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Impact of Education Quality on Sustainable Development in Africa

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Introduction

Africa is a continent in crisis. Despite being rich in natural resources, it is blighted by widespread poverty, corruption, bad governance and a very low standard of living in many countries. The contribution of Africa to global research and the global economy is very low, as is evident in all statistics coming from reputable international organisations such as the United Nations Development Programme (UNDP), the United Nations Economic Commission for Africa and the World Economic Forum. In Dafa'Alla et al. (2015, 2016), we presented the meaning, goals and objectives of education as a human right and argued that, realistically, the existing or prevailing social, political and economic conditions of life

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are taken into consideration and largely determine the aims of pragmatic education. This is particularly true for developing countries, which need to optimise their resources in order to serve their national development plans and goals as best as they can. Our aim in this chapter is to investigate the role of education in achieving sustainable development, and whether it can reasonably be expected to improve the state of underdevelopment from which Africa suffers.

Sudan is considered as representative of many African countries that have emerged from the colonial phase and are still trying to find their footing in the modern world, with varying degrees of success. Like many African countries, Sudan also inherited a British colonial education system that was designed to prepare the Sudanese only for taking up certain subordinate positions in government offices (Mohamed 2005). It was not intended to develop among the people capacities to take leadership and initiative in different walks of life. Hence, the aims and objectives of the education system were adjusted after independence to put more emphasis on promoting education to serve the development needs of the country economically, technologically, culturally as well as socially. Accordingly, in this chapter we will review the performance of the education system in post-independence Sudan in order to understand and relate major reforms that took place during this period and assess their impact on the economic performance of the country. We will then generalise and apply lessons learned from the Sudanese experience to the problem of underdevelopment in the whole continent of Africa.

Literature Review

It is not the intention of this section to cover the literature on education in general. Rather, it will review three important themes central to the objectives of the chapter, namely the evolution of the concept of education as a human right, the importance of the link between education aims and objectives and the national development plan (NDP), and modelling education as a 'system' using an engineering methodology approach, as found in the literature.

The United Nations Educational, Scientific and Cultural Organization (UNESCO) made an effort to harmonise national education systems with international education strategies and visions. These strategies evolved from workforce and socio-economic development drivers to more humanistic ones. In 1972, UNESCO formulated the vision of 'Learning to be', a concept of lifelong education that meets the challenges of a rapidly changing world (Faure et al. 1972). This vision was seen as necessary because of its advantages of flexibility, diversity and availability at different times and places. It also went beyond the traditional distinction between initial schooling and continuing education to suggest lifelong education as the master concept for educational policies. Additionally, UNESCO's report (Faure et al. 1972) aimed towards developing a scientific humanism, creativity, social commitment, complete development and learning society. This was followed by a global commitment during the World Conference on Education for All at Jomtien, Thailand to make primary education accessible to all children in order to massively reduce illiteracy before the end of the decade (UNESCO 1990). At this conference, a clear tie between human development and contemporary global challenges was established, and this became the driver of the recommended Global Education Action Plan for the 1990s. The focus on universal access to learning and equality in education was fostered by the Dakar Action Framework to establish tight monitoring, evaluation and global commitment to Education for All, which were summarised in the six goals of the Dakar Declaration to be achieved by 2015 (UNESCO 2000). This declaration amounted to establishing education as a human right. Delors et al. (1996) revisited the global education vision in their report 'Learning: The Treasure Within', in which they advocated a shift of focus from the local community to a world society, from social cohesion to democratic participation, from economic growth to human development, and from basic education to universities. This, together with fostering the four pillars of learning to know, learning to do, learning to live together and with others, and learning to be, was a main vision shift, which suggested a strategy backdrop of lifelong learning.

Although there is clear evidence that education has a positive impact on national development, it remains less clear how this impact manifests

itself. The Human Development Report (UNDP 1990) identified education as one pillar to enlarge people's choices. The social and economic development of nations is fundamentally an education process in which people not only improve their individual capacity but also learn to create new institutions, utilise new technologies, cope with the environment and alter their patterns of behaviour. As such, education becomes a catalyst for the closely interrelated economic, social, cultural and demographic changes that become defined as national development aims (Adams 2002). Therefore, education strategies must be at the core of any NDP, which, besides social and economic development, must pay attention to diversity, nation building and equality in access to education services. Uneven education distribution will deepen and legitimise social and wealth divisions in society. While building and strengthening national culture and diversity, the NDP must also balance the other sides of living in a global, borderless and connected environment. Hence, the challenges of globalisation will, in turn, be reflected in the complexity of education strategy, policy and plans.

