

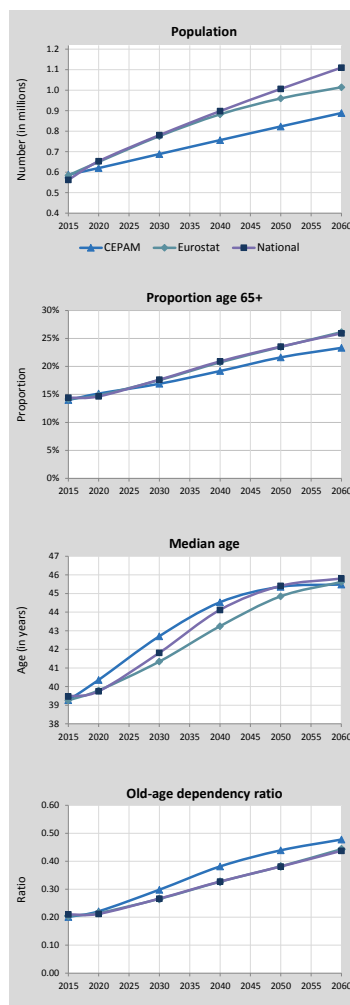
# Luxembourg

## Detailed Human Capital projections to 2060

### Comparison of CEPAM projections with other sources

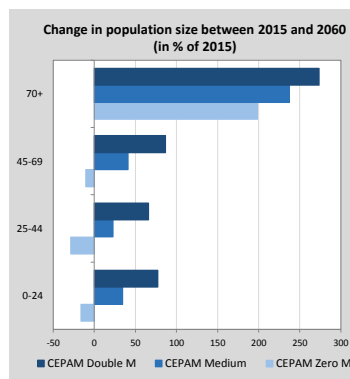
Demographic indicators - CEPAM Medium Scenario (SSP2), Eurostat and national projections		2015	2020	2030	2040	2050	2060
Population (in millions)	CEPAM	0.57	0.60	0.67	0.73	0.80	0.87
	Eurostat	0.56	0.63	0.75	0.86	0.94	0.99
	National	0.54	0.63	0.76	0.88	0.98	1.09
Proportion age 65+	CEPAM	14.0%	15.2%	16.9%	19.2%	21.6%	23.3%
	Eurostat	14.2%	14.8%	17.6%	20.7%	23.5%	26.1%
	National	14.4%	14.6%	17.6%	20.9%	23.5%	25.9%
Proportion below age 20	CEPAM	22.4%	21.7%	21.7%	20.9%	20.2%	20.3%
	Eurostat	22.4%	21.5%	21.4%	21.1%	20.2%	19.9%
	National	22.9%	21.5%	21.3%	20.5%	19.6%	19.6%
Median age	CEPAM	39.3	40.4	42.7	44.5	45.4	45.5
	Eurostat	39.3	39.8	41.3	43.2	44.8	45.6
	National	39.5	39.7	41.8	44.1	45.4	45.8
Old-age dependency ratio (65+/15-64)	CEPAM	0.20	0.22	0.30	0.38	0.44	0.48
	Eurostat	0.21	0.22	0.27	0.33	0.38	0.44
	National	0.21	0.21	0.27	0.33	0.38	0.44
Young-age dependency ratio (0-14/15-64)	CEPAM	0.24	0.24	0.26	0.25	0.26	0.27
	Eurostat	0.24	0.24	0.25	0.25	0.24	0.25
	National	0.25	0.24	0.25	0.24	0.24	0.25
Parent support ratio (85+/50-64)	CEPAM	0.10	0.10	0.11	0.17	0.28	0.39
	Eurostat	0.10	0.11	0.12	0.15	0.22	0.29
	National	0.09	0.10	0.10	0.14	0.20	0.26

