

Programmed Explosion?

The Potential Consequences of the
Rapid Population Growth in Sub-Saharan Africa

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The African sub-Saharan countries are demographically a special case. In the course of the 20th century population has admittedly also grown in other areas of the world, but this process did not take place anywhere near as rapidly as in these states. If the population boom of the 20th century should be followed by a second one in the 21st century, its impacts would not stay limited to the African continent alone.



Demographic special case: Throughout the course of the 20th century, population in the sub-Saharan African countries has increased sevenfold. Source: © Akintunde Akinleye, Reuters.

The most spectacular demographic changes in the whole of human history are currently taking place on the African continent and this development is set to continue over the course of the coming decades.¹ As Europeans used to stagnant population figures, we find it very difficult to grasp the consequences of a three per cent growth in population leading to an approximate doubling of the population every twenty years.

In Terms of Demographics, Africa is a Special Case

In sub-Saharan Africa, we witness a demographic development different from that of the other continents. Due to the upheavals and unrest caused by the slave trade, Africa is the only continent whose population virtually stagnated between 1500 and 1900, increasing from some 80 to 95 million only. While growth rates were at a very low level elsewhere in the world during the same period, they still developed to a five-fold increase in population numbers in Europe and China.

During the course of the 20th century, Europe's population doubled, China's tripled, India's grew fivefold, and sub-Saharan Africa's increased sevenfold. This immense boost in the global population over the whole course of the 20th century can be attributed to the convergence of two factors: Firstly, the strong decrease in mortality, particularly child mortality, and secondly, persistently high fertility rates (average number of children per woman) until a gradual decline in fertility rate set in. This, in combination with a declining death rate, defines the so-called demographic transition.

From the 1960s onwards, fertility rates dropped rapidly everywhere, except for sub-Saharan Africa where it remained very high with 5.4 children per woman in the recent period from 2005 to 2010; during the last few years, the rate actually exceeded seven children per woman in most countries in the Sahel. This significant disparity between the rapid decline in the death rate and the decline in fertility is the main anomaly in Africa's demographic circumstances.

This situation has resulted in continuously high population growth rates of on average 2.7 per cent in all sub-Saharan African countries and of over three per cent in most countries in the Sahel. So how will this African population develop in the course of the 21st century?

In view of the persistently high fertility rate, it seems likely that Africa is set to experience a second population explosion during the 21st century following the initial population explosion in the 20th century. But what will be its extent? In view of the inertia that characterises demographic phenomena, one can already forecast that the population in sub-Saharan Africa will reach between 1.3 and 1.4 billion by 2030. In this region, the decline in fertility rates is considerably slower than one would expect according to the classic model. Disregarding the five countries of southern Africa, it appears that the fertility rates are, in fact, currently stabilising at over four children in the most highly developed and urbanised African countries; there has been no serious analysis of how cultural and religious reasons, lack of access to contraception and lack of interest on the part of the authorities may affect the situation. Research indicates that there has been no significant progress in the use of contraception as this only increased by 0.2 per cent per year in the first decade of the 21st century.

It has to be mentioned that the authorities have shown a lack of commitment where the promotion of active family planning measures is concerned. External donors also show little concern for resolving this issue. The amount set aside by the member states of the Organization for Economic Cooperation and Development (OECD) to run population programs accounts for merely 0.2 per cent of its overall aid budget. In addition, numerous religious authorities, ranging from the American Right to the jihadists from the Sahel, are vehemently opposed to birth control.

Accordingly, there is a high degree of uncertainty about the population figures to be expected by 2050. We do not know, for instance,



how quickly the mortality rate among children under five can be reduced. In Africa, this rate declined from 256 per 1000 children in the early 1970s to 120 per 1000 today. That said, child mortality is almost ten times lower in Asia and twenty times lower in Europe. Significant progress is therefore to be expected in this area. However, while this is in itself highly desirable, this progress will undoubtedly have an effect on population growth rates.

The population of sub-Saharan African countries, which is put at close to one billion for 2016, will most likely at least have doubled by 2050. If the fertility rate throughout sub-Saharan Africa were to decline from 5.4 children per woman (as in the 2005 to 2010 period) to 2.6 at the beginning of the 2050s, the population would rise to 1.8 billion by 2050. However, if the fertility rate were still as high as 3.5 children per woman, the population would rise to 2.3 billion.

