AFRICAN MEDICINES AGENCY

Business Plan

EXECUTIVE SUMMARY

The African Heads of State and Government as well as the World Health Organization (WHO) Regional Committee for Africa made a decision for the establishment of the African medicines regulatory agency (AMA) in response to the enormous health challenges including lack of access to affordable, quality essential medicines.

Africa has a high disease burden and high mortality from preventable and curable diseases, which affects populations at various levels, rural and urban. This is partly due to inadequate health systems, scarce financial and human resources and unavailable and unaffordable medicines that are good quality, safe and efficacious. Lack of access to quality essential medicines and health products is just one of the contributing factors to the enormous health challenges that Africa faces. Further, the regulation of pharmaceuticals is an essential part of improving health care while supporting social and economic productivity of the African population.

Therefore, AMA is intended to be an organ of the African Union (AU), legally mandated by Member States (MS) with the goal of increasing availability of affordable, quality, safe and efficacious medicines and other health products on the continent. This will be achieved through coordinating national and sub-regional regulatory systems for medical products, providing regulatory oversight of selected medical products as well as promote cooperation, harmonization and mutual recognition of regulatory decisions. AMA will serve as a catalyst for stronger regulatory oversight to curtail medical products that are SSFFCs, enable competitiveness of locally produced medicines particularly of those for diseases that disproportionately affect Africa.

It is increasingly becoming evident that no single country including well-resourced countries can efficiently and effectively regulate its own market alone in this globalized market. As such, AMA as a continental agency would be able to galvanize technical support, expertise in various countries and RECs, and resources at a scale that cannot be matched at national or regional level. However, AMA will not replace National medicines regulatory Authorities (NMRAs) or sub-regional Medicines Regulatory Authorities, which will be established by the Regional Economic Communities (RECs).

Key milestones to achieve the desired results will include increased number of manufacturing facilities that are GMP compliant, number of MS & RECs with appropriate policies, legal and regulatory frameworks, increased number of NMRAs and RECs with sustainable financing, and increased market share (value and volume) of local manufacturers. AMA will achieve these desired results through the following strategies: (1) regional integration and harmonisation, (2) policy, legal and regulatory reforms at national and regional level, (3) regulatory capacity development – human, infrastructure, financial, technical, governance systems and (4) advocacy and knowledge management.

AMA's financing model is based on diversified funding to ensure ownership and sustainability. The financial mechanisms are (1) direct contributions from member States through the AUC, (2) direct contributions from partners, (3) revenue generation, and (4) innovative financing mechanisms (endowment fund and use of social impact bonds). It is expected that contribution from the endowment fund and social impact bonds will reach 25% by 2022.

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ACTs	Artemisinin-combination therapies
AMA	African Medicines Agency
AMRH	African Medicines Registration Harmonisation
AMU	The Arab Maghreb Union
API	Active Pharmaceutical Ingredient
ARVs	antiretrovirals
AU	African Union
AUC	African Union Commission
CEN-SAD	The Community of Sahara-Sahel States
COMESA	The Common Market for Eastern and Southern Africa
EAC	The East African Community
ECCAS	The Economic Community of Central African States
ECOWAS	The Economic Community of West African States
FPP	Finished Pharmaceutical Product
GDP	Gross Domestic Product
GMP	Good Manufacturing Practice
ICH	The International Conference on Harmonization of Technical Requirements Registration of Pharmaceuticals for Human Use
ICMRA	International Coalition of Medicines Regulatory Agencies
IGAD	The Intergovernmental Authority on Development
IGDRP	International Generic Drugs Regulators Programme
IPTp	Intermittent preventive therapy in pregnancy
IVD	In vitro diagnostics
LDCa	Least Developed Countries
LICs	Low-income Countries
MD	Medical devices
MDG	Millenium Development Goals
MDR-TB	multidrug-resistant tuberculosis
MRA	Medicines Regulatory Authority
MS	Member States
NCD	Non communicable diseases
NEPAD	The New Partnership for Africa's Development
NMRA	National Medicines Regulatory Authority

NPCA	NEPAD Planning and Coordinating Agency
PIC/s	Pharmaceutical Inspection Convention and Pharmaceutical Inspect Cooperation Scheme
PMPA	Pharmaceutical manufacturing Plan for Africa
PMS	Post marketing surveillance
RCOREs	Regional Centers of Reegulatory Excellence
REC	Regional Economic Community
SADC	The Southern African Development Community
SSFFCs	substandard, spurious, falsely-labeled, falsified and counterfeit products
TB	Tuberculosis
TRIPS	The Agreement on Trade-Related Aspects of Intellectual Property Rights
WHO	World Health Organization
XDR-TB	extensively drug-resistant tuberculosis

ACKNOWLEDGEMENTS

The process of developing the AMA business plan was guided by a participatory approach through consultations with key stakeholders through online platforms, meetings and workshops, and interviews. The exercise was overseen by the WHO Regional Office for Africa and African Union Commission. The work was carried out under the general direction of the AUC Director – Social Affairs.

WHO and AUC provided the necessary financial resources required to finance the development of the business plan, including the consultation process throughout the Member States, and the publishing of the final draft.

1. INTRODUCTION

Africa's leadership remains concerned about the disproportionate disease burden of communicable and non-communicable diseases affecting the continent. Coupled with the sub-optimal investment in health systems, this has a potential negative impact on Africa's economic development. Moreover, the proliferation of substandard, spurious, falsely labeled, falsified, counterfeit (SSFFCs) medical products[1] in the market are a major concern to public health.

The African Union (AU) Executive Council on recommendation from AU Conference of Ministers of Health[2], endorsed the Pharmaceutical Manufacturing Plan for Africa (PMPA) in 2007 in order to address the lack of access to quality, affordable medical products, economic development, and reduce the overdependence on imported medical products[3]. It is within this framework of creating an enabling regulatory environment for PMPA that the African Medicines Regulatory Harmonization (AMRH) Programme under the New Partnership for Africa's Development (NEPAD) was initiated. The goal for the AMRH is to strengthen the capacity for regulation of medical products in Africa and the harmonization of medicines regulatory systems.

Additionally, the African Heads of State and Government as well as the World Health Organization (WHO) Regional Committee for Africa made a decision for the establishment of the African medicines regulatory agency in response to the enormous health challenges including lack of access to affordable, quality essential medical products[4,5,6]. Subsequently, the AU Executive Council endorsed the roadmap for the establishment of the African Medicines Agency (AMA)[7] based on the recommendation of the first African Ministers of Health meeting jointly convened by the African Union Commission (AUC) and the WHO[8].

In line with the Ministerial commitment, the AUC and WHO established a Task Team to facilitate the establishment of the AMA. The first Task Team meeting was held in November 2014 in Addis Ababa and adopted its terms of reference and a four-year action plan (2015 - 2018) for the operationalization of the AMA. The AUC, the WHO and NEPAD Planning and Coordinating Agency serve as a joint secretariat for the Task Team. Development of the AMA business plan for the AUC is one of the AMA's four-year action plans to operationalize the continental agency.

The AMA business plan provides the rationale for the continental agency, background to the

[1] According to WHO definition, medical products include medicines, vaccines, pharmaceutical ingredients, medical devices, and diagnostics.

[2] The African Union, Third Session of The AU Conference of Ministers of Health, Johannesburg, South Africa, 9 – 13 April, 2007

[3] African Union Executive Council, Eleventh Ordinary Council 25 – 29 June, 2007 Accra, Ghana EX.CL/Dec.348 - 377(XI)

[4] WHO Regional Committee for Africa, Sixtieth Session: Report of the Regional Task Force on the Prevention and Control of Substandard/Spurious/Falsely labelled/Falsified/Counterfeit Medical Products in the Africa Region. Malabo, Equatorial Guinea 30 August–3 September 2010

[5] The African Union Assembly Decision No: Assembly/AU/Dec 413 (XVIII): Roadmap on Shared Responsibility and Global Solidarity for AIDS, TB and Malaria Response in Africa, July 2012

[6] WHO Regional Committee for Africa, Sixty-third session Agenda item 11: Strengthening The Capacity for Regulation of Medical Products in The African Region Brazzaville, Republic of Congo, 2–6 September 2013

[7] African Union Executive Council, Twenty-Sixth Ordinary Session, 23 – 27 January 2015 Addis Ababa, Ethiopia EX.CL/Dec.851-872 (XXVI)

[8] First meeting of African Ministers of Health jointly convened by the AUC and WHO Luanda, Angola, 16–17 April, 2014

genesis of AMA, policy issues at regional, continental and global level, environmental scan, the approach that was undertaken in the development of the business plan including the consensus building process, its business model including financial plan, and monitoring and evaluation framework.

2.1 Problem Statement

The high diseases burden and high mortality from preventable and curable diseases, which affects populations at various levels, rural and urban, is partly due to inadequate health systems, scarce financial and human resources and unavailable and unaffordable quality, safe and efficacious medicines. Lack of access to quality medicines and health products is just one of the contributing factors to the enormous health challenges that Africa faces. For instance, only 7.6 million (36%) of the 21.2 million people in Africa eligible for antiretroviral therapy in 2013 were receiving HIV treatment[9]. Further, compared to two-thirds of adults, only a third of children needing antiretroviral therapy are receiving it.

