



Effects of growing population in tropical africa

(a) Define the following terms: mortality rate; population explosion. (b) Explain five factors that affect mortality rate in Tropical Africa. Only very few candidates tried this question and the performance of those who tried it was generally poor. Many of the candidates failed to satisfactorily define mortality rate and population explosion. Population explosion is the rapid increase in the population of a place over a short period of time. The factors affecting mortality rate in Tropical Africa were also poorly answered by the candidates. The expected answers were: improvement in healthcare, diseases and epidemics, improved standard of living, improved sanitation and hygiene, wars and conflicts, education, improvement in food production, level of economic development, natural disasters, regular accidents, family planning and poverty. Academia.edu use cookies to personalize content, customize ads, and improve the user experience. By using our website, you agree to our collection of information by using cookies. To learn more, we see Privacy Policy.× When the nations of sub-Saharan Africa won independence about twenty years ago, they faced formidable restrictions on development that continue to hamper their economic and social progress, despite substantial interim achievements. This article discusses five of these limitational internal factors largely based on historical circumstances and the physical environment: (1) underdeveloped human resources; (2) military and political conflict; (3) the colonial institutional heritage; (4) climate and geography; and (5) the twin factors of rapid population growth and the expansion of support. As an urban sociologist, however, the author will focus on the fifth developmental constraint and on the contrasting policies that Tanzania and Kenya have devised in response to that. These two countries were chosen because while Tanzania is a low-income sub-Saharan African nation, defined by the World Bank as one with a per capita income of \$370 or less, and Kenya is a mid-income sub-Saharan African nation with a per capita income of more than \$370, Tanzania and Kenya are similar in total population, his is the fourth and fifth most populous nations in sub-Saharan Africa (Nigeria ranks first with a population of 82.6 million Ethiopia, second, with a population of 30.9 million; Zaire, third, with a population of 27.5 million; Tanzania and Sudan essentially tap for fourth place with populations of 18 million, respectively; and Kenya, fifth, with a population of 15.3 million, its closest competitors are Uganda with a population of 12.8 million and Ghana with a population of 11.3 million). Kenya and Tanzania had the same average annual rate of population growth-3.4 percent between 1970 and 35 million respectively. However, even more relevant to the theme of this article is the fact that by 1980 Tanzania had reached almost the same level of urbanification - 12 percent, respectively, as well as almost the same concentration of urban population in their capital or primate cities -50 percent, respectively, as well as almost the same concentration of urban population in their capital or primate cities -50 percent, respectively, as well as almost the same concentration of urban population in their capital or primate cities -50 percent, respectively, as well as almost the same concentration of urban population in their capital or primate cities -50 percent, respectively, as well as almost the same concentration of urban population in their capital or primate cities -50 percent, respectively, as well as almost the same concentration of urban population in their capital or primate cities -50 percent, respectively, as well as almost the same concentration of urban population in their capital or primate cities -50 percent, respectively, as well as almost the same concentration of urban population in their capital or primate cities -50 percent, respectively, as well as almost the same concentration of urban population in their capital or primate cities -50 percent, respectively, as well as almost the same concentration of urban population in their capital or primate cities -50 percent, respectively, as well as almost the same concentration of urban population in the same concentration of urban population of urban population of urban population of urban population of urban EXPANSION OF URBANITY, AND OTHER FACTORS ON DEVELOPMENT IN SUB-SAHARAN AFRICA: THE CONTRASTING RESPONSES OF TANZANIA AND KENYA, International Journal of Sociology and Social Policy, Vol. 4 No. 2, pp. 1-16. if . RIS : MCB UP Ltd Copyright © 1984, MCB UP Limited Please note that you do not have access to teaching notes You can access teaching notes by logging in via Shibboleth, Open Athens or with your Emerald account. If you think you should have access to this content, click the button to contact our support team. To read the full version of this content, please select one of the options below You can access this content by logging in via Shibboleth, Open Athens or with your Emerald account. If you think you should have access to this content, click the button to contact our support team. No general statement on African demographics is true. The variation on the continent is too large. Africa today includes giant countries with populations near or more than 100 million (Egypt, Ethiopia, Nigeria) and small countries where fertility is rising (Algeria, Egypt, Tunisia, Seychelles), countries where fertility is high but stable, falling by less than 1% a vear (Mozambigue, the Democratic Republic of Congo, Nigeria and ten others), and countries where fertility is high, but falling very guickly, 2.5% per year or more (Ethiopia, Rwanda, Kenya, and Leonwi It also includes countries where fertility rates are extremely high, more than six children per woman (Niger, Somalia, Chad, DRC, Mali) and countries where fertility is down to replacement levels (2.1) or below (Tunisia, Mauritius) Annual population growth rates for African Republic, Libya) to eight times what rate, or about 4% per annum (Niger, Equatorial Guinea). Some African countries are highly urbanized, with urban populations around 60% of their total (South Africa, Angola, Botswana), while others are not at all urbanized, with urban populations less than 20% (Burundi, Ethiopia, Malawi, Niger, Rwanda, Uganda). And while Africa has most of the world's highly ethnically diverse countries, African countries are quite low in ethnic diversity (Burundi, Algeria, Tunisia, Egypt).1 In short, Africa is immensely varied. About the only firm statement one can make is that Africa will be the source of virtually all workforce growth in the world, and by far the youngest region, in the 21st century. This paper will lay out the key aspects of Africa's population dynamics in the coming decades, focusing on trends in mortality, fertility, population growth, workforce growth and support. I will discuss the reasons for Africa's demographic exceptions and the main consequences of these trends for Africa and the world's economy, politics and security. Deaths: Good News Most of Africa has made remarkable progress in reducing deaths, especially in recent years, as improvements in nutrition, sanitation and measures to combat malaria and other tropical diseases have led to substantial increases in lifespans. For Africa has made remarkable progress in the 1950s was less than 40 vears, not much different from Europe in the 1700s. But by the 1980s life expectancy had surpassed 50 years, and by 2010–2015 it had reached 60 years, and by 2010–2015 it had reached 60 years, while in West Africa, life expectancy is just under 55 years, with Sierra Leone, Nigeria, and Cote d'Ivoire barely above 50.2 These gains in life expectancy are mainly due to dramatic declines in infant deaths. For Africa as a whole (and sub-Saharan Africa), infant deaths have fallen by 29% in just the past decade, from 2000–2005 to 2010–2015. Champions include Ethiopia (drop of 41%), Rwanda (51%), Congo (43%), and Botswana (46%). But all regions enjoyed declines: Burundi, Somalia, Central African Republic, Chad, Benin and Mauritania. Africa's population today has so far been lived healthier and longer than it was in the preceding century. The UN projects that by 2050-55, average lifespans in Africa's deaths, a dramatic convergence with other world regions. 