Population Growth is Particularly Worrying in Niger

When it gained its independence in 1960, Niger had a population of approximately three million. The figure has since risen to 20 million. And one can safely assume that whatever the expected development of the fertility rate and family planning efforts, Niger will have over 40 million inhabitants by 2035 (the previous estimate for population growth of some 3.5 per cent was revised upwards to four per cent in 2015 and may even exceed the 4.3 per cent mark by 2035 based on the latest development).

Forecasts for the period between 2035 and 2050 differ greatly depending on the assumed decline in the fertility rate. They range from a very optimistic figure of 63 million at a fertility rate of 4.1 by 2050 to 76 million at a rate of 5.1 and finally to 89 million if the fertility rate were to remain at the current level of 7.6. One can conclude that by 2050 twenty times as many people will live in Niger as in 1960. Yet, is it not the children who are a family's wealth and a people's future?

Niger has a land mass of 1,267 million square kilometers, making the country roughly two-and-a-half times the size of France. But over 85 per cent of the population live in the most southerly 20 per cent of the national territory. Less than eight per cent of the land benefits from average rainfall exceeding 400 mm and is suitable for agricultural use. In these areas, population density varies between 60 and over 100 inhabitants per square kilometers, even up to 150 inhabitants in some districts.

In view of the irregular rainfall, a great disparity in soil quality, the current extensive cultivation methods and scarcity of irrigation, a population density of such degree becomes problematic as soon as the threshold of some 40 inhabitants per square kilometer is exceeded. This is because a higher population density results in a shortage of fallows, land overuse, dramatic deforestation to cover the demand for firewood and a growth in conflicts with cattle herders, who no longer have sufficient space for their nomadic herding. There are already various documents² in the public domain indicating that the amount of arable land per head of the working population has halved in thirty years, declining from 11.8 hectares in 1980 to five hectares in 2010.

This uncontrolled population growth has led to the proliferation of areas – by now even entire regions – suffering from dramatic rural poverty, where tensions about land use aggravate and situations arise only to be described as localised Malthusian catastrophes.³ These problems are undoubtedly exacerbated by the lack of appropriate public and private investment in agriculture and inadequate agricultural policies.

Is a Demographic Crisis Inevitable in the Sahel Region?

In the debate about population development, the proponents of the doctrine put forward by Jean Bodin in 1576, which says that it is people who generate power and wealth, frequently find themselves opposed by the followers of Malthus, who argued in favour of limiting population

growth to prevent famine, wars and epidemics in his 1798 publication “An Essay on the Principle of Population”. There have been many changes since the two authors published their works. Indubitably, the 19th and 20th centuries were still characterised by numerous famines, wars and epidemics, for which there were various reasons, not exclusively demographic ones. By and large, Malthus was in error as scientific progress, particularly in the area of agricultural science, has confounded his predictions. However, experts are also aware of the fact that at a local level, for example in a valley in Afghanistan or in a certain area of the Sahel, the combination of exceptional population growth and a lack of investment in agriculture and technical progress can result in Malthus’ predictions unfortunately coming true in some instances. In Niger and in other Sahel countries for instance, indications of an increase in rural exodus as well as increased dependence on humanitarian aid are to be witnessed, a situation which is only likely to deteriorate.

Once every three years, Niger suffers from cereal shortages in excess of 200,000 tons. In periods of extreme drought, this can easily rise to a million tons. It is true that this demand is generally covered by regional trade with the neighbouring countries and by the efforts of the Office des Produits Vivriers du Niger (OVPN), the authority for strategic provision and national intervention. However, whenever the drought affects the entire sub-region, as was the case to a large extent in 1973 and 1984, the situation quickly takes a dramatic turn. Even in “almost” ordinary periods of moderate drought, such as 2009 to 2010, as many as 2.3 million Nigerians suffered from malnutrition.

In all these areas, people are engaged in subsistence farming, which often does not even cover their own needs. They have to seek resources elsewhere, resulting in a rural exodus to the major cities or to Nigeria or Ivory Coast, where they are not always welcome and where many of them do not find work. A minor climatic event can cause supply shortages or even famines.

Regularly recurring periods of drought result in a catastrophic chain of damaging events. Besides spectacular crop failures due to water shortages, there are fairly regular swarms of locusts that devastate crops and grazing land, epidemics that spread through herds of cattle, food price inflation (with prices going up four or fivefold), declining livestock numbers and a drop in the number of people making a living from farming and cattle breeding, proliferating debt, a deterioration in nutritional standards and, of course, growth in poverty. The correlations between these different mechanisms indicate that the effects of a strong drought can be felt for several years. Considering these conditions, it is comprehensible that young people dream of leaving their homeland.