Besides the necessity of integrating the strategic plan of education into the NDP, the quality of education must be maintained and improved continuously. One paradigm that enhances the design, evaluation and evolution is to treat education as a system using an engineering methodology approach. Different authors, such as Sinha and Satsangi (1972) and Miokovic et al. (2011), have applied this approach successfully to different aspects the education system in different countries. However, in order to apply the approach to analyse the whole education system, rather than just one specific aspect, it is desirable to use a simple system that can be easily analysed and understood by all stakeholders in the educational process; some of them are not necessarily specialists in the field. This will extend the benefits of the engineering system approach as well as pave the way for developing effective tools for monitoring education system performance. Such an approach was used by Dafa'Alla et al. (2015, 2016), who modelled education as a simple engineering system of processes. The system, which is supposed to satisfy certain measurable key performance indicators (KPIs), identifies the individual as input and the qualified trained graduate as product. In this sense, the education system is purposefully designed to serve the objectives of the national

development plan in any specific state or country. Consequently, they modelled the education generically as a closed loop system that is fed and driven by the society and pays back its return to the society, as shown in Fig. 6.1. The flow chart shown in the figure summarises the various elements of their generic educational model together with its dependencies and interfaces. The model provides a natural means to measure its performance. The ability of the system to meet the demand of the labour market was the primary KPI through which the success of the education system could be measured against its general objective of serving the goals of the NDP. Additionally, the well-being of society and hence the standard of living of its members is a reflection of the success of the system. However, the education system, though instrumental, is not the only factor in determining such a complex goal. Other factors, such as type of governance, good planning, secure funding, efficient management and

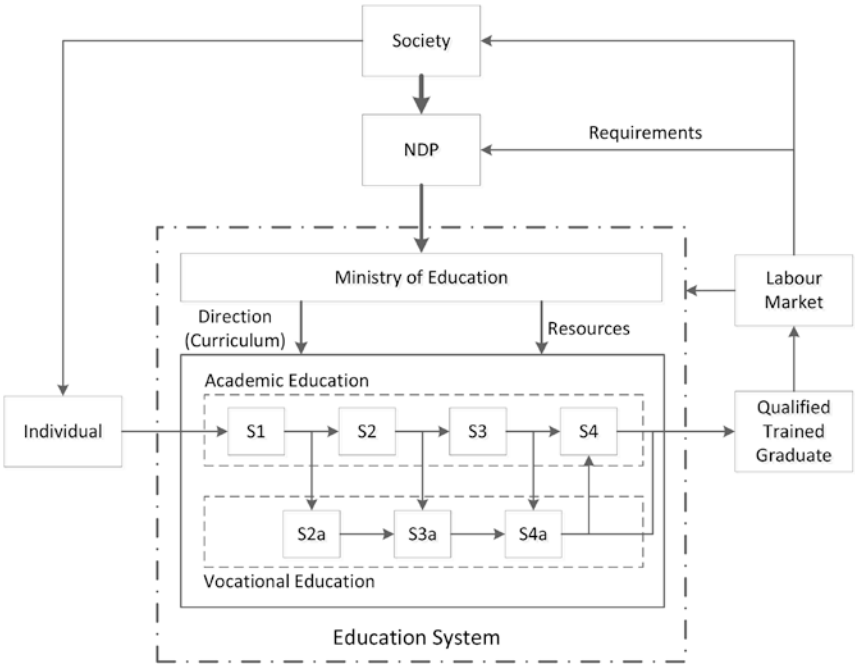

Fig. 6.1 Generic education system model as a closed loop to the society (Dafa'Alla et al. 2016)

so forth also play significant roles. Accordingly, the well-being of society and standard of living could only be considered as a secondary KPI. The model of Dafa'Alla et al. (2015, 2016) is generic and can thus be applied to and used for the evaluation and assessment of the education system in any developing country.

Evaluation and Critical Assessment of the Education System in Sudan

A good historical perspective on educational development in pre-independence Sudan since the year 1820 was presented in Mohamed (2005), while a thorough discussion of the education in Sudan and its evolution in the context of economic and administration evolution for the pre-independence period of 1898–1956 was given by Professor Mohamed Omer Bashir (1983). This section is intended to highlight and evaluate the education system and its contribution to the well-being of Sudanese society in the post-independence period only. Like other African countries, Sudan has inherited a deficient education system that was designed to satisfy the needs of the British colonial power rather than meet its own national and global objectives. Vocational efficiency was one of the urgent problems of post-independence Sudan. There was a need to improve productive efficiency and to increase the national wealth and thereby raise the standard of living. Together with the general national aims of the country, these objectives were translated into a national development plan that stressed Sudanese values, defining its identity, building the infrastructure and accelerating development. Therefore, there was an urgent need immediately after independence to review and amend the education system, its aims, goals and objectives against the new direction set for the country at the time. The new system should bring forth vocational efficiency, develop personality or character, educate for leadership, increase national productivity, achieve social and national integration, accelerate the process of modernisation, and cultivate social, moral and spiritual values. In other words, the functional role of education as a driver for social change and progress was emphasised. However, these new objectives were not set in stone and were subject to changes throughout the country's post-independence history.