3 Fertility: A conundrum Based on the experience of other developing regions, these improvements in Africa's deaths, especially infant mortality, are expected to lead to similarly impressive reductions in fertility. In Asia and Latin America, fertility was similar to that in Africa in the 1950s, with about six children born per woman during her lifetime. Then with improvements in mortality and other indices of economic development, fertility has steadily By the late 1970s, total fertility had fallen to four, and then by the 2000s to well below three. From where 2010-2015, fertility in Asia and Latin America goes on replacement levels at 2.2 and 2.1, respectively. In Africa, however, a completely different pattern has evolved. From the 1950s, fertility in Africa actually rose slightly and reached nearly seven children per woman by the early 1970s. Fertility then derived sharply in different regions. In northern and southern Africa, fertility began a steady decline. In northern Africa, fertility of seven children per woman fell to five by the late 1980s, and then to three by 2005-2010. In southern Africa, where fertility was six children per woman in the 1960s, the level fell to four in the late 1980s and to 2.71 in 2005-2010. These regions therefore followed the pattern of other developing regions, with about a one-decade delay. In contrast, in eastern Africa in the late 1980s, fertility was still above seven children per woman. It then began a slow decline, but still remains at nearly five in 2010–2015. In the mid-Africa, which had fertility of about six children per female in the 1950s, fertility continued to rise until the late 1980s, reaching 6.76 in 1985-1990. Fertility then began to decline, but very slowly, remaining in about six children per woman even twenty-five years later in 2010-2015. West Africa was similar to the centre of Africa, with fertility rising close to seven children per woman until the late 1980s and then falling slowly, but fell a little further than in the middle of Africa, reaching 5.5 by 2010-2015. Western, middle and eastern Africa have therefore shown a dramatically different fertility path than other parts of Africa and other regions of the developing world. These are the only major regions of the world where, even after decades of decreasing deaths, fertility remains with or above five children per woman. 4 Because these tropical regions dominate Africa in terms of population, overall fertility for sub-Saharan Africa remains at 5.1 children per woman in 2010–2015, and at 4.72 for Africa as a whole. Outside of Africa, except for some small Pacific island nations, and for the tribe of Islamic countries of Yemen, Palestine, Afghanistan and Iraq, there are no other nations, with a fertility of even 4.0. By contrast, thirty-two nations in Africa have fertility of 4.5 or higher, including giant countries such as Nigeria (5.74) and Ethiopia (4.63), and extremely high fertility countries such as Niger (7.4), Somalia (6.6), the Democratic Republic of Congo (6.4), Chad (6.3) and Burdiun (6. As demographers, Jean-Pierre Guengant and John F. May observed, This pattern of sustained high levels of fertility in the majority of African countries differs markedly from what has been in other developing countries since 1960 Is. 5 Still as population expert John Casterline recently observed, is nothing approaching consensus on the sources of this difference. 6 Why high African fertility John Bongaarts persists, summarizes the experience of most developing regions, it suggests that If societies modernize, economic and social changes such as industrialization, partitioning, new occupational structure and increased education lead first to lower mortality and subsequently lead to a decline in fertility. 7 The puzzle on why these changes did not yield lower fertility in Africa, as they did elsewhere, gave rise to two main answers: First, it is true that Africa has not yet experienced the same increases in education, income and other indices of modernization seen in Asia and Latin America. As Bongaarts dates on it, real income per capita in sub-Saharan Africa did not grow at all from the 1970s to the 2010s, While real incomes in other developing regions have risen sharply in these decades.8 Goujon, Lutz and Samir have pointed out that many sub-Saharan countries have a stall in their progress in education that might be a stall going on to reduce fertility.9 So it may pose that Africa is simply behind in certain attainments and will eventually catch up to other regions. Still, it's unsatisfaying for two reasons. Firstly, northern and southern Africa did follow the pattern of other regions, as would be expected; it is only eastern, middle and West Africa that did not. Secondly, even for the latter regions, the rate and quantity of their fertility decline is not comparable to what has happened in other developing regions at similar levels of income and development. According to Bongaarts and Casterline, ... the median rate of change in sub-Saharan Africa (0.03 per year) is less than a third of the pace in the other regions [Asia and Latin America] (0.12 and 0.13, respectively). 10 Indeed, the behavior of fertility in sub-Saharan Africa is completely at odds with the idea that economic progress determines the rate of fertility decline; as Bongaarts showed, fertility rose when the region's GDP/capita dropped significantly, and then encountered a widespread stall in fertility decline in the 2000s, when GDP/capita rose faster.11 Prediction of Africa's demographic trajectory based on expectations that it was the pattern of other regions. Figure 1 shows the difference between the decline in fertility from 1990-1995 to 2010-2015 projected by the United Nations Population Division in 1995 (shown in orange) and the actual decline in fertility as revealed by on-the-ground Demographic and Health Surveys two decades (shown in gray).12 As can readily be seen, is, pattern of fertility reductions of .5 to 1 child per woman more than actually observed. As the slow fertility decline in Africa continues to confuse expectations, the adjustments to population projections can be dramatic. Table 1 shows how the UN's projections for Africa's total population in various regions for 2050, as made in 2010, differ from their projections made in the 2017 review, published in 2018. The differences – due to an expected decline in fertility that simply did not occur – are striking. By 2018, the new medium variant projection for the population of sub-Saharan Africa in 2050 is higher with 337 million people (15,4%) if the projections are nearly thirty to forty percent higher than those of 2010. Indeed, the new 2018 medium variant forecasts are closer to the 2010 high variant forecasts, and sometimes they exceed. The new high variants are similarly adjusted upwards. If, as has occurred to, the predicted population for Africa would be nearly 2.8 billion in 2050, or 600 million more than the 2010 medium forecast of 2.2 billion. (See Figure 1) Table 1. UN Population Projections for 2050 (Millions), 2010 vs. 2018 MEDIUM VARIANT PROJECTIONS HIGH VARIANT PROJECTIONS 412.8% East Africa 780 888 13.8% 879 982 11.7% Middle Africa 278 384 38.1 % 314 420 33.8% North Africa 322 360 11.8% 368 399 8.4% Southern Africa 67 86 28.4 % 79 97 22.8% West Africa 744 810 8.9% 830 887 7.0% Due to the failure of Africa's fertility to the pattern of other regions, an alternative hypothesis is advanced, arguing that Africa has an exceptionally pro-natalist culture that maintains high fertility even in the face of economic modernization. John and Pat Caldwell, who led this line of argument, point to the exceptionally high desired family size featured in African surveys.13 It was also noted that due to traditional taboos on post-partum intercourse and long breastfeeding periods, historically relatively high. This means that there is both less room to lower fertility by boosting birth spacing, and more room to increase fertility by reducing birth spacing if these traditional practices are relaxed.14 While this explanation would be responsible for the low fertility rate observed in Africa, and even the rise in fertility observed from the 1950s to the 1970s, it also has problems. In fact, we observe a gradient in fertility within sub-Saharan Africa related to Women in cities, and women with higher education and higher incomes.15 Modernization factors therefore have an effect on fertility in Africa, just not guite the same way as in other developing regions. A more likely answer would be an interactive combination of modernization levels and cultural factors, such as that certain regions of African distinctive cultural factors, such as that certain regions of African western, middledevelopment could be fundamentally different in Africa than elsewhere in the developing world. 16 We test this hypothesis with a path analysis of how modernization factors affect fertility in Africa against other developing regions. Africa is different John Bongaarts found that while fertility in African countries generally declines in line with changes in income, education, mortality and support, in a multiple regression, including all these factors, only education has consistently been significant in managing fertility, contraceptive use and desired family size. In addition, he found an African effect so that fertility for any level of development indicators was about one child per woman higher than in other developing countries. He therefore concluded that both the level of economic development (especially education) and a distinctive pro-natal culture in sub-Saharan Africa contribute to Africa's unique fertility dynamics. The finding that education was the most important factor supports the proposal by Goujon,

