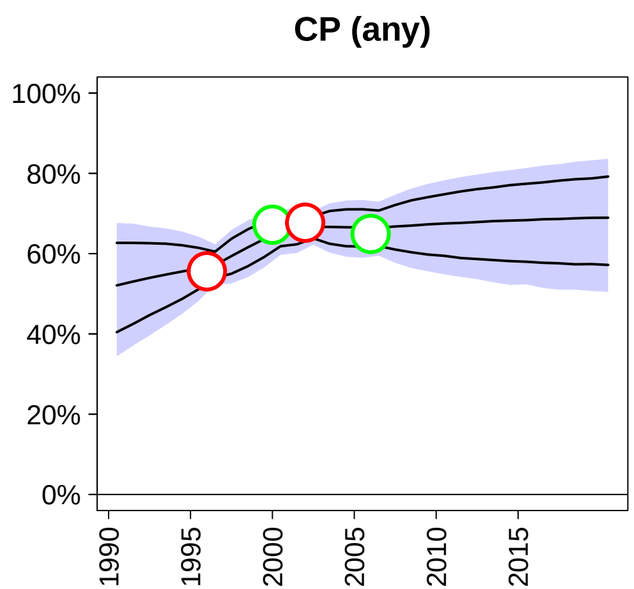
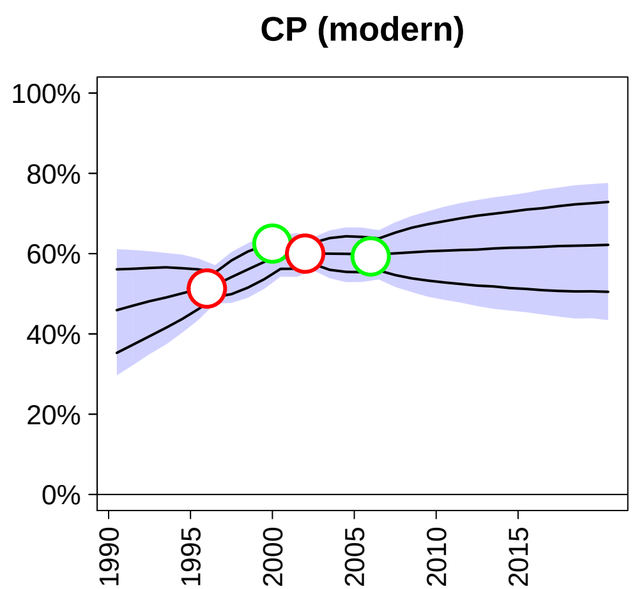
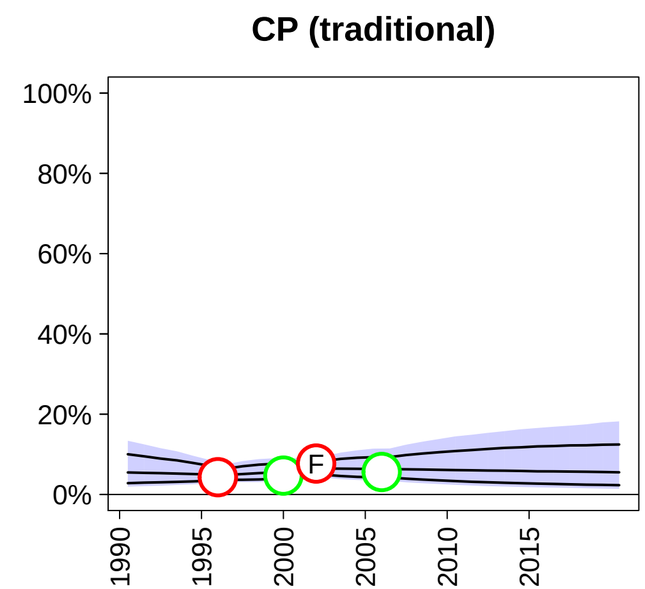
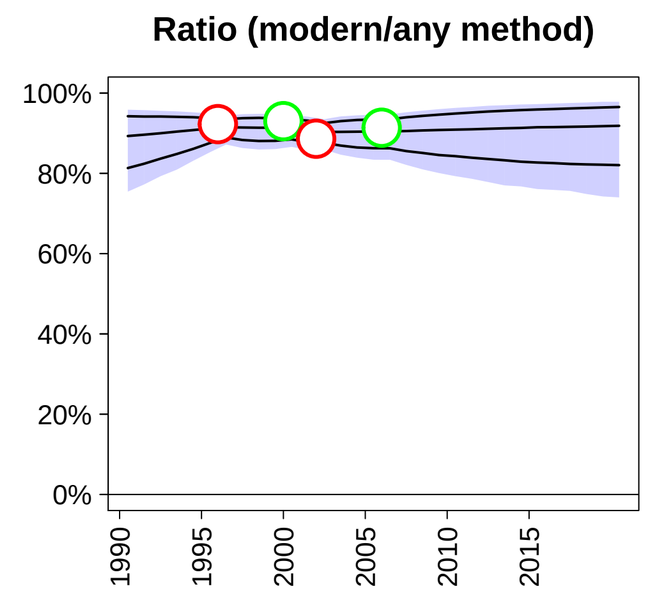
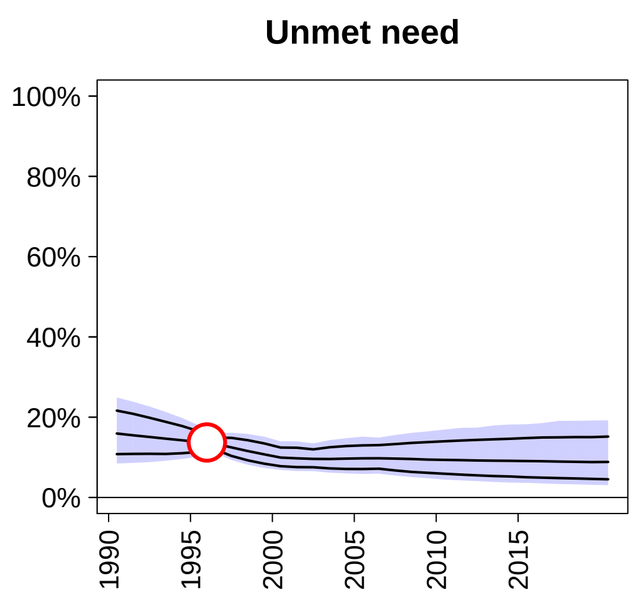
Uzbekistan (Central Asia)