Demographic assumptions underlying projections		2010-2015	2015-2020	2025-2030	2035-2040	2045-2050	2055-2060
Total fertility rate	CEPAM	1.63	1.70	1.72	1.78	1.80	1.81
	Eurostat	1.50	1.55	1.56	1.59	1.62	1.65
	National	1.53	1.59	1.62	1.66	1.69	1.71
Life expectancy at birth (in years)							
Male	CEPAM	79.8	80.9	81.9	83.9	86.0	88.0
	Eurostat	79.5	80.4	81.1	82.5	83.8	85.0
	National	80.8	81.5	82.3	83.7	84.9	86.3
Female	CEPAM	84.1	85.2	86.2	88.2	90.3	92.4
	Eurostat	84.9	85.6	86.3	87.5	88.7	89.7
	National	85.2	85.8	86.5	87.8	88.9	90.3
Five-year net migration flow (in thousands)	CEPAM	19.4	20.5	21.6	23.3	24.6	25.4
	Eurostat	53.8	49.7	46.1	33.0	28.0	23.0
	National	53.7	49.3	47.0	44.6	45.0	46.9



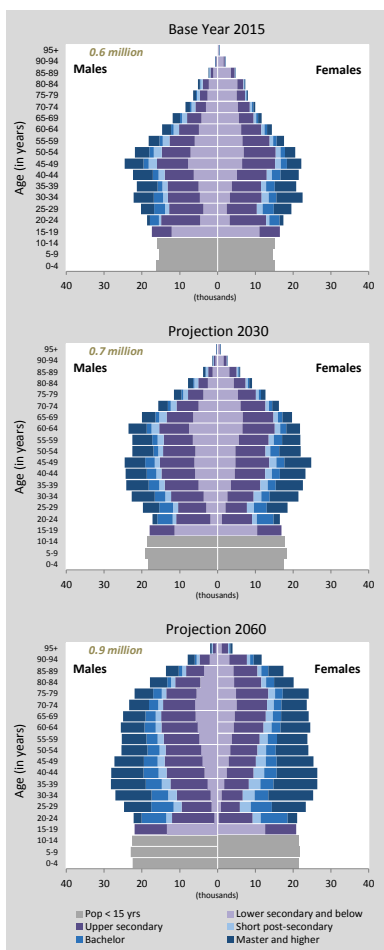
### Changes in population size and structure according to CEPAM scenarios (impact of migration)

Population size according to CEPAM projections to 2060		2015	2020	2030	2040	2050	2060
Population (in millions)	Zero M	0.57	0.58	0.59	0.60	0.60	0.58
	Medium	0.57	0.60	0.67	0.73	0.80	0.87
	Double M	0.57	0.62	0.74	0.86	0.99	1.11
Population 0-24 (in millions)	Zero M	0.16	0.16	0.16	0.15	0.14	0.14
	Medium	0.16	0.17	0.18	0.19	0.20	0.22
	Double M	0.16	0.17	0.20	0.23	0.26	0.29
Population 25-44 (in millions)	Zero M	0.17	0.16	0.14	0.13	0.13	0.12
	Medium	0.17	0.17	0.18	0.18	0.19	0.21
	Double M	0.17	0.19	0.21	0.23	0.25	0.28
Population 45-69 (in millions)	Zero M	0.18	0.19	0.21	0.20	0.18	0.16
	Medium	0.18	0.20	0.22	0.23	0.24	0.25
	Double M	0.18	0.20	0.24	0.27	0.31	0.33
Population 70+ (in millions)	Zero M	0.06	0.06	0.09	0.13	0.15	0.17
	Medium	0.06	0.06	0.09	0.13	0.16	0.19
	Double M	0.06	0.06	0.09	0.13	0.17	0.21



# Luxembourg (Continued)

Pyramids by education, CEPAM Medium



Detailed Human Capital projections to 2060

Human Capital indicators, CEPAM Medium (SSP2)

	2015	2020	2030	2040	2050	2060
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**Population age 25+: highest educational attainment (columns sum to 100%)**

E1-E4 - lower secondary and below	31.5%	29.6%	25.7%	22.5%	19.2%	16.0%
E5 - upper secondary	36.3%	36.1%	36.0%	35.5%	34.5%	33.1%
E6 - short post-secondary	7.3%	7.3%	7.3%	7.4%	7.7%	8.1%
E7 - bachelor	7.1%	7.7%	8.8%	9.9%	11.1%	12.2%
E8 - master and higher	17.8%	19.3%	22.2%	24.8%	27.6%	30.6%
Mean years of schooling (in years)	12.66	12.82	13.18	13.51	13.88	14.25