Despite the fall in malaria mortality rates, Africa alone, accounts for 90% of malarial deaths – a preventable and curable disease due to poor access to insecticide-treated mosquito nets (ITNs), and artemisinin-combination therapies (ACTs) among other factors[10]. Although, women and children are at high risk, only 57% of pregnant women receive at least one dose of intermittent preventive treatment in pregancy (IPTp), while use of ACTs in children is below 20%. Availability of generic medicines in WHO Africa region is less than 60% in private sector and 30% in public sector[11]. On average, patients in the WHO Africa region pay 2.3 times and 6.7 times for the lowest-priced generic compared to the international reference price in public and private sector respectively[12]. Consequently, poor access to affordable, quality medical products is one of the determinants of the preventable productivity loss, poverty and poor health outcomes on the continent.

The causes of lack of access to affordable, quality medical products are varied (Annex I). They include **poor accessibility** as a result of poor coverage of health facilities especially in rural areas. This inadequacy of health care systems including inefficient supply and distribution systems also contributes to shortages particularly at lower levels of care. Another factor is medical products are often **unaffordable.** This is partly due to lack of adequate financial resources allocated to health. For instance, despite the Abuja Declaration, only six MS (Liberia, Madagascar, Malawi, Rwanda, Togo and Zambia) had reached the agreed 15% target for budget allocations to health, evidence that health is apparently not prioritised by policy and decision makers across the continent[13]. Together with poverty, as the majority of Africans are considered poor or live in extreme poverty, there is *insufficient financial resources* to spend on health including on medical products. In

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[9] UNAIDS. Access to Antiretroviral Therapy in Africa: Status Report on Progress Towards the 2015 Targets. http://www.unaids.org/sites/default/files/media_asset/20131219_AccessARTAfricaStatusReportProgresstowards2015Targets_en_0.pdf (last accessed 20 October 2015)

[10] World Malarial Report 2014

[11] A Cameron, M Ewen, D Ross-Degnan, D Ball, and R Laing. Medicines prices, availability, and affordability in 36 developing and middle-income countries: a secondary analysis. Lancet 2009; 373: 240-49. DOI:10.1016/S0140- 6736(08)61762-6

[12] Alexandra Cameron, Margaret Ewen, Martin Auton and Dele Abegunde. Medicines Prices, Availability and Affordability *in* The World Medicines Situation 2011. World Health Organization (WHO) http://apps.who.int/medicinedocs/documents/s18065en/s18065en.pdf (last accessed 20 October 2015)

[13] UNAIDS & African Union Commission. Abuja +12 Shaping the future of health in Africa, 2013.

addition, the lack of required skills and competences leads to inefficiency and ineffective supply chain systems.

Patent and intellectual property rights, especially on newer treatments and *lack of local manufacturing* capacity for generic medicines contributes to the high cost of medical products. Local pharmaceutical manufacturing is impacted by the lack of enabling regulatory environment, among other factors. Consider, Africa with its 54 countries, each with its own territorial jurisdictions that are not harmonised. This creates a complex, inefficient and ineffective regulatory environment, which culminates in non-tariff barriers impacting on availability and affordability of quality medical products to Africans.

There is scarce information on the extent of quality and safety of medical products in African countries due to inadequate regulatory systems and post marketing surveillance (PMS) systems. Some examples include deaths due to diethylene glycol in teething syrup in Nigeria[14], reports of SSFFCs in several African countries[15] and a review of published literature on quality of antimalarials suggesting that a third failed chemical analysis[16]. One would postulate that the situation is probably worse for medical devices and *in vitro* diagnostics compared to medicines because of the comparative limited capacity to regulate these products compared to medicines[17]. Several authors and reports seem to confirm this situation for the diagnostics sector, by noting that lack of regulation and quality assurance has allowed a flourishing market of SSFFC medical products tests to emerge in parts of the developing world[18].

2.2. Rationale for African Medicines Agency

Some of the causes of SSFFCs or poor quality medical products include poor compliance with GMP, limited capacity for technical reviews for marketing authorisations, limited post marketing surveillance systems and reduced numbers of quality manufacturers. Although the quality of the evidence was low, Fadi El-Jardali et al (2015) showed correlation of premarketing authorisations and WHO prequalification of medicines with low failure rates on quality testing[19]. Thus, strengthening medicine regulatory systems including the capacity for conducting pre-marketing authorisations and routine PMS is one of the key strategies in a multi-faceted approach for combating SSFFCs.

The inadequate regulatory capacity on the continent is attributed to lack of human resources with required skills and competencies in both manufacturing companies and NMRA. Although a specialised field, NMRAs lack adequate financial resources to attract and retain competent and skilled staff. Further, there are limited training opportunities in regulatory sciences. Additionally, a number of the countries have inadequate institutional arrangements due to inadequate policy, legal and regulatory frameworks and financial resources that negatively impact on the efficiency and effectiveness of medicines regulatory

[14] Akuse et al 2012

[15] Stanton et al 2012 ; Kyriacoset et al 2008, Chaccour, C., et al. Lancet 2012

[16] Gaurvika M L Nayyar, Joel G Breman, Paul N Newton, and James Herrington. Poor-quality antimalarial drugs in southeast Asia and sub-Saharan Africa. Lancet Infect Dis 2012; 12: 488–96

[17] Marcella Mori, Raffaella Ravinetto and Jan Jacobs. Quality of medical devices and in vitro diagnostics in resource-limited settings. Tropical Medicine and International, volume 16 no 11 pp 1439–1449 November 2011 http://onlinelibrary.wiley.com/doi/10.1111/j.1365-3156.2011.02852.x/pdf

[18] Blacksell et al., 2006;

[19] El-Jardali F, Akl EA, Fadlallah R, et al. Interventions to combat or prevent drug counterfeiting: a systematic review. BMJ Open 2015; 5: e006290. doi:10.1136/bmjopen-2014- 006290

systems. With this in mind, there is need for harmonized and coordinated regulatory efforts in Africa to improve efficiency and effectiveness of pre-marketing authorizations, strengthen the PMS systems, create an enabling environment for local production of medical products and improving access to quality medical products. As such, AMRH is seen as the foundation for the establishment of a single continental medicines regulatory agency in Africa.

The AMA is intended to be an organ of the AU, legally mandated by Member States (MS) to coordinate national and sub-regional regulatory systems for medical products, provide regulatory oversight of selected medical products to start with as well as promote cooperation, harmonization and mutual recognition of regulatory decisions. It will serve as a catalyst for stronger regulatory oversight to curtail substandard medical products and hopefully enable competitiveness of locally produced medicines particularly those for diseases that disproportionately affect Africa.

As a continental agency, AMA will serve the purpose of pooling expertise and capacities and strengthening networking for optimal use of the limited resources available for regulatory authorities and complement and enhance the efforts of on-going harmonization initiatives. However, AMA will not replace National Medicines Regulatory Authorities (NMRAs) or sub-regional Medicines Regulatory Authorities, which will be established by the Regional Economic Communities (RECs).

2. BACKGROUND

This section briefly discusses the geographical, economic and developmental indicators, and health indicators on the continent laying the groundwork for the subsequent sections in this business plan. To begin with, almost two billion of the world's population lack access to essential medicines[20]. Improving access to existing medicines could save ten million lives each year, four million of them in Africa and South-East Asia. Attaining the Sustainable Development Goals (SDGs) such as reducing child mortality, improving maternal health and combating HIV and AIDS, malaria and other diseases is dependent upon improving access to affordable, quality, essential medicines to the world poorest. Accordingly, one of the SDG targets for good health and well-being is to "*achieve access to safe, effective, quality and affordable essential medicines and vaccines for all*".

"*Access to medicines is an integral component of universal health coverage*," said WHO Director-General, Margaret Chan.

Similarly, the importance of access to medicines as a human right is notably highlighted by the United Nations Human Rights Council that "*medicines must be affordable, acceptable, accessible, of good quality, and made available without discrimination*"[21]. Nonethless, access to medicines depends upon effective, integrated, responsive and accessible health systems particularly on the African continent.

2.1 Geographical

Africa is the second largest continent (30.2 million square kilometres) and second most populous continent in the world, with a population of 1.13 billion people[22]. Geographically, the continent is divided into five regions namely North, West, Central, East and Southern Africa. The African Union, the continental body consisting of 54 countries (excluding Morocco)[23] recognises eight regional economic communities (RECs). These are:

- The Arab Maghreb Union (AMU)
- The Common Market for Eastern and Southern Africa (COMESA)
- The Community of Sahara-Sahel States (CEN-SAD)
- The East African Community (EAC)
- The Economic Community of Central African States (ECCAS)
- The Intergovernmental Authority on Development (IGAD)
- The Economic Community of West African States (ECOWAS)
- The Southern African Development Community (SADC)

Figure 1 below shows the schematic representation of the RECs and trading blocks on the continent including areas of overlap.

[20] WHO. The World Medicines Situation 2011. 3rd Edition. http://www.who.int/medicines/areas/policy/world_medicines_situation/en/ (accessed October 2015)

[21] United Nations Human Rights Council, 23rd Regular Session (A/HRC/23/2) 27 May - 14 June 2013, Agenda Item 3, Access to medicines in the context of the right of everyone to the enjoyment of the highest attainable standard of physical and mental health Available from http://www.ohchr.org/EN/HRBodies/HRC/RegularSessions/Session23/Pages/ResDecStat.aspx

[22] Africa Economic Outlook 2014 published by African Development Bank, Organisation for Economic Co-operation and Development, United Nations Development Programme (2014).