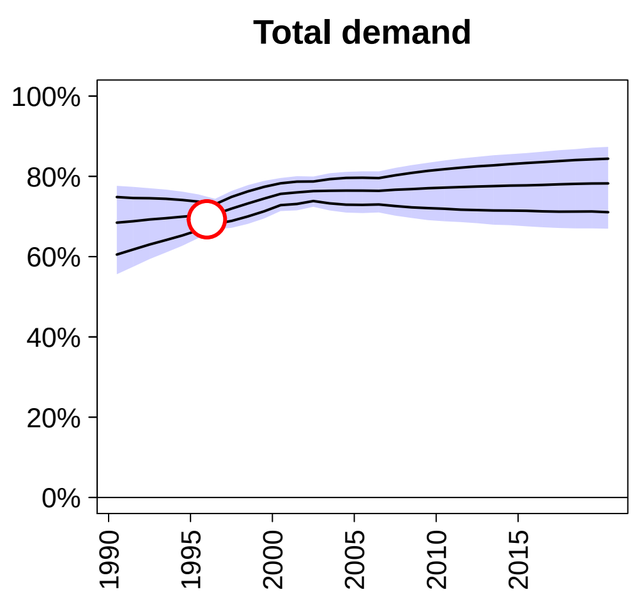


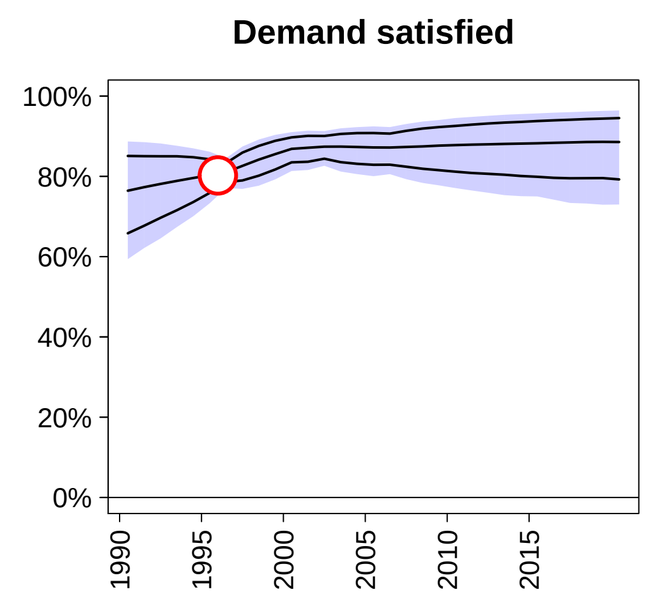












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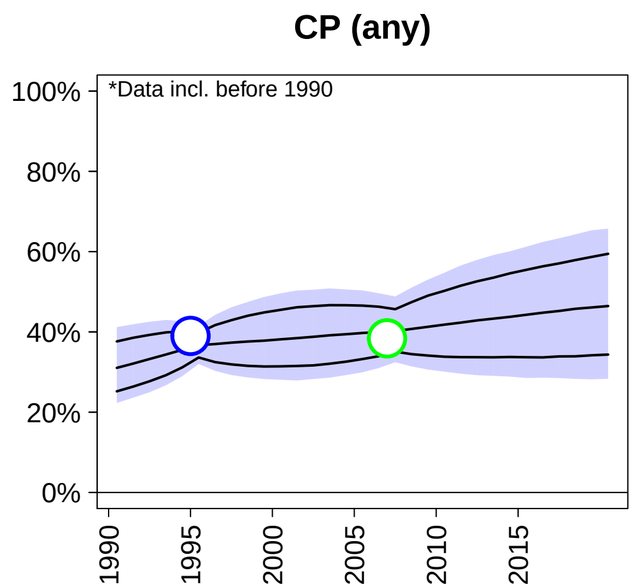
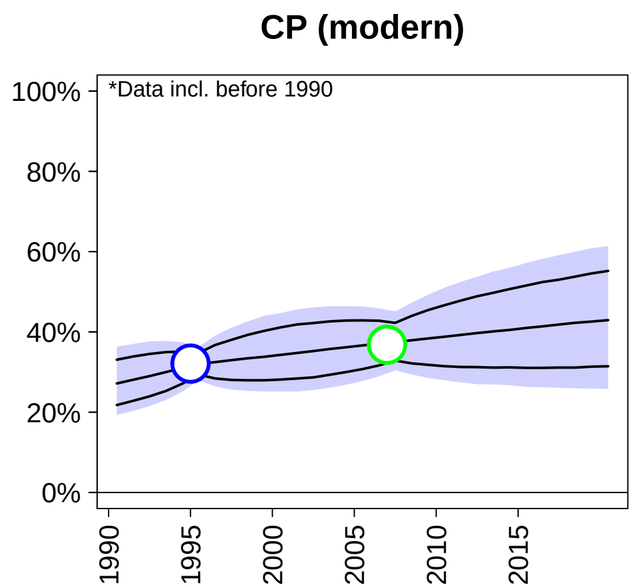
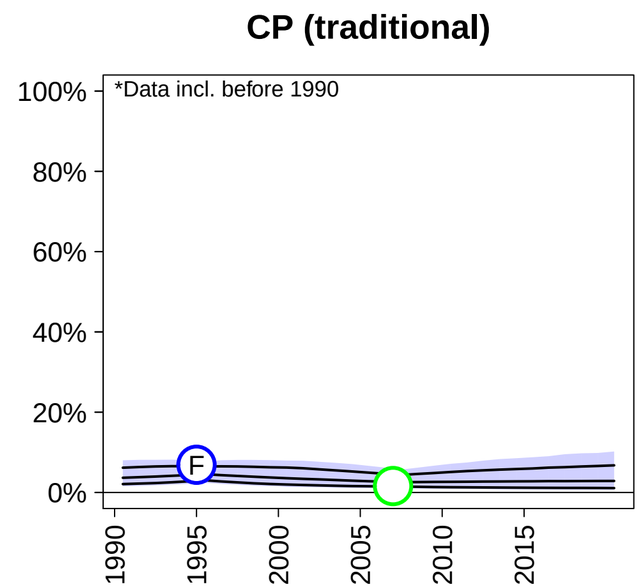
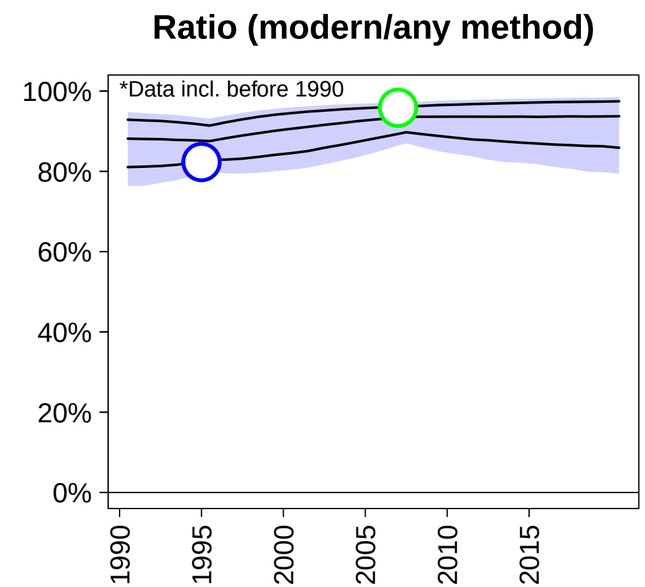
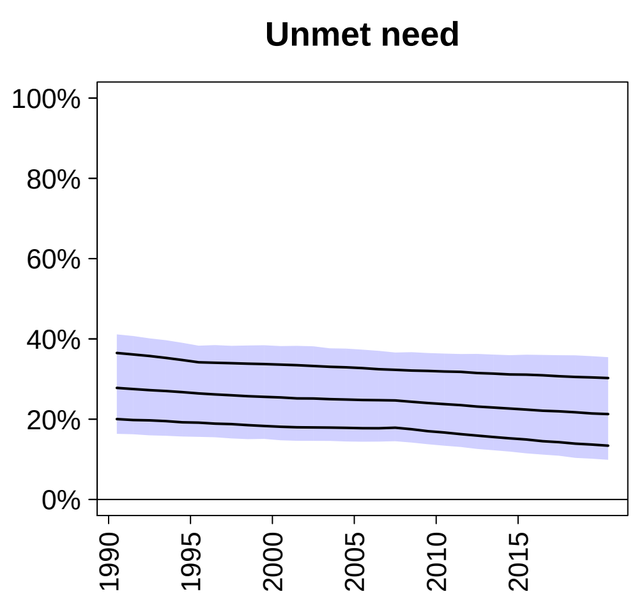
Vanuatu (Melanesia)