**Age gap: highest educational attainment (ratio 35-44/50-64)**

E1-E4 - lower secondary and below	0.66	0.64	0.74	0.70	0.61	0.54
E5 - upper secondary	0.97	0.99	0.99	0.96	0.94	0.90
E6 - short post-secondary	0.82	0.83	1.02	1.22	1.24	1.24
E7 - bachelor	1.70	1.60	1.32	1.25	1.24	1.24
E8 - master and higher	1.76	1.62	1.23	1.19	1.24	1.24
Mean years of schooling (35-44 minus 50-64)	1.59	1.36	0.87	0.96	1.20	1.22

**Gender gap (population age 25+): highest educational attainment (ratio male/female)**

E1-E4 - lower secondary and below	0.89	0.93	1.01	1.08	1.13	1.16
E5 - upper secondary	0.99	0.99	1.01	1.05	1.11	1.18
E6 - short post-secondary	1.36	1.23	1.04	0.91	0.81	0.75
E7 - bachelor	0.90	0.93	0.99	1.03	1.06	1.10
E8 - master and higher	1.16	1.08	0.96	0.89	0.84	0.80
Mean years of schooling (male minus female)	0.44	0.28	0.02	-0.17	-0.32	-0.43

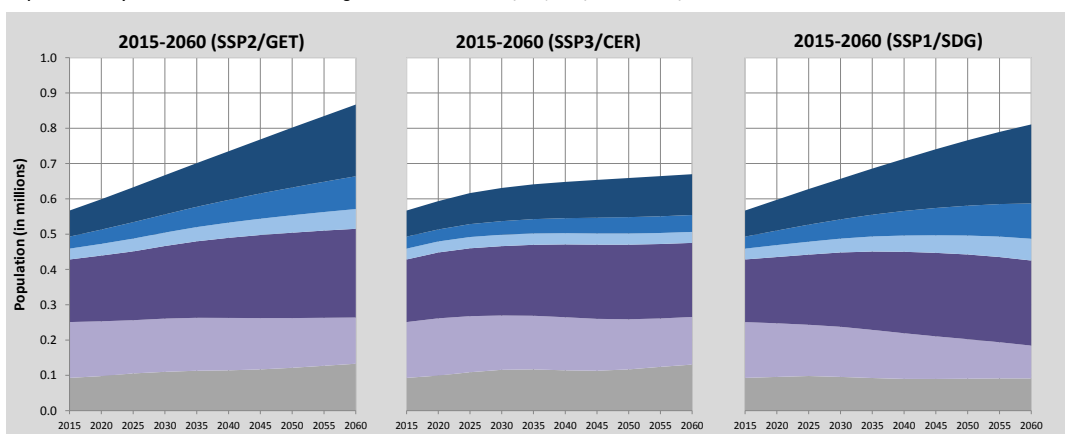
**Women age 20-39: highest educational attainment (columns sum to 100%)**

E1-E4 - lower secondary and below	16%	16%	12%	9%	6%	4%
E5 - upper secondary	42%	39%	36%	33%	30%	27%
E6 - short post-secondary	7%	8%	9%	10%	11%	12%
E7 - bachelor	13%	13%	16%	18%	19%	21%
E8 - master and higher	23%	24%	28%	30%	34%	36%
Mean years of schooling (in years)	13.98	14.00	14.44	14.83	15.25	15.58

**Age gap among women: highest educational attainment (ratio 35-44/50-64)**

E1-E4 - lower secondary and below	0.56	0.54	0.69	0.69	0.58	0.50
E5 - upper secondary	0.93	0.91	0.93	0.89	0.86	0.83
E6 - short post-secondary	1.08	1.16	1.29	1.29	1.26	1.25
E7 - bachelor	2.05	1.58	0.97	1.13	1.26	1.25
E8 - master and higher	2.20	2.03	1.42	1.25	1.26	1.25
Mean years of schooling (35-44 minus 50-64)	2.61	2.19	1.57	1.28	1.68	1.63

Population size by educational attainment according to three scenarios: SSP2/GET, SSP3/CER and SSP1/SDG



Colour legend as in pyramids above

**Education scenarios**

SSP2/GET : Global Education Trend Scenario (Medium assumption)

SSP3/CER : Constant Enrollment Rates Scenario (assumption of no future improvements)