In our complementary study (Dafa'Alla et al. 2015, 2016), using Sudan as a case study, we developed and applied the generic education model to review the performance of the education system in detail and identify deviations with time due to education reforms through three distinct political phases in the post-independence history of the country. While the initial post-independence phase, Phase 1 (1956–1969), was characterised by a stable education system that was run smoothly, efficiently and successfully with clear objectives linked to the NDP, the following two phases, Phase 2 (1969–1989) and Phase 3 (1989–2016), were characterised by major reforms that were driven by ideological philosophy and political aims without adequate consultation and were rushed through in extremely short time frames. It was shown that this was a deadly combination that brought both the system and the country to a state of crisis. This manifested itself in skills gaps in the labour market and, together with other factors, was reflected in a weakening economy and an ever-declining standard of living in the country, leading to mass emigration—a situation characteristic of many African countries. The system has simply failed to satisfy both its primary and secondary KPIs (see Dafa'Alla et al. 2016 for a detailed evaluation).

The aim of modern education is individual development as well as social advancement. It emphasises the total development of an individual, including intellectual, social, moral, aesthetic, cultural and physical development. The spirit of modern education was clearly captured in the education system in post-independence Sudan. However, according to Mohamed Khair Othman, nearly all post-independence governments failed to care about the nationalism of education and restricted it to the domains of general and educational bureaucracy, allowing education to proceed through inertia alone, with no strategic objectives or scientific planning (Othman 2015). Accordingly, he stressed that it is important for education to take a national role in emphasising citizenship, engagement in democracy and breaking down the boundaries between people where they live, work and interact. Nevertheless, immediately following independence, a very well designed, funded and run education system was adopted to attain the social and economic development dictated by the newly established NDP. The system produced the trained teachers to run it as well as the qualified cadre to meet the demand of the labour market and aid the execution of the NDP for the benefit of the whole society.

To this end, the education system during the initial post-independence phase, Phase 1, met its overall objectives quite satisfactorily. However, it was not free from criticism. For example, Mohamed Khair Othman argued that the British colonial power had created a defective education system in pre-independence Sudan, which led to the phenomenon of educational injustice in the southern part of the country (Othman 2015). He blamed the Sudanese elites for not paying enough attention at the time of independence to this phenomenon, which created an uneven distribution of educational opportunities between the north and south, and questioned how it began and who was responsible for it. This created the longest and most dangerous dichotomy of educational opportunity between the two parts of the country (Othman 2015) and arguably was used politically to justify the separation of the south later on. Likewise, the competitive nature of the system and the teaching philosophy, which was based on filling the individual with knowledge and information that would be tested regularly and rigorously to ensure that the preset standard was achieved, was at odds with modern education philosophy, which is based on self-learning while the role of the teacher is to secure and manage the environment in which the individual is encouraged to develop their faculties in their own way according to their own abilities, talents and interests. There is an implied assumption here that there is enough variety among the population to ensure that all the skills required by the labour market will be naturally met without further steering from the authorities. Such modern practices were used in different parts of the developed world with varying degrees of success. For example, the education system in Finland was completely liberal, with absolutely no testing during the mandatory education stages, which cover the whole childhood period of the candidate. Following the self-learning philosophy, the children in Finland were encouraged to pursue their own interests under the supervision of highly trained teachers while progressing through the various education stages based on their age only without any consideration of ability. The system was reported to be extremely successful and was known to produce some of the best graduates in the world. The British system, on the other hand, while not far removed from the Finnish one, does include some testing at Key Stage 2 for 10–11 year-olds, the SATS test, which takes place between the primary and secondary stages at

national level. As age is the only factor considered for a pupil's progression from one stage to the other, results of the SATS test are not decisive for the progression of the pupil from the primary to the secondary stage of the mandatory education. The only purpose of the test is to serve as a dipstick to measure the performance of individual schools, rather than pupils, against a preset national standard. However, despite the larger population of the United Kingdom relative to Finland, the country is now suffering from a skills gap of about 1.5 million jobs (Winterbotham et al. 2014), the majority of them in the fields of health and technology, which are filled to some extent by immigrant workers (Lewis 2014). Indeed, a survey conducted by the Confederation of British Industry (CBI) found that a quarter of employers who need technicians qualified in science, technology, engineering or mathematics already reported difficulty recruiting, and a third anticipated problems in the next three years (Groom 2014). This shows that the level of success of the Finnish system cannot be readily replicated elsewhere. It could also indicate the presence of other forces in the society acting in a different direction, in a manner strong enough to invalidate the assumption that natural variety among a population would automatically ensure satisfying the needs of the labour market, as implied in the self-learning theory cited above. Indeed, when it comes to developing countries in general, and the underdeveloped, such as in Africa, in particular, tighter control and balance between complete freedom of choice and meeting the needs of development plans is highly desirable. The balance can only be dictated by the development stage of the country. Clearly, this approach helped the education system in Sudan to perform well in its initial phase following independence and is still recommended for the country now, as the challenges facing the country still persist. Once the development plan is running smoothly and efficiently, the system can then be relaxed gradually and proportionately.