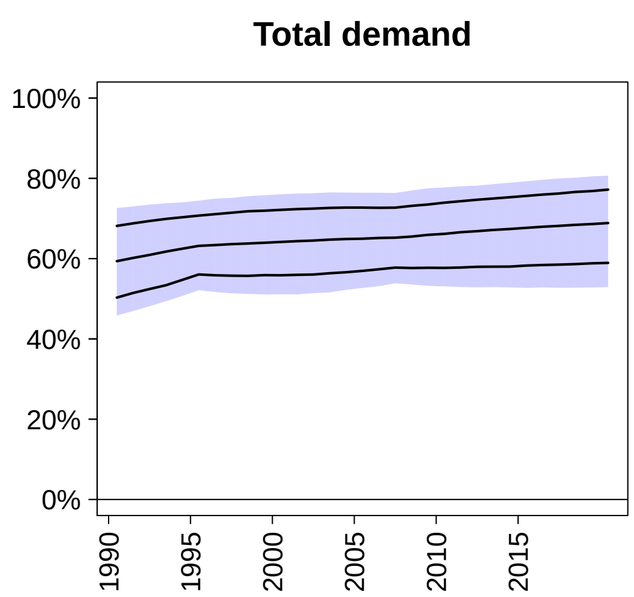


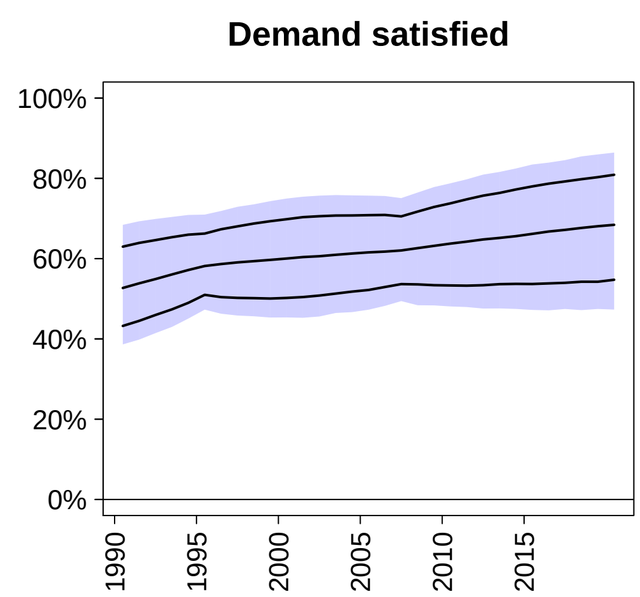












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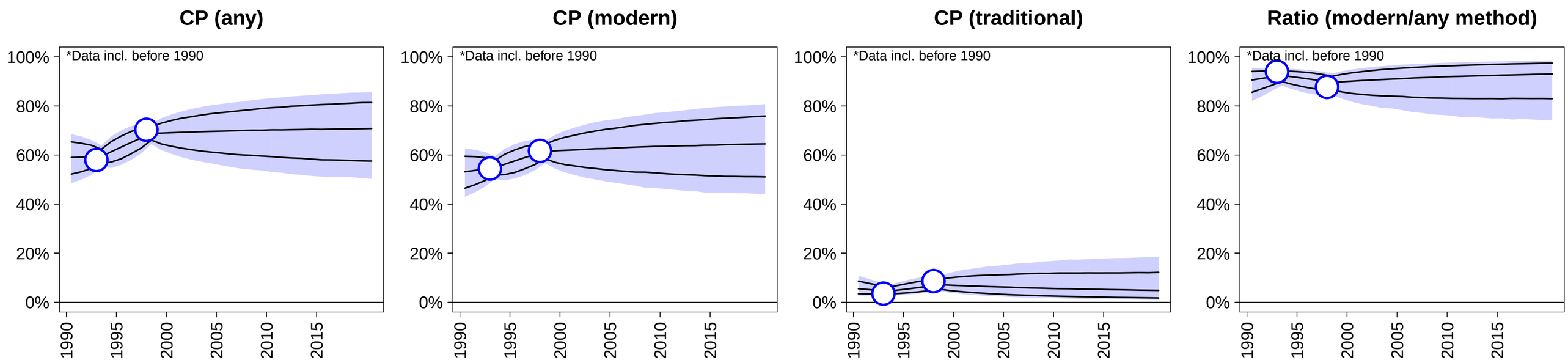
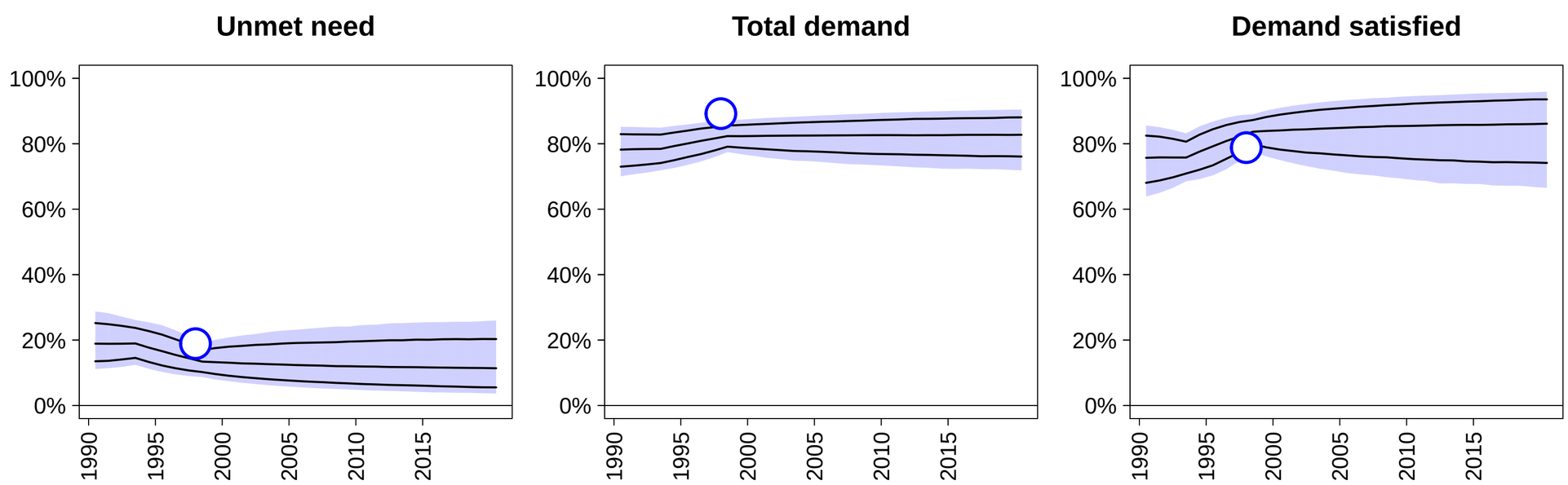
Venezuela (Bolivarian Republic of) (South America)