Lutz and Samir that Africa's fertility stall reflects a lack of progress in educational attainments.17 In Figure 21 show a road model for the determinants of fertility in developing countries excluding sub-Saharan Africa. It is based on data available from Demographic and Health Surveys (DHS) for 31 countries at different time intervals from 1991 to 2013, accounting for 88 observations.18 The model follows the distinction made by Guegant and May between intermediate determinants of fertility, which are mainly socio-economic conditions that indirectly affect fertility, and especially determinants of fertility, who are mainly biological and behavioural and influence, fertility directly 19 The intermediate determinants exert their influence on fertility through its effect on close determinants. In the model, the intermediate determinants exert their influence on fertility through its effect on close determinants. In the model, the intermediate determinant income (real GDP/capita), urbanization (percent urban), infant diet, women's employment (both for young women aged 15-24 and all women), and women's education. The proximate determinants are desired family size and birth interval, which together form total fertility.20 In the are shown positive effects by red arrows, negative effects are shown as dotted pains. In this model, fertility is most strongly affected by desired family size, although the effect of birth interval is also very significant. The consequences are almost everyone as one would expect from the development. (See Figure 2) If we manage the same road analysis on African countries, perhaps we would expect, following Bongaarts, that these relationships will still gain but be weaker, or that, following Goujon, Lutz and Samir, education will have a greater impact. The model using data from DHS surveys in 35 countries in sub-Saharan Africa, with 95 observations from 1991 to 2013, is shown in Figure 3. In fact, there are some surprising and marked differences. Literature. Rising incomes lead to lower infant death, and have a direct effect on increasing birth intervals, thus reducing fertility. Rising incomes also lead to greater divination, which is associated with higher levels of women's employment (both for young women and all ages), and also has a direct effect on increasing birth intervals. Lower infant death leads to a reduction in desired family size, significantly reducing fertility. In addition, lower infant deaths, women's employment and women's education all also contribute to rising birth intervals; Indeed these factors appear to affect fertility altogether by greater spacing of births rather than changes in the desired family size. Yet the overall pattern is familiar - as incomes rise, support and women's education and employment also rise, and all these factors produce a decrease in desired family size and increases in birth spacing, producing lower fertility. (See Figure 3) In terms of agreements, rising incomes in Africa do lead to higher divination and to lower infant death, although the latter effect is much weaker in Africa. Lower infant death, in turn, has a somewhat stronger effect on reducing desired family size in Africa as in other developing regions. However, there are major differences in the results of women's employment. Outside of Africa, many factors contribute to greater birth intervals and thus to reduced fertility lower infant death, higher incomes, women's employment, total women's employment, and support all have direct consequences. The biggest of those effects is by women's employment, both for young women and total women's employment - whether for young women or for all no significant impact! Furthermore, in sub-Saharan Africa, but not other developing regions, women's education also has a significant direct impact on desired family size. Also unusual is that in sub-Saharan Africa, unlike other developing regions, profits in income and supportion do not have a direct effect on birth intervals at all; rather, they act only indirectly by raising women's education. In sum, Africa is different. In other developing regions, a group of modernization changes works in tandem, strengthening changes that stretch out birth intervals and thus reducing fertility. Most importantly, getting women into the workplace. However, women's education only has a minor impact on birth intervals and none on desired family size. In sub-Saharan Africa, by contrast, women's education is absolutely central, as it is the main driver of changes in birth intervals and a strong direct factor in reducing desired family size. In contrast, women's employment does not have a significant effect on fertility at all, not through family size or through birth intervals. How is that possible? In most developing countries, as women move into paid jobs outside the home-including young women with modest education fertility. However, in Africa, extensive family child care systems have evolved that allow women to avoid this trade review. The basic commitment this pattern enables is the cultural expectation that aunts, uncles, siblings, grandparents, cousins and even fellow women (where polygny occurs) will take care of children while their mothers work. As Korotayev et al. note: As long as extended families provide working women (not only agricultural workers, but those in urban areas who have also paid jobs) with family members willing to come and help with household chores and childcare, paid female employment may not only make a much smaller contribution to fertility decline in tropical Africa than observed in other regions., but it may also actually slow fertility reduction in Africa by slowing the trend toward the core family childcare is rooted in longstanding cultural patterns evident to tropical Africa. They note that this region (corresponding to eastern, middle and West Africa) was characterised by how-based agriculture, in which women were the primary daily field workers, as opposed to plough-based agriculture based in North Africa, Europe Asia reigned. In the latter regions, men were the primary field workers, while women worked at textile and other household chores undertaken inside the home and combined with childcare. Tropical so commonly have extended families with widespread polygligyny and large desired family size, all of which facilitate women working outside the home. When women shift to paid work outside the home this pattern simply proceeds and allows women to enter paid labor without worrying about childcare.22 These cultural patterns buffer the effect of women's employment on childbearing. Women's employment should therefore have no impact on birth spacing or fertility in tropical Africa, which is exactly what we find in the road model. The factor central to fertility decline in Africa, more than any other, therefore seems to be women's education. It is only through its effect on this factor that other developmental changes matter, as indicated by both the road analysis in Figure 3 and Bongaart's multiple regression showing that when total fertility, contraceptive appearance and desired family size on education, income, life expectancy and urbanisation are reproved, only education is consistently significant. To understand future fertility in Africa, we must therefore take a closer look at its progress in education. Africa's Secondary Education at materials are going to be lacking, and effective testing, feedback and cumulative growth in skills are often lacking.23 These problems are not unique to tropical Africa; they are found in many developing nations, especially in South Asia, where fertility has nevertheless declined. In other nations, however, educational progress is far less important for fertility decline than in sub-Saharan Africa. As we have just seen, women's education in most developing countries has a much smaller impact on fertility than women's employment; only in sub-Saharan Africa is it the other way around. This marks an opportunity for rapid fertility reduction in Africa by investing in women's education. Yet Africa, despite considerable increases in education in recent decades, seems to have invested in the wrong kind of education and suffers a huge shortage of secondary education. Moreover, such a secondary education as provided goes primarily to boys, with girls having a significant gap. Moreover, while the provision of secondary education is weak across the board, with sixty percent of youth aged 15 to 17 in sub-Saharan Africa not in school in 2017, girls' exclusion from higher secondary education is even worse, and especially at lower income levels. For middle- and low-income women in sub-Saharan Africa, according to an assessment of Survey data in 2008, participation of female teens in secondary school was less than ten percent.24 For women, it seems that secondary education is the critical arena arena fertility reduction. Women who leave school after primary education, which ends at the age of 12, are readily available to very early marriage and have no distinctive skills that allow them to be more productive or stand up to their husbands. Women who complete high school, by contrast, are unlikely to marry before age 18 and emerge with greater confidence and skills that allow them to form their own fertility and make a greater economic contribution to their families.25 Furthermore, as Véronique Hertrich has argued, women in Africa face specific problems in asserting their