However, largely thanks to major reforms introduced to the education system on the hoof, with no proper thinking or acceptable level of public consultation following the change of political regimes in May 1969 and June 1989 respectively, the performance of the education system and hence its ability to meet the demands of the labour market and NDP were gradually eroded. The first major reform introduced in Phase 2 following the Socialist Pro-Arab Nationalism military coup of May 1969

attacked the architecture of the education system and hence the national curriculum without enough planning or even proper thinking about the consequences. The education system ladder was changed from three four-year stages to a six-year primary stage followed by two three-year general and high secondary stages, with new subjects introduced in the intermediate stage. The motive behind the change was mainly ideological and driven only by political considerations. The funding was inadequate, the implementation was poor and the result was a deterioration in the quality of the education standard. In fact, education was not the only facet of life that was adversely affected during that phase. Corruption was rife, the economy was weakening and the standard of living was continuously declining as governance lacked stable direction. Admittedly, these factors are interdependent, and the situation is too complex to blame one of them in isolation or even to quantify its share of the blame. However, the role of education is too significant to ignore. The performance of the education system during Phase 2 was weak and its ability to meet the NDP objectives through satisfying the demand of the labour market was clearly inadequate.

The impact of the second major reform, which followed the Islamist military coup of 1989 at the beginning of Phase 3, was even more devastating for education than its predecessor. The change this time attacked both the structure and the architecture, including the goals and aims, of education in the country. The three-stage main education ladder was replaced by a two-stage one consisting of an eight-year foundation stage and a three-year secondary stage, hence erasing one year from the ladder. Furthermore, new subjects were introduced to reinforce the country's new identity as defined by the regime, at the expense of the functional and vocational aims of education. It was ideologically driven and aimed at remoulding the identity of the Sudanese people. Education was seen as the tool to bring about this identity change. Hence, the vocational efficiency character of the education was replaced by one that emphasised the character building and individual development role of education. This structural change was enforced by changing the architecture of the education system and introducing new subjects to the national curriculum. Consequently, the alignment between the academic and vocational streams of education was muddled, and target market niches for each

stream were blurred as colleges and polytechnics were converted into universities offering both Diploma certificates and university degrees (c.f. Dafa'Alla et al. 2015 , 2016). This move was also criticised by Habib (2004) in his critical assessment of planning technical education in Sudan, as it 'distorted the distinguished identity of the existing technical institutes and colleges' and was done without a proper consultation process: What role will these new degree graduates play? Is there any demand for them? Who is going to fill the roles that the old colleges and polytechnics used to, and how can the labour market deal with them? This was confusing to the labour market and also created a skills gap which is difficult to fill. It was a radical change to the system that has resulted in de-linking the education system and the declared objectives of the NDP and has brought chaos to the labour market. It is not surprising, therefore, that the 2011 Sudan Labour Force Survey (SLFS) has revealed an unemployment level of 50 % among the working age population, a quarter of them with a university/tertiary education qualification (International Labour Office 2013)!

It should also be noted here that both of the major reforms discussed above were introduced and implemented in record short periods of time of less than six months each. This rush introduced implementation problems and mistakes that required many years, typically more than 20, to repair. Indeed, there is talk in Sudan about changing the current eight-year foundation education stage into a nine-year one. On the one hand, this proposal is an admission of the problems introduced by the latest reform and, on the other hand, it will introduce its own new challenges of a different nature, such as dealing with children of the extreme age range of 7–16 years in the same school building and environment, let alone the usual problems of any architectural change, such as invalidating the existing curriculum due to the change of the educational period from eight to nine years! Equally significantly, such a change will not address the problems of teacher training or linking the system back to the NDP. Note that, like the rest of the workforce in Sudan, the teaching profession has recently suffered from uncontrolled mass emigration of qualified and well-trained teachers at all educational stages. Low morale, low payment and the deteriorating economic situation leading to the lowest-ever standard of living were among the main factors for the

emigration of teachers. Interestingly, the last batch of teachers who served in Phase 2 will retire naturally by the year 2016. Hence, any attempt to repair the system by reverting back to its predecessor will be hampered by the loss of their invaluable experience.