[23] Constitutive Act of the African Union, Adopted by the Thirty-Sixth Ordinary Session of The Assembly of Heads of State and Government 11 July, 2000 - Lome, Togo

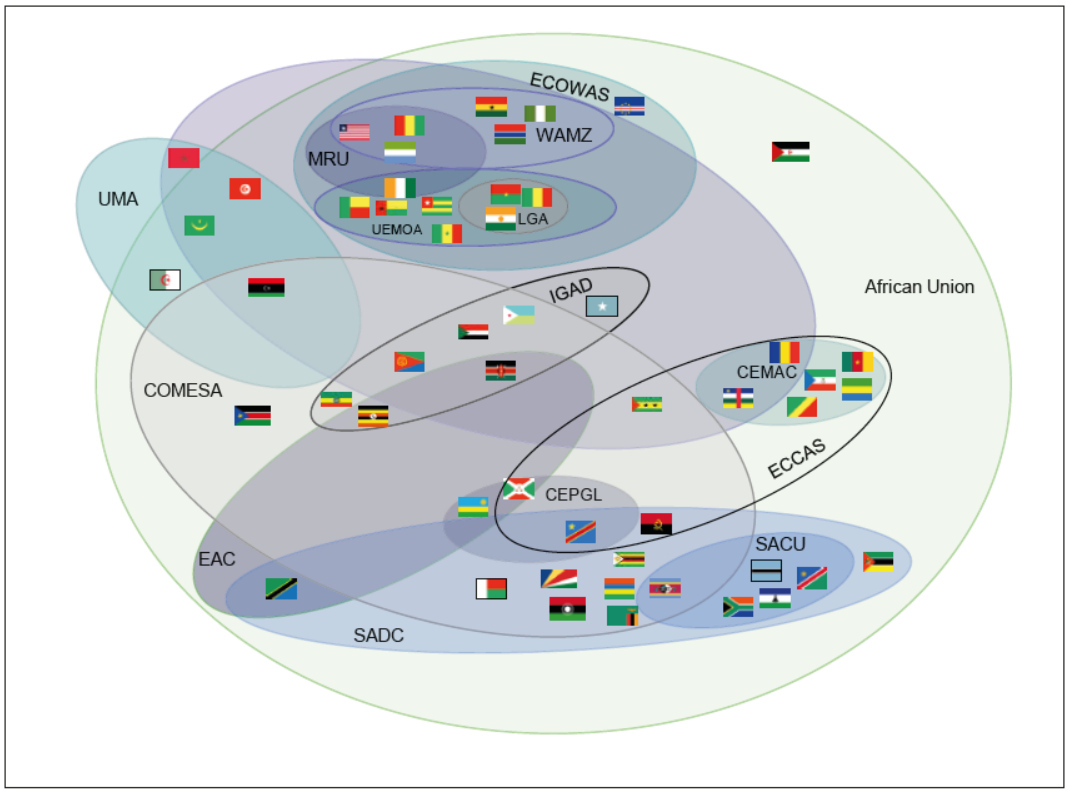

Figure 1: Schematic representation of the overlap of the Regional Economic Communities (RECs) and trading blocks in Africa.
Source: Pharmaceutical Manufacturing Plan for Africa Business Plan

The African Union's (AU) vision is "*an integrated, prosperous and peaceful Africa, driven by its own citizens and representing a dynamic force in global arena*"[24] . The AU's focus is on spear-heading Africa's development and integration. To this end, the African Economic Community (AEC), commonly known as the Abuja Treaty has been operational since 1994 and seeks to create the African Common Market using the Regional Economic Communities (RECs) as building blocks[25].

2.2 Demographics

Africa with its 54 countries accounts for 15.6% (1.13 billion) of the world population (7.24 billion) and expected to reach 2 billion by 2050 (African Development Bank (ADB) projections) representing 25% of the world population, and eventually reaching 4.2 billion by 2100 representing 40 % of the world population[26]. The majority (47%) of the African population are below the age of 18 years. It is projected that by mid century, 37% of all children under 18 and 35% of all adolescents will be African. This population growth projection is expected to yield demographic dividends that will lead to economic success similar to other regions, if correct policies are implemented.

[24] http://www.au.int/en/about/nutshell (Last accessed 19 August 2015)
[25] Treaty Establishing the African Economic Community (Abuja Treaty) Abuja, Nigeria 3 June 1991. http://www.au.int/en/sites/default/files/TREATY_ESTABLISHING_THE_AFRICAN_ECONOMIC_COMMUNITY.pdf (last accessed 19 August 2015)
[26] United Nations, Department of Economic and Social Affairs, Population Division, World Population Prospects: The 2012 Revision, United Nations, New York, 2013.

2.3 Economic & Developmental Indicators

Africa's economic growth was averaging above 5% since 2001, and above 3.5% after the 2008/09 global recession[22]. Africa's combined Gross domestic Product (GDP) is 2.9 trillion USD[27]. However, thirty-four out of 54 countries that are classified as Least Developed Countries (LDCs) are in the African region, representing a disproportionate share of low-income countries (LICs). African urbanisation at about 40% is low compared to other regions. However, with the current trends in urban migration, the number is expected to grow to about 60% by 2050[28]. This creates new social, environment and health pressures especially in the fast growing cities. About 60% of Africans and 70% of the sub-Saharan African are considered poor, living on less than US$2 per day while 40% are in extreme poverty (live on less than US$1.25 per day). These economic and developmental indicators have a significant impact on financial models and programming of social and development programmes on the continent.

2.4 Health

Africa with about 15% of the world population, is disproportionately affected by a high disease burden as it bears 25% of global disease burden particularly infectious diseases such as HIV and AIDS, TB and malaria among others. To put this high disease burden in perspective, 70% of the 36.9 million HIV positive people are in sub-Saharan Africa; Africa accounts for 24% of the world's TB cases, and it is home to nearly 80% of TB cases among people living with HIV and 90% malaria deaths occur on the continent. This disproportionate disease burden severely affect productivity, economic development, healthcare, and life expectancy, to name a few. Child mortality at 92 per 1,000 live births is twice the world average of 46 per 1,000 live births[29] and life expectancy at 57 years is significantly less than the global average of 70 years. The continent accounts for more than half of the world's child deaths. Life expectancy on the continent is expected to reach the pensionable age of 65 by 2035[30].

The burden of non-communicable diseases (NCDs) is also on the rise, mainly due to dietary and lifestyle changes and projected to have surpassed infectious diseases as the leading cause of death in Africa by 2030[31]. The WHO estimates that NCDs already disproportionately affect low- and middle-income countries with almost three quarters of the 38 million deaths a year due to NCDs occurring in these countries[32].

2.5 Political Will and Leadership

Recognising the devastating impact of these infectious diseases on the continent, in 2001, African Heads of States and Governments declared AIDS a State of Emergency in the continent and committed to, among other issues end all tariff and economic barriers to access to funding of AIDS-related activities, enact and utilise appropriate legislation and international trade regulations to ensure the availability of medicines and technologies at affordable prices, and to take immediate action to use tax exemption and other incentives to reduce the prices of medicines.

In 2001, the AU Member States made commitments to allocate at least 15% of their budgets to public health by 2015, remove all taxes, tariffs and other economic barriers that hindered the

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[27] World Bank estimates 2014 http://data.worldbank.org/ accessed 7 August 2015
[28] UNICEF, Generation 2030, Africa 2014
[29] UNICEF Levels & Trends in Child Mortality Report 2014 Estimates Developed by the UN Inter-Agency Group for Child Mortality Estimation
[30] UNICEF, Generation 2030 Africa
[31] Colin D Mathers & Dejan Loncar. Projections of Global Mortality and Burden of Disease from 2002-2030. PloS Medicine Nov 2006, Vol. 3, Issue 11
[32] http://www.who.int/mediacentre/factsheets/fs355/en/ (last accessed 19 August 2015)

AIDS response, support for AIDS vaccine development, and to make medical commodities and technologies more available in the Abuja Declaration in response to the AIDS epidemic[33]. While, six AU Member States (Liberia, Madagascar, Malawi, Rwanda, Togo and Zambia) have achieved the 15% target and some (e.g. Djibouti, Ethiopia, Lesotho and Swaziland) are within reach of the 15% target, the majority of the MS have not reached this target.

3. POLICY ISSUES AT NATIONAL, REGIONAL AND GLOBAL LEVEL

The Africa Health Strategy (2007 – 2015) mission is to build an effective, African driven response to reduce the burden of disease and disability, through strengthened health systems, scaled-up health interventions, inter sectoral action and empowered communities[34]. Underpinning the universal access to essential health care in the strategy is adequate supply of ARVs, contraceptives, condoms, vaccines and effective medicines. The strategy also advocates for full implementation of the Pharmaceutical Manufacturing Plan for Africa. In addition, as part of the implementation of the PMPA, the strategy advocates for Ministers of Health to put in place appropriate legislation for the regulation and control of medicines.

In 2012, AU Member States built on this progress by adopting a historic Roadmap on Shared Responsibility and Global Solidarity for AIDS, TB and Malaria Response in Africa[35]. Under this roadmap, the Member States pledged concerted action to strengthen and diversify health funding, strengthen health leadership and governance, and enhance access to affordable and quality-assured medicines; Pillar II in the Road Map: Accelerate access to affordable and quality-assured medicines and health-related commodities as enshrined in the Pharmaceutical Manufacturing Plan for Africa (PMPA).