choices about their reproduced behaviour. Women in Africa are often married while young should compete with many older men or with fellow women in polygamous marriages. In both cases, they are poorly placed to make claims about the formation of family size. In addition, the extended family conditions in conditions of great uncertainty and rare occasions have valuable risk distribution benefits for the entire extended family. The benefits of larger families, as well as the cost, are therefore spread across a large extensive family grouping, rather than the spousal couple.26 Completing secondary education makes it possible for young women to have the skills and confidence to assert themselves against this pressure and get the ability to limit their childbearing if they choose to do so. Demographer Joel Cohen made the case for the effects of secondary education in high fertility associations. He writes: Although there are other factors at work, in many developing countries, women who complete only primary school. In Niger in 1998, for example, women who completed secondary education had 31% fewer children (on average, 4.6 per lifetime) than those who only completed primary education (6.7). In Yemen in 1997, women who completed primary school had an average of 4.6 children, while women who completed secondary school had an average of 3.1 children. In some sub-Saharan African societies, lifelong fertility is only reduced among girls who have had 10 or more years of schooling.27 Despite its importance, the data on secondary school entries in tropical Africa tells a disappointing story. Overall, net secondary attendance of women in sub-Saharan Africa is only 34%; this is one half of the level in the Middle East and North Africa and one guarter less than in South Asia.28 Table 2 provides a sample of primary and secondary entry rates for women in major countries of tropical Africa.29 As is evident, while substantial progress has been made in female Education, there is a substantial gap when it comes to female secondary education. Even in countries where female female attendance is up more than 80%, such as Tanzania, Burundi, Uganda and Rwanda, female econdary attendance falls to 25% or less. Across all these countries, female encollment relationships never reach even 50%. To be sure, female education is not an essential and sufficient condition for fertility decline. Kenya and Rwanda both have similar levels of fertility, 4.1 and 4.2 respectively, even though Kenya has nearly twice the level of female secondary attendance. In Rwanda, a powerful state-led campaign to promote contraception and legal limits on teen marriage has had roughly the same effect as Kenya's greater progress on female education. Yet female education is on average the most important factor in reducing fertility is tropical Africa severely lays other developing regions in providing women with secondary education. In sum, the reason tropical Africa still has exceptionally high fertility is rooted in both this region's distinctive extended family culture and the deep shortage of secondary education. Unless the latter is addressed, we can expect that even continued growth in primary education, supportion and income per head will have only minor effects on reducing fertility. Given the rapid decline in deaths Africa enjoyed, and the ever-high fertility it maintains, the future will be one of extremely rapid population growth. Table 2. Africa's Secondary Education Niger 46 13 Burkina Faso 50 17 Nigeria 66 49 Ethiopia 67 18 Sudan 67 45 Central African Rep. 68 15 Angola 76 17 Tanzania 83 25 Burundi 84 14 Dem Rep. Congo 85 41 Kenya 87 44 Uganda 87 21 Malawi 95 34 Rwanda 96 23 Growth Projections for Africa : 2050 and Beyond30 The combination of declining deaths and relatively stable and high fertility makes Africa unique among all world regions. Outside of Africa, the steady decline of fertility makes that population growth is likely to end in this century. The UN medium-variant projection for developed countries shows their population peak in 2054, and for less developed countries, excluding the least developed countries, excluding the least developed countries, excluding the least developed countries (most of which are in sub-Saharan Africa), peak population is projected in 2077. However, for Africa, with a total population of 1.2 billion in 2015, the medium projection is for population to reach 2.5 billion by 2050 and grow to 4.5 billion by 2100. Although fertility has declined since the 1980s means that population growth in Africa accelerated in the decades from 1980 to 2015. In the 1950s, before the start of the demographic transition, Africa's population grew at 2,2% per annum. But by the 1980s it had increased by nearly a third to per year. After the 1990s, growth rates dropped very slightly 2.7% for sub-Saharan Africa and a little more, to below 2% per annum, in northern Africa, where fertility has dropped faster. But due to the growing demographic weight of sub-Saharan Africa, the growth rate for Africa as a whole has remained at 2.6 % per annum by 2020 and 2.4% by 2025 as fertility falls. Although this decline is welcome, it should be remembered that even at an annual growth rate of 2.3%, total population doubles every 30 years. Africa's population will therefore increase from 16% of the global population still assumes that fertility in sub-Saharan Africa will fall from an average of 5.1 today to 3.0 in 2050-55 and 2.2 in 2095-2100. If fertility remains as high as 3.5 children per woman in 2050 and 2.65 in 2100, which is the UN's high variant scenario, Africa's total population will use the UN's medium variant projections for future growth, but remember that this is a conservative, rather than worse case. You may note that I have given population totals here for Africa and not just sub-Saharan Africa. This is because, although northern and southern Africa are clear and have progressed beyond other regions in their demographic transition to low fertility, they are still well above replacement fertility rates and therefore experience significant growth. In addition, several countries in northern African Tunisia, Algeria and Egypt have seen an unexpected increase in fertility of 8-12% over the past five years. If this is a sustained trend, rather than just a blip, it will further contribute to overall African growth. Table 3 shows the countries in Africa where fertility is falling fastest (more than 10% in the past five years) and where it is stalled or rising. As can be seen, there is wide variation. However, fertility decline has been rapid. Moreover, as the left column shows, fertility decline is slow or absent in many countries where fertility is quite high, from 4.0 to above 6 or even 7 children per woman. Only very few countries have fertility that declines at double-digit rates over this period. So, for Africa as a whole, fertility decline in the past five years was just 3.6%. Unless that decline accelerates significantly, Africa as a whole will not reach replacement fertility of 2.1 children per woman for 110 years, well into the next century. The UN's medium-variant projection usually assumes that countries with higher fertility will shift to a faster declined by 3% in the five years 2005-10 to 2010-15 will experience a fertility drop of 6.6% in the future every five years until 2050. It is certainly closer to the median for Africa as a whole. But given the wide variation between African countries, it is not clear why they should converge on a median rate of fertility decline. Indeed, for Nigeria, whose population is divided between a higher fertility and faster-growing Muslim population in the north and lower fertility and thus slowing growing Christian population to the south, it may well be that fertility decline slows as the Muslim population. Table 3. Fertility rates in African countries with the highest and lowest fertility rates, 2005-2010 to 2010-2015, excluding small island states LOWEST FERTILITY RATES DROP HIGHEST FERTILITY RATES IN 2010-2015 % drop since 2005-10 Fertility in 2010-2015 % drop since 2005–10 Zimbabwe 4.0 (0.0% Malawi 4.88 17.4% Namibia 3.60 0.0% R 4.20 15.5% Botswana 2.88 0.9% Djibouti 3.10 14..5% Libya 2.40 1.1.3% Ethiopia 4.63 13.6% Niger 7.40 2.0% Swaziland 3.30 13.6% Senegal 5.00 2.0% Kenya 4.10 13.4% Gambia 5.62 2.5% Madagascar 4.40 9.8% Congo 4.86 2.9% Eritrea 4.40 9.1% South Africa 2.55 2.9% (All other decline is less than 9%) Nigeria 5.74 3.0% Lesotho 3.26 3.5% Dem R Congo 6.40 3.6% Egypt 2.93 -11.8% (mounting) Tunisia 2.25 -10.1% Algeria 2.96 -8.0% W Sahara 2.60 -1.9% Africa's uniquely high fertility regime will produce high rates of population growth in the coming decades. Table 4 shows how the UN's medium-variant projections for the next two generations, until 2050 and 2100, play out for both Africa's largest countries and for its fastest-growing countries (there is some overlap between these two groups). Nigeria, through these projections, will be more populous than the United States by 2050 and by 2100 had more people than all of Europe. By 2050, Ethiopia, Egypt, the Democratic Republic of Congo, and Tanzania will each have larger populations than Russia. It can be