Also, both reforms introduced accelerated expansion to the education establishments. The first reform in Phase 2 accelerated the expansion of the state-funded main education schools, while the second one in Phase 3 expanded university education and the role of the private sector in the field of education. Neither of the two was adequately funded nor rigorously monitored. In fact, instead of increasing the expenditure on education in order to meet and fund the expansion, UNICEF (2008) revealed that education expenditure in Sudan dropped from 4 % of the gross domestic product (GDP) and 15 % of total government expenditure in the early 1980s to around 1 % and 3 % respectively in the 1990s. As a result, schools suffered from teacher shortages and were starved of resources and educational aids. School buildings were run-down, if not collapsing, as funding for schools maintenance and operation became scarce. Consequently, schools needed to generate their own income through private admissions, levying parents and raising public donations in order to survive. No wonder teachers' morale was low!

Likewise, the enlargement of the role of the private sector was another missed opportunity. Instead of following the South Korean example of utilising the monitored private sector to help expand higher education and hence allow government to free invaluable resources to expand main education, particularly primary, in order to achieve their goal of Basic Education for All and steer the education system to serve their Knowledge-Based Economy, as noted by Chen (2007), the private educational institutions in Sudan were managed as commercial enterprises, rather than educational establishments, with particular emphasis on teaching medicine. Interestingly, foreign secondary certificates, such as the international Oxford, American and Gulf certificates, were downgraded relative to their Sudanese counterparts and hence forced the children of the Sudanese diaspora, despite proving themselves academically, to apply for private, rather than general, admission in the Sudanese state and private universities. This was interpreted by them as an attempt to boost the private sector rather than a fair reflection of the academic standard of their

certificates. However, in summary, this uncontrolled, ill-thought-out and underfunded expansion of main and higher education during Phases 2 and 3 has resulted in a bad trade of quality for quantity. The result was the lowering of the education standard and mass graduation without a proper link to the demands of the labour market.

The discussion above clearly shows that the damage inflicted on the education system in post-independence Sudan is both visible and deep. Indeed, the figures for 2014 released by the Ministry of Cabinet Central Bureau of Statistics (MICS) show that only 36.4 % of children of school-entry age entered the first grade of primary school (a drop of 3 % relative to 1970) and 28.4 % of children of secondary-school age were attending secondary schools or higher (MICS 2015). This speaks volumes about the dilemma faced by education in Sudan. The economic indicators for Sudan are in equally bad shape. The GDP growth rate has dropped by over 53 %, and the consumer price index increased by 266 % between the years 2006 and 2013, according to the African Statistical Book 2014 published by the UN African Centre for Statistics (UNECA et al. 2014). Simply put, these figures show that the education system has lost its way and so has the country.

Education, Innovation and Sustainable Development in Africa

As stated earlier, Sudan is used herein as a typical example of an African country and the ills of its education system are not unique. Indeed, the educational statistical data for Africa published by the UN African Centre for Statistics (UNECA et al. 2014) show that Sudan's statistical figures are not far removed from the African average. Also, the backward economic situation and poverty is a common African issue. This in itself is a reflection of the state of the education system in the continent. Therefore, it is not a coincidence that the contribution of Africa, as a whole, to the world scientific research literature is next to nil.

Remember that education drives national prosperity and sustainable development. China, India, Malaysia, South Korea, Singapore and the other Asian Tigers all have used technology, widespread industrialisation

and education to escape the trap of poverty and build world-class economies. Human resources development is the single-most important factor responsible for South Korea's release from the vicious cycle of poverty and underdevelopment from which it suffered for many decades (Eltayeb 2006). With its scant natural resources, human resources development played a vital role in modern South Korea's development. Clearly South Korea has emerged as an exemplary showcase for national development powered by human resources development (Eltayeb 2006). Likewise, Singapore is a city-state with not much land area that is not particularly rich in natural resources. It won its independence from British colonial power in 1965 and has a population of only 5.4 million as per the 2013 census. Singapore obtained its independence 18 years after Pakistan, has no natural resources and has a mere 3 % of Pakistan's population, but it has a GDP roughly 20 % higher in nominal terms than Pakistan's and a literacy rate of 96 % (Amanulla 2012). It all stems from the innate power of education. Education drives progress. Education drives intellectual capacity-building, which drives the ability to know right from wrong, which in turn drives the overall governance of a country. Education enhances the ability to think and decide which, in turn, gives the masses the ability to elect qualified people. Education drives innovation, values, the ability to see the future and solution-based thinking, which in turn drives economic growth. In a recent study it was shown that a 20–30 % increase in literacy produces an 8–16 % gain in GDP, while teaching mothers to read can lead to a decrease in infant mortality of up to 50 % (Amanulla 2012).

