9. *Europe*

(a) *Past trends*

Europe today consists of the 47 countries and areas that are listed on page viii. The combined population of these 47 countries was 728 million in 1995. The total fertility rate in Europe fluctuated at levels slightly below 2.6 births per woman in the 1950s and early 1960s, but subsequently took a steady downward course that reduced it to 1.57 births per woman by 1990-1995. Life expectancy at birth progressed at an uneven pace until recently, rising from 66.2 years in 1950-1955 to 73.0 years in 1985-1995. Subsequently, the expectation of life declined to 72.6 years in 1990-1995, a trend reflecting the sharp deterioration of mortality conditions observed in Eastern Europe, particularly in the Russian Federation and Ukraine. The proportion of the population aged 65 or older rose from 8.2 per cent in 1950 to 13.9 per cent in 1995. The potential support ratio declined from 8.0 in 1950 to 4.8 in 1995.

(b) *Scenario I*

Scenario I, the medium variant of the United Nations population projections in the *1998 Revision*, assumes an average net intake of 428,000 migrants per year between 1995-2050, for a net total of 23,530,000 migrants during the period. After a slight increase between 1995 and 2000, when the total population of Europe would reach its top level at 729 million, continuous decline is projected to set in immediately after 2000. By 2050, Europe would have lost some 100 million inhabitants and would therefore have a population of only about 628 million, or 14 per cent less than in 1995. (The results of the *1998 Revision* are shown in the annex tables.) By 2050, out of this total population of 628 million, 27 million, or 4.3 per cent, would be post-1995 immigrants or their descendants. Up to 2010, the population aged 15-64 would register diminishing increases; having topped at some 497 million in 2010, it would thereafter decline rapidly. By 2050, the working-age population of Europe would be down to 364 million, a 25 per cent reduction in relation to the 1995 level. On the other hand, the population aged 65 or older would rise steadily, from 101 million in 1995 to nearly 173 million in 2050. As a result, the potential support ratio would be severely reduced, from 4.8 in 1995 to 2.1 in 2050.

(c) *Scenario II*

Scenario II, which is the medium variant with zero migration, uses the fertility and mortality assumptions of the medium variant of the *1998 Revision*, but without any migration to Europe after 1995. The results in this scenario show that in the absence of migration, the total population would start decreasing immediately after 1995, and by 2050 it would be down to 600 million, approximately 27 million less than in scenario I and some 127 million (or 18 per cent) down from the 1995 level. The population aged 15-64 would initially continue to rise, going from 487 million in 1995 to 493 million in 2005; thereafter it would drop steadily to reach 345 million in 2050, a decline of almost 30 per cent in relation to 1995. The population aged 65 or older would increase from 101 million in 1995 to 169 million in 2050. While the absence of migration means considerably smaller population numbers, it would impact less on the population aging process: the potential support ratio would decline to 2.0 in 2050, which is only marginally lower than the figure (2.1) in scenario I.

(d) *Scenario III*

Scenario III keeps the size of the total population of Europe constant at its maximum of 728 million and calculates the number of migrants that would be required in order to prevent the decline of the population in the face of an increasing excess of deaths over births. The calculations show that a net total of 100 million migrants would be required during the period 1995-2050 just to maintain the total

population of Europe at its 1995 level. This corresponds to an average of approximately 1.8 million net migrants per year. By 2050, out of a total population of 728 million, 127 million, or close to 18 per cent, would be post-1995 immigrants or their descendants.

(e) *Scenario IV*

Scenario IV keeps the size of the population aged 15 to 64 constant at 492.6 million, which is the maximum level that it would reach (in 2005) in absence of migration after 1995. The calculations show that the number of migrants that would be required to prevent the decline of the working age population after that point would total 161 million over the period 2005-2050, or a net average of approximately 3.6 million migrants per year during those 45 years. This would cause the total population to grow from 728 million in 1995 to 809 million in 2050; out of these 809 million people, some 209 million, or 26 per cent, would be post-2005 immigrants or their descendants.

(f) *Scenario V*

Scenario V does not allow the potential support ratio to decrease below the value of 3.0. For this to happen, no immigrants would be needed until 2025, and 235 million immigrants would be needed between 2025 and 2050, an average of 9.4 million per year during that period. By 2050, out of a total population of 895 million, 294 million, or 33 per cent, would be post-1995 immigrants or their descendants.