A lot of young people dream of leaving their homeland Niger, in which minor climatic changes often result in hardships.

In view of the country’s increasing dependence on imports and food aid, significant efforts are being made to develop irrigation systems of all types: large-scale irrigation systems, communal or individual small-scale irrigation, and measures to improve the use of surface water. Despite these efforts, cereals grown on irrigated land accounts for less than two per cent of overall cereals production, and forecasts show that even if all the areas suitable for irrigation were sown, i.e. some 330,000 hectares, Niger would continue to depend strongly (at around 75 per cent by 2050) on an extremely precarious rain-fed agriculture.

High Population Growth Leads to Increased Poverty

The principle that large numbers of children always represent a source of wealth is undeniably correct within the rural family context as



it increases the amount of manpower; but at a national level, the principle does not hold true. Firstly, very high population growth depresses the growth of per capita income. If GDP grows by five per cent and the population grows by 3.5 per cent, the effective GDP growth per person is only 1.5 per cent and it would consequently take over forty-five years to double the living standard per inhabitant. This problem is illustrated dramatically by the development of per capita GDP in Niger which has declined by a third since the country gained its independence, dropping from 476 U.S. dollars⁴ in 1960 to 297 U.S. dollars in 2014, reaching a low point of around 260 U.S. dollars in the period from 2002 to 2010.

The second reason has to do with the budget; if the population of a poor country increases by 750,000 children every year, as is currently the case in Niger, and infants and school-age children already make up half the population, covering their needs in the areas of education, training and healthcare becomes an absolutely prohibitive financial burden. Niger has made considerable efforts with respect to schooling over the last fifteen years. The primary school enrolment ratio rose from 31 per cent in 2000 to almost 84 per cent in 2014. However, the quality of this education has lagged behind and the average period children spend at school is under 1.4 years, while it takes at least five years for a child to become proficient in reading, writing and arithmetic.

In principle, the growth of the working age population (individuals age 15 to 64) leads to a phenomenon described as the “demographic dividend”, which encourages population growth and has to do with the fact that many cohorts representing a high labour potential are coming

of age. This demographic dividend means the ratio between dependents under 15 and those in work declines. However, if fertility remains very high, the number of dependent children also remains very high, and there are only few African countries that can hope to benefit from this demographic dividend, as John May from the Population Reference Bureau and Hans Groth from the World Demographic & Ageing Forum point out in their book to be published in the spring of 2017.⁵

One must also bear in mind that the young people who are flooding onto the labour market need to find decent jobs if they are to benefit from a demographic dividend. In Africa, however, such prospects mostly remain illusory due to the reality of the labour market.

Again, regarding the situation in Niger, jobs in the processing industry (excluding mining and oil) only number around 4,000, while the size of the cohort of young men entering the job market every year is in the range of 240,000. Due to land scarcity, poor soil fertility and meagre returns from agriculture, young people are therefore driven out of rural areas. Unfortunately, they have a far greater likelihood of entering the masses of unemployed casual workers living in the slums than of obtaining a skilled job; the same applies to young people in the cities, including graduates.

All in all, it now appears virtually certain that the demographic transition in sub-Saharan Africa and particularly in the Sahel has only just begun and will take decades to conclude. The next thirty years will see a spectacular rise in population figures and the number of young people, which will have a detrimental effect on food availability, the improvement of living standards, social benefits and the job situation above all. Both in the rural areas and in the megacities, there will be vast numbers of unemployed people, who have no hope for social advancement and many of whom will be frustrated graduates ready to engage into risky endeavours.