Benchmarking Africa's education systems against their peer continent Asia in terms of how education drives development can also provide useful insights. Figures 6.2, 6.3 and 6.4 depict relationships between accessibility to education (as measured by the average number of schooling years among the population) and quality of education system on the one side, and sustainable development indicators, such as human development, ability to innovate and economic competitiveness for African and Asian countries, on the other, based on data extracted from UNDP (2015), WIPO (2015) and World Economic Forum (2016) respectively. For the sake of presentation clarity, not all countries are labelled in these figures. The clear strong correlations reflected in the figures indicate

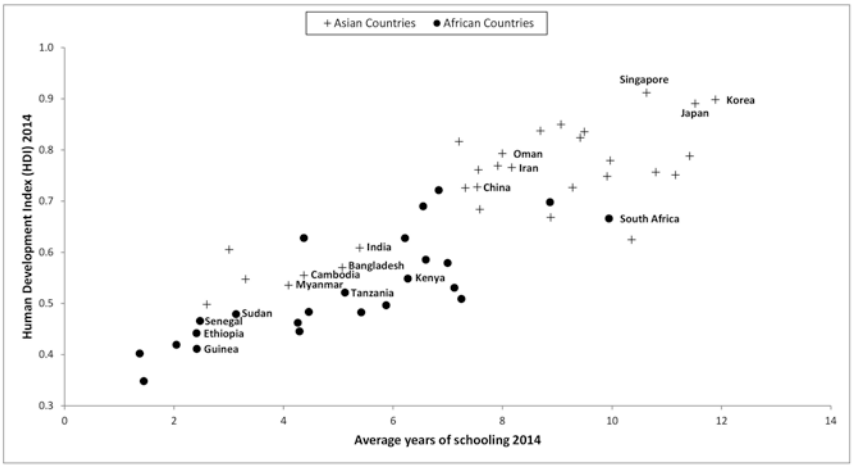

Fig. 6.2 Correlation of human development and average years of schooling for Africa and Asia (*Data source*: UNDP 2015)

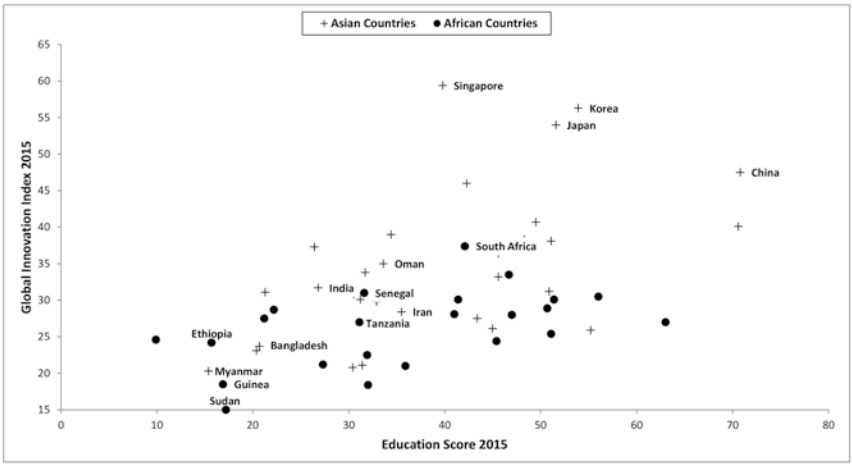

Fig. 6.3 Correlation of global innovation and education quality for Africa and Asia (*Data source*: WIPO 2015)

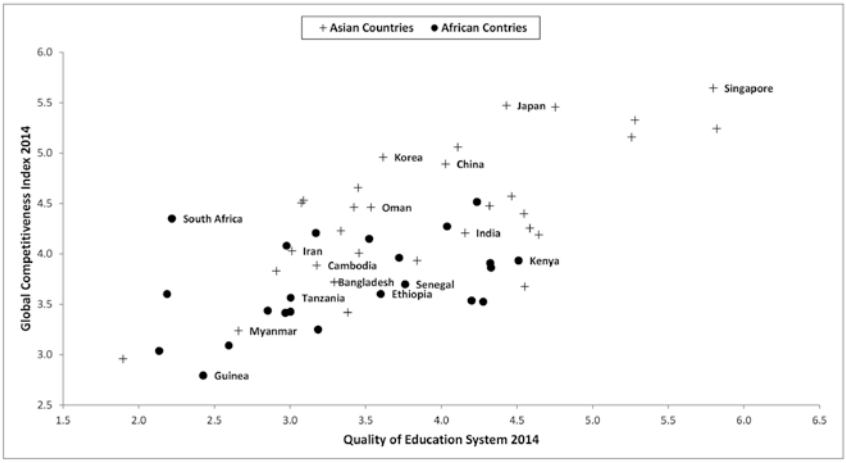

Fig. 6.4 Correlation of global competitiveness and education quality for Africa and Asia (*Data source*: World Economic Forum 2016)

that the longer the members of the society stay in good-quality education, the more developed the individuals will be, the greater the ability of the population to innovate and the better the chance for the country to gain economic competitive advantage in a sustainable development environment. Additionally, the figures also reveal that, while the African countries are generally lagging their Asian peers in terms of human development, innovation and economic competitiveness, the countries with the poorest education quality in both continents are clustering close to the bottom end of the curves. Sudan, which is used as a case study in this paper, scores among the poorest, while Singapore and South Korea are in leading positions. This clearly supports the argument made above, that countries that have built education-based economies to guide their development plans are not only standing out relative to other countries in Africa and Asia but, indeed, comparing favourably with the best in the world, such as Japan and China, as the figures show.

