

# SDG 7.1.2 Methodology



**Proportion of population with primary reliance on clean fuels and technologies.**

November 2021

# SDG 7.1.2 Clean fuels and technologies

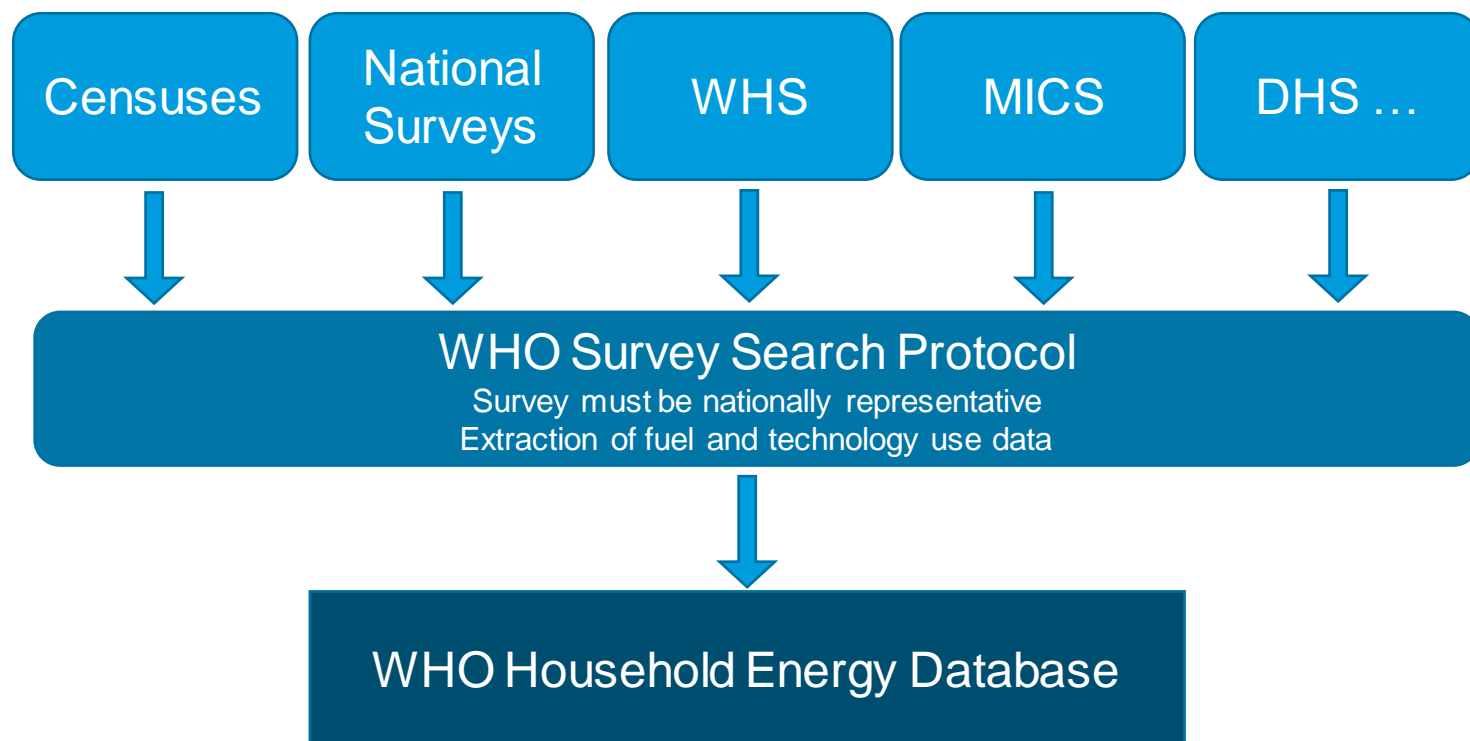
# Definition and Concept

Target	Indicator
7.1 By 2030, ensure universal access to affordable, reliable and modern energy services	7.1.2: Proportion of population with primary reliance on clean fuels and technology

- ❑ WHO is the custodian agency for access to clean fuels and technology.
- ❑ Proportion of population with primary reliance on clean fuels and technology is calculated as the number of people using clean fuels and technologies for cooking, heating and lighting divided by total population reporting any cooking, heating or lighting, expressed as percentage.
- ❑ “Clean” is defined by the emission rate targets and specific fuel recommendations (i.e., against unprocessed coal and kerosene) included in the normative guidance WHO guidelines for indoor air quality: household fuel combustion.
- ❑ Data regarding the tracking of SDG 7 is available at <https://trackingsdg7.esmap.org>