(g) *Scenario VI*

Scenario VI keeps the potential support ratio at its 1995 value of 4.8 persons aged 15-64 years for each person aged 65 years or older. In order to keep the potential support ratio constant at that level, it would be necessary to have almost 1.4 billion immigrants from 1995 to 2050, an average of 25.2 million a year. By 2050, the population of Europe would have grown to 2.3 billion out of which 1.7 billion, or almost three quarters, would be post-1995 immigrants or their descendants.

(h) *Additional considerations*

The United Nations estimate of the average net total number of migrants in Europe around 1997 is 950,000 per year. This level would be about half the long-term average net number of migrants required to prevent the total population from declining; one third of the number required to prevent the working-age population from declining; and about 4 per cent of the number required to maintain the potential support ratio at its 1995 level. Figure 25 shows, for scenarios I, II, III and IV, the population of Europe in 2050, indicating the share that is made up of post-1995 migrants and their descendants.

In the absence of migration, the calculations in this report indicate that the upper limit of the working age would need to be raised to 69.8 years in order to obtain in 2050 a potential support ratio of 3.0, and to about 75 years in order to obtain in 2050 the same potential support ratio observed in Europe in 1995, which was 4.8 persons of working age per older person.

TABLE 26. POPULATION INDICATORS FOR EUROPE BY PERIOD FOR EACH SCENARIO

Scenario	*I*	*II*	*III*	*IV*	*V*	*VI **
Period	*Medium variant*	*Medium variant with zero migration*	*Constant total population*	*Constant age group 15-64*	*Ratio 15-64/65 not less than 3.0*	*Constant ratio 15-64/65 years or older*
			A. Average annual number of migrants (thousands)			
1995-2000	950	0	854	0	0	*5 844*
2000-2025	486	0	1 323	2 696	0	*17 246*
2025-2050	265	0	2 511	3 758	9 402	*37 031*
2000-2050	376	0	1 917	3 227	4 701	*27 139*
1995-2050	428	0	1 821	2 934	4 274	*25 203*
			B. Total number of migrants (thousands)			
1995-2000	4 750	0	4 270	0	0	*29 220*
2000-2025	12 162	0	33 081	67 393	0	*431 153*
2025-2050	6 617	0	62 787	93 953	235 044	*925 779*
2000-2050	18 779	0	95 869	161 346	235 044	*1 356 932*
1995-2050	23 530	0	100 137	161 346	235 044	*1 386 151*
			C. Total population (thousands)			
1950	547 318	-	-	-	-	-
1975	676 390	-	-	-	-	-
1995	727 912	-	-	-	-	-
2000	728 887	723 482	727 912	723 482	723 434	*753 810*
2025	702 335	684 055	727 912	759 766	684 189	*1 212 912*
2050	627 691	600 464	727 912	809 399	894 776	*2 346 459*
			D. Age group 0-14 (thousands)			
1950	143 174	-	-	-	-	-
1975	160 557	-	-	-	-	-
1995	139 464	-	-	-	-	-
2000	127 346	125 509	126 643	125 509	125 500	*133 272*
2025	103 212	100 408	110 158	119 218	100 400	*223 700*
2050	90 430	86 378	112 731	129 140	152 282	*456 670*
			E. Age group 15-64 (thousands)			
1950	359 162	-	-	-	-	-
1975	438 455	-	-	-	-	-
1995	487 110	-	-	-	-	-
2000	494 102	492 142	495 287	492 142	492 222	*513 673*
2025	451 599	438 874	470 673	492 555	438 988	*818 857*
2050	364 277	345 100	432 959	492 555	556 871	*1 564 343*
			F. Age group 65+ (thousands)			
1950	44 981	-	-	-	-	-
1975	77 377	-	-	-	-	-
1995	101 338	-	-	-	-	-
2000	107 439	105 831	105 982	105 831	105 712	*106 865*
2025	147 524	144 774	147 081	147 993	144 801	*170 355*
2050	172 985	168 986	182 222	187 704	185 624	*325 446*
			G. Potential support ratio 15-64/65+			
1950	7.98	-	-	-	-	-
1975	5.67	-	-	-	-	-
1995	4.80	-	-	-	-	-
2000	4.60	4.65	4.67	4.65	4.66	*4.81*
2025	3.06	3.03	3.20	3.33	3.03	*4.81*
2050	2.11	2.04	2.38	2.62	3.00	*4.81*