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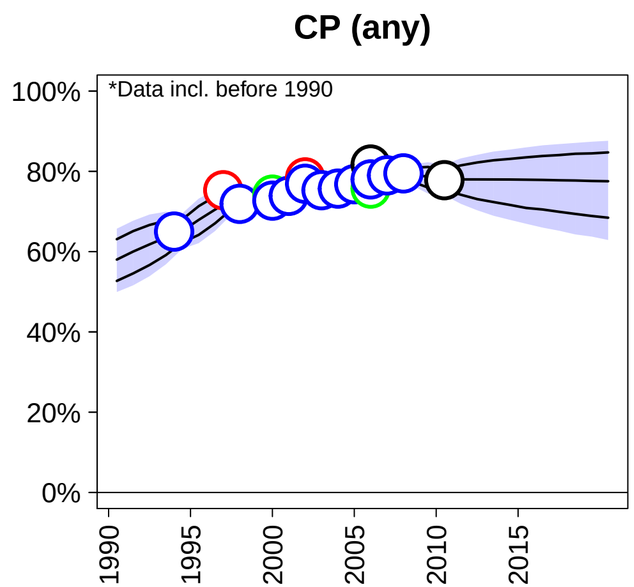
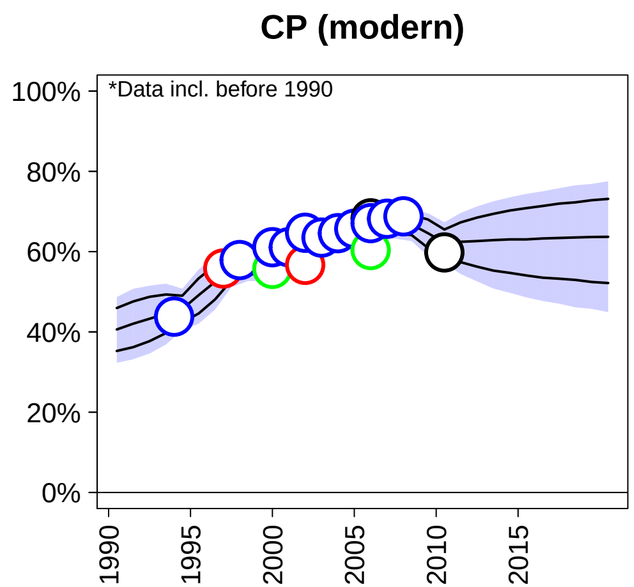
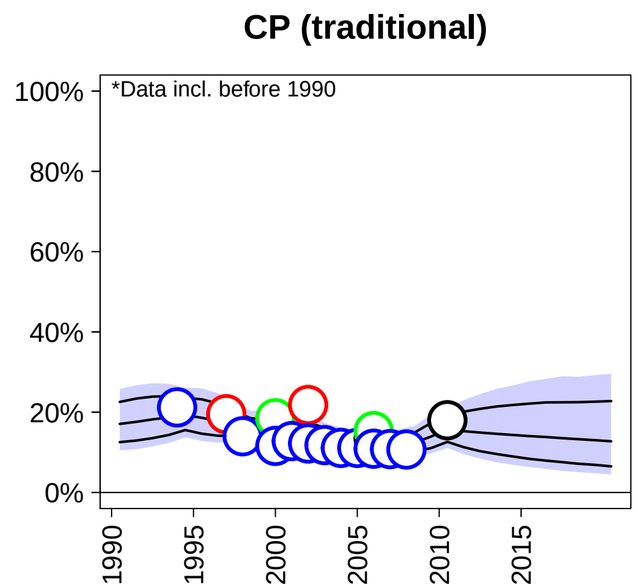
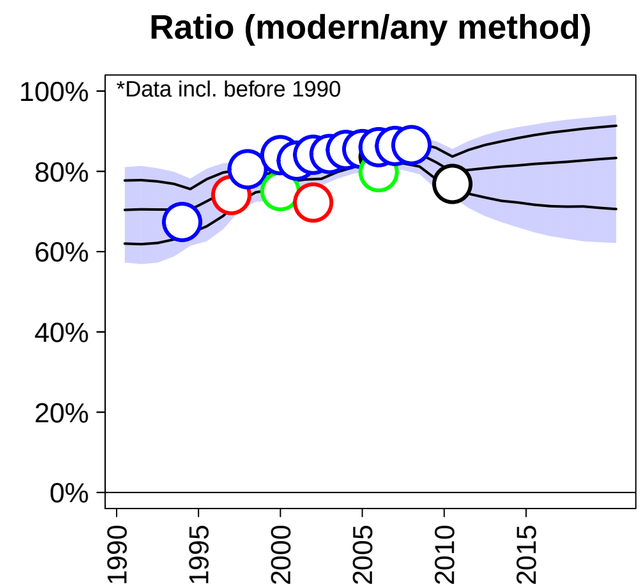
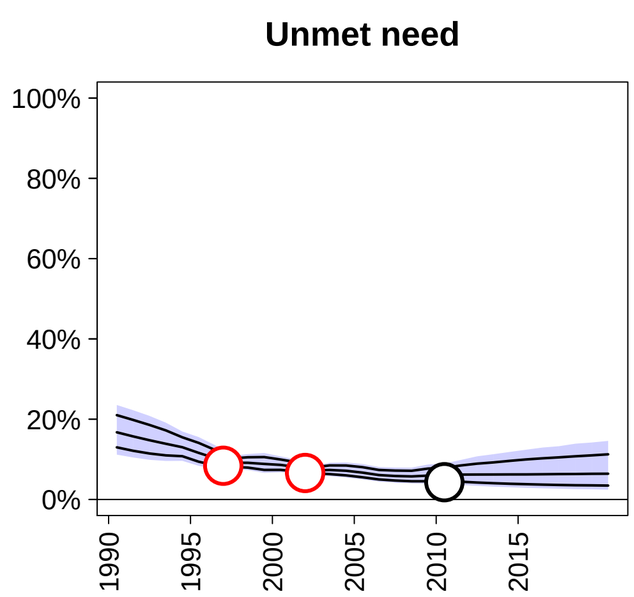
Viet Nam (South−Eastern Asia)