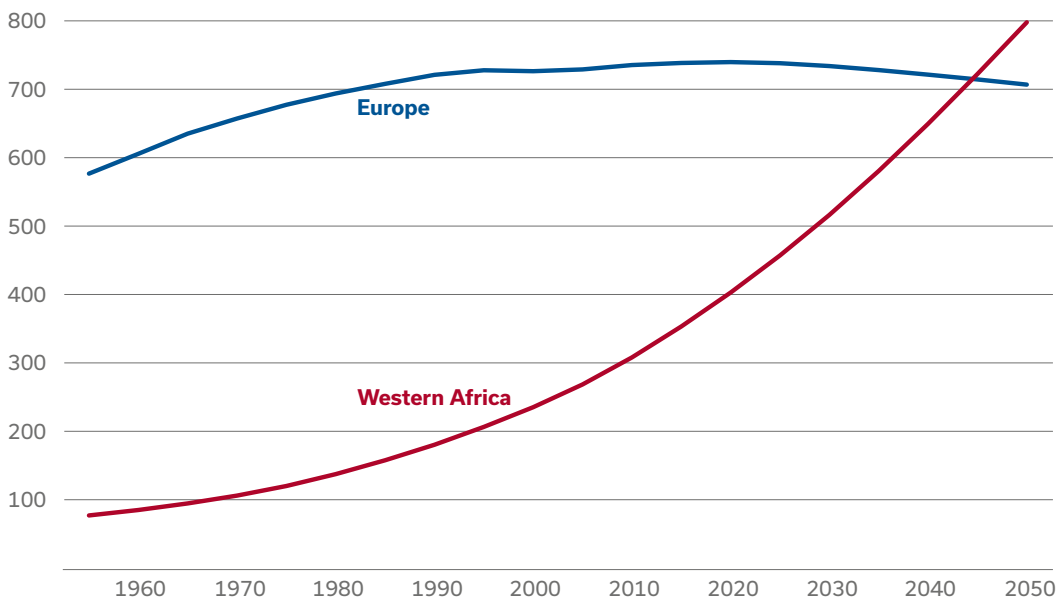
← Orthoptera: Locust plagues are an additional factor exacerbating farming under adverse climatic conditions.
Source: © Pierre Holtz, Reuters.

Large numbers of young Africans in the cities belong to the group of those referred to as “NEETS”, i.e. not in education, employment or training. These young people, many of whom have gone off the rails, are either sponging off their parents or living by various types of theft. At this point, it is worth mentioning that the same phenomenon can be attributed a very significant role in the increasing tensions in the Middle East, which led to the famous Arab Spring and to the catastrophes taking place in Syria as well as in Iraq and Yemen. Therefore, the coming decades in sub-Saharan Africa will most surely turn into decades beset by all kinds of dangers, as I pointed out in one of my previous books.⁶

The Demography of Niger and the Sahel Zone Has the Potential to Destabilise All of Western Africa

How can a landlocked country like Niger with only limited agricultural potential, adverse climatic conditions and a poorly educated population hope to be capable of offering 60 to 80 million inhabitants a normal life on its territory in 35 years’ time? And how can the group of the four countries forming the core of the Francophone Sahel Zone, whose population is set to increase from 67 million in 2015 to 120 or 132 million by 2035 and then to 170 to 210 million by 2050, hope to master first a doubling and then a tripling of its population in such a short time knowing that the population will

Fig. 1: Population Growth in Europe and Western Africa (in Million)



Countries in Western Africa: Benin, Burkina Faso, Cabo Verde, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Saint Helena, Senegal, Sierra Leone, Togo.

Source: Worldometers 2016: Western Africa Population Forecast, in: <http://worldometers.info/world-population/western-africa-population> [8 Dec 2016]; idem 2016: Europe Population Forecast, in: <http://worldometers.info/world-population/europe-population> [8 Dec 2016] (each with data from: UN, Department of Economic and Social Affairs, Population Division. World Population Prospects: The 2015 Revision).

continue to increase after 2100, even if substantial efforts are made in the area of family planning?

It is hard to believe that this insane growth in population in a region of the world that faces so many disadvantages and threats will be without dramatic consequences. These could manifest in large-scale regional famines in a situation where food and humanitarian aid would be overwhelmed in the event of crop failures due to a climatic catastrophe. One can hardly expect to feed 30 or 50 million people with food aid for the simple reason that the required volumes of cereals would not be available on time, the mobilisation of the resources would take too long and may not even be possible, and finally the logistics systems would not cope with distributing the aid even if, by a miracle, the first two problems could be overcome. In fact, humanitarian aid tends to be largely ineffective when there has been a severe drought affecting an entire region as this precludes intraregional trade making up for local deficits.

Throughout human history, overpopulation has repeatedly led to the collapse of whole civilisations.