** Scenario VI is considered to be demographically unrealistic.*

Figure 24. Age-sex structures by scenario for 2000, 2025 and 2050
(*Population in millions*)

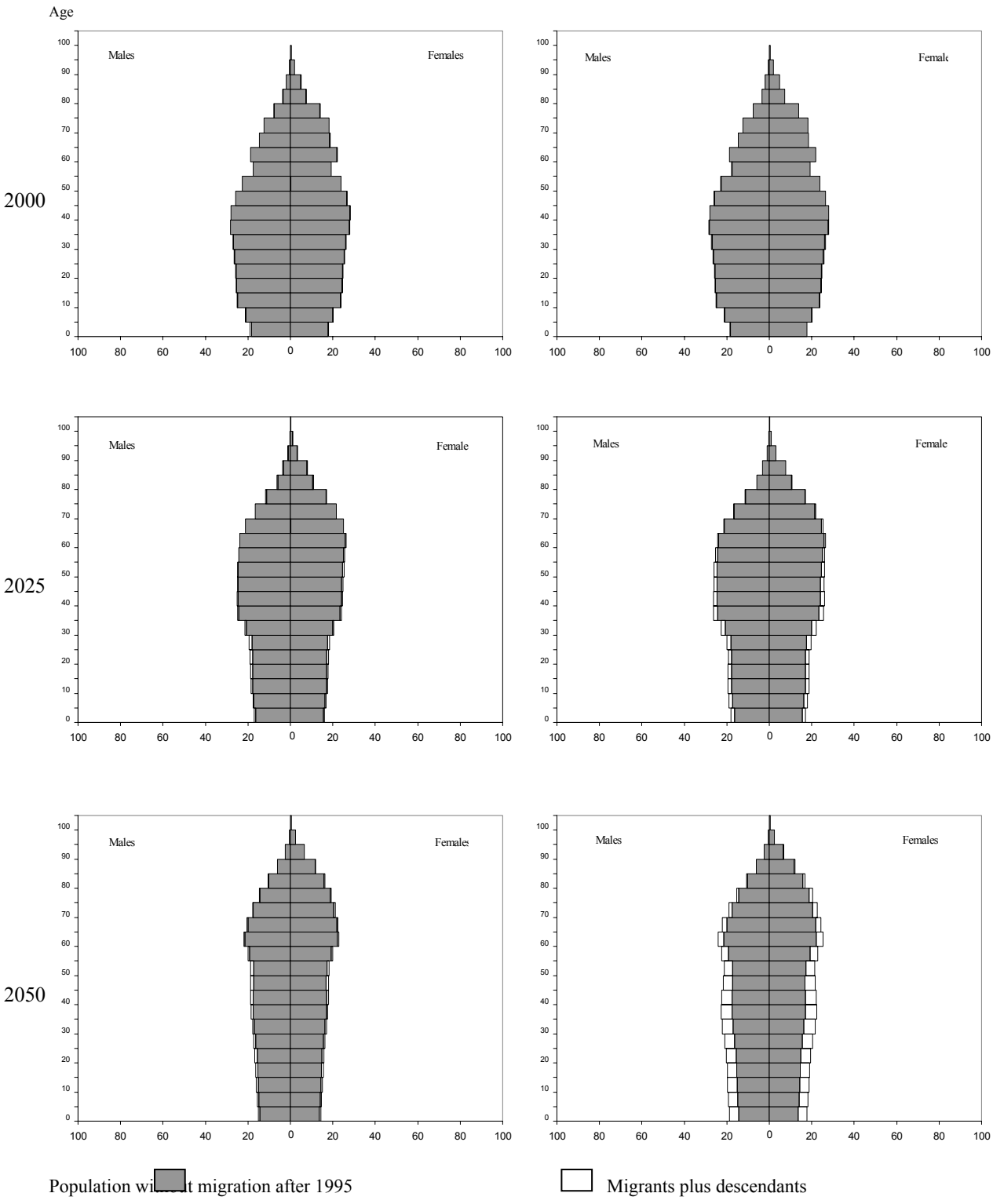

Figure 24 (continued)