tempting to dismiss these numbers as simply fantastic. Can Niger go from 20 million to nearly 70 million by the middle of the century, or Angola to 76 million? Can Tanzania go to 300 million by 2100, or the DRC to nearly 400? But it's change projected over only two generations, or over 85 years. And it must be remembered that Africa is historically a large and undercrowded continent. The population density of Angola and Somalia today is only 24 people per square kilometre; Tanzania is at 65, the Democratic Republic of Congo is at 37. Even giant Nigeria has only 215 people per square kilometre; Tanzania is at 65, the Democratic Republic of Congo is at 37. Even giant Nigeria has only 215 people per square kilometre; Tanzania is at 65, the Democratic Republic of Congo is at 37. Even giant Nigeria has only 215 people per square kilometre; Tanzania is at 65, the Democratic Republic of Congo is at 37. Even giant Nigeria has only 215 people per square kilometre; Tanzania is at 65, the Democratic Republic of Congo is at 37. Even giant Nigeria has only 215 people per square kilometre; Tanzania is at 65, the Democratic Republic of Congo is at 37. Even giant Nigeria has only 215 people per square kilometre; Tanzania is at 65, the Democratic Republic of Congo is at 37. Even giant Nigeria has only 215 people per square kilometre; Tanzania is at 65, the Democratic Republic of Congo is at 37. Even giant Nigeria has only 215 people per square kilometre; Tanzania is at 65, the Democratic Republic of Congo is at 37. Even giant Nigeria has only 215 people per square kilometre; Tanzania is at 65, the Democratic Republic of Congo is at 37. Even giant Nigeria has 0. Even giant physical for people; the guestion, what we have our to below is whether the economy will provide jobs and susceptibility to such populations. Table 4. UN populations. Table 4. UN populations for Africa's largest and fastest growing countries in millions of 2015 2050 2100 AFRICA 1194 2528 4468 SUB-SAHARAN AFRICA 969 2168 4002 LARGEST COUNTRIES Nigeria 181 411 794 Ethiopia 100 191 250 Egypt 94 153 199 Dem R Congo 76 197 379 South Africa 55 73 76 Tanzania 54 138 304 Kenya 47 95 142 Uganda 40 106 214 Algeria 40 57 63 Sudan 39 80 139 FASTEST GROWING COUNTRIES (Not already shown above) Niger 20 68 192 Angola 28 76 173 Somalia 14 36 79 Zambia 16 41 94 Burundi 10 26 54 Mali 17 44 83 Mozambique 28 68 135 Burkina Faso 18 43 82 Malawi 18 42 76 powerful programs of state-led family planning, together with increased education, these curves could bend. If the whole of Africa were to accelerate its fertility decline to the rates achieved by Kenya, Rwanda and Ethiopia, from 13-15% a year, Africa's total population would reach only 3.1 billion instead of 4.5 billion by 2100.31 Yet the change at mid-century would be modest; The UN's low fertility variant projection continues to predict an African population of 2.3 billion by 2050 (instead of 2.5 billion in the medium variant). This is because of demographic momentum. That is, virtually all of the women who will have children from now until 2030 have already been born, so the number cannot change. Given increasing health and lifespans, more of them than ever before may have children for longer periods of time, and more and more of those children will themselves survive to have children. This means that even substantial declines in fertility in the next few decades will not have a major effect on population growth until after 2050. For comparison, the country that had the fastest decline in fertility in recent years was Iran, where fertility fell from 6.5 children per woman to 2.0 in just twenty years, from 1980-85 to 2000-05. Nevertheless. Iran's population increased from 38.7 million in 1980, when its rapid demographic transition began, to 80 million in 2010, when the transition was completed; such is the power of demographic momentum to grow population even when fertility declines. It is therefore almost impossible to expect Africa's population to do less than double by 2050, and this would be an optimistic projection. Rapid progress in reducing fertility can only have a major impact in the second half of this century. Consequences of rapid population growth: Economic, Political and International Social Science have made great strides in understanding the implications of rapid population growth. We have learned that a significant number of social changes, including divestment, political instability, education and democratisation are all linked to changes in population structure.32 We will look at how Africa quick growth is likely to affect its workforce, its politics and the international arena. Workforce growth and the economy Other parts of the world also have growing populations, but that's mainly because their adult populations are healthier and live longer. Africa is unique not only in the speed of its populations to Africa's total population are overwhelmingly young people. Africa will therefore, by the second half of the century, if not earlier, have a surge of a commodity that is becoming increasingly rare in the rest of the world – young workers. Indeed, as shown in Figure 4, workforce growth (increase in the population age 15-59) in sub-Saharan Africa is much faster and greater in numbers than in any other region of the world, including China and India. After 2040, workforce age groups will shrink all over the world except in sub-Saharan Africa. By 2070, after thirty years in which all growth in the workforce in the world in sub-Saharan Africa will be, that region will have a working-age population of 1.8 billion, more than the United States, India and China combined. If we focus on new entrants to the workforce, the youth aged 15-24, by just 2040 sub-Saharan Africa will have more than twice the youth population of China, again more than India, and nearly three times the youth of the United States and Europe combined.33 Fundamental to the future of labor productivity in both Africa and the world will be the As we have seen, secondary school entries, those for men aren't much better. The high school completion rate among the male population up to 21 years is below 15% in Burundi, Niger, Madagascar, Burkino Faso, Mozambique, the Central African Republic, Gabon, Zimbabwe, Mali, Ethiopia, South Sudan and Sierra Leone. In South Africa and Kenya, which are among Africa's leaders, it is 44%. (See Figure 4) With an average across sub-Saharan Africa of a 31% high school completion rate for men, and 24% for women, the vast majority of africa, nor to work with machinery. They are therefore likely to be left to agriculture and the informal labour market and low-productivity and low-income jobs - unless it changes.34 A fast-growing population and workforce could be a boon for the economy. Indeed, the countries of East Asia have benefited from a demographic dividend during period of rapid population growth.35 But this occurred only after three conditions were met: (1) (1) continued to decline so that the dependency ratio — the number of children, output per person has risen sharply, savings increased for investment, and more can be invested in education and training for each child. (2) Investments were made to increase enrolments in secondary/occupational and tertiary education, reaching 100% for secondary/vocational enrolments. And (3) as populations moved from the countryside to the cities, they found jobs in factories and service companies and expanded the formal economy. The demographic window for favorable development opens approximately when the population falls below 30% of the total population under the age of 15, and the proportion of people 65 and older is still under 15%. Unfortunately, most tropical sub-Saharan African countries are far from this point on, and with high fertility and falling infant die they do not include on it. Almost all tropical African countries, including good artists such as Kenya and Rwanda, are at 40 to 50% of their population between the ages of 0 and 14. Ideally, African countries will increase the skill level of workers and accelerate the decline in fertility. It would kick off a virtuous circle in which more money could be invested in per student and worker, further increase productivity and lead to sustained and rapid economic growth. The alternative, if delayed, is a vicious cycle in which fertility continues to decline slowly or stall, spurs continued growth of the young population, making it harder to provide secondary education for all youths and bare less to invest in workers. Africa has a lot of scope to increase its agricultural productivity and release workers for manufacturing and service jobs. Most of Africa's farmland is not irrigated, and the adoption of machinery, fertilizer and improved species of plants and animals has just begun. Tropical parasites and diseases, which reduce human and animal productivity, are overcome. A sorghum and cassava revolution, along the lines of the green revolution that change Asia, are potentially within reach. The big problem is whether there will be work for those who move to the cities. To some extent, construction and service jobs are growing parallel to urbanity as the expansion of cities creates their own