People often forget that phenomena involving overpopulation have resulted in the collapse of entire civilisations throughout human history. In the remarkable book by Jared Diamond,⁷ itself carrying the word “collapse” in the title, there are several examples of societies that have not survived environmental crises that they brought about themselves. They also forget the dramatic famines costing the lives of millions of people. Leaving to one side the major famines of the 20th century in Ukraine and China, which resulted from despotic or erroneous policies, Ireland is a case in point. There, around one million people starved to death between 1846 and 1851 when the potato blight devastated several harvests in succession in a situation where the population

had grown from four to nine million within four decades. This famine caused mass emigration to the United States.

A similar drama of historic dimension is most likely to take place in the Sahel, long before the population will have tripled by 2050. The final report of the multi-disciplinary conference on the Sahel crisis that the University of California, Berkeley organised in 2013 in collaboration with the OASIS Initiative stresses that “[t]here is no escaping the conclusion that climate change and population growth in the Sahel will rapidly outstrip the food supply”.⁸ The first famines, even relatively minor ones, would trigger massive migration flows to coastal countries and to Europe. The exceptional character of such a migration, while representing the most natural “safety valve”, would inevitably initiate a xenophobic response of unprecedented severity and, as we have seen several times in the past, result in massive deportations and widespread turmoil. The unrest in Ivory Coast and in Libya in 2010 to 2011 resulted in the repatriation of 210,000 Nigerians, triggering a great deal of tension.

But a consequence even more likely, even before such famines set in, will be that the impoverishment of rural areas and the sense of hopelessness felt by the young will boost jihadism. The threat of this is already ubiquitous. Being caught between Boko Haram in the south-east, Libya in the north, which is drowning in fire and blood and the persistently unstable northern and central parts of Mali, insecurity will probably become so widespread that economic life becomes paralysed. One telling example is the disastrous situation in north-eastern Nigeria, where the insurgency conducted by Boko Haram is paralysing economic activity and where a humanitarian catastrophe is looming. The insecurity that is currently still increasing in the Sahel may well spill over into Ivory Coast, Cameroon, Senegal and Nigeria, whose fragility people tend to underestimate. In any case, it is certain that if the current demographic trend in the Sahel continues, the situation will become unmanageable.



Causes of flight: Famines that are already foreseeable now would cause massive migration movements – especially within Africa. Source: © Isaac Billy, Reuters.

Such Worrying Development Is not yet Irreversible

While the situation and current developments in the Sahel are extremely worrying, appropriate policies could mitigate the negative consequences of this extraordinary population growth and at least help to gain some time.

Suitable measures in the area of agricultural policy and rural development could undoubtedly slow the rural exodus and initiate genuine and sustainable growth in the rural areas for a certain time; René Billaz, former Scientific Director of the well-known French research institute CIRAD and subsequently President of the NGO *Agronomes et Vétérinaires Sans*



Frontières, has just published a remarkable book⁹ summarising his sixty years of global experience in tropical agronomy and his extraordinary expertise in agriculture in the Sahel. The title of his book, which translates as “Turning the Sahel into a Land of Plenty”, paints a clear picture of the challenge. Although the funding that is available for agricultural research is very mod-

est, the systematic application of knowledge about agricultural ecology in the Sahel that has been acquired over half a century’s time would make it technically entirely possible to at least minimise the consequences of ongoing climate change for agriculture in the immediate future and double agricultural yields, entirely without using expensive chemical fertilizers and pesticides.

The measures range from protecting and restoring soil fertility to controlling the rainwater cycle. This would require some adaptations, a special way of working the soil, the introduction of animal traction and low-level mechanisation, and the use of biopesticides. All this should, however, be followed by the introduction of solar electricity in rural areas, which is essential for the development of craft businesses, and a literacy drive naturally. The problem lies in managing the leap from the micro to the macro level, from pilot projects, demonstrating what is feasible by the example of a dozen villages, to the macro level with millions of beneficiaries. The application of these fundamental principles requires significant investment and the effective implementation of comprehensive development programs for rural areas in a situation where local budgets only include ridiculously small amounts for rural development (less than eight to ten per cent of the budget, although 80 per cent of the population live in rural areas) and international aid organisations have scandalously withdrawn from this sector, devoting a mere four to eight per cent of their resources to it.

A few figures illustrate this huge discrepancy between current realities and the existing demand. Burkina Faso would need 250,000 so-called *Kassines*, lightweight ploughs suitable to be pulled by donkeys. Local production capacity is 400 units per year. In Niger, 0.2 per cent of the rural population have access to electricity. And finally, 90 per cent of farmers in this country are illiterate (95 per cent of women in rural areas).

