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THE EVOLUTION AND FUTURE OF SOCIAL SECURITY IN AFRICA: AN ACTUARIAL PERSPECTIVE

LA EVOLUCIÓN Y EL FUTURO DE LA SEGURIDAD SOCIAL EN ÁFRICA: UNA PERSPECTIVA ACTUARIAL[1]

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Abstract

Social Security in most African countries has evolved significantly in terms of perspectives, motives, governance as well as innovation of benefits and administration. African countries are slowly, one by one, beginning to reassess the role of social security in correcting several social ills. Empowerment programs and grants are increasingly being provided via social security to women and the youth. From the roots of social security, even very low income countries, some of which have recently experienced several years of civil war and extreme economic hardships, have begun to improve benefit structures and amounts, which include national medical benefits. The attention being provided to social security and how it fits into a nation's plans to lift itself out of poverty is increasingly involving the actuarial profession from international organisations such as ILO and ISSA as well as consulting actuaries and academics. Assessing and ensuring sustainability of social security benefits requires actuarial valuations to take long-term consequences involving demographic changes into account in the face of providing the benefits in the short term; asset liability modelling to ensure adequate resources are held; ensuring that results are appropriately reported and communicated to key stakeholders; as well as developing long-term strategic plans and dynamic systems surrounding all of these issues. In this paper, the role of actuaries is brought to the centre of the increasingly changing face and evolving culture of social security in taking Africa closer to poverty alleviation

Keywords

Actuarial; Social Security; Africa; Pensions; Healthcare; Pensions; Education; Gender inequality.

Resumen

La Seguridad Social en la mayoría de los países africanos ha evolucionado significativamente en cuanto a perspectivas, motivos, gobernanza, así como en innovación en las prestaciones y la adminsitración. Los países africanos están comenzando a reevaluar el papel de la Seguridad Social en la eliminación de determinados problemas sociales. Los programas de acción y los subsidios canalizados a través de la Seguridad Social están llegando cada vez más a mujeres y jóvenes e incluso países con bajo nivel de vida, algunos de los cuales han experimentado guerras o dificultades económicas intensas, han empezado a mejorar sus estructuras y las cuantías de sus prestaciones. Por otra parte, la atención que presta la Seguridad Social y cómo encaja en las estrategias nacionales para salir de la pobreza cada vez involucra más a la profesión actuarial a través de organizaciones internacionales como la OIT o la AISS, así como académicos y consultores. La evaluación y garantía de la sostenibilidad de las prestaciones de seguridad social requieren valoraciones actuariales que tengan en cuenta el largo plazo y la evolución demográfica de cara a un entorno de aplicación de la cobertura en el corto plazo; para la adecuación de derechos y obligaciones adaptados a recursoa adecuados, para que los resultados sean correctamente registrados y comunicados a las partes interesadas, y para desarrollar planes estratégicos a largo plazo que aborden todas estas cuestiones. En este estudio el papel de los actuarios se sitúa en el epicentro de los cambios en la Seguridad Social para mitigar la pobreza en Africa.

Palabras clave

Actuarial; Seguridad Social; África; Pensiones; Salud; Pensiones; Educación; Inequidad por sexos.

JEL: G22, I1, I2, I3, N3.

1. Introduction

The purpose of this paper is to provide a high level summary of Social Security developments within the African context. The effective use of Social Security programs and how they fit into a nation's programs to lift itself out of poverty is increasingly involving the actuarial profession, including the utilization of international organisations such as ILO and ISSA, as well as consulting actuaries and academics. Social Security in most African countries has, over time, evolved significantly in terms of perspectives, motives, governance, benefit–design and administration. African countries are slowly but surely beginning to reassess the role of Social Security in correcting several historical social ills. Empowerment programs and grants are increasingly being provided to women and the youth through Social Security programs. Even very low income countries, some of which have recently experienced several years of civil war and extreme economic hardship, have begun to improve social security benefit structures and benefit payments which include national medical benefits.

Assessing and ensuring sustainability of Social Security benefits requires actuarial valuations to take into account long-term consequences such as potential demographic and economic changes whilst providing the benefits in the short-term. Asset–liability modelling may ensure adequate resources are held and that results are appropriately reported and communicated to key stakeholders. In this paper, we consider the role of actuaries in a dynamic environment where Social Security mechanisms are increasingly evolving. Social Security programs need to be considered alongside other mechanisms to alleviate poverty. The main factors considered driving forces behind Social Security spending patterns are as follows:

a) Income growth and level of development.
b) Demographics and population aging.
c) Rise of democracy and political institutions, political parties and policy legacies.
d) Globalisation, industrialisation and urbanisation.

Whereas to some, Africa is the embodiment of war, poverty, disease and other social and economic ills, there is much evidence that Africa is emerging as an important economic player and that there is much more science and thought behind Social Security provisions. At the same time we appreciate that it is not possible to comprehensively cover the length and breadth of such provisions, covering such a vast area, and that this paper is selective in its coverage.

2. Africa – An Overview

The purpose of this section is to provide an overview of the key geographical, economic and demographic elements of Africa to contextualise the discussion in the rest of the paper. Africa is a vast continent consisting of 62 political territories and an area of 30,368,609 km^2. By way of comparison, Europe covers 10,400,000 km^2. Africa covers 6% of the Earth's total surface area and 20.4% of the total land area. African economies have traditionally lagged behind the rest of the world in terms of growth rates. Although Africa accounts for some 16% of the world's population, it accounts for only 2.4% of the world's GDP. Statistics over the last decade have however become more encouraging. Six of the world top ten fastest growing economies over the period 2001 to 2010 were African. The average growth rate for Africa has been about 5% per annum over the same period. Seven of the world fastest ten growing economies over the period 2011 to 2015, will be African. Africa's relatively higher growth rate when compared with the rest of the world is

expected to see its share of GDP increase from 2.4% in 2012 to about 5% in 2034.

In 2009 Agriculture accounted for some 13% of GDP for Sub Saharan Africa, Industry (including Mining and Manufacture) accounted for 31% of GDP and Services made up 56% of GDP. Agriculture does however account for 60% of the workforce. Africa has numerous mineral resources and there have been substantial new discoveries of oil and gas. Some of the major obstacles of doing business in Africa include unstable economic or political environment, lack of infrastructure, foreign exchange control, corruption, local regulatory requirements and lack of skilled resources. Average life expectancy in Africa will increase from 57 years (2010) to 64 years in 2030. There is expected to be a reduction in infant mortality rates and a reduced impact of HIV/AIDS. Moreover, the proportion of people living below the poverty line in Sub-Saharan Africa decreased from 51% in 1981 to 47% in 2008 (where China moved from 84% in 1981 to 13% in 2008). The reduction in poverty rates in Africa was mainly due to robust economic growth rate exceeding the population growth rate. This was also aided by improvements in education and health care. Conversely, hikes in fuel and food price and global economic crisis worked against reducing poverty. Africa's increasing population and in particular increasing young population, has implications for Social Security provisions. A case in point is the Social Security provisions for unemployed youth. These individuals are unlikely to have adequate Pension, Health Care or any other Social Security provisions over their lifetime.

3. Retirement Benefits

There are probably two main objectives for the provision of retirement benefits, namely: to protect against the risk of poverty in old age; and to smooth consumption from working life into retirement. Neither objective is

necessarily preferable; they simply represent different societal preferences (Schwarz, A., 2006). The state generally provides the funds and finances them through foreign aid capital, taxation or borrowing (Prasad, N. & M. Gerecke, 2010). Other writers also associate other objectives with the provision of pension benefits. Asher, A. (2006a) includes the following: equality, liberty, efficiency and recognition of just deserts. Old-age pensions were introduced by Bismarck at the end of the 19th century.

There are currently three primary providers of pension benefits. The first provider, the state, is the main focus of this section of the paper. The employer and the individual are the other two main providers. Engaging in paid employment after retirement age may be seen as a type of individual provision. The family and/or the community may also have a role in benefit provision for the elderly. Different pension benefit providers have different, sometimes non-complementary, criteria. The criteria used by the primary providers to determine the suitability of retirement benefits offered is given below in Table 1.