demand. But as cities are overwhelmed with migrants, the construction of transport, housing, electricity, and squatters. Fortunately, China offers a good deal of investment in urban infrastructure in Africa, to use their knowledge of how to handle fast-growing megacities. Japan and other countries are also investing. But to be seen as this could keep up with the forecast urban population is projected to increase from 41% to 59% of total population between now and 2050.36 This means an increase in the urban population from 491 million in 2015 to 1.49 billion in 2050. Almost all population growth in the coming decades is therefore expected to end up in cities. For example, in Nigeria, the urban population is expected to grow from 87 million. But where do 200 million additional city dwellers go? Will twenty million people be added to the population of each of Nigeria's 10 largest cities in the next 35 years? Or will many dozens of new cities of 1 million or more originate from small towns? The Democratic Republic of Congo is projected to have 100 million new urban residents by 2050, Egypt 85 million, Ethiopia and Tanzania 75 million. For comparison, China increased its urban population by 583 million in the thirty-five years from 1980 to 2015; this is only 58% of the increase in urban population that Africa will add roughly one billion new workers to its workforce. Most of them will be young and eager for work, but unless things change radically, they will be ill-educated and ill-prepared for work. Almost all of them will converge on cities, looking for a better life than they had in the countryside. Some economists worry that if robots and automation take over jobs in the developing world, there won't be the kind of low-wage manufacturing jobs for Africans that have helped Asia move forward.37 Yet there are many needs within Africa for African workers to address if the transport networks for intra-African trade were developed. Exports of agricultural goods are possible if Africa's large countries are used more profitably for high value farming and animal husbandry; Kenya and Ethiopia are already among the world leaders in cut flowers, as well as high-value specialty tea and coffee. As we will discuss further below, Africa can also export workers for landscaping, construction and health and aged care. Or they could trade on their climate to offer solar energy and follow Asia in developing resorts and retirement communities with lavish personal services for developed world retirees. Unfortunately, it will probably only be marginal developments. Absent truly unselfish and creative leadership, global investment, and drive to encourage labour in major projects, Africa will be in under-service youth converging on sprawling cities across the entire landscape. Politics, Fragility and Instability Africa's politics are known for Whether it's the hundreds of military coups that took place in Africa since independence, or the civil wars and genocides that swept across central, west Africa and Algeria in the 1990s and the multiple rebellions that have taken place in West Africa since 2000, the continent is a byword for political instability. By 2010, there was hope that Africa, Ethiopia, Ghana, Uganda and Zambia led the continent to more stable and democratic government.38 The uprisings in 2010–2011 in Tunisia, Libya and Egypt were greeted with much hope as an end to dictators and the spread of democracy. But by 2018, it had become clear that many of these states had joined the global trend toward reconsidering strongman, autocratic rule. Only Ghana, Botswana, and perhaps Tunisia maintain their way into stable democracy. In Tanzania, President Magufuli was quickly transforming Tanzania from a flawed democracy into one of Africa's more brutal dictatorship was sudden. Two and a half years ago, Zambia was one of Africa's most stable democracy into one of Africa's more brutal dictatorship was sudden. international headlines. Now it's 'all, except in designation, a dictatorship,' according to the country's influential Conference of Catholic Bishops. 40 In Uganda, President Yoweri Museveni has kept in power for 32 years, changing the constitution as necessary to remain in office indefinitely.41 Unfortunately, all these tragic trends can be predicted from the state of African demographics. Numerous scholars have shown that states with large youth are bulging and sustained population growth suffering from a variety of political pressures.42 Whether these are the difficulties of providing jobs, affordable food, adequate housing, controlling inflation, or policing sprawling cities governments are hard-pressed to respond to the needs of fast-growing populations, often falling into debt by the cost of subsidies and bloated government Battles over resources among military or ethnic or regional factional struggles as the young are both drawn more to ideological extremists and more available for protest and rebellion, which are less tied to jobs and responsibilities. Conflict, or the threat of conflict, promotes the seizure of power by autocratic leaders. Demographers and political scientists have shown that not only are relatively young societies more prone to political violence, rebellions and civil wars, they are far more likely to fall back to dictatorship after phasing toward democracy.43 As Leahy et al. wrote, it is now clear that the impact of demographic conditions on a state's security Democracy is significant and quantifiable. 44 They note that: The finding that countries with very young populations are more vulnerable to conflict holds true despite the maturation of age structures worldwide at the end of the twentieth century. This suggests that the vulnerability of countries with a very young population was not only a result of the large numbers of institutionally weak states in the early stages of industrialization. Although age structures in most countries in East Asia, the Caribbean and Latin America have matured significantly over this three-decade period and many countries in these regions have come in more advanced age structures, the likelihood that countries with very young age structures would experience civil conflict actually increased in every decade from the 1970s to the 1990s.45 In fact, in these decade, countries in which 60% or more of the population was under 30 had more than four times a higher risk of experiencing outbreaks of violent civil conflict. That age structure still characterizes almost the entire sub-Saharan Africa today. Richard Cincotta found that the odds of a country being a stable democracy only exceed 50% once it has progressed in its demographic transition to the point where its median age is 29.5; the chances of being a stable democracy increase to 80% when median age reaches 35.46 With a few exceptions in the north and southern Africa, virtually all African countries have a median age under 25, and for many it is under 20. Indeed, the median age for Africa as a whole is just 19.4 years. Most African countries are therefore decades away from achieving the age structures favorable for maintaining democratic rule.47 Apart from the small island states of Mauritius, Reunion, and the Seychelles (median age 35), from 2015 no countries in Africa except for Tunisia (31) have a median age of 30 Several states in northern Africa, Botswana, Cabo Verde and Djibouti, with median age around 23-25, are on track to reach the 50% threshold in the next decade. But for all other African states, with median age of 22 or less, the likelihood of achieving stable democracy is 10-20%. That doesn't mean none of these states will remain, or return to, autocracies, with recurring waves of violent conflict.48 If there is a region to look at as a likely model for Africa's future, one need look no further than the Middle East and North Africa. Even if sub-Saharan Africa's economies prosper, it probably won't solve the problems of political disarray. The countries of Middle East and North Africa, after rapid population growth and then progress on their demographic transition, have seen decades of economic growth and rapid rapid rapid explansion before the eruption of revolutions in 2010–2011. Yet they also exhibited a huge increase in youth population and exfigure, severely downing the benefits of growth, high degrees of corruption and political exclusion and struggling to keep up with previous commitments to subsidize food prices, fuel and government employment. Syria has also been affected by climate change, as a severe drought has disrupted rural areas and attracted urban migration. Many of the countries of tropical Africa are likely to follow this path in terms of both economic growth and educational advances, combined with not enough jobs, strained governments, corruption, autocracy and extreme climate events. It was a formula that led to upheancy and is likely to do the same in tropical Africa in the coming decades. Africa and the International System until very recently, Africa was simply too small, in terms of its population and its economy, to matter a lot to the world. In 1950, the total population of sub-Saharan Africa was 180 million people. It was only twice the population of