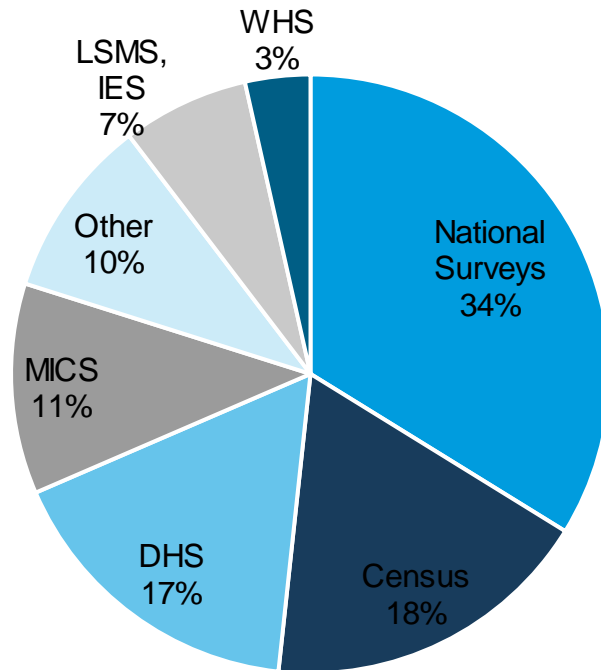
# Data Collection

Cooking, heating, and lighting fuel and technology use data is collected yearly. Data sources include National Statistical Offices, censuses and national surveys, among others. All collected data is housed in the [WHO Household Energy Database](#).



# WHO Household Energy database

Survey source distribution  
(1960-2020)



- ❑ The cooking fuel and technology portion of the database contains 1440 surveys taken in 170 countries between 1960 and 2020.
- ❑ Data includes low-, middle- and high-income countries
- ❑ 21% of the surveys cover the years 2014 to 2019.
- ❑ 88 surveys cover the years 2017 to 2019.

# Data Sources

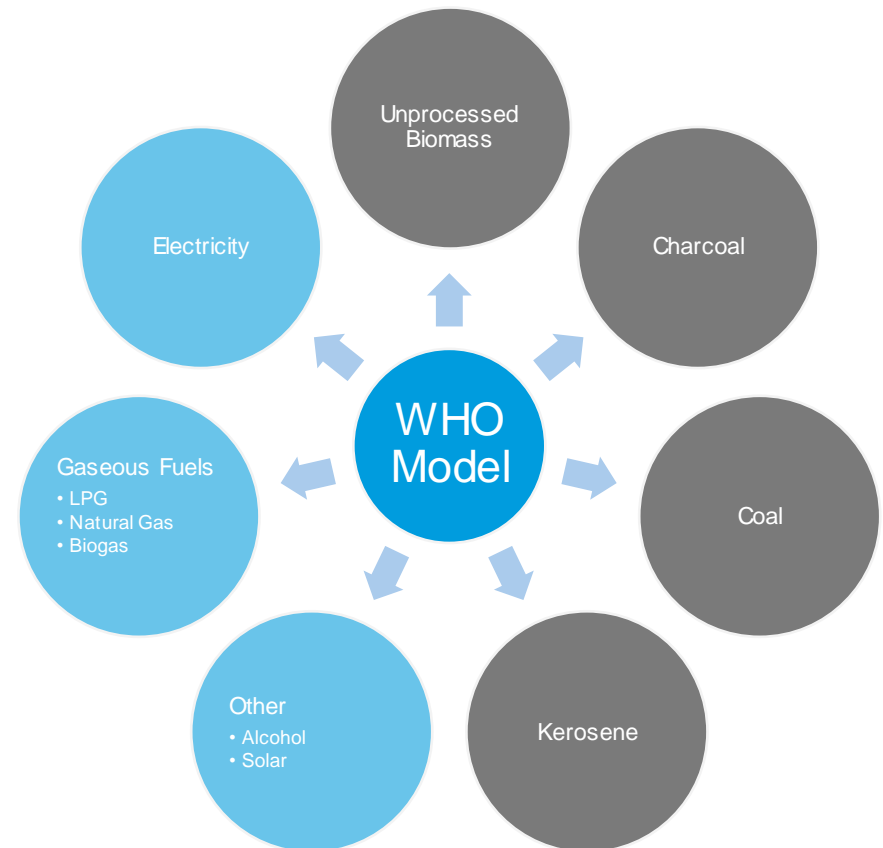
Name	Entity	Number of unique countries	Distribution of data sources (in %)	Question
Census	National statistical agencies	109	17.8	What is the main source of cooking fuel in your household?
Demographic and Health Survey (DHS)	Funded by USAID; implemented by ICF International	81	16.7	What type of fuel does your household mainly use for cooking?
Living Standard Measurement Survey, income expenditure survey, or other national surveys	National statistical agencies, supported by the World Bank	48	6.8	Which is the main source of energy for cooking?
Multi-indicator cluster survey	UNICEF	87	11.3	What type of fuel does your household mainly use for cooking?
Survey on global AGEING (SAGE)	WHO	7	0.6	
World Health Survey	WHO	50	3.5	
National survey		107	33.6	
Other		80	9.7	