3.1. Benefits Covered

The Five Pillar Framework for pension provision, as proposed by the World Bank (World Bank, 2008), is set out in their document on a conceptual framework for pensions (World Bank, 2008).The following table contains brief descriptions, of the five pillars identified to meet pension objectives. The table has been extended to include, in the authors/ opinion, the extent to which the state-related criteria may be met by the various pillars.

Table 1. Five pillar framework for pension provision

Pillar	Definition	Primary Criteria	
		Should be met	**Possibly met**
Zero*	Non-contributory social assistance financed by the state, fiscal conditions permitting.	Adequacy (as a safety net)	Affordability Sustainability Predictability Robustness
First	Mandatory contributions linked to earnings–with the objective of replacing some portion of lifetime pre-retirement income.	Affordability	Adequacy Sustainability Predictability
Second	Mandatory defined contribution plan with independent investment management.	Affordability Sustainability	Adequacy
Third	Voluntary, taking many forms (e.g. individual savings, employer-sponsored, defined benefits or defined contribution).	Sustainability wrt DC schemes. This Pillar may constrain the fiscal cost of basic components **	Affordability Predictability (depending on nature: DB or DC) Adequacy (for higher-income groups **)
Fourth	Informal support (such as family), other formal social programs (such as healthcare or housing), and other individual assets (such as home ownership and reverse mortgages).		Adequacy

* The Zero Pillar, comprising of cash transfers, is sometimes referred to as the Social Assistance Tier.

** (Holzmann, R. & R. Hinz, 2005).

The importance placed on each pillar is country- dependent. Not all pillars are present in all countries. All systems face some degree of economic, political and demographic risk. Experience has shown that a multi-pillar approach is able to address risks facing pension systems more effectively (Holzmann, R. & R. Hinz, 2005). A multi-pillar approach typically reduces dependency on any one source of income and thereby reduces risks as well. On the other hand, it introduces complexity into the system, especially if

multiple administrators are involved. It may therefore be more expensive to administer than a single pillar system. Individuals may have difficulty understanding the full extent of their benefits and projecting their likely retirement income. The First and Second Pillar encompass mandatory contributions. This serves to combat *individual myopia* (in which retirement is viewed as a problem for the future) and *consumerism (*Schwartz, A., 2006). The Third Pillar offers greater flexibility than the prior pillars, while the Fourth Pillar offers diversification and some recognition of the role informal support systems have traditionally played in African and other cultures e.g. that of China. A multi-pillar approach therefore has the ability to meet the broad spectrum of criteria on which systems are evaluated: increased security of benefits[2], flexibility, and allowance for the influence of local culture.

3.2. Means-Testing

Means-testing involves evaluating the income and/or assets of the person applying for social assistance to determine whether the person's means are below the stipulated amount. Means-testing assists in ensuring that only those who need benefits the most receive them, maximising efficiency, and helping to cap the Social Security bill. However, Social security benefits are seen to promote fairness, equality and shared citizenship. These benefits are expected to promote social cohesion, particularly in the case where everyone is participating. Means-testing is seen to undermine these values and is neither simple nor economical to administer and operate. The bureaucracy and administrative costs tend to eat up any predicted savings. Asher, A. (2006b) gives evidence that it is not possible to properly administer

[2] The Seychelles is an example of this. It operates both a Zero and Secondary Pillar. The Zero Pillar is, by definition, dependent on the government for its funding. The Secondary Pillar, if accompanied by property rights embedded in the constitution, builds up funds in advance and keeps them outside the influence of the state (with the exceptions of taxation and state imposed investment requirements).

means-tests, even amongst developed countries. Reducing a person's government benefits as his outside income increases creates a disincentive to work and save. In other words, means-tests can produce implicit taxes every bit as harmful as explicit taxes. Also, since it is preferable that individuals remain in employment and save more for retirement, it would be both counterproductive and unfair to penalise them for doing exactly that.

It is evident that there is a wide array of reasons not to continue with the current implementation of means-testing for retirement benefits. One of the roles of actuaries is to assist in developing fair ways to distribute benefits whilst ensuring sustainability. Two alternatives are the scrapping of means-testing, with a claw-back mechanism to recover benefits from the relatively wealthy via the taxation system or the implementation of a single means-test. An alternative single means-test should ideally:

- Ensure the full range of an individual's retirement savings is effectively and fairly assessed in the pension means-test.
- Be more neutral in the treatment of different forms of retirement savings.
- Ensure there are appropriate incentives for people to use their retirement savings effectively.
- Provide appropriate incentives for older African (citizens) who wish to do so, to continue to undertake paid work.
- Contribute to the fairness of the overall tax-transfer system.

The ultimate design of such a means-test depends on its interaction with the personal income tax system. According to proposals of South Africa’s National Treasury, retirement fund reform proposals include the proposed scrapping of their current Means-Test in South Africa from a future date.

3.3. African Experience and current African challenges

The ISSA classifies Social Security benefits into four categories (ISSA, 2011b):

- Employment related: dependent upon employment (or credits for employment in some cases).
- Universal: given to all (may be subject to country-specific criteria e.g. citizens only).
- Means-tested: granted to all who apply that meet minimum age, income and/or asset level tests.
- Other: aligned to benefit source (e.g. financial service providers, mandatory occupational systems or provident funds).

In general, a number of ex-British colonies have national provident funds (which initially provided lump sums at retirement), while ex-French colonies introduced national earnings-related pension schemes (Asher, A., 2006a).

Africa's *average old-age dependency ratio* has been, and remains, the lowest; far below the world average. The African labour force has been expanding over the last two decades (Pallares-Miralles, M.; C. Romero & E. Whitehouse, 2012). Africa is subsequently not yet experiencing the type of demographic pressure that exists in other regions of the world. Steward, F. & J. Yermo (2009) believe that current pension-related spending in Africa is often crowding out spending on key areas such as health and education. Based on figures provided by Pallares-Miralles, M. *et al.* (2012), Sub-Saharan countries have an arithmetic average pension spend of 2.2 % of GDP and Growth in civil service retirees in this region is creating a growing fiscal strain.

If governments cannot find additional money to finance implicit pension debt, e.g. by increasing revenues (imposing higher taxes) or reducing expenditures on other items (such as education and health), they may have to default on this implicit debt by reducing accrued benefits for future generations. All Middle East and North Africa (MENA) countries, and most Sub-Saharan countries, have implemented DB schemes. The implicit returns on the contributions that DB members pay are neither transparent nor equitable as they depend on fund members' wage history and decisions regarding enrolment and retirement. Where regressive tax systems exist, they compound the problem: middle- and high-income individuals can receive better tax treatment than low-income individuals as the wealthier receive the biggest rebates. Tax rebates are irrelevant to those whose income is below the tax threshold. Whitehouse, E. (2005) identified six general problems with pension systems in MENA countries which are detailed below:

Benefit Promise Too Large: The DB pension promise is large and unaffordable in many countries in MENA. The pension systems target a high percentage of earnings before retirement with either no cap or a very high ceiling (Holzmann, R. & R. Hinz, 2005). Large mandatory pension mandates mean that few people will want to provide for retirement outside the system posing a significant risk to the individual and capital markets.

Poorly Designed Rules: Some pension schemes have badly designed rules that arbitrarily redistribute income between members and damage savings incentives. For example, basing pension entitlements on some form of final salary definition, as is the case throughout much of Africa (Pallares-Miralles, M. *et al.*, 2012), rather than basing entitlements on average of pay over an individual's working lifetime, is unfair and open to abuse.

Scheme Fragmentation and Administration Problems: Throughout Africa, the administration of pensions is weak (Whitehouse, E., 2005) and fragmented (Pallares-Miralles, M. *et al.*, 2012). Benefit formulas and eligibility conditions vary considerably among schemes which hampers a smooth transfer of accrued rights between schemes and inhibits the mobility of the labour force across sectors. In some countries, information technology systems are outmoded or non-existent. Administration costs exceed that of other regions of the world, consuming more than a third of contributions in some cases (Holzmann, R. & R. Hinz, 2005).