SSP1/SDG : Sustainable Development Goal Scenario (universal primary and secondary education by 2030)

# Luxembourg (Continued)

## Alternative scenarios to 2100

### Projection results by scenario (SSP1-SSP3)

	2015	2020	2030	2050	2060	2075	2100
<b>Population (in millions)</b>							
SSP1 - Rapid Development	0.57	0.60	0.66	0.77	0.81	0.87	0.92
SSP2 - CEPAM Zero Migration	0.57	0.58	0.60	0.60	0.58	0.56	0.53
SSP2 - CEPAM Medium	0.57	0.60	0.67	0.80	0.87	0.97	1.14
SSP2 - CEPAM Double Migration	0.57	0.62	0.74	0.99	1.11	1.30	1.58
SSP3 - Stalled Development	0.57	0.59	0.63	0.66	0.67	0.69	0.77

### Proportion age 65+

SSP1 - Rapid Development	14.0%	15.3%	20.1%	29.8%	33.3%	37.8%	44.6%
SSP2 - CEPAM Zero Migration	14.0%	15.6%	21.3%	32.5%	34.5%	34.8%	38.0%
SSP2 - CEPAM Medium	14.0%	15.2%	19.2%	25.9%	27.4%	28.5%	32.4%
SSP2 - CEPAM Double Migration	14.0%	14.7%	17.6%	22.4%	24.4%	26.8%	31.9%
SSP3 - Stalled Development	14.0%	15.2%	19.5%	27.1%	27.2%	23.8%	23.1%

### Proportion below age 20

SSP1 - Rapid Development	22.4%	21.4%	19.8%	16.0%	15.3%	13.9%	12.4%
SSP2 - CEPAM Zero Migration	22.4%	21.7%	21.1%	18.5%	18.7%	18.2%	17.4%
SSP2 - CEPAM Medium	22.4%	21.7%	21.7%	20.2%	20.3%	19.8%	18.7%
SSP2 - CEPAM Double Migration	22.4%	21.7%	22.3%	21.1%	20.8%	20.2%	18.7%
SSP3 - Stalled Development	22.4%	22.1%	23.6%	23.5%	25.2%	26.3%	26.9%

### Proportion of women age 20-39 with post-secondary education

SSP1 - Rapid Development	38.2%	42.6%	51.6%	68.0%	74.1%	79.8%	83.3%
SSP2 - CEPAM Zero Migration	38.2%	43.2%	51.1%	61.9%	66.5%	71.3%	77.4%
SSP2 - CEPAM Medium	38.2%	41.2%	47.6%	57.6%	62.2%	67.4%	74.3%
SSP2 - CEPAM Double Migration	38.2%	39.5%	45.2%	55.5%	60.4%	65.9%	73.2%
SSP3 - Stalled Development	38.2%	33.9%	33.7%	32.6%	33.4%	32.4%	32.8%

### Mean years of schooling, age 25+

SSP1 - Rapid Development	12.7	12.9	13.3	14.3	14.8	15.4	16.2
SSP2 - CEPAM Zero Migration	12.7	13.0	13.5	14.4	14.8	15.4	16.1
SSP2 - CEPAM Medium	12.7	12.8	13.2	13.9	14.2	14.8	15.5
SSP2 - CEPAM Double Migration	12.7	12.7	13.0	13.6	13.9	14.5	15.3
SSP3 - Stalled Development	12.7	12.7	13.1	13.6	13.7	13.8	13.8

### Demographic assumptions underlying SSPs

	2015-2020	2020-2025	2030-2035	2050-2055	2060-2065	2075-2080	2095-2100
<b>Total fertility rate</b>							
SSP1 - Rapid Development	1.51	1.46	1.36	1.35	1.35	1.34	1.33
SSP2 - CEPAM Zero Migration	1.62	1.69	1.75	1.81	1.80	1.79	1.77
SSP2 - CEPAM Medium	1.63	1.70	1.75	1.81	1.80	1.79	1.78
SSP2 - CEPAM Double Migration	1.63	1.71	1.76	1.81	1.80	1.79	1.78
SSP3 - Stalled Development	1.76	1.99	2.22	2.40	2.41	2.41	2.40