3.1 African Pharmaceutical Market

Three quarters of the world population is in developing countries. However, these countries account for less than 10% of the global pharmaceutical market. Ten countries, Algeria, Egypt, Kenya, Ivory Coast, Libya, Morocco, Nigeria, South Africa, Sudan, and Tunisia account for 70% of the 20.8 billion USD African pharmaceutical market[36]. Due to the economic growth, the market is expected to grow to 35 billion USD by 2018. It is estimated about 95% of API and 75% of finished products are imported outside the continent. For example, while Africa accounts for 69% of the world's 40 million people living with HIV, it imports more than 80% of its antiretrovirals.

3.2 Pharmaceutical Manufacturing Plan for Africa

To address the enormous challenges with access to essential medicines and local production, it was agreed to develop a Pharmaceutical Manufacturing Plan for Africa (PMPA) in 2005 in Abuja, Nigeria which was subsequently endorsed by the Heads of State and Government in July 2007 in Accra, Ghana[37]. Subsequently, a PMPA business plan was endorsed by the Conference of African Minister's of Health in May 2012 and approved by the Heads of State and Government in July

[33] African Union Summit, Abuja Declaration on HIV/AIDS, Tuberculosis and Other Related Infectious Diseases, Abuja, Nigeria 24 – 27 April 2001

[34] African Union Conference of Ministers of health. Africa Health Strategy 2007 – 2015, Third Session, Johannesburg, South Africa, 9 – 13 April 2007

[35] African Union. Roadmap on Shared Responsibility and Global Solidarity for AIDS, TB and Malaria Response in Africa, January 2012 http://www.au.int/en/sites/default/files/Shared_Res_Roadmap_Rev_F%5B1%5D.pdf (last accessed 19 August 2015)

[36] Tania Holt, Mehdi Lahrichi, Jean Mina and Jorge Santos da Silva. Insights into Pharmaceuticals and Medical Products. Africa: A Continent of Opportunity for Pharma and Patients McKinsey & Company. April 2015

[37] African Pharmaceutical Manufacturing Plan for Africa, 2005

2012 in Addis Ababa, Ethiopia[38]. The core objectives of the PMPA are to increase access to affordable quality medicines, ensure sustainable supply of essential medicines, improve public health outcomes and promote industrial and economic development in the continent.

Compared to India and China, the African domestic markets are fragmented and too small to achieve the economies of scale necessary for African pharmaceutical companies to compete internationally. Political, legal and regulatory barriers often make it difficult for local producers to exploit regional economies of scale. Therefore, regional integration is key in supporting local pharmaceutical manufacturing as it provides economies of scale that permit greater access to capital markets and pooling of resources for large infrastructure projects in transport and energy that are important for driving industrial growth.

Moreover, the low production quality standards due to weak adherence by manufacturers to good manufacturing practice (GMP) standards and weak medicine regulatory authorities result in products of non-assured quality. Local producers find it difficult to meet regulatory standards, including those for WHO prequalification, and medicine regulatory authorities in Africa are not considered to be meeting their own national or international standards. As such in most countries, especially those that are heavily dependent on donor financing for healthcare, most of the local manufacturers are not able to meet the requirements to supply these international tender and procurement agencies, even for their local markets. Few companies such as Medis in Tunisia and Aspen Pharmacare in South Africa, export finished products to highly regulated markets such as North America and Europe. Presently, only three companies Aspen Pharmacare, Maphar Laboratories in Morocco and Quality Chemicals in Uganda are WHO prequalified[39].

Notwithstanding the limited pharmaceutical production, there are some notable successes in technology transfer on the continent which include voluntary licensing / technology transfer for several ARVs from multi-nationals to Aspen Pharmacare; establishment of several joint ventures including Cadilla Pharmaceuticals Ethiopia Ltd, ARV manufacturing plant in Uganda as joint venture between Quality Chemicals Ltd, Uganda and Cipla, India, manufacturing of hard gelatin capsules in Ethiopia, as joint venture of local company and Chinese companies[40].

As such regulatory systems strengthening and enforcement, human resource development and facilitating faster access to markets are three of the six pillars in the PMPA plan. In addition, interventions on regulatory strengthening include strengthening national medicines regulatory systems, regulatory harmonisation and GMP enforcement.

3.3 Situational Analysis on the Medical Products Regulation in Africa

At national and regional level, the policy and legislative framework needs to be conducive to regionalized local production. The continent is not homogeneous and has varying legislative frameworks and enforcement capacity.

An assessment performed by WHO of 26 African NMRAs found that only 15% of these NMRAs were mandated to perform all five critical functions, and that in many cases not all of these functions were operational[41]. It is important to note that not all NMRAs are expected to perform all the regulatory functions on their own, but could rely on other NMRAs' decisions such as for

[38] PMPA Business Plan, 2012

[39] http://apps.who.int/prequal/ (last accessed 21 October 2015)

[40] UNAIDS China and WHO China. Promoting Access, quality and Technology Transfer between Africa and China. November 2014

[41] World Health Organization. Assessment of medicines regulatory systems in sub-Saharan African countries, an overview of findings from 26 assessment reports. Geneva: World Health Organization, 2010

GMP inspection of foreign manufacturing sites and marketing authorisations. The assessmented noted that requirements for GMP, where local manufacturing occurs, and good distribution practices (GDP) were poorly enforced, increasing the risk of SSFFCs in the market, for some countries. With regard to inspections of manufacturers and the distribution chain, common challenges were lack of published standards and operating procedures, and shortage of qualified personnel. Although the assessment was based on information obtained between 2002 and 2009, for the most part, this reflection is still valid in the current situation.

The WHO has prequalified thirty-eight (38) quality control laboratories; eight of these are in the Africa region[42]. These include laboratories in Algeria, Kenya, South Africa, Tanzania, Uganda and Zimbabwe. Prequalification entails that the WHO has assessed as part of the WHO Prequalification Programme, the quality control laboratories and found them compliant to the declared scope of analytical activities with respect to Good Practices for National Pharmaceutical Control Laboratories (GPCL) and the relevant parts of the WHO GMP. Two of these eight WHO Prequalified Laboratories (Research Institute for Industrial Pharmacy (RIIP) incorporating CENQAM North - West University, and Medicines Control Authority of Zimbabwe (MCAZ) were also designated as Regional Centres of Regulatory Excellence (RCORE) in quality assurance and quality control of medicines by the NEPAD Agency under the AMRH programme.

3.4 Global experiences and networks in Medical Products Regulation

3.4.1 Structure and Functions of Continental Agencies

In the European Union (EU), the European Medicines Agency (EMA) was established in 1995 and its functions include preparation of marketing authorisations for human and veterinary medicines, coordination of inspections of national authorities and collection of information on adverse drug reactions. Its budget is based on fees paid by industry for the evaluation of product applications and from the European Commission. The EMA prepares scientific opinions and the decisions are made by the European Commission.

Models for Agencies include information agencies with the task of collecting and disseminating information and managing expert networks, and executive agencies that execute a specific mandate and provide specific service(s)[43]. Information agencies provide assistance in the form of opinions and recommendations. Regulatory agencies by nature are required to be actively involved in the executive function by enacting instruments which help to regulate a specific sector. In other words, they are empowered to adopt individual decisions which are legally binding on third parties. Within the EU context, EMA is an information agency, though in practice its opinions are containing on the Commission that rarely contradicts EMA.

3.4.2 Collaboration Frameworks

Due to the global nature of pharmaceuticals and that no single country or regulatory agency has adequate resources to perform all the necessary functions alone, there is a growing trend in collaborative networks. The most notable of such collaborative networks is **The International Conference on Harmonisation of Technical Requirements for Registration of Pharmaceuticals for Human Use (ICH)** driven mainly by the EU, Japan and the US, with other countries such as Canada and Switzerland as associate members. ICH's mission is to achieve greater harmonisation to ensure that safe, effective, and high quality medicines are developed and registered in the most resource-efficient manner.

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[42] WHO List of Prequalified Quality Control Laboratories, Version: 36th Edition, 15/05/2015 http://apps.who.int/prequal/lists/PQ_QCLabsList.pdf accessed 27 June 2015

[43] Kreher, Alexander. Agencies in the European Community - A Step Towards Administrative Integration in Europe. Journal of European Public Policy, 1997, 4, 2, 225-245. http://hdl.handle.net/1814/17044

Pharmaceutical Inspection Convention and Pharmaceutical Inspection Co-operation Scheme (jointly referred to as PIC/S): The PIC/S are two international instruments between governments and pharmaceutical inspection authorities which provide an active and constructive co-operation in ensuring GMP. The schemes' objective is to lead the international development, implementation and maintenance of harmonised GMP standards and quality systems of inspectorates in the field of medicinal products. PIC/s has 46 participating authorities of which South Africa Medicines Control Council (MCC) is the only member from Africa.