Modest Coverage Rates: Pension systems often cover a relatively modest share of the labour force; mostly workers in the public sector or a minority of relatively high-paid workers in the formal sector (Stewart, F. & J. Yelmo (2009)). Low coverage rates reflect the informal structure of labour markets (Whitehouse, E., 2005), the level of overall economic development (Pallares-Miralles, M. *et al.*, 2012) and low education and skills levels.

Sub-Saharan Africa and the MENA countries have the lowest and third lowest regional coverage rates in the world: 10% and approximately 20% of their working-age populations respectively (Pallares-Miralles, M. *et al.*, 2012). Hinz, R.; R. Holzmann; D. Tuesda & N. Takayama, (2012) state that, in low income and developing countries, the number of working-age adults participating in a pension scheme is very often less than 1 in 10. Coverage rates are higher in predominantly public sector economies where civil servant schemes cover a large segment of the workforce. Changing working patterns also influence coverage rates: self-employment (often characterised by low coverage rates) is increasing and the period of employment with a single employer is decreasing (ISSA, 2012a). Financial uncertainty may deter pension scheme participation.

Governance and Institutional Capacity: Governance of pension schemes is generally weak. Tripartite boards, with representatives of government, employers, and trade unions, are common in Francophone Africa (Holzmann, R. & R. Hinz, 2005). Nominated members may lack experience in managing large, complex financial concerns. Whitehouse, E. (2005) states that, where pension reserves exist, investment policies are governed more by political influence than by members' interest. Adequate regulatory and supervisory capacity should be in place, particularly for funded or partially funded retirement pillars.

Zero Pillar Benefit: Devereux, S. (2007) states that, for a zero pillar to be sustainable, countries offering it should have a high average national income and/or a high degree of inequality. Botswana, Lesotho, Mauritius, Namibia, Seychelles, Cape Verde, Liberia, South Africa and Namibia have a type of zero pillar (Pallares-Miralles, M. *et al.*, 2012). Three of these, all middle income countries, have questioned the financial sustainability of the benefit (Devereux, S., 2007). Resources allocated to such spending will need to increase as populations age (Holzmann, R. *et al.*, 2009). Delivery costs can be problematic, e.g. these consume almost 15% of the social pension budget in Namibia (Devereux, S., 2007). In addition, people who could afford to save for retirement may have less incentive to do so (Van Ginneken, W., 2010), adding unnecessarily to the state's financial burden.

3.4. Retirement Benefit Reform

It can be seen from the challenges discussed in the above section that there is room for retirement benefit reform in Africa. If, *inter alia*, overly large existing benefits could be curtailed and economies of scale utilised, it may be possible for a wider portion of the population to enjoy some form of retirement provision.

Reform Criteria: The World Bank was approached for input into retirement reform and performed a 3-fold evaluation of retirement reform proposals, namely whether the proposed reform makes sufficient progress toward the goals of the pension system, existing arrangements and three process criteria (Holzmann, R. & R. Hinz, 2005). Questions asked concerning existing arrangements are: Is the macro and fiscal environment capable of supporting the reform? Can the public and private structure administrate any new pension scheme effectively? In the case of an existing funded pillar(s): Are regulatory and supervisory arrangements and institutions established and prepared to operate it with acceptable risks? The process-related criteria are as follows: A long-term credible commitment by the government; Local buy-in and leadership; and the inclusion of sufficient capacity building and implementation. Such an evaluation should help clarify the realistic chance of successful implementation of a country-specific reform proposal. The following sections discuss broad reform principles and potential areas for intervention in Africa, before focussing on specific types of potential reform.

Reform Principles: Existing country conditions must be taken into account in establishing the pace and scope of the proposed reform (Holzmann, R. & R. Hinz, 2005). Countries need to make explicit choices about the level of benefits that the pension system will provide. In particular, these entail deciding what share of pre-retirement income should be replaced by the public system and what share should be the responsibility of individuals (Whitehouse, E., 2005). The following broad principles should guide African reform:

- A zero pillar should be in place. Alternatively, funding credits –or similar- in another pillar for those periodically (or permanently) inactive in the formal sector during the accumulation phase could act as a substitute for a zero pillar.

- Mandated systems should be kept small and manageable.
- The pension system should provide benefits that are adequate and affordable to all workers.
- The pension system should be financially self-sustainable, thus guaranteeing that pension promises can be kept.
- If redistribution takes place, it should be transparent and progressive (that is, from high–to low–income workers). Holzmann, R. & R. Hinz (2005) recommends that "low-coverage earnings- related systems should minimise redistribution, be self-financing and not rely on budgetary transfers". Each country will need to make its own decision on the desirability of redistribution.
- The pension system should not distort incentives; this requires a closer link between contributions and benefits.

Potential Areas for Intervention: Reform may involve interventions in the following areas: explicit recognition/financing of liabilities; basic protection; earnings-related protection; expansion of coverage; diversification of sources of provision; gender-based intervention and improvements in governance, institutional capacity and administration. Gender-based intervention is addressed extensively by Whitehouse, E. (2005). Policies that discriminate against women should be reviewed. For example, women's rights to bequeath dependants' pensions should be the same as for men. Alteration to legislation defining partners[3] (including multiple spouses), inheritance and divorce may be needed. A typical defined contribution arrangement that prejudices women is the use of unisex risk contribution rates. In this scenario, women cross-subsidise their male colleagues' risk costs over their working lifetimes. However, when their accumulated contributions are utilised to purchase annuities, this purchase is often done at a more penal rate for women than for men. Women's higher life expectancy is factored in to the annuity purchase.

[3] Same sex partners are recognised in South Africa.

Providers may wish to identify ways to maintain a minimum level of contributions to a retirement fund for women during their child-bearing years (Whitehouse, E., 2005).

3.5. Reform Types

Parametric Reform: Parametric reforms retain the existing structure of benefits, funding and administration, but change contribution or benefit parameters or eligibility conditions. In this manner, additional contributions can be raised and/or the value of benefits can be contained. For example, by reducing first or second pillar benefits, governments may encourage individuals to extend their third or fourth pillar savings. Kenya, Senegal and Uganda were implanting parametric reforms as far back as 2005 (Holzmann, R. & R. Hinz, 2005). Interest in parametric reforms is increasing in Africa and fiscal pressure of civil service pensions is frequently a motivator for reform (Stewart, F. & J. Yermo, 2009).

Introducing a Non-Financial/Notional Defined Contribution Scheme: An NDC scheme is unfunded, with current workers paying for current retiree benefits. However, NDC schemes establish a link between contributions paid and benefits received through the use of notional contributions, notional interest rates, allowing for growth rate of covered wages in a mature system. Accrued contributions are converted at retirement to defined benefits payable over the remainder of an individual's life. Increases to pensions in payments may be based on price, wage or national domestic product increases. Reserves could assist in providing a cushion should adverse conditions manifest. Any desired redistribution can be introduced in a transparent manner through explicit monthly transfers into the system. Existing benefits may be transferred to notional individual accounts to aid retirement system integration.

If done well, NDC reform is "likely the best way to restructure a typical unfunded defined-benefit scheme within a multi-pillar structure" (Holzmann, R. & R. Hinz, 2005). This entails ensuring a level of old-age income protection through a zero pillar (or transfers within the NDC pillar) and implementing an NDC pillar together with a third pillar to enable individuals to target the same replacement ratios as were targeted pre-reform. NDC reform mostly takes place in a defined contribution environment, or one where a conversion to a defined contribution environment is underway. Egypt planned to implement an NDC system in 2012 (Pallares-Miralles, M. *et al.*, 2012). However, ISSA's 2011 prediction that "the country's current uncertain political and economic situation may yet impact the scope, sequencing and timing of reforms"[4] was proved true when the relevant social security law was terminated in August 2013. The termination was, according to the interim president, due to societal opposition to the law[5].

Expanding Coverage: Kwena, R.M. and J.A. Turner (2013) state that it is generally assumed that an economic incentive is needed to encourage individuals to participate in voluntary retirement schemes. Many governments therefore offer favourable tax treatment of retirement-related contributions, investment accrual and/or eventual benefits. Tax breaks are ineffective in encouraging informal sector coverage and encouraging sponsors to match individual contributions may therefore be offered as an incentive to encourage contributions. A non-financial approach of automatic enrolment in voluntary schemes is quite effective at improving coverage (Madrain, as quoted in Kwena, R.M. & J.A. Turner, 2013).