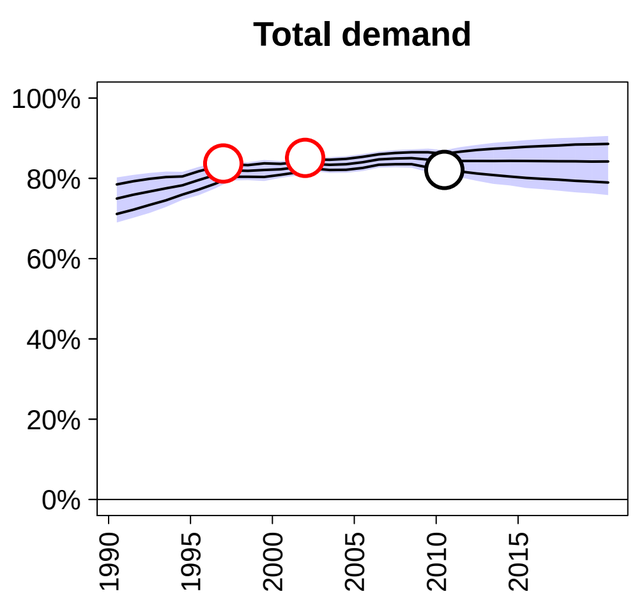


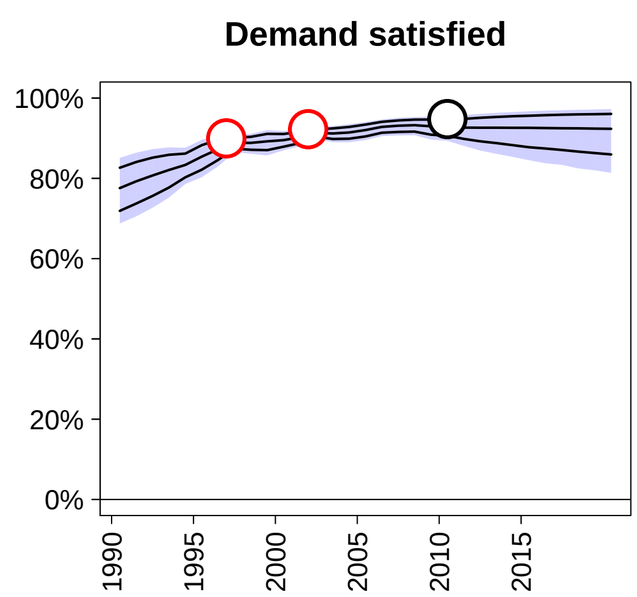












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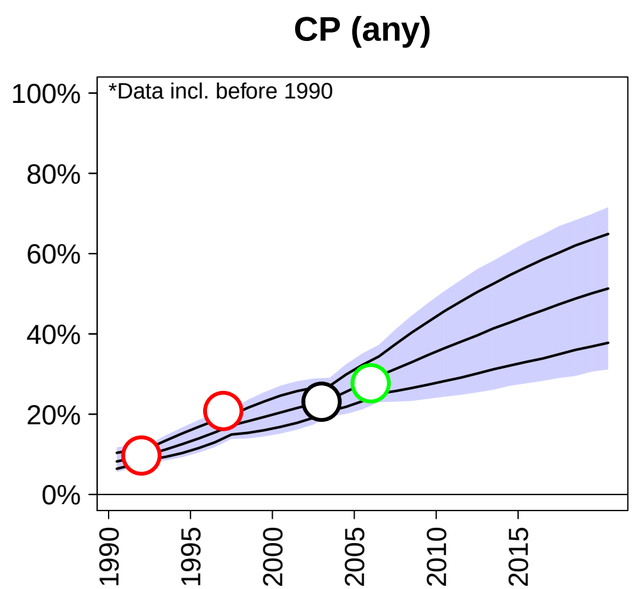
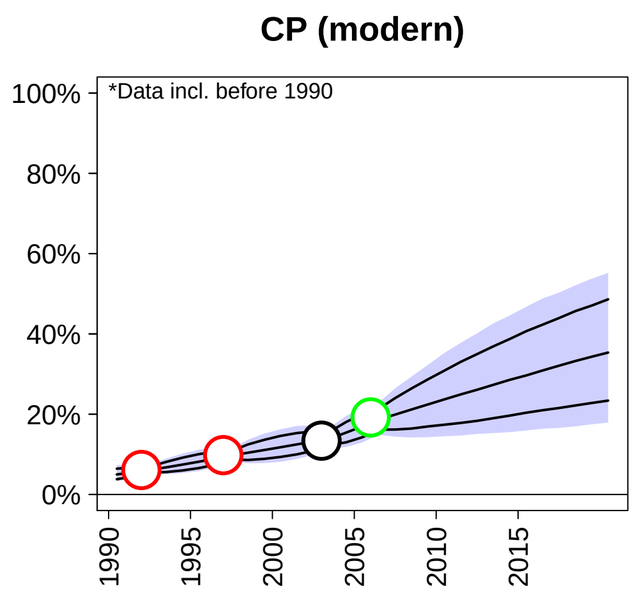
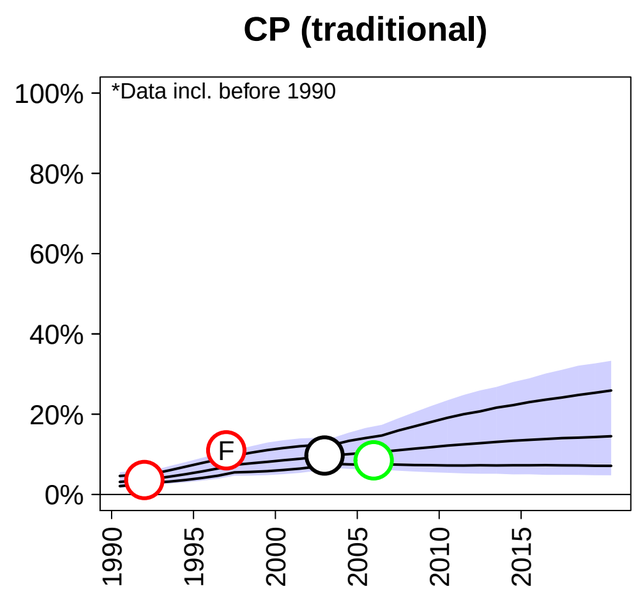
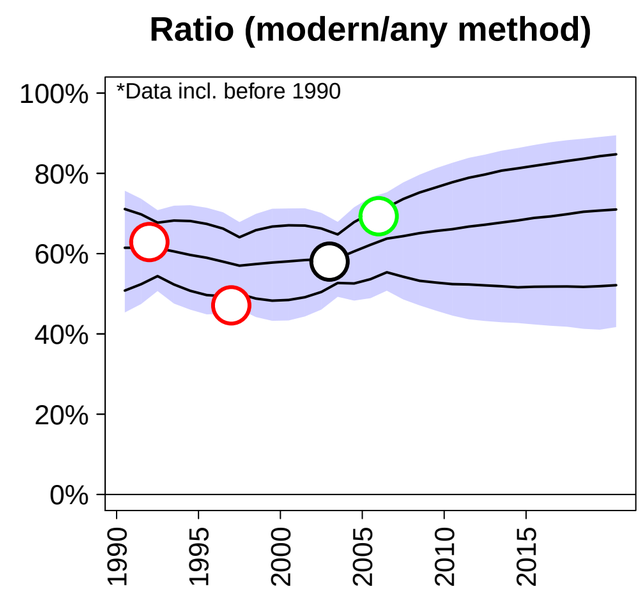
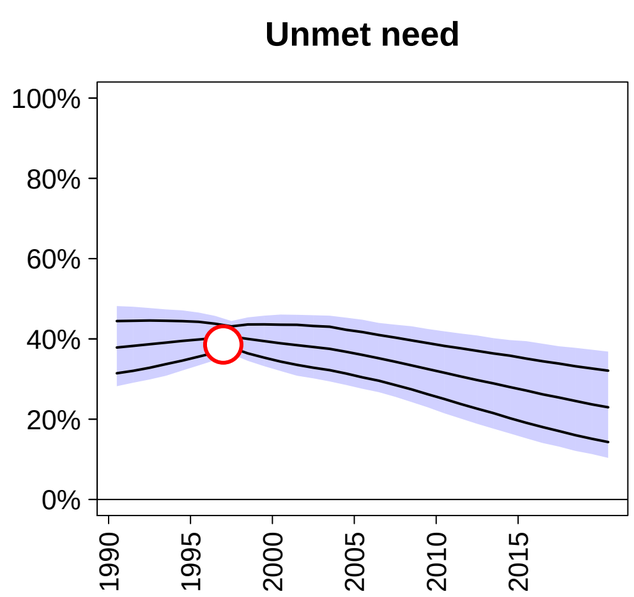
Yemen (Western Asia)