Recently several other initiatives have ermeged. This section will briefly discuss some of these initiatives. The **International Generic Drug Regulators Programme (IGDRP)** was created in 2012 as a pilot and has since evolved into a programme to promote collaboration and convergence in generic drug regulatory programs in order to address the challenges posed by increasing workloads, globalization and complexity of scientific issues. An expression of interest was issued for applicants to use this mechanism for work sharing in review of applications for registration for generic medicines in the E.U., Australia, Canada, Chinese Taipei and Switzerland[44]. The objective of the pilot is to provide a more efficient and consistent review process while at the same time reducing regulatory burden and facilitating similar timing of market authorizations across jurisdictions. Other members of the IGDRP include Brazil, China, Japan, Korea, Mexico, New Zealand, Russia, Singapore, South Africa, and the U.S., The World Health Organization and the European Directorate for the Quality of Medicines and Healthcare are observers in this mechanism.

Another initiative involves **Australia-Singapore-Switzerland-Canada Consortium** work-sharing project. The consortium collaborates on work sharing to enhance regulatory convergence, adopt common standards and to ensure the timely and enhanced global market access to high quality generic medicines. The work sharing projects under this consortium include: generic medicines, New Chemical Entities (including orphan medicines), assessment of benefit and risk and complementary medicines.

International Regulatory Cooperation for Herbal Medicines (IRCH) Working Group: The WHO International Regulatory Cooperation for Herbal Medicines (IRCH) is a global network of regulatory authorities responsible for herbal medicines. The current members include Australia, Brazil, Canada, China, India, Indonesia, Japan, Malaysia, Mexico, Pakistan, Republic of Korea, Saudi Arabia, Singapore, United Kingdom, and United States of America. The aim is to identify how regulatory agencies can work more closely together and leverage resources and expertise.

Regulatory Cooperative Initiative between **Canada and Australia** on work sharing activities in the areas of pre-market evaluation of generic medicines and new chemical entities, manufacturing inspections and post market safety monitoring of medicines.

European Community - Australia Mutual Recognition Agreement (MRA): under this agreement, the Australia will act as a commercial body in conducting assessment work under the provisions of the European Community legislation.

International Coalition of Medicines Regulatory Agencies (ICMRA) was established at the Summit of Heads of Medicines Regulatory Agencies in Amsterdam in December 2013. The Coalition complements the technical / operational work of the IGDRP and other international collaborative projects on generic medicines. The focus of ICMRA is at the strategic and policy

[44] European Medicines Agency, International Generic Drug Regulators Programme (IGDRP) Information Sharing Pilot: Information packet January 2015

level. The two-year project focused on development of a governance model and regulatory programs (including generic medicines). Member countries include Australia, Brazil, Canada, Italy, France, Germany, India, Indonesia, Ireland, Japan, Mexico, Netherlands, New Zealand, Nigeria, China, Russia, Singapore, South Africa, Sweden, Switzerland, United Kingdom, the US as well as representatives from the World Health Organization, the European Commission and the European Medicines Agency.

The **WHO Collaborative Procedure** was launched to facilitate or fast track national registrations of prequalified products[45]. This is done through confidential sharing of WHO/PQP assessment and inspection outcomes with participating National Medicines Regulatory Authorities (NMRAs) at the manufacturer's request. The information is shared via a secure internet-based platform, subject to agreed restrictions on use and confidentiality undertakings. Twenty-two of the twenty-five countries participating in this procedure are from Africa.

3.5 Harmonisation Initiatives in Africa

The AMRH Programme assists African countries and RECs to respond to the challenges of increasing access to essential medicines by building effective medicines regulatory systems through harmonisation and regulatory capacity building. The programme is implemented through RECs in collaboration with partners. This initiative is being implemented under the framework of the PMPA.

The general view is that RECs can be supported to serve as regional platforms for information sharing, developing regulatory frameworks and standards, capacity and promoting regional legislative harmonisation and implementing common or approximate regulatory systems. Moreover, within the objects of the RECs, that is creating common markets, major economies of scale can be realised from adopting collaborative approaches to regulatory functions. Similar to the global trends in collaborative networks and work sharing in medicines regulation, a regional or full-continental African medicines regulatory agency could more efficiently take on centralized assessment of new medicines and inspection of manufacturing sites using a limited pool of regulatory expertise and a number of other specialized functions to complement and support national medicines regulatory authorities.

The regional harmonisation activities under NEPAD started with EAC in 2012. The EAC MRH project was launched in 2012 with the purpose of improving access to safe, efficacious and good quality essential medicines for the treatment of conditions of public health importance. Similar to other RECs, medicines regulation and control in the SADC's 15 MS are governed by various non-uniform territorial legislations passed by national legislative assemblies[46]. The MRH project proposals for SADC has been approved for year one of implementation before the full project is implemented. In addition, the four NMRAs from Botswana, Namibia, Zambia, and Zimbabwe and with support from the WHO Prequalification Team-Medicines (WHO-PQTm) and the SARPAM Programme (until December 2014) agreed to a collaboration in registration of medicines in mid-2013 (ZAZIBONA).

Proposal for the ECOWAS/UEMOA have been finalised while proposals for the OCEAC/ECCAS and the COMESA, IGAD and the CEN-SAD/AMU are at different levels of development.

[45] World Health Organization. "Collaborative Registration". Accessed 10, August 2015. http://apps.who.int/prequal/

[46] NEPAD Agency, Situational Analysis study on Medicines Registration Harmonization in Africa: Final Report for the Southern African Development Community (SADC), November 2010

4 ENVIRONMENTAL SCAN

Table 1 is an analysis of potential factors that would influence the work of the continental agency. Success of continental or regional bodies is dependent on political willingness for countries to cede some sovereignty and prioritise regional or continental interests over national ones. Often, lack of political commitment slows down implementation of regional or continental decisions as a result of varying levels of commitments to regional or continental initiatives. Misconceptions, especially at lower of levels of integration and policy differences should be addressed. The African Union does not have sweeping legal powers over national jurisdictions; as such decisions at continental level are not legally enforceable on MS. Thus, within the current legal context, AMA could only have advisory powers.

Least developed countries (LDCs)[47] can utilize the maximum TRIPS flexibilities that exempt them from implementing the TRIPS provisions on patents, and test data and granting exclusive marketing rights for pharmaceutical products until 2021, and can further choose to exempt pharmaceuticals from patent restrictions until 1 January 2016, or a subsequent date as determined by the WTO Members[48]. Other African countries not classified by UN as LDCs are required to comply with the TRIPS provisions on patents including pharmaceuticals, though they can utilize other provisions such as compulsory licenses and government use orders, and parallel importation[49]. As such the impact of TRIPS on these countries may hamper the efforts of promoting generic local manufacturing as a way of ensuring affordable pharmaceutical products.

The rapid growth of mega cities in African countries may lead to new social pressures due to internal, unplanned migration that can negatively impact on the health outcomes.

On one hand, Africa as a continent has been on an unprecedented economic growth averaging around 5% in the last decade, and this may increase the available financial resources including expenditure on health. On the other hand, the global economic recession curtails the available financial resources from traditional donor markets coupled with shifting donor priorities may impact on sustainability of AMA. Additionally, African economies are still fragile due to heavy reliance on commodities such as minerals and oil that are subject to varying price fluctuations. Moreover, the frequent pandemics such as EBOLA have negative consequences on economic growth.

The silent growing epidemic of NCDs that is receiving very little attention may reverse the gains on health outcomes due to the concerted interventions on communicable diseases. Leveraging on technology may present opportunities for offering innovative solutions to some health problems such as improved reporting of adverse drug reactions, and vital statistics from lower level facilities. On the contrary, emerging regulatory challenges due to technological

[47] The UN defines the LDC as countries with gross national income (GNI) per capita (under $750 for inclusion, above $900 for graduation) based on three-year average estimate, involving a composite Human Assets Index (HAI) based on indicators of: (a) nutrition; (b) health; (c) education; and (d) adult literacy and based on indicators of the instability of agricultural production; the instability of exports of goods and services; the economic importance of non-traditional activities (share of manufacturing and modern services in GDP); merchandise export concentration; and the handicap of economic smallness.

[48] Nirmalya Syam. Transition Period for Trips Implementation for LDCs: Implications for Local Production of Medicines in the East African Community. Research paper 59, South Centre. December 2014

[49] Tenu Avafia (PhD Thesis). Public Health Related Trips Flexibilities and South-South Co-Operation as Enablers of Treatment Access in Eastern and Southern Africa: Perspectives from Producing and Importing Countries, Centre for Commercial Law Studies, Queen Mary, University of London. February 2015 https://qmro.qmul.ac.uk/jspui/bitstream/123456789/8945/1/Avafia_Tenu_PhD_030815.pdf (last accessed 23 October 2015)

advancement such as e-commerce has potential negative impact on health outcomes due to access to unregulated products via e-commerce by the public.