[4] Reforming Egypt's social security system: A vision for social solidarity; Web accessed on url http://www.issa.int/-/reforming-egypt-s-social-security-system-a-vision-for-social-solidarity (5 September 2015).

[5] Daily News Egypt (2013). Web accessed on 5 September 2015 on url http://www.dailynewsegypt.com/2013/08/27/presidential-decree-announces-increase-in-pensions/.

Both the Rwandan and Kenyan governments have implemented successful programs to increase coverage amongst informal sector employees. Rwanda achieved this without following any of the aforementioned traditional methods. The Rwandan government targeted the informal sector by establishing partnerships with key institutions active in the sector, improving information technology to enable the exchange of relevant employment information, designing attractive benefit packages, decentralising services to district level to improve access, and simplifying administrative procedures. This approach led to an increase in coverage from 7 to 18 % in a single year (ISSA, 2011b). The *Kenyan Mboa Pension Plan* makes it easy for individuals to make small, voluntary contributions. The Plan enjoys the same tax benefits as other Kenyan pension schemes and has attracted 42.000 members in a short period of time (Kwena, R.M. & J.A. Turner, 2013).

Move to Prefunded Retirement Benefits: Countries operating a Pay-As-You-Go (PAYG) system may choose to move wholly or partially to a funded system. Moving to a funded system can help reduce the fiscal burden of PAYG schemes over time (Stewart, F. & J. Yermo, 2009). The extent to which this is achieved will depend on the implementation of the process. Whether a move to prefunding is compulsory or voluntary for current active members, the extent of individual incentives to move play a role in estimating financial benefits of a system change (Palacios, R. & E. Whitehouse, 2005). Prefunding can result in increased national savings (provided retirement savings are not merely substituted for existing personal savings) and assist in financial market development (Stewart, F. & J. Yermo, 2009) and output growth (Holzmann, R. & R. Hinz, 2005). The main constraint to moving to a funded system is financial. Governments will need to simultaneously fund implicit pension debt and ongoing retirement fund accrual. Moving from an unfunded scheme to a partially/fully funded one will require a generation of workers to contribute to both arrangements simultaneously. In monetary terms, transition costs may not be high for countries with an immature system and low or modest cover,

compared to countries with a mature system and broad coverage, but they may still be unaffordable (Holzmann, R. & R. Hinz, 2005).

Nigeria's Pension Reform Act of 2004 established a fully funded DC scheme. Membership is compulsory for employees of private sector businesses with more than 5 employees and virtually all public sector employees. However, as the informal sector accounts for 90% of the workforce, it may be argued that a basic social pension is still needed (Stewart, F. & J. Yermo, 2009). Some East and West African countries are interested in creating a prefunded Centralised Wealth Fund to cushion expected future shocks, including population aging, to unfunded pillars (Holzmann, R. & R. Hinz, 2012).

Implement a Combined Unemployment and Retirement Savings Account: Introducing one account out of which unemployment and retirement benefits are paid has the potential to reduce the temptation for the formally employed to only work the minimum numbers of years required to be eligible for a minimum pension (Holzmann, R., 2005). The claiming of unemployment benefits would result in an obvious reduction of future retirement benefits. This may not, however, deter individuals from using unemployment as an excuse to access retirement savings earlier than would otherwise be legally possible.

South Africa's current retirement reform proposals include an allowance for drawing down a portion of preserved pensions in the case of unemployment-related financial need (South African Government, 2013[6]). Although the initial intention was to enforce preservation, there were calls by organised labour to tolerate some leakage as impoverished retrenched

[6] 2013 Retirement reform proposals for further consultation. (1 November 2013 and 1 September 2015). http://www.treasury.gov.za/documents/national%20budget/2013/2013%20Retirement%20Reforms.pdf accessed

workers and unemployed persons have a greater need for current consumption than for deferred benefits.

Three other areas of consideration within retirement reform include:

a) Reduction of administration costs. This would result in better benefit to contributions ratios. Nigeria and Ghana are examples of African countries that have recently introduced a single retirement system in which all formal sector workers participate and Cape Verde and Djibouti have partially integrated their civil servants into the national scheme (Pallares-Miralles, M. *et al.*, 2012).

b) Integrated Systems. These result in equity, administrative efficiency and labour market flexibility. Cape Verde and Djibouti are in the process of integrating their different pension schemes (Pallares-Miralles, M. *et al.*, 2012).

c) Extend Financial Sector Involvement. Sound banking and insurance environments with a clear agenda to support financial sector development should consider higher levels of funding in mandatory schemes and insurance companies could also provide voluntary private pensions and compete for the management of public pension funds (Whitehouse, E., 2011).

4. Health care

Central to the objectives of current Social Security goals is the sustainable access to affordable, efficient and equitable quality health care. The fundamental objective of health systems is to improve the health of the

population and to provide financial protection against the unexpected costs of ill-health. Central to achieving these goals is the concept of *risk-pooling*, where the risk of having to pay for health care is spread across the entire pool of members instead of being borne solely by the individual. The ultimate goal for many health reform initiatives is the achievement of universal coverage. This is defined by the World Health Organisation as access to key promotive, preventive, curative and rehabilitative health interventions for all at an affordable cost, thereby achieving equity in access. In tandem with this goal is the need to reduce the probability of catastrophic health expenditure by achieving equity in financing. Unfortunately, health reform and policy debates focus narrowly on how to generate more funds for health care, ignoring the financing and payment methods chosen as well as the monitoring and evaluation of results. Yet these choices have profound effects on the outcomes and the performance of a health system.

In essence, successful health reform strategies are driven by health care policy. Key policy issues for countries aiming at extending coverage involve:

- Appropriate financing models for different parts of the population as part of an integrated strategy.
- A benefit package that offers essential services in a cost efficient manner. And
- Institutional infrastructure and human resources that enable health benefits to be delivered effectively.

Health reform is unquestionably not restricted to developing or low-income countries. However, it is irrefutable that these countries face the most difficult challenges regarding inadequate access to affordable and effective health care. Several African countries have embarked on the strenuous task of achieving good quality health care that is both accessible and equitable.

The approaches vary from country to country, but positive outcomes in a range of settings suggest that structures that are based on risk-pooling and prepayment, and that are either funded out of taxes or some form of social health insurance, have most to offer. In risk-pooling structures, funds are collected from workers and employers (additional funds may be provided by governments) and then pooled into a social health insurance fund and made available to individuals within the pool as required. The healthy subsidise the sick.

While prepayment and risk-pooling seem to be constants in equitable universal healthcare systems, the ILO recognises that the paths to universal coverage are as varied as the circumstances faced by individual countries. There is no defined solution, nor is it appropriate to disregard current healthcare systems. Universal health coverage is a realistic medium-term goal, even in countries with pluralistic or fragmented health financing mechanisms in place. The remainder of this section provides a high-level summary of the various health insurance models and funding models in operation across the world, including a discussion of the lessons learned from the various countries' experiences. This is followed by an overview of the health care challenges prevalent in Africa and an analysis of Africa's progress with regard to the *Millennium Development Goals* (MDGs)[7]. This section concludes by considering the existing and potential involvement of actuaries in health care. MDGs 4, 5, and 6 focus on improving health and have mobilized governments, businesses, and non-governmental groups to accelerate action for a healthier world. These goals are as follows:

Goal 4: *Reduce child mortality rates*. Target 4A: *Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate*.

[7] The MDGs can be obtained from the United Nations website.

Goal 5: *Improve maternal health*. Target 5A*: Reduce the maternal mortality ratio by three quarters, between 1990 and 2015*. Target 5B: *Achieve universal access to reproductive health contraceptive prevalence rate, by 2015*.

Goal 6: *Combat HIV/AIDS, malaria, and other diseases*. Target 6A: *Have halted and begun to reverse the spread of HIV/AIDS by 2015*. Target 6B: *Achieve universal access to treatment for HIV/AIDS for all those who need it by 2010*. Target 6C: *Have halted and begun to reverse the incidence of malaria and other major by 2015*.