# Methodological considerations

- ❑ Global access is tracked by surveying proportions of the population that rely mainly or primarily on clean fuels and technologies.
- ❑ Cooking, heating, and lighting represent a large share of household fuel use in low- and middle-income countries. Particularly, cooking and heating are activities that typically rely on polluting fuels (solid fuels or kerosene) paired with inefficient technologies.
- ❑ For practical purposes, indicator 7.1.2 relies on the type of primary fuels and technologies used for cooking, heating, and lighting as a surrogate to estimate human exposure to indoor air pollution and its related disease burden.
- ❑ Currently the indicator is based on the main type of fuel and technology used for cooking as cooking occupies the larger share of overall household energy needs.
- ❑ Limitations arise as many households use more than one type of fuel or stove for cooking, heating and lighting. If clean and polluting fuels are combined, any benefit provided by the clean fuels will be negated when used in combination with polluting fuels.
- ❑ Surveys are an essential tool to monitor household fuel use. The data collected offers a good starting point for tracking household energy access, however, a survey enhancement process has been carried out by WHO in cooperation with World Bank and the Global Alliance for Clean Cook stoves. The efforts resulted in the creation of 6 new survey questions that will expand on the current set of questions commonly used on national multipurpose surveys.

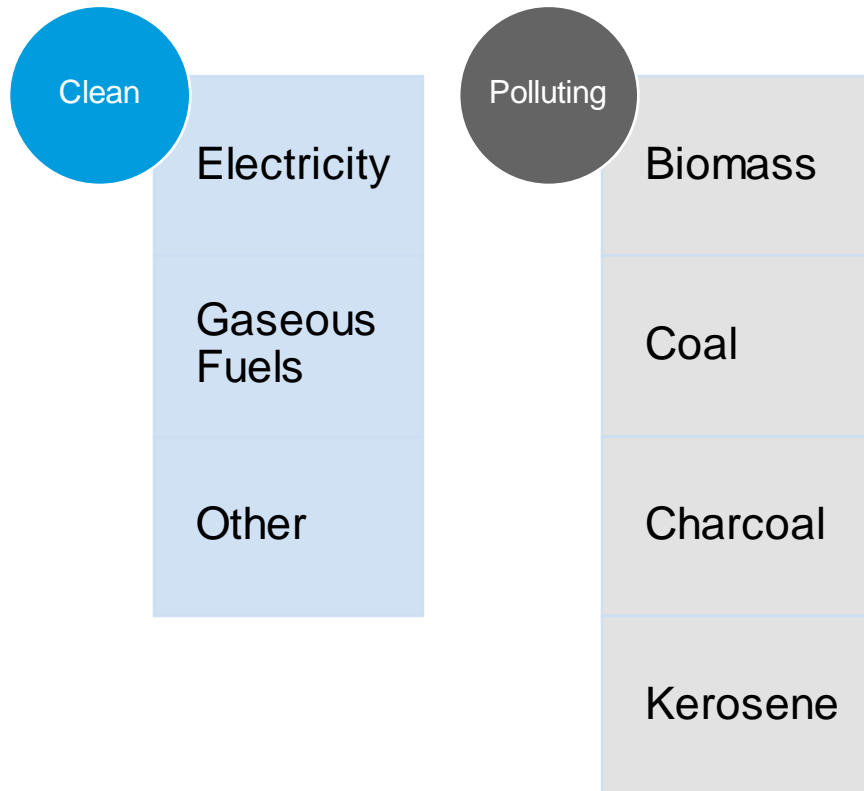
# Model

- ❑ Since surveys are conducted irregularly, estimates of cooking fuel use are obtained using a multivariate hierarchical model
- ❑ The model predicts fuel use for 6 specific fuel types: biomass, charcoal, coal, kerosene, electricity, gaseous fuels, and other clean fuels
- ❑ Estimates for the total, urban and rural population for given country and year are produced
- ❑ Population data from the United Nations Population Division (2019 version) is used to derive the population-weighted regional and global aggregates