### Life expectancy at birth for females (in years)

SSP1 - Rapid Development	84.6	86.2	89.2	95.3	98.4	102.9	105.7
SSP2 - CEPAM Zero Migration	84.1	85.2	87.3	91.4	93.5	96.7	100.7
SSP2 - CEPAM Medium	84.1	85.2	87.2	91.3	93.4	96.5	100.6
SSP2 - CEPAM Double Migration	84.1	85.1	87.2	91.3	93.3	96.3	100.5
SSP3 - Stalled Development	83.6	84.2	85.2	87.3	88.4	89.9	91.9

### Migration – net flow over five years (in thousands)

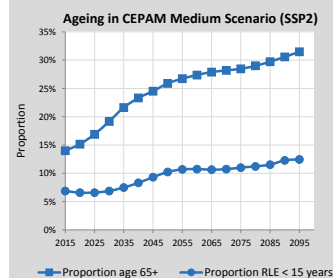
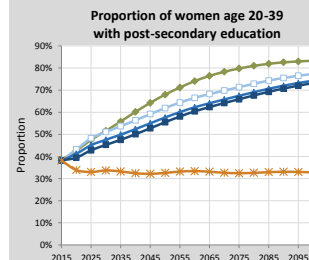
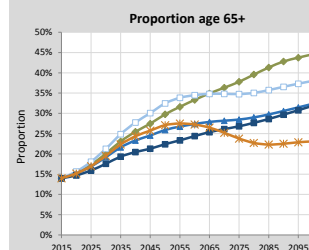
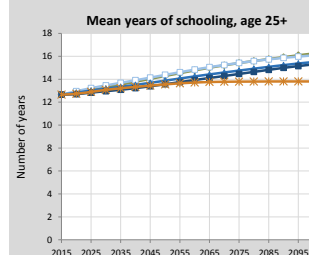
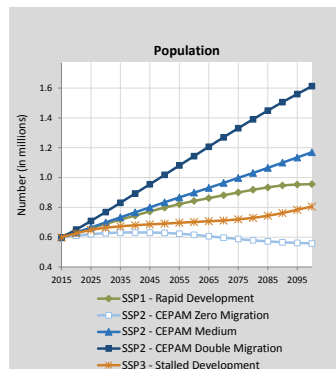
SSP1 - Rapid Development	19.4	20.4	21.8	23.0	22.7	21.3	18.2
SSP2 - CEPAM Zero Migration	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSP2 - CEPAM Medium	19.4	20.5	22.5	25.1	25.5	25.1	22.9
SSP2 - CEPAM Double Migration	38.8	40.4	42.6	44.2	43.3	40.0	33.1
SSP3 - Stalled Development	12.9	7.0	0.0	0.0	0.0	0.0	0.0

### Ageing indicators by scenario

	2015	2020	2030	2050	2060	2075	2095
<b>Median age</b>							
SSP1 - Rapid Development	39.3	40.5	43.7	49.4	51.4	55.0	59.3
SSP2 - CEPAM Zero Migration	39.3	41.1	45.2	50.3	50.5	51.6	52.8
SSP2 - CEPAM Medium	39.3	40.4	42.7	45.4	45.5	46.7	48.4
SSP2 - CEPAM Double Migration	39.3	39.7	41.0	43.3	43.9	45.6	48.1
SSP3 - Stalled Development	39.3	40.4	43.2	44.4	41.7	40.3	39.1

### Proportion with less than 15 years of remaining life expectancy (RLE)

SSP1 - Rapid Development	6.9%	6.6%	6.9%	10.2%	10.7%	11.0%	12.5%
SSP2 - CEPAM Zero Migration	7.1%	7.2%	8.3%	13.8%	14.7%	15.0%	12.7%
SSP2 - CEPAM Medium	7.1%	7.0%	7.4%	10.6%	10.6%	10.7%	9.8%
SSP2 - CEPAM Double Migration	7.1%	6.8%	6.8%	8.9%	8.8%	9.4%	9.4%
SSP3 - Stalled Development	7.3%	7.4%	8.6%	13.4%	13.5%	12.5%	9.2%