4.1. Health Insurance Models and Funding Models

The literature recognises four ways to achieve the ultimate objective of universal coverage (WHO, 2004):

a) The Beveridge Model, which achieves universal coverage immediately.
b) The Bismarck Model, where Social Health Insurance (SHI) can be viewed as a building block for National Health Insurance (NHI). This model follows a phased implementation approach towards achieving universal coverage in the long-term.
c) National Health Insurance (NHI), which achieves universal coverage immediately. NHI can be viewed as a mix of the above two options. Under mixed health financing systems, the subsidised population group is partially covered via general tax revenue, and a clearly specified contributory population group is covered by SHI.
d) Two tiered model: A system of private health insurance that is subject to government regulatory powers, ensuring a pre-defined benefit package of care usually targeted at the urbanised populations, coupled with a large out-of-pocket model within rural regions.

4.1.1. Implementation of SHI: Lessons Learnt

Below is a summary of the key findings from a systematic review of SHI (in particular) country experiences from 5 developing countries (Hsiao, W.C. & P.R. Shaw, 2006): Ghana, Kenya, Philippines, Columbia and Thailand. These countries were/are developing nations with circumstances, to a certain extent, somewhat similar to those of the African countries. The authors make the point that SHI is a complex instrument of reform. Done well, SHI can yield positive outcomes over time. Implemented properly, SHI can be expected to improve a country's risk protection and health status outcomes. Done hastily, SHI can be backward, disruptive, and possibly hazardous. The 4 key lessons for the review are: Positive changes that can be attributed to SHI; Factors contributing positively to an enabling environment for SHI; Major problems that challenge implementation; and Implications for policy makers.

4.1.2. Factors Contributing Positively to an Enabling Environment for SHI

A successful launch of SHI requires that people are incentivised to pay premiums, providers are certified as qualified and that rapid economic growth is present.

a) Incentive for people to pay premiums.

People must be motivated to accept and pay for SHI, even in compulsory systems. People are willing to prepay for health care services only if they currently have to pay for their health services. If adequate public sector services of good quality are provided for free, or nearly free, why would people who use these services want to enrol and pay for SHI? People will not want to pay for SHI unless public sectors user fees are high, if patients have to purchase drugs and supplies, or if public services are so poor that many patients pay out-of-pocket for private providers. A comparison of the Ghanaian

and Tanzanian experiences is instructive. Ghana shifted to the “cash-and-carry” user fee system in 1999 where patients had to pay fairly high user fees. Consequently, voluntary prepayment plans such as the community-based mutual health organisations (MHOs) flourished, growing from 4 MHO funds in 1999 to 157 by 2002. In 2003, Ghana was able to pass legislation to establish SHI nationwide, relying on the MHOs as a building block. By contrast, Tanzania does not have high user fees. Since 1996, Tanzania has tried to attract and enrol its population into its district-based insurance, the community health funds. The government subsidises 50% of the premium, regardless of income level, yet the enrolment rate remains low, ranging from 5% to 20% of the eligible population, and those who enrol tend to be the elderly and the sick.

b) Certifications of qualified providers

Developing nations have tended to pay little attention to the safety and quality of health services rendered in the private sector, other than establishing minimum standards such as licensing requirements. Following initial licensing, the actual safety and quality of health services remain largely unmonitored and unregulated. In rural areas, drug peddlers and indigenous doctors sometimes have free reign because regulations are not enforced. Moreover, governments rarely require private facilities to be transparent in relation to their financial operations or to adopt modern financial and medical record systems. Under such conditions, the quality of private sector health services is highly variable, and detecting fraud and price gouging when SHI pays for claims is difficult. The average clinical quality of public facilities might be better than that of private facilities, but it is nevertheless highly variable. These deficiencies have to be remedied before or concurrently with the implementation of SHI to gain sustained public support, perform its role of assuring a reasonable quality of health care, and sustain public operations financially. The SHI administration should prudently purchase health care for its insured population. A prudent purchaser has to ensure that services and

drugs meet certain standards. Equally important, SHI has to be able to control fraudulent claims and supplier-induced demand for unnecessary services, as well as "inside" dealings between doctors, pharmacies, and testing laboratories. SHI has to develop and implement new standards and enforcement mechanisms to assure the safety and clinical quality of health care, as standardisation of medical records and accounting systems as well as ensuring adequate inspection and auditing of providers.

c) Rapid economic growth

Rapid economic growth is an important consideration in sustaining an SHI program and in expanding it to achieve universal coverage. Health care costs rise rapidly due to inflation, rising expectations and expensive new drugs and technology. Unless wage rates are also rising rapidly, premiums would have to be increased frequently. Meanwhile, governments may need rising revenues to subsidise the growth in premiums for the poor and to expand coverage. Moreover, rapid economic growth has positive effects on SHI enrolment in that it can: lift people out of poverty, meaning that more people can afford to pay their premiums; bring more workers into the formal sector, which increases the number of people in the contributory regime; raise the government's general revenues (meaning that the government can subsidise more of the poor). Rapid economic growth will therefore enable a nation to move towards universal coverage.

4.1.3. Positive Changes Attributable to SHI

SHI-experiences from developing countries indicate that SHI can be credited with at least 13 positive changes. Effective SHI:

a) Facilitates national debate and consensus on the financing of health care and allocation of resources, involving more stakeholders such as industrial groups, co-operatives and religious groups.

b) Separates public finance from public provision, whereby the SHI fund manages the financing and contracts with public and private providers to deliver public services.

c) Mobilises more revenue for health.

d) Constitutes a formal mechanism for pooling revenues and spreading risks across population groups (e.g. from rich to poor, from the sick to the healthy) and across the life cycle.

e) Responds to clients' preferences and complaints through grievance procedures if benefit entitlements have not been honoured.

f) Inspires more realistic consideration of equity, arising from the debate on subsidising and expanding coverage for the poor and the indigent that accompanies SHI.

g) Encourages more efficient purchasing of health services by using different forms of provider remuneration (e.g. capitation agreements) in the quest to achieve value for money.

h) Results in a clarification and redefinition of the roles of ministries of health.

i) Forces more careful and rational planning to equate SHI revenues with SHI expenditures.

j) Succeeds in expanding membership rather than simply stalling or levelling off.

k) Expands access to quality services by the insured.

l) Reduces catastrophic financial loss that is faced at times of serious illness or injury, and thus the vicious cycle of indebtedness, debt servicing, and reduced household expenditure on necessities is less likely to occur.

m) Results in making scarce public revenues (from general taxation) available to the poor.

4.1.4. Major Challenges Inherent in Implementation

The experiences of the five countries also indicate that, at various stages of development, SHI can expect to encounter at least 9 major implementation challenges along the following themes:

a) Enforcing the collection of contributions.
b) Actuarial costing of the benefits package requires technical skills and data, and is essential to determine the financial sustainability and survival of SHI.
c) Contributing members may not afford contributions in respect of dependants.
d) Enrolment of those in the informal sector and the self-employed, since mandatory enrolment is not easy to enforce.
e) Supply will have to be built up progressively if clients in semi-urban and rural areas are to have access to adequate health care.
f) Provider payment mechanisms that aim to shift the financial risk of provision to the provider will have to be continuously monitored and evaluated.
g) Defining, certifying, and subsidising the poor.

h) Administrative efficiency improvements e.g. associated with the consolidation of existing social insurance and other risk-pooling schemes.
i) Leakage of SHI funds because of corruption will be a perpetual threat.

4.1.5. Policy Implications

The 15 policy implications are cautionary statements, intended to minimise misconceptions and mistakes surrounding SHI:

a) It takes decades for SHI to achieve universality.
b) SHI is complicated: effective and efficient implementation takes many years.
c) Initially, having the same benefits-package for all groups may not be possible.
d) The benefits-package must be designed and costed.
e) User fees must be in place to motivate people to join.
f) SHI must create adequate incentives for workers to enrol.
g) Large general revenues are needed to cover the por.
h) Stakeholders must be convinced of the actuarial soundness of SHI.
i) The SHI Agency should be insulated from political interference.
j) The SHI Agency should be a prudent purchaser of medical services and godos.
k) Qualified providers must be certified before or concurrently with implementation of SHI.
l) A single fund is preferable to multiple funds.
m) Donors could play a valuable role in supporting the implementation of SHI.
n) SHI should be linked to a National Health Insurance policy.
o) Supply-side subsidies must be reduced.