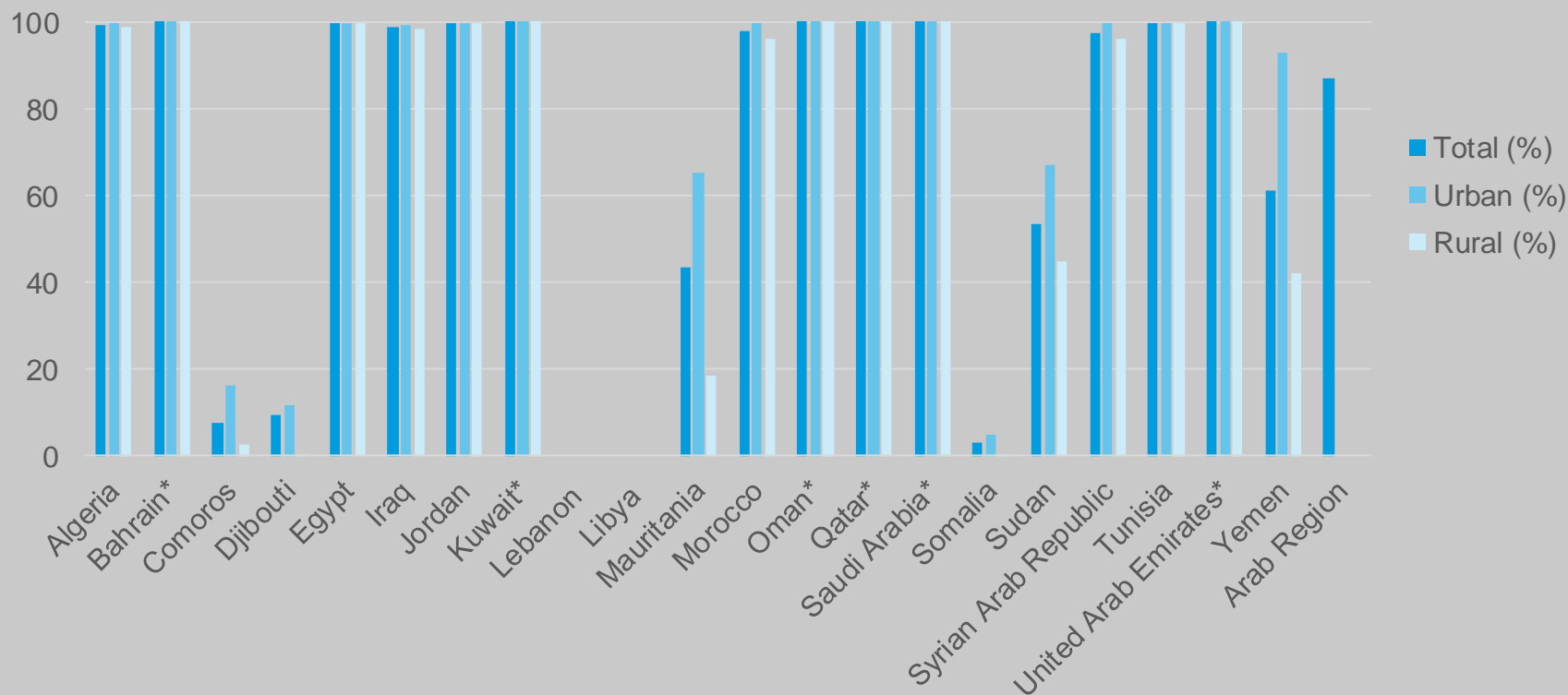
# Output estimates



- ❑ Indicator 7.1.2 is calculated by aggregating estimates on clean fuel types (electricity, gaseous fuels, and other) from the model
- ❑ Low- and middle-income countries estimates are only provided if there is underlying survey data on cooking fuels
- ❑ High-income countries are assumed to have transitioned to clean fuels
- ❑ Estimates produced are validated with UN Regional Commissions annually

# Access rate in Arab region

Percent of the population with access to clean cooking fuels and technologies for year 2019