# Luxembourg (Continued)

## Labour force projections to 2060

### Labour force indicators

	2015	2020	2030	2040	2050	2060
<b>Labour force size, by participation and migration scenario (in millions)</b>						
Constant (CEPAM Zero Migration)	0.28	0.28	0.26	0.25	0.23	0.22
Constant (CEPAM Medium)	0.28	0.29	0.31	0.32	0.34	0.36
Constant (CEPAM Double Migration)	0.28	0.30	0.35	0.39	0.44	0.48
Swedish (CEPAM Zero Migration)	0.28	0.29	0.28	0.28	0.28	0.27
Swedish (CEPAM Medium)	0.28	0.30	0.33	0.36	0.40	0.45
Swedish (CEPAM Double Migration)	0.28	0.31	0.37	0.44	0.51	0.59
Equalization (CEPAM Zero Migration)	0.28	0.28	0.27	0.26	0.24	0.24
Equalization (CEPAM Medium)	0.28	0.29	0.31	0.33	0.36	0.39
Equalization (CEPAM Double Migration)	0.28	0.31	0.35	0.41	0.46	0.52
Constant (CEPAM Medium-low fertility)	0.28	0.29	0.30	0.32	0.32	0.33
Swedish (CEPAM Medium-low fertility)	0.28	0.30	0.33	0.36	0.38	0.40
Equalization (CEPAM Medium-low fertility)	0.28	0.29	0.31	0.33	0.34	0.35

### Labour force participation rates, age 15+, by participation scenario (CEPAM Medium)

TOTAL (Constant)	59.1%	58.2%	54.8%	51.7%	50.0%	49.4%
TOTAL (Swedish)	59.1%	59.6%	58.9%	58.4%	59.2%	60.7%
TOTAL (Equalization)	59.1%	58.7%	56.1%	53.8%	52.7%	52.8%
MALE (Constant)	64.9%	63.6%	59.5%	56.2%	54.6%	53.9%
MALE (Swedish)	64.9%	64.8%	63.2%	62.2%	62.8%	64.0%
MALE (Equalization)	64.9%	63.6%	59.5%	56.2%	54.6%	53.9%
FEMALE (Constant)	53.4%	52.8%	50.0%	47.2%	45.5%	44.9%
FEMALE (Swedish)	53.4%	54.3%	54.6%	54.6%	55.5%	57.3%
FEMALE (Equalization)	53.4%	53.7%	52.6%	51.3%	50.9%	51.7%

### Labour force (15+) by highest level of educational attainment. Columns sum to 100%.

#### (CEPAM Medium; Constant participation)

TOTAL E1-E4 - lower secondary and below	23.5%	21.8%	18.1%	15.2%	12.2%	9.5%
TOTAL E5 - upper secondary	38.4%	37.2%	35.7%	34.4%	32.7%	30.7%
TOTAL E6 - short post-secondary	7.3%	7.3%	7.3%	7.7%	8.4%	9.1%
TOTAL E7 - bachelor	8.8%	9.7%	11.4%	12.7%	14.0%	15.1%
TOTAL E8 - master and higher	21.9%	23.9%	27.7%	30.0%	32.7%	35.5%
MALE E1-E4 - lower secondary and below	25.3%	23.9%	20.3%	17.2%	13.8%	10.9%
MALE E5 - upper secondary	37.8%	37.2%	37.1%	36.9%	36.2%	35.0%
MALE E6 - short post-secondary	7.5%	7.2%	6.5%	6.5%	7.0%	7.6%
MALE E7 - bachelor	7.6%	8.7%	10.8%	12.6%	14.1%	15.3%
MALE E8 - master and higher	21.7%	23.0%	25.4%	26.7%	28.8%	31.2%
FEMALE E1-E4 - lower secondary and below	21.2%	19.3%	15.4%	12.8%	10.2%	7.9%
FEMALE E5 - upper secondary	39.2%	37.2%	34.0%	31.4%	28.5%	25.7%
FEMALE E6 - short post-secondary	7.1%	7.5%	8.2%	9.1%	10.1%	10.9%
FEMALE E7 - bachelor	10.2%	11.0%	12.0%	12.7%	13.9%	14.9%
FEMALE E8 - master and higher	22.3%	25.1%	30.3%	34.0%	37.4%	40.7%

### Labour force size by educational attainment according to three migration scenarios, 2015-2060

(Labour force participation = Constant scenario)