Even though the lessons learned relate mainly to SHI, these lessons can very well be extended to the design and implementation of any State health insurance fund (including the NHI and Beveridge models).

4.1.6. Transitioning from SHI to NHI

Twenty seven countries have introduced the overriding principle of universal coverage via SHI (Hsiao, W.C. & P.R. Shaw, 2006) -these include the five countries referred to above-. Due to the difficulty of moving to universal coverage overnight, a phased approach is typically adopted: Start with occupational/employee groups and Expand coverage, where the government

plays a role in subsidising the rest of the population. Advantages of this two-step approach: More financial stability (once the contributory regime is solvent and performing well, the subsidised regime can then be established) and more buy-in from contributors i.e. more acceptable to people who pay SHI contributions in Step 1. It is possible to intertwine the two stages as follows:

a) Decide the subsidized regime in advance, while designing the contributory regime and
b) Secure donor funding/government funding in advance of introducing the subsidized regime.

It is also important to note that the transition from SHI to NHI is a lengthy process. This was achieved after 127 years in Germany, 118 years in Belgium, 79 years in Austria and 72 years in Luxembourg. However, it is noteworthy that the factors at play for these countries differ to the factors at play in today's more technologically sophisticated world. For further reading on the factors to consider when transitioning from SHI to NHI, please refer to WHO (2004).

4.1.7. Country experience within the informal sector

In Africa, Community Health Insurance (CHI) Schemes are a common mechanism used to provide health care to low-income earners living in rural areas. It was independently estimated that there were 626 CHI schemes in West Africa alone (Soors *et al.*, 2008). Community Health Insurance Schemes share five characteristics, namely:

a) The schemes are established by communities, of which the individuals share common characteristics such as geographical area, ethnicity, religion, etc.

b) Solidarity principles are applied as opposed to mutuality i.e. contributions to the scheme are not determined based on a member's risk factors.
c) Members are involved in decision-making and management of the scheme.
d) The schemes are non-profit.
e) Membership to the scheme is voluntary (Soors *et al.,* 2008).

In West African countries, the establishment and management of CHI schemes have been undertaken by the respective governments which have also instituted enabling legal frameworks. Varying levels of success have been achieved by different countries of which Senegal, Mali, Ghana, Guinea, Burkina Faso, Benin, Togo, Cameroon and Niger are included. Progress has been slow and the success of the entire concept as a means of providing health care to low-income earners who live in areas with limited access to such services has been heavily criticised (Soors *et al.*, 2008). In Central and East Africa, both government and health care providers tend to play leading roles in the establishment and management of CHI schemes. Tanzania, Kenya, Uganda, and Rwanda are some of the countries that have attempted to provide health care to the informal sector through CHI schemes.

Most of these schemes are young and small with varying levels of successful implementation (Soors *et al.*, 2008). Exploring the possible establishment of CHI schemes as a means of providing health care to the informal sector in African nations would require extensive research and investigation into the nature and size of the informal sector and the most appropriate structure for the CHI schemes.

4.2. African Challenges

The pressures of reform for African countries are intensified by the high burden of disease. This is exacerbated by poor living conditions and lack of access to quality care. Health statistics for African countries as a whole are poor in comparison to the rest of the world and efforts for reform are problematic given the typical issues faced by low- and middle-income countries.

These issues include high out-of-pocket health care expenditure, high income inequalities, unemployment rates, poor health care resources, poor infrastructure and overall system management, lack of policies and legislation to support development and importantly, a lack of funding. Furthermore, in Africa, the minority have access to medicine and malnutrition is a constant problem. Lack of clean water and other basic necessities, disease, and human conflicts make survival difficult for most on this continent. Besides lack of appropriate health care and nutrition, HIV/AIDS is a major health issue in Africa. The children of Africa suffer the most from this epidemic. Millions of children have been left orphaned because of the disease.

Child mortality rates in Africa are disproportionately high in comparison to the rest of the world. Some statistics from The UN's Millennium Development Goals Report (2011) which highlight this are: of the 26 countries worldwide with under-five mortality rates (U5MR) above 100 deaths per 1,000 live births in 2010, 24 are on the African continent; Approximately one in every eight children on the continent die before the age of five which is nearly twice the overall average in developing countries.

Table 2. African health care spending and personnel statistics

Healt Statistics	A	B	C	D	THE	PHE
African Region	54	2,2	9	0,7	6,5	50,7
Region of the Americas	76	20	72,5		14,4	50,7
South-East Asia Region	65	5,6	10,9	4,1	3,8	62,9
European Region	75	33,2	65	5,4	9,3	24,8
Eastern Mediterranean Region	66	10,9	15,6	5,4	4,7	49,1
Western Pacific Region	75	14,8	18,4	3,8	6,6	35,6
Global	68	14,2	28,1	4	9,4	40,8

A: Life expectancy at birth, 2009. Years B: Physicians

C: Nursing &midwifery personnel D: Pharmaceutical personnel

B, C, D: Density (per 10.000 population 2005 – 2010)

THE: Total Health Expenditure, 2009 (% of GDP)

PHE: Private Healt Expenditure, 2009 (% of THE)

Source: WHO (2012): *World Health Statistics*.

Despite the momentous challenges faced by African nations, health care has already changed dramatically over the last decade, and is expected to improve even further in the next one. This is largely attributable to the many stakeholders striving to improve health care in the African region. This includes national and local government authorities, NGOs and multinationals. The details of an effective healthcare system are inextricably linked and notably complex and therefore it is difficult for any one party to independently make a difference. A 2009 McKinsey research document noted that the private sector is currently playing and will continue to play a vital role in the financing and provision of health care in sub-Saharan Africa. The report, “The Business of Health in Africa”, noted that the private sector could provide 60% of the $25 to $30 billion needed for sub-Saharan Africa to meet the demands of health care over the next decade. A second McKinsey research document, “A practical approach to health strengthening in sub-Saharan Africa”, pointed out that system-wide barriers were impeding the health care delivery in sub-

Saharan Africa. In order to combat disease effectively, solutions must be developed and implemented collaboratively.

Furthermore, to create an environment of equity in access and fair financing, principles of social solidarity need to apply. Prepayment, linked to affordability and the pooling of funds, ensures that the risk of unexpected health expenditure is borne by the entire risk pool as opposed to the individuals themselves. The larger the risk pool, the greater the predictability of health expenditure as the effect of large claims is spread over a larger membership base. It is therefore critical to formulate a strategy to ensure that the entire population obtains health cover and reduce the levels of out-of-pocket expenditure that lead to impoverishment. Those countries that are seen to be making notable progress in certain areas of reform include South Africa, Zambia, Ghana, Tanzania, Kenya, Nigeria & Namibia, amongst others.

5. Broader Social Security Nets: Overview

Social Security is an extensive field in which actuaries may engage more frequently and apply their skills with greater depth. There is great scope to add value to the programs that currently exist and to assist with developing more innovative programs. To do this appropriately, knowledge of the issues affecting Social Security is necessary. These also have a significant effect on traditional areas of actuarial practice. The remainder of this section aims to very briefly discuss some of the benefits that have not been discussed in more depth.

5.1. Survivor benefits

Social protection programs that include provision for old-age benefits usually include provision for survivors' benefits as well. These benefits are

generally a percentage of either the benefit paid to the deceased at death or the benefit to which the insured would have been entitled if he or she had attained pensionable age or become disabled at that time. In most cases, the provision of survivors' benefits is confined to widows/widowers who are caring for young children, are above a specified age, or are disabled. Many systems also pay benefits to other surviving close relatives, such as parents and grandparents, but only in the absence of qualifying widows, widowers, or children (ISSA, 2012a).