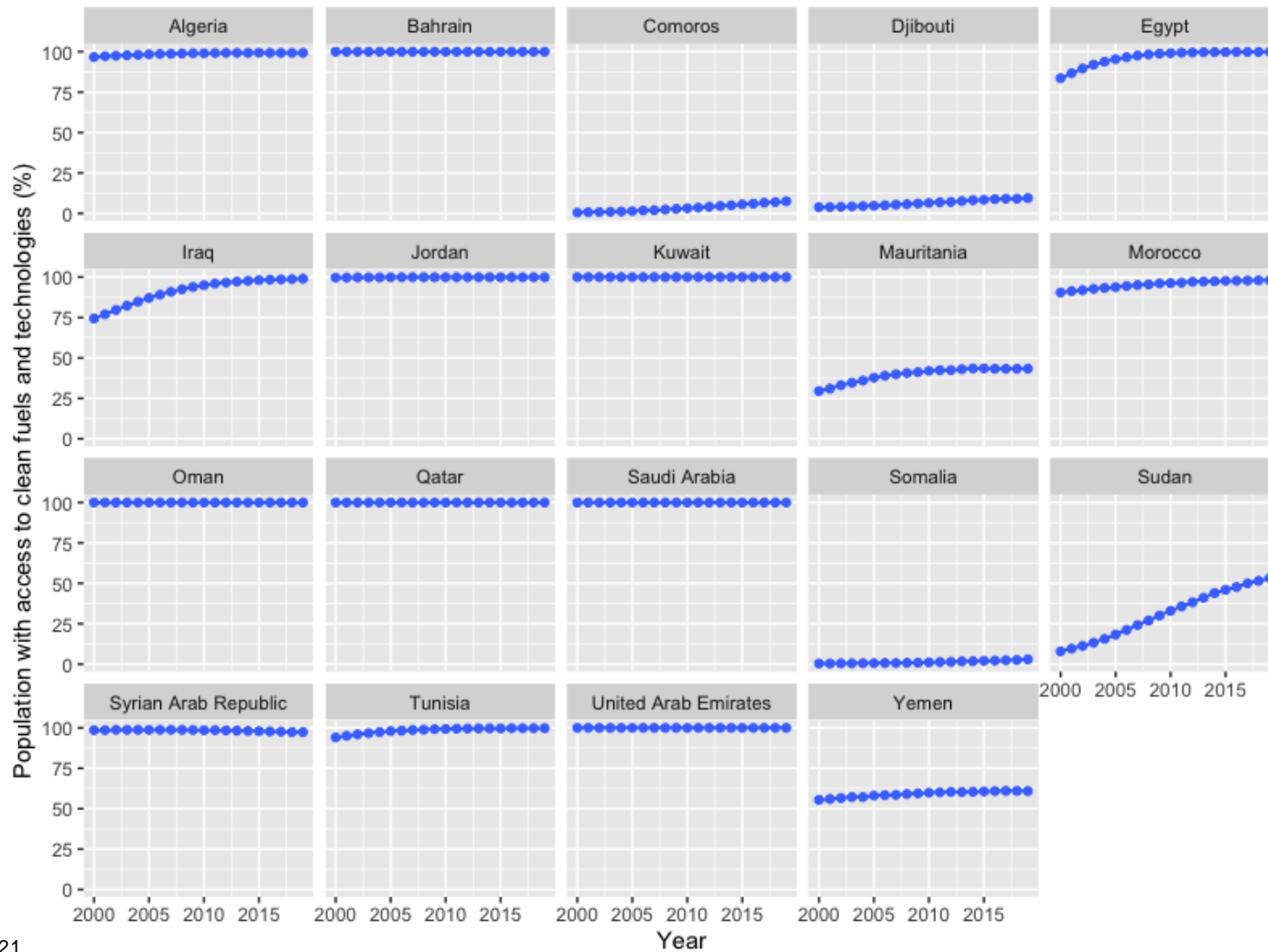
\*High Income Country, access to clean fuels assumed to be 100%

Source: WHO, 2021

# Number of surveys

Country	Income Group	Number of surveys available
Algeria	Lower middle income	4
Bahrain	High income	0
Comoros	Lower middle income	4
Djibouti	Lower middle income	5
Egypt, Arab Rep.	Lower middle income	10
Iraq	Upper middle income	6
Jordan	Upper middle income	10
Kuwait	High income	0
Lebanon	Upper middle income	0
Libya	Upper middle income	0
Mauritania	Lower middle income	12
Morocco	Lower middle income	4
Oman	High income	1
Qatar	High income	4
Saudi Arabia	High income	7
Somalia	Low income	4
Sudan	Low income	10
Syrian Arab Republic	Low income	1
Tunisia	Lower middle income	11
United Arab Emirates	High income	1
Yemen, Rep	Low income	3

# Model estimates for Arab region



# Thank you