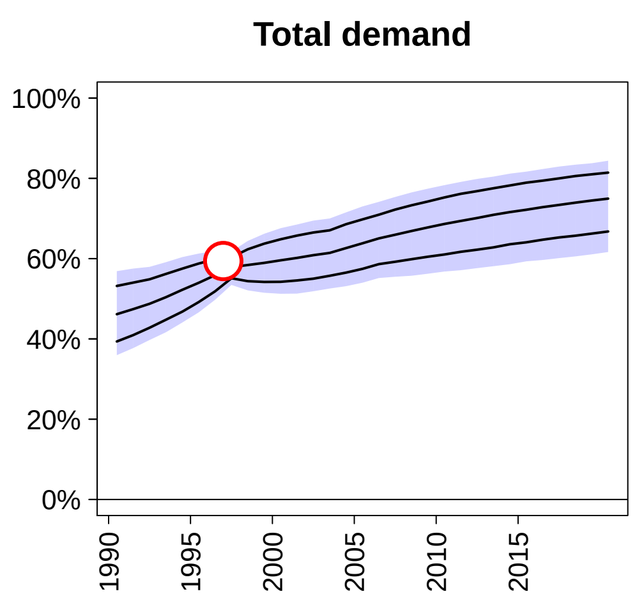


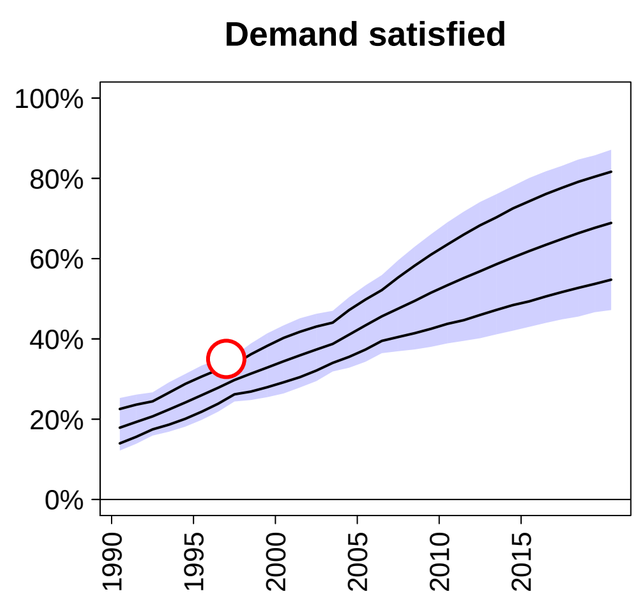












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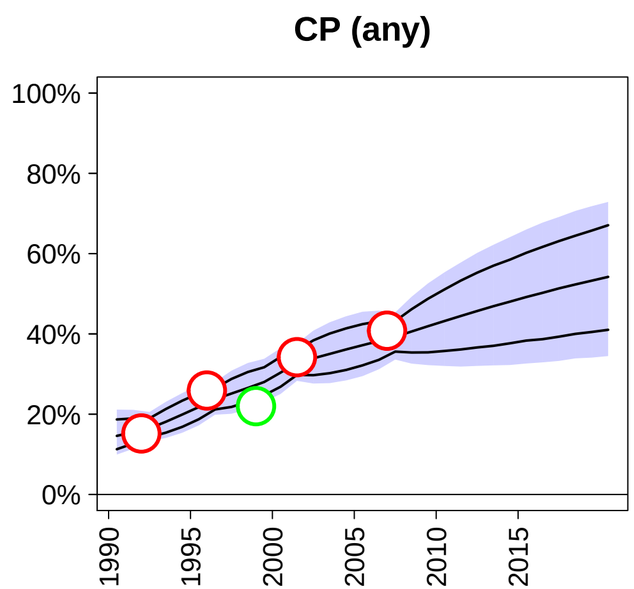
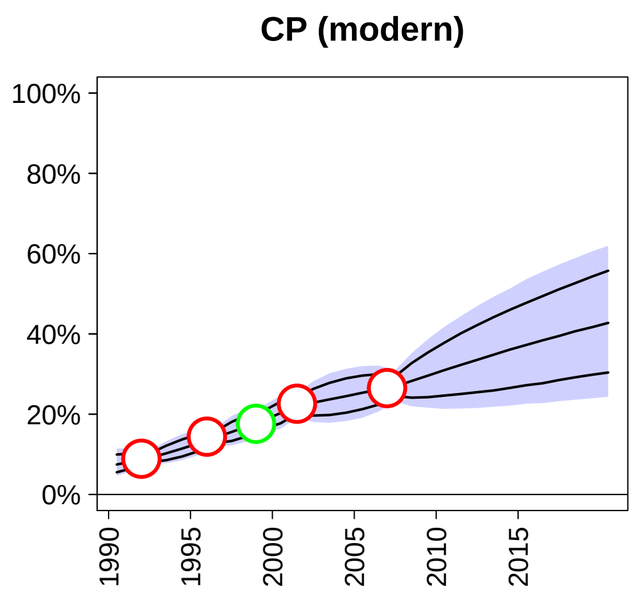
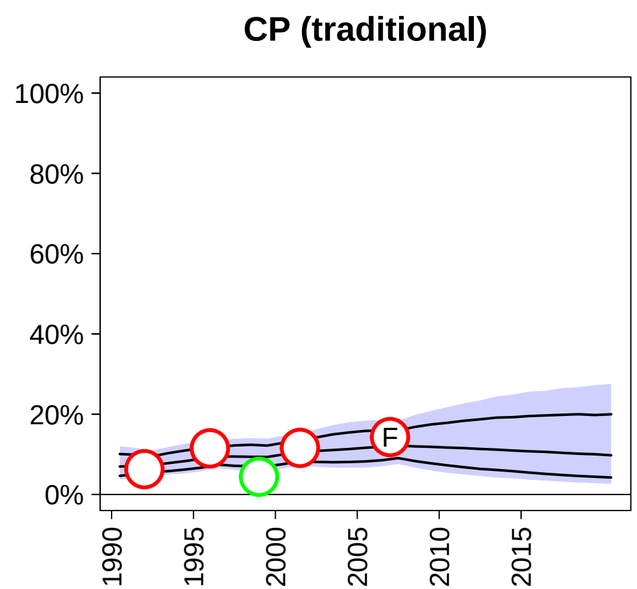
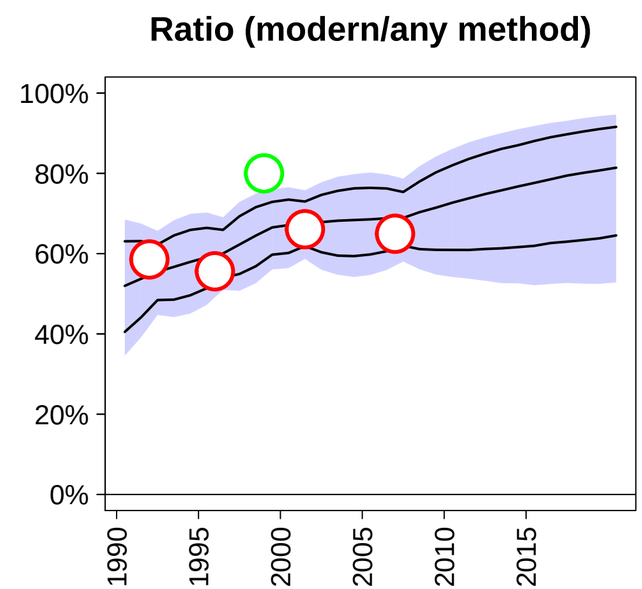
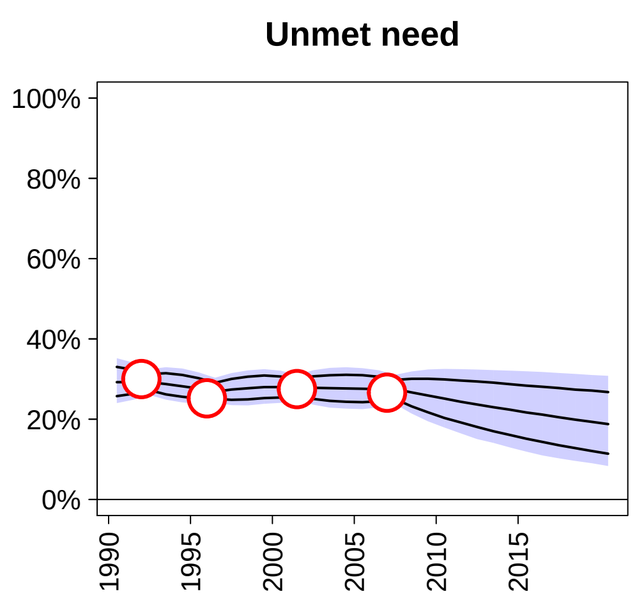
Zambia (Eastern Africa)