Japan, and only about a third of the population of Europe. Africa was a largely empty continent, primarily useful as a source of raw materials and primarily notable as an arena for imperialist competition among European forces. In the 1960s, imperialism was thrown off and most Africa's role as primarily a source of raw materials remained. As late as 1980, sub-Saharan Africa had just 372 million people, and Africa as a whole had 480 million; At this time, Asia had 2.6 billion people. Europe still had almost twice the population of sub-Saharan Africa's population, at 970 million, is now one-third larger than that of Europe. By 2040, twenty-five years from now, sub-Saharan Africa is projected (again, by the UN medium variant) to have 1.8 billion people, making it more than twice as populated as all of Europe (including Russia). In the sixty years from 1980 to 2040, tropical Africa will have gone from half the population of Europe to have its population twice.49 Nonetheless Africa's economy remains fairly small due to the deep poverty of its population. As of 2018, according to the IMF, the total gross domestic product from across Africa in current U.S. dollars is \$2.3 trillion — just 50% more than the GDP of Australia and New Zealand. That's about one-tenth the GDP of East Asia or of Europe and below three percent of total global output. In short, the total economic output of Africa is not much more than a finishing error in the global economy grows at 3% a year, it would take 70 years for Africa to generate even 10% of global economic output; Although Africa is likely to have more than a third of the world's population by then. While Africa will have a large number of potential consumers, their real buying power will be modest. Africa is likely to remain, overall, an economic pygmy among giants. Of course, inequality means there will still be a substantial middle class. With a population of 2.5 billion by 2050, the wealthiest ten percent would consist of 250 million people with a middle class to upper-class incomes, concentrated in some 20-30 metropolitan areas scattered across the continent. That will mean a significantly increased demand, perhaps four or fivefold, for air travel, tourism and consumer goods compared to today's level. Still, this market will still be of little importance to global multi-citizens. Much like China, Africa is likely to disappoint as a consumer market, due to low per-capita income, distinctive local tastes, a large informal market and high savings rates to deal with an uncertain environment.51 The impact of Africa on the international system will therefore depend primarily on the impact of its large population growth. This will primarily matter in terms of regional instability, extremism, climate change and disease, and international migration. We've already noted that Africa is likely to remain a continent of politically fragile states, primarily autocracies with chronic violence. As the world's largest pool of youth aged 15 to 24, it also tends to be an incubator and recruitment ground for all types of extremism from Africa, just as in recent decades it has been a concern to contain the spread of these tendencies from North Africa and the Middle East. Currently, there are already violent extremist movements active in Nigeria (Boko Haram), Somalia (al-Shabab), Uganda (Lord's Resistance Army), Mali (Al Qaeda in the Islamic Magreb), and elsewhere. This problem is likely to get worse after africa's youth population grows in the context of inequality and corrupt autocratic regimes. Africa is also potentially a source of international risks in terms of climate change and disease. The latter risks were brought home with the outbreak of Ebola in the United States in 2014. In the coming decades, the number of travellers from sub-Saharan Africa to other continents, driven by increased population and higher incomes in Africa, is likely to increase by three or four times. What makes climate change possible depends much on the world's fate of what is happening in Africa as a whole emited 1.33 million metric tons of carbon dioxide, less than Russia by itself. 80% 80% which comes from just six fossil fuel dependent industrialization countries: South Africa's CO2 output per person is therefore only 1,1 tons per annum. This compares to 1.8 tons a year in India.52 But Africa's CO2 output per person is growing rapidly. much faster than its population. This is to be expected as increases in revenue and exaltation will lead to higher per capita fuel and electric consumption. From 1950 to 2016, Africa's CO2 emissions increased by a factor of 14.53 Today, Africa has 1.2 billion people and is projected to have 3 billion by 2060. If CO2 emissions per capita were to simply rise to the level of India today, Africa's total CO2 output would guadruple to 5.45 million mt of CO2 a year - the same emissions level per person as India today by 2060, then even if China, the United States, India, Russia, Japan and Germany would all cut their CO2 emissions by 20%, which would not offset the increases to CO2 output from Africa. It is therefore essential that Africa is placed on a course of solar, wind, geotermal, hydro and nuclear power for its fuel needs. Otherwise, even a modest increase in Africa's per capita emissions will make it impossible for more developed countries to make meaningful reductions in the world's carbon charging. Fortunately, with the backing of foreign capital, mainly from China, more than 100 coal-fired electrical plants in various stages of planning or development in Africa.54 Along climate change are the biggest impact Africa is likely to have on the international system, through a growing contribution. It will have two components: labor migration and refugee movements. To date, sub-Saharan Africa has been a modest contributor to global labor migration. North Africa has had a much higher rate of migration outside Africa, with many North Africans working in the Gulf oil countries and, more recently, refugees from the Libyan civil war seeking asylum in Europe. Yet the number of sub-Saharan Africans looking to move to the United States and Europe has risen steadily. From 2010 to 2017 Europe received nearly one million asylum applications from sub-Saharan Africans who reached its shores, more than half of them in the three years 2015–2017; the United States received less, about 400,000 from 2010 to 2016. But many of these claims have been rejected; the net increase in sub-Saharan Africans living in Europe in these years was only 420,000. In the United States, which took more students and skilled workers, the increase was 325,000 in the same period. Alfther, there is an estimated million sub-Saharan Africans living in the United States vas 325,000 in the same period. States are from four countries: Nigeria, Ethiopia, Ghana, and Kenya. In Europe there is a bigger mix, with half of sub-Saharan migrants coming from Nigeria, South Africa, Somalia, Senegal, Ghana, Angola, Kenya, the DRC, and Cameroon. What are the prospects for a huge increase in migration from these and other countries? The pressure factors are obvious: the number of young Africans aged 15 to 24 is growing rapidly; their numbers will double from 230 million in 2015 to 461 million by 2050 (94% of that increase came from sub-Saharan Africa). Many will be unprotected or understimated at home. More and more of them will learn about life in Europe and the United States from friends, family, and media and have the resources to consider moving. While most will only move to larger cities in their first choice of destinations is Europe or the United States, but even though the number of migrants from sub-Saharan Africa to the United States and Europe was to double, or even triple, in the next three decades, the annual numbers would be less than 600,000 a year to Europe (out of a projected population of Western Europe in 2050 of 457 million, or 0.13 percent), and less than half that to the United States (or about 0.08 percent). If done in an orderly way, this volume of migration is not a threat. One might worry that a greater risk is a repeat of what happened in 2015 with the surge of immigrants to Europe driven by Syria's civil war, when one million migrants entered Europe in the span of several months, briefly pushing migrant flows up to five times higher than in previous years, creating a shock to Europe's political system. Syria's war has created about five million international refugees from a prewar population of climate disaster and civil war broke out in the Democratic Republic of Congo (estimated population then of 104 million) or Ethiopia (126 million) or South Africa (62 million), could it also send millions of refugees to Europe? It's possible; if aid cannot be given in place, or if refugees are not welcomed in neighboring countries, those desperate for survival can undertake the costs and risks of trying to come to Europe. The Syrian surge does not appear to have been a major economic burden for Europe, but has had tremendous political consequences. The sudden flow of foreigners to Europe's borders, and management promoted.56 If about every decade a major crisis were to send 500,000 to one million