Table 1: Landscape Analysis

Category	**Factors/Trends/Current events**	**Rationale: Why?**	**Potential Implications**
Political	Ceding of some sovereignty to agencies at regional and continental levels; national interests prioritized over regional or continental interests;	Misconceptions especially at a lower levels of integration, policy differences	Slow implementation,
	Conflicts	Frequent conflicts destroys existing infrastructure and displacement of people while creating humanitarian crisis	Diversion of resources to humanitarian crisis, negative impact on health infrastructure, unplanned social pressures due to refugees,
Legal	Territorial jurisdictions,	There is no regional or continental agreed framework taking precedence over national laws	Decision at continental level are not enforceable by law; AMA can only act in an advisory capacity providing regulatory guidance and recommendations
Environmental/ Field of work	TRIPS	MS required to enforce patent and data exclusivity (middle income countries)	Impact on local manufacturing, impact on efforts to increase access to affordable medicines
Geographic	Increase in urbanisation (mega cities); regional integration	New social pressures due to unplanned migrations, Better coordination and planning of integration projects	Potential negative impact on health outcomes; Opportunity for common market including pharmaceuticals
Economic	Scarce resources, sustained economic growth on the continent, global recession, fragile economies	Shifting priorities for donor community, growing working population, increase in the middle class, unpredictable economies	Viability and sustainability if financing model is heavily donor dependent; lack of security in self financing targets
Social	Growing burden of non-communicable diseases	Little attention given to non communicable diseases compared to communicable diseases	Reverse the gains on health outcomes due to communicable diseases
Technological	Growth of e-commerce, mobile and internet penetration	Emerging regulatory challenges for regulating e-commerce, well connected and networked communities	Negative impact on health outcomes due to access to unregulated products via e-commerce. Leverage on technology to deliver innovative solutions

6. APPROACH FOR THE DEVELOPMENT OF THE BUSINESS PLAN

This section details the methodology that was used in the development of the AMA business plan. The business plan was developed in a way that is both reflective and also forward thinking. The consultants provided a participatory space for reflection, analysis and learning for key stakeholders as well as provided a platform for the development of future review and feedback on the business plan. The process involved the following key steps:

6.1. Literature review

A detailed and in depth research and review was conducted into the existing structure and operations of the national, regional and international regulatory systems. An analysis of recent trends in MRAs, roles and responsibilities, institutional arrangements and governing structures at national, regional and global levels was also conducted. A variety of resources were used for the literature review, ranging from databases, online search engines, websites for the key institutions such as NMRAs, development partners, AU/NEPAD, WHO among others, and published and unpublished articles. The literature review was documented and organized carefully with the information gathered and the sources. Emerging themes and issues were gathered from the literature review and informed the design of the survey questionnaire. A separate detailed analytical report was written, which provides a background and context to this business plan.

6.2 Interviews and email survey

A number of selected key stakeholders were consulted to provide information. Physical interviews and discussion with key people was organised wherever possible. The interviews were held in person and an email survey on Google Docs sent out to stakeholders on the key elements and structure of the AMA, priority areas, activities and potential areas of contention. These stakeholders included NMRAs, regional economic groups involved in medicines regulatory harmonisation initiatives, partners, representatives of pharmaceutical firms, the WHO and AUC.

Triangulation through multiple key informant interviews and document review reduces potential stakeholder bias on the findings.

6.3 Stakeholder consultations

A focus group discussion was held with regulators in the SADC region in July 2015. The summary of the results of the online survey are presented as Annex IV. Further input and discussions with other key stakeholders in other regions on the draft business plan will be explored depending on available opportunities. Stakeholder consultations are important to validate the models and assumptions made in the draft business plan.

7. AMA BUSINESS MODEL

7.1 Vision

A healthy African population with access to quality, safe and efficacious medical products and technologies

7.2 Mission

Provide leadership in creating an enabling regulatory environment for pharmaceutical sector development in Africa [50]

[50] Adopted from the AMRH Mission statement in the Strategic Plan 2016 – 2020 (revised 6 May 2015)

7.3 Objectives of AMA

The Agency is intended to be an organ of the African Union, legally mandated by Member States to coordinate national and sub-regional regulatory systems for medical products, provide regulatory oversight, promote cooperation, and harmonisation in Africa. The AMA will achieve this through pooling expertise and capacities and strengthening networking for optimal use of the limited resources available on the continent and complement and enhance the effects of on-going harmonisation initiatives.

Based on the mandates of the AU, and establishment of other organs and institutions of the AU, the African Medicines Agency can only have consultative and advisory role.

The objectives of AMA are:

1. Pool expertise and capacities for optimal use of the limited resources available in the region
2. Co-ordinate national and sub-regional regulatory systems for medical products
3. Provide regulatory oversight of selected medical products
4. Promote cooperation, harmonization and mutual recognition of regulatory decisions.
5. Facilitate joint assessments and GMP inspections for active pharmaceutical ingredients (APIs) and high tech products such as biologics and vaccines

The AMA business model will build on social enterprise business models[51] and deliver measurable social and economic impact in return for financial investments. The expected social and economic impact is detailed below:

7.4 Expected Impact

7.4.1 Social Impact

The value proposition for AMA is to improve the health of Africans through working with MS and RECs to ensure that medicines and other health products are affordable, accessible, good quality, safe and efficacious. This will in turn lower the disease burden and mortality on the continent leading to improved developmental indicators such as morbidity, mortality, and life expectancy. People will have improved wellbeing thus, remain more productive and hence reduce poverty. Facilitating local manufacturing is expected to stimulate economic development and reduce trade imbalances thereby increasing the available resources for social development.

7.4.2 Economic impact

General Public – high cost of medicines and ill health drives people into poverty especially in developing countries as available limited resources are diverted to healthcare, conversely, improved access to affordable, quality medicines will ensure good health and people remain economically productive reducing poverty.

MS Governments: high cost of medicines reduces coverage of healthcare services especially for most African governments were resources are scarce. Moreover, this also diverts funding from other priority areas. High prevalence of SSFFCs in the continent results in wasted resources on ineffective medicines, drug resistance, loss of economic productivity and ultimately unnecessary deaths. Thus, reducing the prevalence of SSFFCs leads to costs savings. Expansion of national into regional markets through harmonisation will reduce costs of medicines due to economies of scale, increased competition and reduced regulatory costs. In addition, increasing access to affordable

[51] Social Enterprises apply effective business model to social problems with the ultimate goal of achieving sustainability by enabling non-profits to support themselves financially in innovative ways instead of relying solely on grants and donations. The return on investment or outcomes is measured in terms of social value (social impact) and economic value (revenue).

quality medicines will improve the health of the nation, which improves economic productivity (e.g. lower healthcare costs, absenteeism and deaths).

Pharmaceutical Industry: Harmonisation and collaboration among NMRAs is expected to streamline the registration processes, consolidate the fragmented national markets into regional ones thereby reducing the regulatory burden on industry and faster access to a wider pharmaceutical market. Introduction of the common technical document (CTD) by ICH was noted to reduce the resources and time required by both industry and regulators in the ICH regions in approving a single product[52][53]. While the interventions would reduce SSFFCs and increase business for legitimate pharmaceutical companies that invest in quality systems, the same interventions would result in some companies driven out of business due to failure to upgrade to required standards and increased competition through market consolidation.

Partners/Impact investors:

THE INTERNATIONAL FINANCE FACILITY FOR IMMUNIZATION (IFFIM) Bonds ($3.7B raised)

- *Innovative financing mechanism that has been hailed by the The Financing for Development Conference 2015 as a model for addressing other global issues.*
- *Launched to support the GAVI (Global Alliance for Vaccines and Immunisation) Initiative, these bonds use the public markets to support vaccination efforts in the developing world*
- *IFFIm raises money in capital markets by converting long term government or donor commitments into immediate cash. These bonds have been issued at market rates to both commercial and retail investors and hold a AAA/Aaa rating*
- *The offering has allowed GAVI to frontload committed funds (that have been guaranteed over a 20 year time horizon), facilitating more lives to be saved in the near years and creating the infrastructure to more efficiently administer vaccinations across the developing world*

Figure 2: Innovative financing model for immunization. Adapted from IFFIm evaluation report 2011

The International Finance Facility for Immunization (IFFIm) utilises innovative financing model of social impact bonds to fund vaccination programmes[54]. Similarly, as part of the resource mobilisation, AMA would explore social impact bonds to raise private sector capital to expand to support the expansion and implementation of regional and continental harmonisation programmes. This mechanism allows private investors to fund the strengthening of regulatory activities to improve access and affordability to quality essential medicines, and the partners and governments to repay the investors based on the success in achieving predetermined outcomes[55].

Similar to any business and investments, the investors can recoup their principal plus a potential rate of return if AMA succeeds in meeting its targets, while if it does not achieve the desired outcomes, the partners and the governments are not obliged to repay the investors.

Additionally, the AMA business model is designed to deliver value for money and focus on interventions that have specific measurable outcomes (quantifiable social value) to ensure the desired impact for the social investors and partners.

[52] Betty R. Kuhnert, ICH at 20 an Overview. April 2011, Vol 3 Issue 2 Global Forum
[53] Caroline Nutley. The Value Benefits of ICH to Industry, IFPMA 2000
[54] Mark Pearson, Jeremy Clarke, Laird Ward, Cheri Grace, Daniel Harris, Matthew Cooper. Evaluation of the International Finance Facility for Immunisation (IFFIm) June 2011
[55] This model of investments is also referred to as impact investments, which combines a return on investment with non-financial impacts

7.5 Expected Value Addition of African Medicines Agency

This section will describe the value addition of a continental agency where there are national regulatory agencies and plans to establish regional agencies within the RECs. First an analysis of the current context including the separation of regulatory functions will be discussed. This will be followed by a discussion on the value addition of AMA to resolve some of the current pharmaceutical related problems.