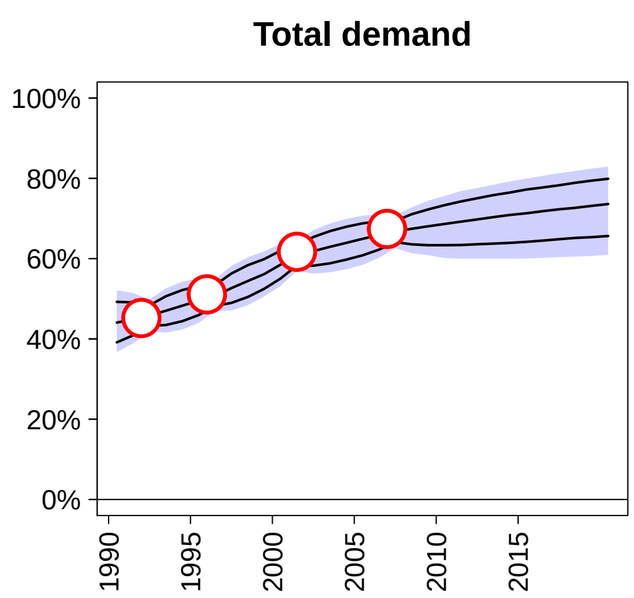


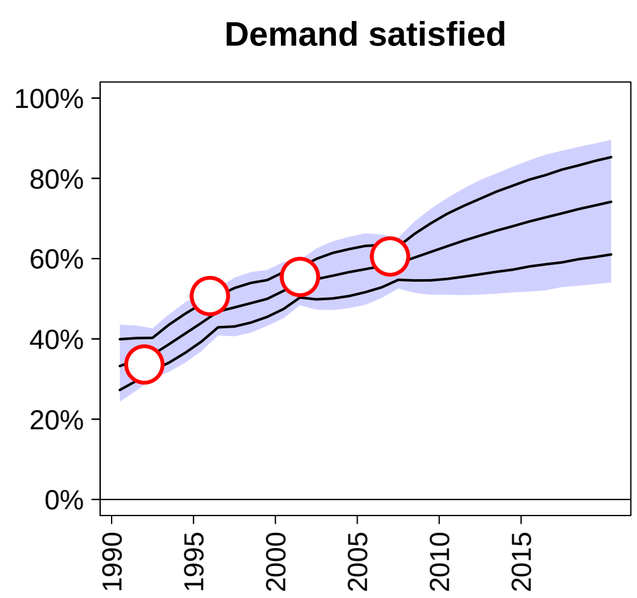












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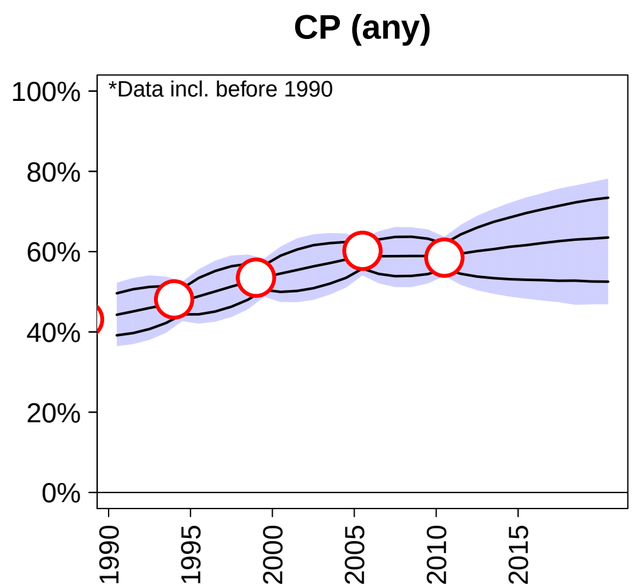
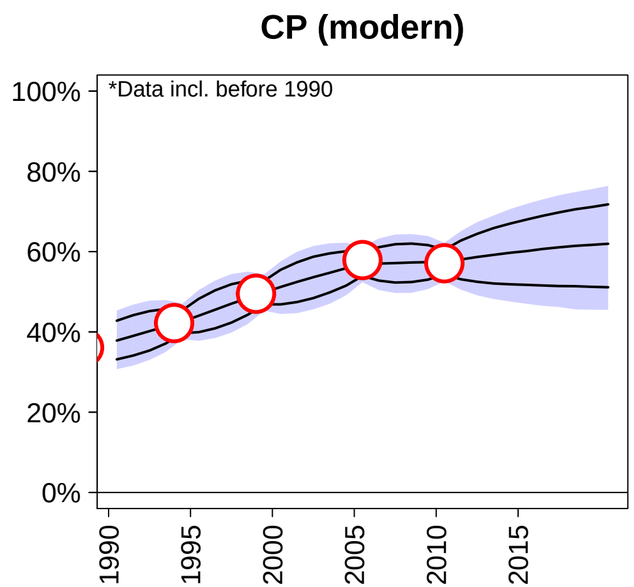
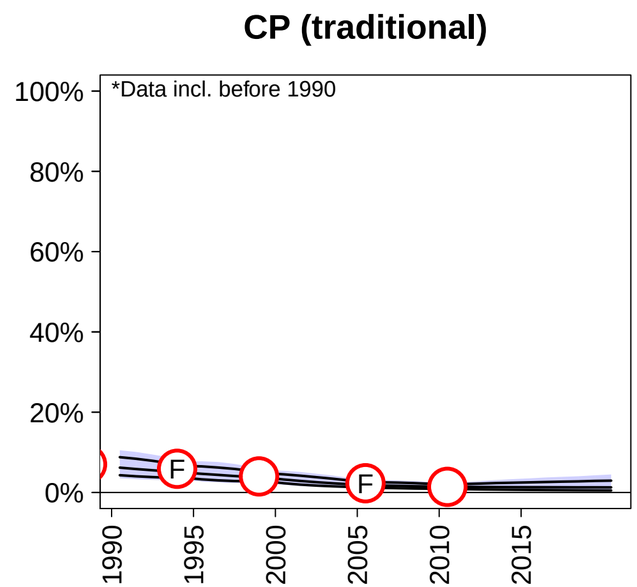
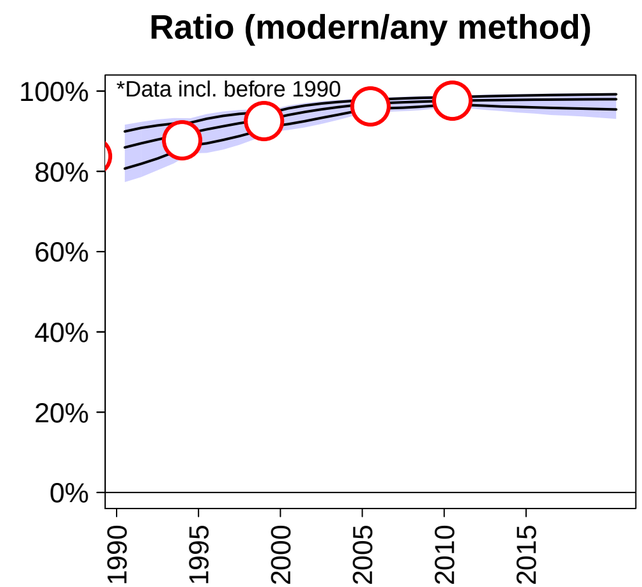
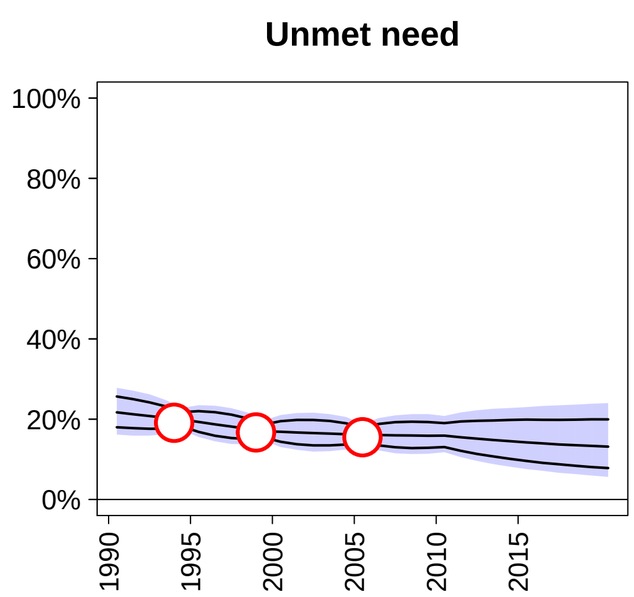
Zimbabwe (Eastern Africa)