African refugees to Europe's borders, which could have the effect of periodically worsening identity and political extremism, strengthening populist regimes, and doing sustained damage to European democracy. Another and more pragmatic approach to migration would be to view the large numbers of young african workers as an untapped resource. For most resources, be it minerals or fossil fuels, if they are rare in Europe, but cheap and plentiful elsewhere, international investment flows in to refine and upgrade the resource and export it to Europe. Why shouldn't African labour be seen similarly? Europe and America already face severe shortages of low-wage labor for service, construction and parent care work — jobs that are not done easily or cheaply by robots. There are also shortages of skilled workers for jobs such as nursing and pharmacy and healthcare, shortages that will grow as the populations of Europe and America age. Europe and America also face huge future costs to fund their national and local pension and healthcare systems with a shrinking workforce. In the United States, for example, the recent drop in fertility to record low levels has resulted in the U.S. Census reduced its population (forecast in 2008) to 390 million (latest forecast in 2017).57 That means in 2050, the United States will have nearly 50 million fewer people —most of them prime working age—than expected just ten years ago to pay into social security and Medicare to seniors to pay seniors and that's with recent immigration, due to low fertility, the U.S. workforce would already be in decline. The United States will need an additional one million immigrants a year for the next 35 years only to return to the 2050 population that was expected a decade ago! Many potential African migrants to the United States and Europe are Christians who speak French or English, mitigate anxieties about how they would fit into American or European society. So it would make sense for the United States and Europe to plan to attract more migrants from Africa to meet the needs of their aging and pre-screening overseas to create orderly migration inflows. Increased training and migration from Africans to developed Western countries can also, as happened with India and China, create a virtuous circle of return migration over time to increase management and entrepreneurial skills in Africa and improve prospects for Africa's Demographic Growth Ideal jeal, Africa's population growth, and Entry of African populations into the global economy as workers and consumers will recapitalize the success stories of East Asia. Even Bangladesh, once written off as a basket case, and whose population doubled in the 30 years from 1975 to 2005, emerged as a success, being one of the world's fastest growing economies and increasing its per capita income by 64% in the decade from 2007 to 2017.58 But Bangladesh's performance depended on reducing its fertility from 6.9 children per woman in 1970-75 to 2.5 in 2005-10, and to make investments in its human capital and infrastructure that allowed it to become an important textile manufacturer and exporter and create its own financial, steel, pharmaceutical, and food processing industries. To mimic that success, African countries and their Western supporters and partners must adopt a two-pronged approach. From now until 2050, the main goals must deal with the effects of inevitably rapid population growth and yet continue to work on lowering fertility as quickly as possible so that Africa can achieve continued high growth in income per head after 2050. During the 30 years from 1975 to 2005 when its population doubled, Bangladesh had only modest growth in per capita income, struggling with coups and unstable government. Still, it managed to reduce its fertility and improve its education and economic infrastructure so it was ready for rapid growth in the next decade. For Africa's high fertility will require the conditions that both lead to higher desired family sizes and weaken women's ability to assert their preferences if they desire fewer children.59 It means empowering women through later marriage and greater education. Indeed, arguably the single most important investment for international donors that can be made in Africa's future – both for the earning capacity of its population and the torrent of the flood of population growth after 2050 – is to target universal secondary education for both generations. If Africa can turn the corner on fertility by 2050 and reduce its population for future growth, Africa could be the main car of global economic growth in the second half of this century, as much as China has been for the past thirty years and India could be the main car of global economic growth for the next thirty years. However, if Africa fails to do so, the ever-greater swell of its population will mean that its economic lags and political instability will only increase and become an even greater burden for the international system later in the century. The pressure on Africa's labour markets, urban centres and political stability of the population growth that will inevitably take place by the middle of the century will immensely African countries and developing nations would be wise to plan now to meet this pressure by developing a variety of standby rapid response institutions. This is includes providing humanitarian assistance for larger populations likely to be affected by extreme climate events and the provision of peacekeeping and refugee settlement and support for populations likely to be affected by rebellions and civil wars. It also includes providing social media campaigns, information sharing and well-trained police/gendarme forces to combat the spread of extremist ideologies and extremist actors. While it would be too much to expect most sub-Saharan African countries to achieve stable democracy before their fertility is brought down and the age structure of their societies expires, critical steps can be taken by the international community to discourage corruption, improve administrative and legislative capacity and raise expectations regarding government behavior. Africa is likely to make greater progress among regimes, whether autocratic, that respect the rule of law, develop strong private sectors and invest primarily in show projects and elite consumption. There is also great potential for Western countries to help themselves, as well as Africa, by treating the surge of young people in Africa as an opportunity rather than a threat. By helping to train Africa workers in their countries and facilitate a larger but more orderly flow of migrants, Western countries can help fulfil their own shortages of labor, take better care of providing for their aging populations in terms of both fiscal health and physical care, and creating cadres of African workers who will be able to contribute to the global economy. Indeed, among the literally billions of Africans to be born in the 21st century, there is no doubt future Mozarts, Einsteins, Salks and Picassos, as well as brilliant artists, writers and thinkers of all kinds. Depriving the world of that talent through a lack of education and opportunity would be a tragedy to all of humanity. In the coming decades, Africa will have by far the fastest growing population anywhere in the world and will soon be the only fast-growing source of one of the most precious resources on the planet — young people. This will create risks and anxieties, enticing the develop that youth as productive contributors to their own and the global economy, and managing Africa's future energy transition to reduce its impact on climate, will be the important tasks for global security and prosperity in the coming century. Jack Goldstone is the Virginia E. and John T. Hazel, Chair professor of public policy at George Mason University and a global fellow of the Woodrow Wilson International Center. Supports day of dataphore 1. Un Un from fertility decline from 1990-1995 to 2010-2015 vs. DHS Reported Fertility in sub-Saharan Africa Figure 4. Growth of Workforce (Population Age 15-59) in millions, 1980–2100 1 Data on demographic variables of the UN Population Division, World Population Prospects 2017 review on-line and the UN Population Division, World Diversification Prospects, 2018 Review, on-line Interview on-line and the UN Population, World Diversification Prospects, 2018 Review, on-line and the UN Population Division, World Diversification Prospects, 2018 Review, on-line Interview on-line Interview on Prospects, 2018 Review, on Prospects, 2018 Harvard Institute for Economic Research Discussion Paper Number 1959, Cambridge, MA: Harvard University, June 2002. 2 The UN Population Division divides Africa into five regions, it is drawn from the UN World Population Outlook 2017 review, which gives population-weighted totals for each region. 3 All death data in this section are from UN World Population Outlook 2017 The estimate of life expectancy in 2050-55 is of their medium variant projection. 4 Fertility Data herein and subsequent paragraphs are some of the UN World Population Outlook 2017. 5 Jean-Pierre Guengant and John F. 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