But gaining some time does not mean the fight will be won, and there is now also an urgent need to control human fertility. With respect to this culturally, religiously and ideologically highly sensitive issue, people still indulge in the hope that the problem will ultimately resolve itself “spontaneously” through education and the proliferation of modern means of contraception as economic development progresses.

In Europe, North America and Russia, this approach of relying on economic development and education was successful. However, in those countries, the demographic transition stretched over some hundred years and natural growth did not exceed one per cent a year. In Latin America and Asia, where Nobel Prize winner Gunnar Myrdal forecast dramatic famines in a famous book published almost half



Empowerment: Birth control programs could not only slow down population growth, but also contribute to women's equality. Source: © Joe Penney, Reuters.

a century ago,¹⁰ natural annual growth rates of over two per cent were short-lived. In how many decades can one seriously expect sensible population growth rates of around one per cent a year, as is the case in Asia and Latin America these days, in sub-Saharan Africa and particularly in the Sahel Zone, where population growth has been above three per cent since 1960?



Birth Control Is Unavoidable, But Is It Actually Politically Feasible?

The situation in the Sahel is unique in recent history. The unemployment problem both in rural areas and in the cities, which is already very worrying today, will turn into one of the most urgent problems that the governments of the Sahel countries will have to address. In the given situation, these governments have the historic responsibility to express opinions deviating from those of the religious authorities and promote them in opposition to the prevailing culture and mind-set in order to initiate comprehensive family planning programs as quickly as possible.

Is the introduction of such programs possible? Technically speaking it certainly is, because there are plenty of examples of success (and of instructive failures) with programs of this type in other parts of the world. This enables the authorities to promote the development and introduction of programs with a global character, which will facilitate better fertility control. Such programs will need to be conducted with caution, taking the culture of the respective country into account. The costs would be reasonable, amounting to a figure between six and 35 U.S. dollars per family per year in a country such as Niger, depending on the type and objective of the expenditure involved.

But is it politically feasible? Will the governments have the courage to go against prevailing opinion, against religious conservatives, seeing that armed opposition groups could use the issue as a political argument that may have a destabilising effect? Are the international donors, who have always avoided the issue, now prepared to come out of their comfort zone and offer support for the governments' efforts? Are they ready to defy the prohibitive edicts of the religious right in the USA, which has considerable influence? This would require a very ambitious lobbying program to bring on board numerous influential partners, ranging from the Catholic Church to the religious

Republican right in the USA, and get them to at least remain neutral on this issue.

Will carefully thought-through strategies that have worked in well-organised countries such as Iran (where the fertility rate dropped from six children per woman in 1986 to 3.5 in 1994, i.e. within less than a decade), ultimately also work in countries such as Niger, with its poor infrastructure and inefficient institutions? We do not know the answer to that question yet. But the answer will be of crucial importance for the continent's future.

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- 1 In 2015, Serge Michailof published a book with the title *Africanistan - L'Afrique en crise va-t-elle se retro- uver dans nos banlieues?* (Fayard, Paris) dealing with the difficulties that could only be outlined here.
- 2 Cf. Nigerien Ministry of Agricultural Development 2013: *Stratégie de la petite irrigation au Niger*.
- 3 Cf. Potts, Malcom / Henderson, Courtney / Campbell, Martha 2013: *The Sahel, a Malthusian Challenge in: Environmental and Resource Economics*, Aug 2013, Vol. 55.
- 4 Expressed in constant dollars at 2005 rate.
- 5 Cf. May, John / Groth, Hans (eds.) 2017: *Africa's Population: In Search of a Demographic Dividend*, New York.
- 6 Cf. Michailof, Serge 2010: *Notre maison brûle au Sud*. Fayard.
- 7 Cf. Diamond, Jared 2005: *Collapse. How Societies Choose to Fail or to Succeed*, New York.
- 8 Cf. OASIS Conference 2013: *Crisis in the Sahel, Possible Solutions and the Consequences of Inaction*, Berkeley.
- 9 Cf. Billaz, René 2016: *Faire du Sahel un pays de cocagne*, Paris.
- 10 Cf. Myrdal, Gunnar 1968: *Asian Drama, an Inquiry into the Poverty of Nations*, London.