Hence, although weak education cannot be solely blamed for all the ills of the African continent, it must be considered a factor of significant importance. Other factors, such as corruption; type of governance; lack of good planning, secure funding and efficient management; and so on

are also contributory factors, as noted above. However, education that builds capacity and fosters innovation is a means to catching up with lost opportunities, building an 'innovation-based economy' and realising the African dream. Africa is a continent emerging from centuries of colonisation and still finding its footing in the modern world. However, it is not a poor continent—it is a backward one. It has a wealth of natural resources, such as minerals (including diamonds, gold, copper and more), huge reserves of oil, forestry and agricultural products (timber, cotton, tea, cocoa, wheat, etc.) as well as livestock—all in abundance. However, as the late President Kenneth Kaunda of Zambia once put it, no country can depend on exporting raw materials and importing all its needs of processed goods to escape the trap of poverty.

The international community has given Africa lots of aid, particularly to help it face natural disasters. However, it is now generally accepted that this 'charity-based aid' is not helping Africa to escape the poverty trap, let alone to build its own capacity and develop its own resources. Sharma (2009) revealed that more than $50 billion of foreign aid is given to African countries every year to address poverty on the continent. Although this may seem generous and, to some, a solid strategy to treat Africa's ailments, he questioned whether this aid is helping or hurting Africa. Indeed, Dambisa Moyo, a Zambian economist with a background that includes Harvard, Oxford and Goldman Sachs, says just the opposite. In her book *Dead Aid: Why Aid Is Not Working and How There Is Another Way for Africa*, Moyo claimed that foreign aid has been 'an unmitigated political, economic and humanitarian disaster'. She strongly argued that 'charity-based aid' cannot provide long-term sustainable development for Africa. She added that the $60 trillion of this aid that has been given in the past 60 years is not working, evident from the fact that the number of Africans who live on less than $1 a day has doubled in the last 20 years. And most foreign government aid, she argued, had been pocketed by corrupt politicians (Moyo 2010).

Levels of corruption and bad governance are obviously huge concerns that need to be tackled in Africa; however, the underlying issue, in our opinion, is much deeper and rests in the fundamentals and the philosophy of aid-giving itself. Yes, food aid, emergency disaster relief and fighting endemic diseases in Africa need immediate action in the short term;

however, they are neither the long-term problems of poverty and underdevelopment in Africa nor the cause of Africa's lack of real contribution to the world economy. The general wisdom says 'give the poor a fish, they will eat for a day; give them a fishing rod, they will eat for life'. The root cause of African backwardness is that Africans do not possess the fundamental tool required to develop their countries and lift them out of poverty. This tool is good-quality education, as argued above. What is required is an innovative education system that promotes innovation, fosters local talent and spearheads sustainable development. There are immense possibilities for greater and more widespread change with the use of present-day technological advancements as well as with the implementation of innovative educational programmes. The challenge is to ensure that innovation plays a constructive role in improving educational opportunities for billions of people who remain underserved in a rapidly developing world (Kuboni et al. 2006). Providing education in new and unconventional ways is only one of a number of solutions, but it is through innovation that we can meet the challenges of improved efficiencies, lower costs, increased accessibility and greater success in achieving sustainable development goals through education. This has happened in the many examples quoted above and it can happen in Africa. The question is how to bring it about in a continent handicapped by corruption, poverty, bad governance and national debt.

In previous papers, namely Dafa'Alla et al. (2015, 2016), we argued that the education system in Sudan has lost its way. Hence, an 'Action Plan' to repair the situation is urgently needed. The design, implementation and funding of the education system is a complex problem. Likewise, introducing radical changes to it is a complex process that requires deep thinking and wide consultation, as it is linked to the NDP and has repercussions for all facets of life. Hence, major reforms to the system should not be taken lightly or based on a unilateral decision by any group or party. Wide societal debate and consultation should take place before changes are introduced. In other words, changes to the education system should be taken out of the political arena and only be introduced by national consensus. We called upon all concerned and all interested parties to engage constructively and participate in outlining the required Action Plan to get the education system, and hence the country, back

on track. It is our aim in this chapter to widen this call to include the whole African continent. This can be facilitated by calling for an African conference on education under the slogan 'Education, Innovation and Sustainable Development' to set the African goals and targets for education at a high level and to come up with an 'Action Plan for Education in Africa' as an outcome of the conference. Then, each country can adopt and adapt these general goals and guidelines to suit their own national targets and development phases. A maximum degree of harmonisation can thus be achieved regarding vocational and functional education aims, while a high degree of flexibility can be granted for others, such as cultural and character formation aims. A 'High Bureau' affiliated to the African Union could then be set up to oversee the implementation process.