5.2. Family benefits

Family benefit policies not only cover compensation for the additional cost for having children through family allowances, but also maternity and paternity benefits, day care subsidies, as well as programs to encourage women's participation in the workforce while balancing family needs. With the break-up of the traditional family social safety net, together with a changing work environment and the effects of globalization, new social risks have emerged. These new risks have drawn attention to the limits of the existing social safety net and, as a response, the need for the state to adopt new social policies. Family policies can help societies meet these challenges, in particular by helping parents cope with the double burden of providing care for children while seeking to pursue a full professional career (ISSA, 2012a).

5.3. Work Injury benefits

Work injury schemes provide for compensation for work-related injuries and occupational diseases. These schemes are in general funded through a levy based on number of employees charged to employers or earmarked tax percentage. The benefits provided by these schemes range from medical expenses, income support, support to dependants in the event of death of the employed individual etc. The efficiency of a work injury scheme

depends on a range of factors, the main indicator being the reduction of work-related accidents and occupational diseases. According to the ISSA (2012a), 2.34 million people die from work-related accidents and diseases each year and approximately 4% of GDP is lost as a result of occupational accidents. From the above, it can be deduced that health care is relevant to work injury benefits. The sufficiency of the benefits payable in relation to medical expenses is directly impacted by the cost of health care services. In addition, the availability and adequacy of care has direct impacts on the ability of an individual to recover and return to work. Consequently this impacts the economy of a country through increased poverty, reduced economic growth and an increased burden on the state. The concept of preventing occupational risks is therefore embedded in many of these schemes. Linking prevention to accident insurance compensation can enable effective mechanisms to reduce both accidents at work and occupational diseases, and to provide an incentive for employers to boost preventive activities in an enterprise, as it directly impacts on the contribution rate paid exclusively by the employer (ISSA, 2012a).

5.4. Disability benefits

Disability can be understood on three different levels, namely impairment, activity limitation, and participation restriction. The data suggest that disability prevalence in the Eastern and Southern African region is between 14% and 36%, including different types and degrees of disability. Swaziland has the highest disability prevalence (35.9%) and South Africa has a disability prevalence of over 24%.

The link between poverty and disability is often discussed as a ‘vicious circle’ where poverty features as one of the key drivers of disability; disability may in turn lead to impoverishment due to lack of opportunities and access to health services, education and employment. Many governments in Africa have

developed budget allocations and systems in the form of disability grant payments to provide disability benefits to those in need. In general these grant payments are means-tested, and as mentioned in previous sections, means-tested benefits tend to marginalise a large proportion of the population despite their inability to earn a sufficient income. Logically, individuals who are receiving disability grants require these funds for various reasons, including food, shelter, medical care, supporting dependants etc. Should the costs of health care comprise a large proportion of the overall benefit received, it is unlikely that the individual will pursue the medical treatment required as the perceived need for alternate living necessities will be deemed more important. In addition, the high cost of disability means that many disabled people have additional expenses and difficulties in addition to those of able-bodied people, such as assistive devices, remuneration of caregivers and additional transport costs. This will further exacerbate the ailments burdening disabled individuals, hindering these individuals from resuming employment and combatting poverty, and consequently place further pressure on the adequacy of the disability grants provided globally.

Disability can be viewed from a medical perspective, which looks purely at the physical or mental impairment and views the degree of severity as the extent to which certain activities of daily living cannot be undertaken. It is difficult to define and measure disability, because disability is related to many life areas, and involves interactions between the person and his or her environment. Just as important as the disease label itself is whether a person can work and carry out the routine activities necessary to fulfil his or her roles at home, work, school or in other social areas. Understanding the different aspects of disability is necessary in developing a comprehensive and value-adding disability programs.

5.5. Broader Social Security NETS: Gender Inequality

Gender inequality has a much greater impact than the explicit MDGs. Gender dynamics underpin all of the MDGs and to make progress, it is necessary to develop specific gender-sensitive approaches to the manner in which we organize the new world. The great themes of the 21st Century – democracy, globalization, health, lasting peace – cannot be achieved in a world with gross gender inequalities. MDG 3 aims at "Promoting gender equality and empowering women". The specific target that was established at the time of developing the MDGs was to eliminate gender disparity in primary and secondary education preferably by 2005, and at all levels by 2015.

The Gender Inequality Index ("GII") was introduced in 2010 by the Human Development Report of the United Nations Development Program (Gaye, A. *et al.*, 2010). It has replaced the Gender Development Index and the Gender Empowerment Measure. This measure takes into consideration gender disparities, reproductive health, empowerment and labour market participation. The reproductive health indicators are Maternal Mortality Ratio and the Adolescent Fertility, obtainable from UNICEF's State of the World's Children and the UN Department of Economic and Social Affairs respectively. The logic is that the lower these values are, the more likely a woman is to have access to adequate health services, lower health risks, and higher education attainment. Empowerment for GII is measured by two indicators which are: *Share of parliamentary seats held by each sex*, which is obtained from the International Parliamentary Union; and *Higher education attainment*, which is obtained from the United Nations Educational, Scientific and Cultural Organisation ("UNESCO") and the Barro-Lee data sets [8].

[8] This is data compiled by Robert J. Barro and Jong-Wha Lee which shows educational attainment for over 140 countries over 60 years, disaggregated by sex and 5-year age intervals.

The labour market component is measured by *women's participation in the workforce*. This takes into consideration those who are in paid work, unpaid work, and actively looking for work. The data for this dimension are obtained from the International Labor Organisation ("ILO"). It is worth reflecting on these measures (and those for the other MDGs) and challenging them to ensure that the most transparent and valuable measures provide the best quality information. For example, the interactions between these measures are likely to be very significant once multiplied against one another. It would be expected that statisticians and actuaries, with a good understanding of the social factors, could assist in understanding these measures and their relationships with more gender inclusiveness.

Table 3. Bottom 10 highest ranking countries based on GII in 2011

Country	**GII Rank 2011**	**GII Value 2011**
Yemen	146	0.769
Chad	145	0.735
Niger	144	0.724
Mali	143	0.712
Congo	142	0.710
Afghanistan	141	0.717
Papua New Guinea	140	0.674
Liberia	139	0.671
Central African Republic	138	0.669
Sierra Leone	137	0.662

Source: *Social Watch Report* (2012).

As can be seen from the above, African countries dominate the bottom of the list. There are other economic indices which have been developed across the globe to measure gender differentials. The World Economic Forum developed the *Global Gender Gap Index* ("GGGI") covering economic participation and opportunity, educational attainment, general health and political empowerment. The Economic Intelligence Unit then

launched the *Women's Economic Opportunity Index* ("WEOI") in 2010 covering labour policy and practice, women's economic opportunity, access to finance, education and training, women's legal and social status and the general business environment.

Interestingly, 2006 statistics from the ILO indicated that unemployment rates for men and women in Africa were the same at 9.7%. However it is worth noting that unemployment rates do not reflect the quality of work obtained. Women often do not have the opportunities to obtain employment in the formal sector and generally resort to insecure work in the informal sector which does not have prospects for growth. The question of women involved in parliament spans beyond quotas, but more critical questions revolve around the actual involvement of women in decision-making processes. Has the higher representation of women resulted in significant changes in national health status, adequate budgeting, and stronger, more sustainable programs encouraging greater gender equality? The issues to cover are corporate confidence, illiteracy, leadership training and advocacy, etc. - not just the number of women in parliament and schools and fertility rates.

One of the key means by which gender inequality is being addressed within African countries is by engendering national budgets. This ensures that the impact of budget allocations on women is tracked. South Africa has done this with the use of "Women's Budget Initiative" (Bhatnagar, D. *et al.*, (2003)). Some governments have gone so far as to develop programs within several ministries with several measurable indicators to ensure gender equality. Organisations within government and commerce have been instrumental in furthering the development of gender-sensitive policies and those that pro-actively empower women. In some cases this has resulted in the increase of political representation. A recurring theme across several African countries is the prioritisation of agricultural and rural development. This is as a result of

the fact that a majority of women live and work in these areas, some with very low prospects of progressive work in urban areas. There is the increased recognition of the economic and social value that can be created within the small scale commercial and subsistence agricultural sector. Due to the non-traditional nature of this field for the majority of actuaries, this is currently an experimental area where it is believed that we can provide value in the planning, development and monitoring processes.