The NMRAs will retain their decision making roles and exercise market controls for their specific markets. However, for certain functions such as GMP inspection of foreign manufacturing sites, review of complex medical products, the regional agencies and AMA could assist by optimising the available resources within the regions and harmonisation through convergence/harmonisation of technical requirements, joint activities, work sharing arrangements, and facilitating technical support to countries. For example, while the WHO PQ programme prequalifies manufacturing sites of APIs and FPP and products, the NMRAs still retain the right to give national authorisations for prequalified products. AMA will build on the AMRH work under NEPAD and continue to galvanise political and partner support at continental level, resource mobilisation and coordination of the harmonisation activities in the regions. Moreover, the work at RECs is intended to be a stepping-stone to harmonise activities on the continent. In addition, AMA will provide regulatory guidance on specific problematic issues for which technical expertise and capacity is limited at national or regional level such, medical devices, e-commerce of pharmaceuticals, regulation of high technology products such as vaccines, biologics and investigative innovative therapies for pandemics.

Table 2: Level of implementation of regulatory activities at national, regional and continental level.

Regulatory function	**National Agency**	**Regional Agency**	**AMA**
Registration of medical products	X	X[a]	NA
GMP Inspection of manufacturers	X	X[b]	X[c]
Inspection of supply chain (importers, wholesalers, retail facilities)	X	NA	NA
Post marketing surveillance	X	X[d]	X[d]
Pharmacovigilance	X	NA	NA
Clinical trial regulation	X	X[e]	X[f]
Quality control	X	NA	NA
Medicine information	X	NA	NA

[a] Depending on the specific regional context, centralised registration may not be possible in some RECs. Moreover, the centralised registration will only be for selected products for which there are comparative advantage to have centralised registrations.

[b] Few national agencies have the resource capacity to perform GMP inspections, thus this function is ideal to be done at both national and regional level, though the final approval is left to national authorities.

[c] GMP inspection of API manufacturers, biologics and vaccines is almost none existing in African countries, therefore, this is ideal regulatory function to be coordinated and performed at continental level, though the final approval is left to the national authorities.

[d] Regional and continental agency play a coordination role and facilitating information exchange at national, regional and continental level especially for SSFFCs.

[e] Review and / or coordination of regulatory oversight of multi-country clinical trial studies

[f] Regulatory guidance and / or coordination of regulatory oversight of clinical trials of investigative and innovative therapies (e.g. for pandemics such as EBOLA)

Figure 3 shows the logic model for AMA. The model focus on pharmaceutical regulatory issues to resolve the identified problem of high disease burden and high mortality from preventable and curable diseases, partly due to inadequate health systems, scarce financial and human resources

and unavailable and unaffordable medicines that are good quality, safe and efficacious. Lack of access to quality essential medicines and health products is just one of the contributing factors to the enormous health challenges that Africa faces. This is in part because national regulatory authorities across the continent have inadequate capacity and resources to ensure that medicines and health products are acceptable. The same is true even for well-resourced authorities that are exploring work sharing, and collaborative arrangements with counterparts worldwide. However, to note is that the AMRH project under NEPAD has made significant progress with the coordination and facilitation of RECs harmonisation activities. Moreover, at continental level, AU has PMPA strategy in which regulatory strengthening is one of the key components.

It is anticipated that AMA will contribute to increased availability of affordable and acceptable (quality, safety, efficacious) medical products on the continent, and reduced incidence of SSFFCs on the continent. Moreover, key milestones to achieve the desired results will include increased number of manufacturing facilities that are GMP compliant, number of MS & RECs with appropriate policies, legal and regulatory frameworks, increased number of NMRAs and RECs with sustainable financing, and increased market share (value and volume) of local manufacturers. AMA will achieve these desired results through the following strategies: (1) regional integration and harmonisation, (2) policy, legal and regulatory reforms at national and regional level, (3) regulatory capacity development – human, infrastructure, financial, technical, governance systems and (4) advocacy and knowledge management.

Within this context, the following factors are influential in AMA's success:

1) Language barriers – AU has at least six official languages Arabic, English, French, Portuguese, Spanish, and Kiswahili. In some cases, within the same RECs more than two official languages are recognised;
2) Creation of the African Common market and achievement of common markets in the RECs. AMA's activities are conducted within the context of regional and continental integration, thus progress in the creation of the common markets in the RECs and at continental level will have a bearing on AMA's progress.
3) Functional the Reional Centres Of Regulatory Excellence (RCORE) – utilisation of the established RCOREs to build regulatory capacity at NMRAs.
4) Political and policy leadership at AU and RECs to support harmonisation efforts
5) Sustainable financing mechanisms for AMA, RECs and NMRAs

The value addition of AMA is based on the assumptions that partners, AUC, WHO, MS and stakeholders will continue to provide the required support for harmonisation activities on the continent, MS and RECs have the capacity to implement the recommendations/strategies within the given timeframes and that increasing the efficiency and effectiveness of regulation systems will promote local manufacturing and increase access to affordable, and acceptable medicines.

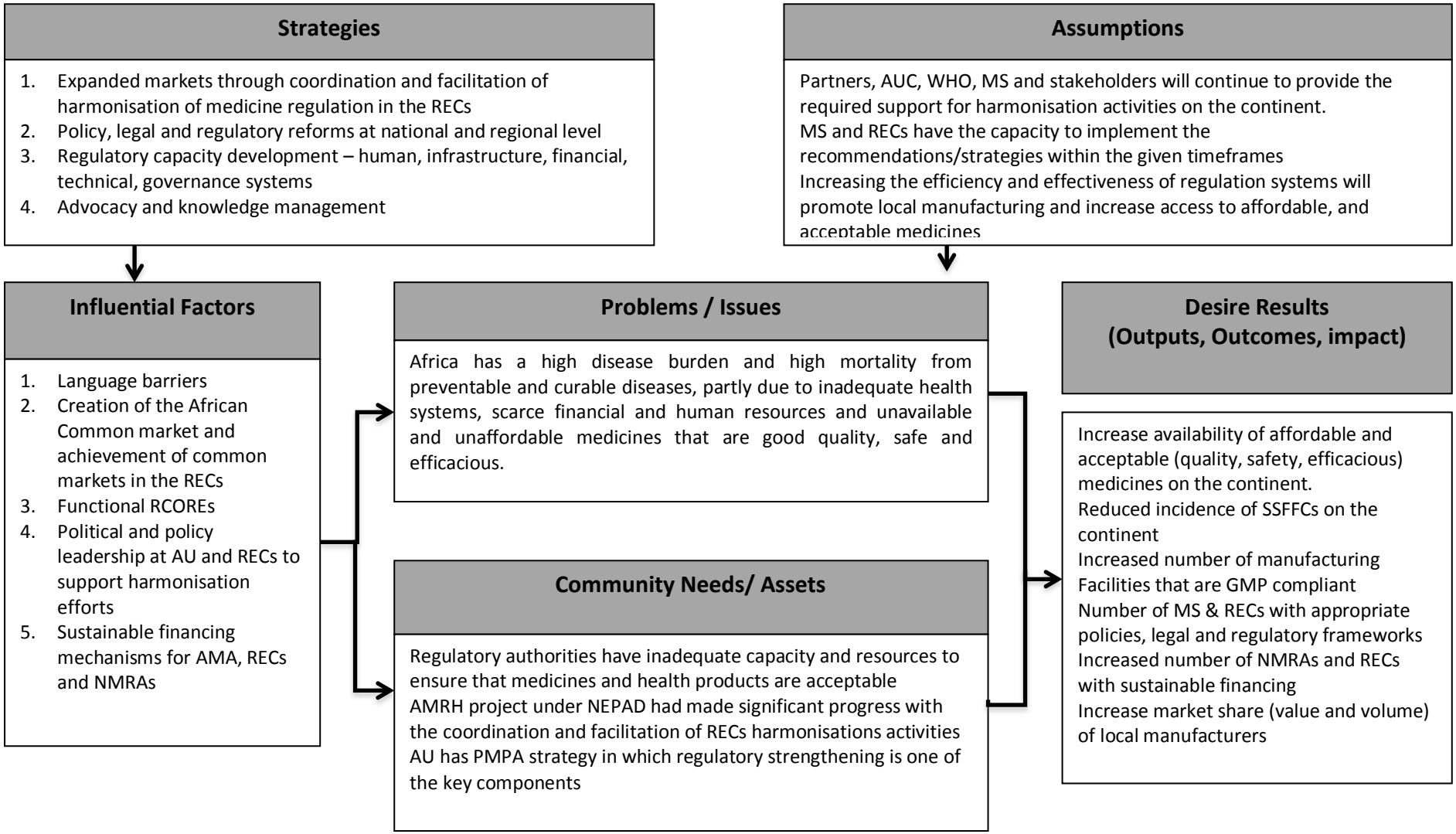

Figure 3: Logic Model for the African Medicines Agency

7.6 Core Functions/Services of AMA

The AMA shall exercise advisory and consultative role only. In this regard, it may:

1. Examine, discuss or express a regulatory guidance on any regulatory matter within its mandate, either on its own initiative or at the request of the African Union, Regional Economic Communities, or Member States or other policy organs and make any recommendations it may deem fit relating to, inter alia, matters pertaining to medical product regulation (e.g. to support procurement decisions, national marketing authorisations in the Member States, clinical trials of investigation products, regulation of traditional medicines).
2. Work towards the harmonization or coordination of the pharmaceutical laws of the Member States based on the African Union Model Law.
3. Promote the programmes and objectives of the African Union medicines regulatory harmonisation in the constituencies of the Member States.
4. Promote the coordination, convergence and harmonization of policies, measures, programmes and activities of the Regional Economic Communities and the National Medicines Regulatory Authorities
5. Collect, manage or disseminate pharmaceutical market intelligence to inform the African Union, and Member States including the private sector.
6. Mobilise resources to support regulatory strengthening activities on the continent

Most African NMRAs are struggling with regulation of traditional medicines. The First AUC/WHO Ministers meeting agreed that the scope of functions of AMA should be extended to cover the Traditional Medicine, as this was the first point of call for a large proportion of Africans.