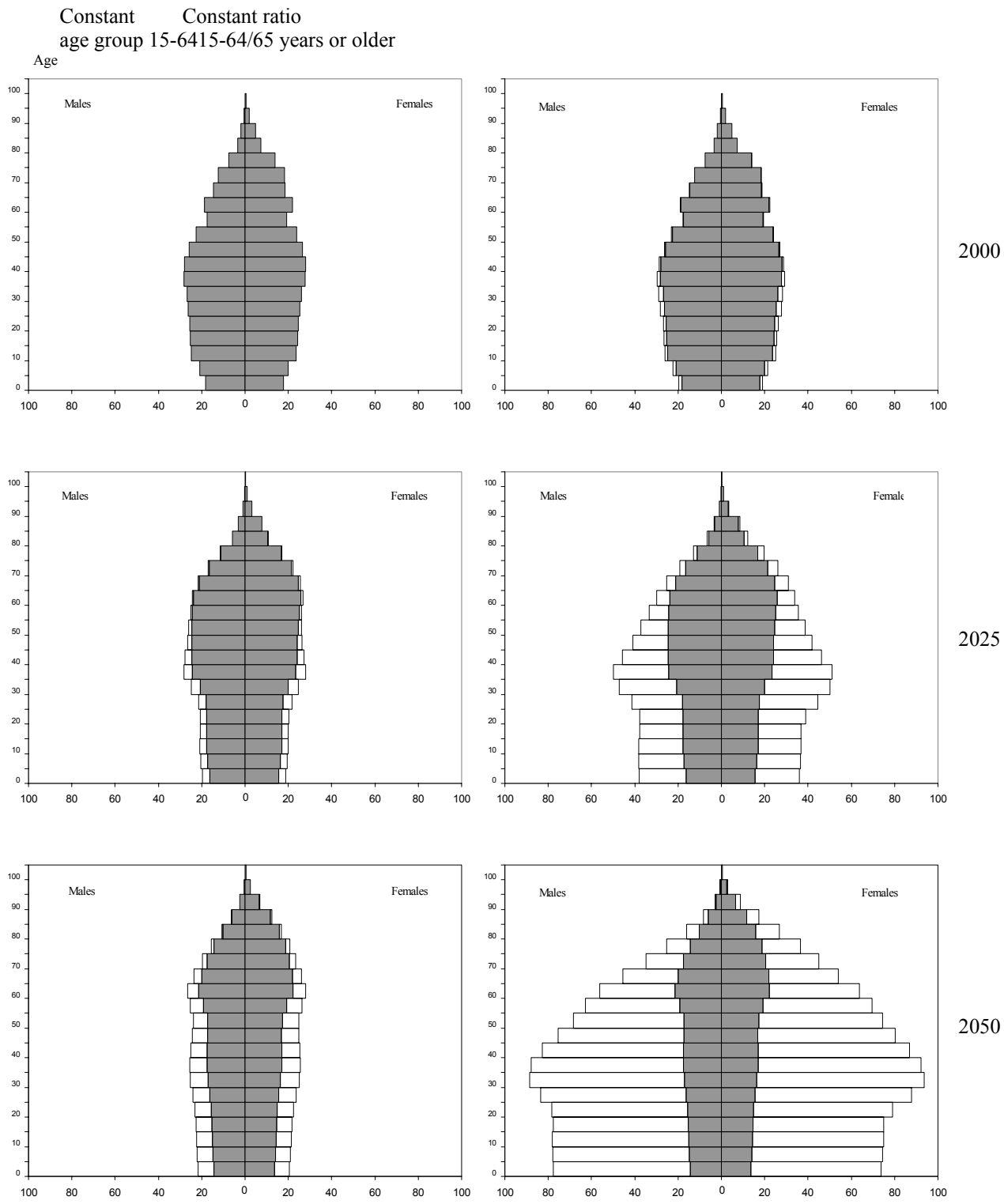

Figure 25. Population of Europe in 2050, indicating those who are post-1995 migrants and their descendants, by scenario