5.6. Broader Social Security Nets: Child/Orphan Grants and Education

Childhood poverty is a significant factor in persistent and chronic poverty, and in the inter-generational transmission of poverty. Preventing poverty in childhood can thus help prevent the vicious cycle of poverty across generations+. MDGs 4 and 5 are related to children with MDG 4 aimed at “Reducing Child Mortality Rates” and “MDG 5 aimed at “Improving Maternal Rate”.

The three main types of cash transfers often used to tackle childhood poverty are: a uniform benefit, paid for every child in the household; an income supplement, paying a fraction of the difference between household income and the poverty line; and a minimum guaranteed income, which supplements income up to a given level. As these programs have not been in existence for a significant period of time, it is difficult to provide a conclusive assessment as to whether they have indeed resulted in a change to certain behaviour. It has however been observed that cash transfer programs must be coupled with other programs that target other poverty-dimensions to be as effective as possible. These may include those related to education, health, employment and mobility, as is being seen across Africa. The critical factor to consider here is that the impact of the cash grants is critically dependent on the response of the households as the cash given is assumed to increase the general standard of living within the home.

MDG 2 states that "By 2015, all children can complete a full course of primary schooling, girls and boys." Lacking from these goals is the urgent need for relevant higher education, starting from secondary education. The core educational focus at the moment should be to ensure that all children obtain a full primary education to allow them the opportunity to be accepted into secondary education. However, with the growing unemployment problem in the world, greater focus will need to be directed towards secondary education as well. It is disheartening that the progress on primary school enrolments has slowed since 2004, even as countries with the toughest challenges have made large strides to reduce the number of uneducated children. More than half of out-of-school children are in Sub-Saharan Africa. This shows the need for a greater drive to get children into schools. The area of education is not often covered by Social Security as its mandate falls under the Ministries of Education (including Higher Education). It is essential to note the close connection between education, OVC benefits, unemployment, health, gender issues and other Social Security benefits. No one area can be targeted in isolation of others as our socio-economic environment is a highly entangled web. Neglecting one area impedes efforts directed in another area. This needs to borne in mind during product development by considering and implementing useful collaborations between education ministries and social security governing bodies if they are separated by artificial institutional barriers.

6. Actuarial Involvement

Actuaires in Africa have proved innovative in applying their skills to socio-economic challenges. Within healthcare, actuaries play an important role in developing, valuing and monitoring innovative health insurance products such as gap cover, hospital cash-plans, medical aid cover etc. The trend has further strategically embarked upon development of innovative

health care solutions aimed at low-income earners and informal employees so as to increase the access to health care funding within Africa. Furthermore, actuaries are involved in developing SHI and NHI through developing comprehensive costing structures and benefit packages suitable to the nation in question. Some of the areas that actuaries should continue to develop their understanding and increase their involvement (particularly within pensions and healthcare) are:

- Return on assets must be determined and declared and annuitisation factors for age-related cohorts must be determined.
- Inherent redistribution within and across generations should be monitored and communicated.
- Evaluating the sustainability of Social Security Systems, ensuring design and adequacy issues are addressed, asset-liability modelling[9] and reporting and communicating information (ISSA 2012b).
- Actuaries can help to provide credible comparative estimates of retirement costs post reform to that of the current system (Holzmann, R. & R. Hinz, 2005). The World Bank provides a program called the *Pension Reform Options Simulation Toolkit* (*PROST*)[10] that can assist with this.
- Setting of health policies with specific reference to health financing policies.
- Maximising population coverage including innovative methods to extend coverage to the informally employed as well as the unemployed.

[9] The authors believe that actuaries can play a role in advising on investment strategies, valuing assets, recommending an investment reserve account to smooth returns over time and assessing the impact of HIV/AIDS on funds.

[10] For more information, visit: http://siteresources.worldbank.org/INTPENSIONS/Resources/395443-1121194657824/PRPNoteModeling.pdf

- Formulating appropriate benefit packages including synergies between benefits provided by government, private insurers and employers.
- Evaluating the impacts of the long-term demographic effects of high childhood mortality, escalating disease burdens, medical advancements and changing lifestyles including consideration of the economic consequences of these impacts.
- Consideration of the relative effects of national economic growth and global technological improvements in improving general human health and well-being.
- Developing optimal methods of reimbursement whilst simultaneously developing clinical monitoring tools so as to ensure that optimal quality of care is achieved.
- Continuously monitoring and evaluating health care reform strategies and the interventions and health care solutions offered in order to reflect the actual disease burdens and demographic profiles of the nation.
- Developing strategies to maximise the supply of health care resources with specific consideration to the funding strategies required to achieve the most optimal health care solution within the constraints of available resources.
- Improving accountability through tracking and reporting on allocation, disbursement, and utilisation of financial resources, using the tools of auditing, budgeting, and accounting.
- Consideration of the impacts of changing taxation and regulatory laws.
- Improving health system performance by demonstrating and accounting for performance in light of agreed-upon performance targets with a clear focus on services, outputs and results.

- Costing and the analysis of the programs for monitoring and evaluation purposes would have to be in terms of the number of OVC beneficiaries that are reached in separate regions.
- Commissioning a National Longitudinal Cohort study of the impact of OVC benefits. Following children and families being supported by various services over an extended period of time, is the most reliable way to understand whether the services being provided are making a difference in the lives of the children, both in the short-term and longer term.

This list is in no way intended to be exhaustive but rather illustrative of the various aspects of social security that require collaborative attention by actuaries and other experts. Imperative to these aspects is the consideration of the evolutionary nature of socio-economic needs and the dynamics of a population. Considerable and continuous effort by all stakeholders, experts and professionals is vital in order to achieve sustainable social security nets and development.

7. Conclusion

African economies are increasingly demonstrating dual characteristics of high economic growth rates on the one hand and substantial Social Security challenges on the other hand. Economic growth should be reflected in an improved socio-economic environment. Many countries have either reformed or are in the process of reforming retirement funding provision. Coverage of population and adequacy of benefits are critical challenges for effective retirement funding provision. State benefits are limited and more emphasis will need to be placed on individual savings to ensure adequate pension provision at retirement. There has been a trend towards Defined

Contribution-type arrangements but there still remain challenges in respect of investment opportunities that can make such transitions sustainable.

Various health care funding models are being implemented within African countries. Out-of-pocket expenses remain a major funding method. Affordability, and sound and efficient management of existing resources remain challenges as well as a historic lack of adequate primary Health Care facilities. Several nations have initiated efforts towards developing national public health care provision for their people with some degree of success. Challenges in providing effective Unemployment Insurance include poor administration systems, access to payments, limited coverage, availability of information, eligibility enforcement, varying financial performance and lack of co-ordination. The areas to focus on include hidden employment, reemployment incentives, severance payments, workfare programs, Individual Unemployment Insurance Savings Accounts and effective administration systems. In addition to addressing the above, innovative solutions to providing employment are required for more sufficient long-term solutions. This is particularly an area of concern due to the very young African labour-force which should be integrated into the workforce. To be able to appropriately develop, implement and run programs for orphans and vulnerable children it is essential to know the costs of OVC programs, an area which actuaries could provide as much value as they have in costing health care and UIFs amongst other benefits. The area of education is still very new in the consulting and actuarial practices but the value provided is slowly emerging. Planning and budgeting at a national level have started involving actuarial input in a few African countries.

There is a strong interlinked nature to these benefits. It is impractical and ineffective to address one area without considering the impacts of other issues. Given the very differing landscape, culture and socio-economic environments, best practice for developing and implementing social security

in the differing African regions may not be identical to that witnessed in western regions. In this regard, any social security research should not be in isolation of the circumstances in differing communities. The potential contribution of actuaries is quite clear in some areas such as retirement reform, health care and unemployment insurance, as a result of the momentum the profession has already gained in these areas. In other areas of the development goals, contribution points are slowly being unearthed. The long-term view; the skill to view assets and liabilities side-by-side; the risk management capabilities; financial, economic and demographic modelling capabilities amongst a host of other skills, could be further put to great use to address development issues across the continent.

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