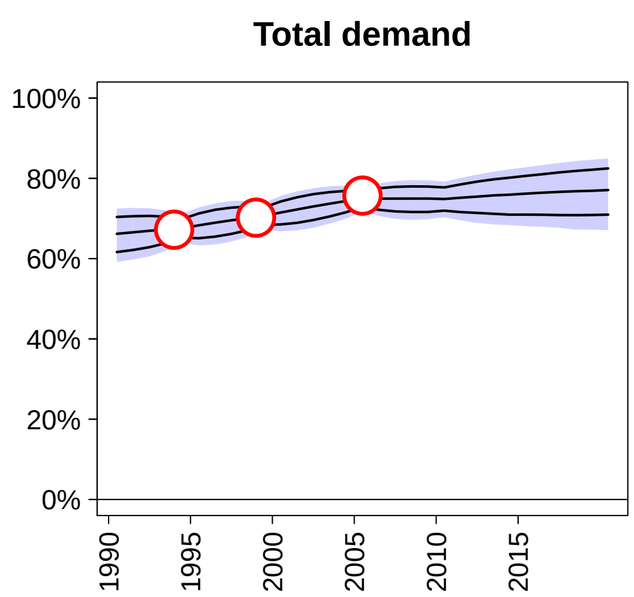


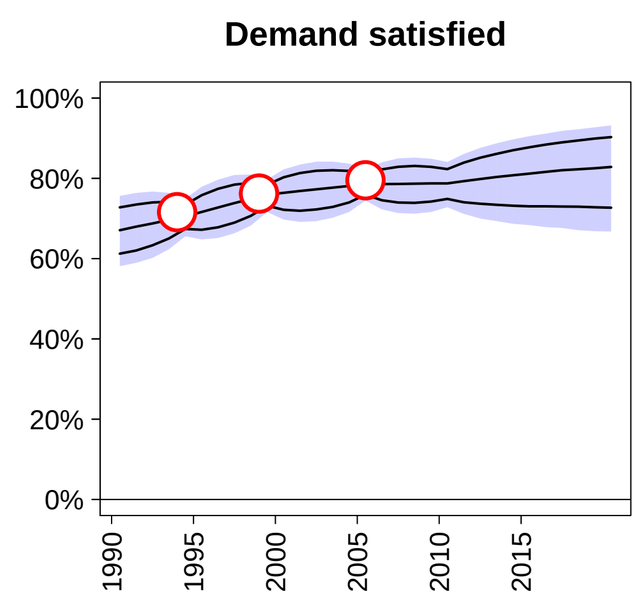












- DHS
- MICS
- Other international survey
- National survey

- Subpopulation

+: Higher contraceptive use
−: Lower contraceptive use
A: Other age group
F: Folk methods included
S−: Sterilization included
S+: Sterilization excluded

- Married women
- Sexually active women
- Ever married/All women
- Both sexes and husband/wives