From our perspective, the whole world will benefit from a vibrant African continent that is playing its full role and contributing its full share to world prosperity. The world needs the virgin natural resources of Africa to keep functioning, and Africa needs the rest of the world to trade with and develop its resources. Hence, the whole world needs to come to the rescue of Africa and help it, not to feed its population, but to build its education system. Clearly, Africa is not in a state to fund this change at present, and this is where the international community under the auspices of the United Nations and its agencies, such as UNESCO, can help. If there is a will, the world can easily divert some of the 'charity-based aid' it is quite happy to pay annually to implement this Action Plan for Education in Africa as a solution to the long-term problems of Africa and a means to put Africa back on the world map. The African Union can act as the custodian to the plan, call for and organise the conference, and ensure links with other international organisations.

However, in addition to the fact that quality education is synonymous with sustainable development and the importance of linking the education system to the NDP, there are another two main lessons to be learnt from the Sudanese experience cited above in this regard. First, the education system has to be indigenous to its environment, as one of the main weaknesses in the experience of Sudan during Phase 2 was that it copied large parts of the education system from the Egyptian one (c.f. Dafa'Alla et al. 2015, 2016). The second important lesson is to take the educational reforms out of the political arena, and hence the competition

among politicians, and only introduce them by national consensus (c.f. Dafa'Alla et al. 2015, 2016). This is particularly important in Africa, where regime change is a regular occurrence and corruption and bad governance will undoubtedly hinder the implementation of any plan, no matter how good it is. Therefore, we should stress here that the proposed Action Plan should not be a mere copy of a European or American system. It has to be an indigenous African plan, dealing with local African issues and hence engineered by African intellectuals in consultation with their community groups and stakeholders and in reaction to the needs of their own masses without political interference. Otherwise it will not work.

Conclusions

Good-quality education and sustainable development are synonymous. Education drives innovation, values, the ability to see the future and solution-based thinking, which in turn drives economic growth and sustainable development. This has been clearly demonstrated in many emerging economies worldwide.

Although weak education cannot be solely blamed for all the ills of the African continent, it must be considered a significant factor in the state of underdevelopment from which it suffers. This was clearly demonstrated in the case of Sudan, as an example typical of the African continent.

A critical review and assessment of the education system in post-independence Sudan was undertaken here. The review considered three significant phases in the history of education in post-independence Sudan in which the education system experienced major reforms: Phase 1 between 1956 and 1969; Phase 2 between 1969 and 1989; and Phase 3 from 1989 to 2016.

The link between significant political events in the country and major reforms to the education system was evident. While the initial post-independence phase was characterised by a stable education system that was run smoothly, efficiently and successfully, with clear objectives linked to the NDP, the following two phases were characterised by major reforms that were driven by ideological philosophy and political aims

without adequate consultation and rushed through in extremely short time frames.

These reforms contributed to the deterioration of the quality of education in Sudan and gradually de-linked the education system from the objectives of the NDP. The current system resembles a ship sailing in rough seas without a captain.

The damage inflicted on the system throughout the years was wide, deep and fundamental, and it is now in a state of crisis. This manifested itself in a skills gap in the labour market and, together with other factors, was reflected in a weakening economy and ever-declining standard of living in the country leading to mass emigration. The system has failed to satisfy both its primary and secondary KPIs. The case of Sudan is reminiscent of many African countries.

The problem of development in Africa has repercussions worldwide; therefore, it is beneficial for the whole world to ensure that Africa is playing its full role in world prosperity. Hence, this chapter calls for an African conference on education to address education as the root cause of the lack of sustainable development in Africa. The objective of the conference should be to set African goals and targets for education and to draw up an 'Action Plan for Education in Africa' that supports the building of an 'innovation-based economy' as an outcome.

The plan should reflect African values and development needs. It should be an indigenous African plan, dealing with local African issues and therefore engineered by African intellectuals in consultation with their community groups and stakeholders and in reaction to the needs of their own masses, without political interference.

The African Union should adopt the plan, act as its custodian and oversee the implementation phase, with support from the international community through the United Nations and its agencies. Diverting some of the annual charity-based aid to Africa was seen as a means to fund the plan.

It was suggested that the conference would be held under the slogan 'Education, Innovation and Sustainable Development' and should produce an 'Action Plan for Education in Africa' that is capable of repairing the damage and putting the education system, hence Africa, back on the world map.

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