7.7 Theory of Change

The theory of change model (Figure 4) tries to link the different outputs and outcomes to the desired goal (pathway of change) and how this would be achieved. The first level of intervention is advocacy especially at continental and regional level, partners and key stakeholders, resource mobilisation, and coordination of RCOREs. It is anticipated that advocacy will increase the number of regional & national policies, legal frameworks & technical standards adopted. In addition, the RCOREs if effectively utilised, will increase the number of regulatory experts in all the key regulatory functions including the specialised areas. One of the key functions of AMA is to mobilise financial resources through innovative mechanisms such as social impact bonds, and endowment funds that will improve the mix of financing mechanisms not only for AMA, but also for the RECs and possibly NMRAs to ensure sustainability and massive scaling of regulatory interventions.

Through coordinating and facilitating regional harmonisation activities and strengthening NMRAs as requested by MS, the number of RECs implementing medicines regulatory harmonisation is expected to increase as well as the number of functional NMRAs in MS. On the back of strengthened institutional architecture at national and regional level, coupled with the delegated regulatory functions for AMA for specialised areas, this will increase the number of facilities and products that are approved through mutual recognition, work-sharing, & centralised procedures as a result of increased collaboration among NMRAs. Ultimately, these interventions will lead to increased number of suppliers for essential medicines that drives competition and lowers medicines prices, at the same time improving product availability; increased number of facilities that are GMP compliant and reduced incidence of SSFFCs on the continent thereby ensuring that Africans have access to affordable, quality, safe and efficacious medicines and health products.

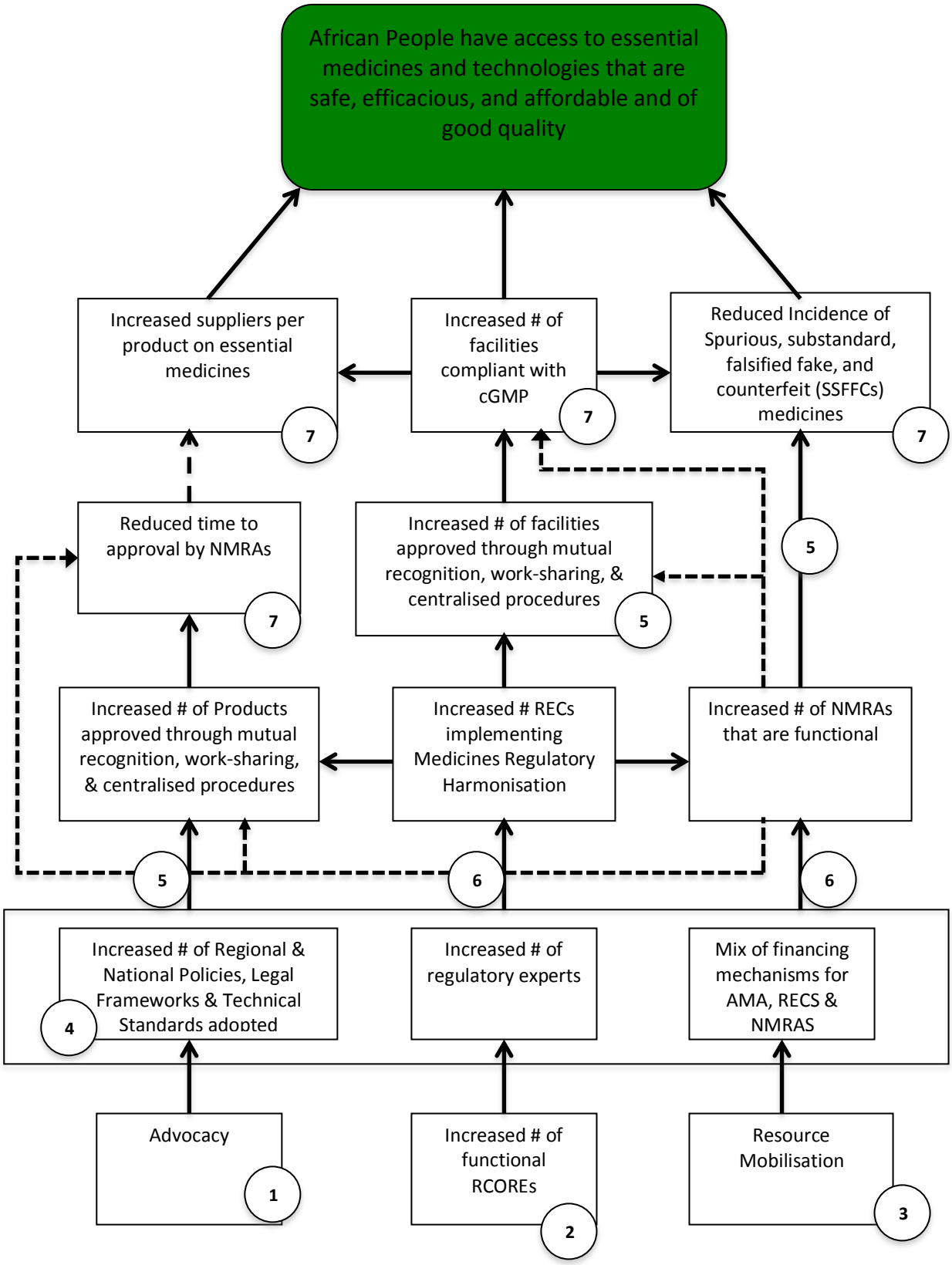

Figure 4: Theory of Change linking the interventions, outputs, outcomes and desired goal.
NB: The numbers represent the key activities to be performed by AMA

Key Activities in Figure 4

1. Advocacy to AUC, RECs, partners and stakeholders for the policy, regulatory and legal reforms at continental, regional and national levels.
2. Coordinate, accredit and monitor the regional centres of regulatory excellence (RCOREs)
3. Governance, partnerships and resource mobilisation for regulatory activities including sustainable finance mechanisms at all levels
4. Custodian of the Model Law, development of policies, legal and technical standards in collaboration with WHO.
5. Delegated regulatory functions for AMA:
   - regulatory guidance and the continent's voice on emerging issues and pandemics particulaly with respect to investigational therapies
   - regulatory guidance on complex molecules (biotherapeutics, innovative new therapies, vaccines)
   - coordination of GMP inspections of API manufacturing sites,
   - coordination and provision of regulatory guidance as required by RECs and Member States for complex situations (e.g. innovative therapies for pandemics), and / or where capability at national or regional level is lacking, e.g. emerging issues such as regulation of e-commerce businesses
6. Coordinate and facilitate regional harmonisation activities and strengthen NMRAs as requested by Member States, where applicable.
7. Establishment and maintance of accurate information and market intelligence on regulatory and pharmaceutical market (knowledge and information management)

The AMA's logical framework in presented as Annex 2 linking the outcomes, outputs, and activities to be performed by AMA.

7.8 Stakeholders Analysis

For AMA to achieve its mandate, the following target groups are identified: (1) policy and decision makers, (2) regulators, academia and pharmaceutical industry), (3) partners and social investors. Table 3 below shows analysis of these target groups including mapping common interests of the target Stakeholders and the Agency.

Table 3: Target Stakeholders Segment Analysis

Classification	Target group	Descriptions	Intervention	Interests
Category 1	Policy & decision makers	Senior Officials at AUC & its organs including NEPAD NPCA,	Advocacy for policy, & legal reforms; financial resources	Competing priorities, a health continent, Minimising costs, economic development,
		Senior Officials at RECs	Advocacy for policy, legal and regulatory reforms	Regional integration; Economic development of the regions,
		Senior Government Officials	Advocacy for policy, & legal reforms; financial resources	National economic development, Sovereignty, Getting re-elected (politicians), Health nation, Minimising costs, Competing priorities
		Legislators	Advocacy for legal reforms	Getting re-elected, Relevance,
Category 2	Collaborators and implementing institutions	Regulators	Technical assistance – policy, legal and regulatory reforms, Capacity building, Collaboration /	Relevance, Efficiency and effectiveness, Managing costs, Reputation

Classification	Target group	Descriptions	Intervention	Interests
			participation as experts, regulatory guidance	
		Pharmaceutical industry	Minimise the regulatory barriers, harmonisation of requirements, market intelligence / information, regulatory guidance	Maximise returns to shareholders, Minimal regulatory barriers, Reputation,
		Academia	Capacity building (RCOREs), expertise in regulatory sciences	Relevance, Participation
Category 3	Technical Partners	WHO, US FDA, EMA	Normative standards, technical cooperation, capacity building	Relevance, reputation, cooperation
Category 4	Partners and Social investors	African Development Bank,	Resource mobilisation, impact investment,	Inclusive and sustainable economic growth, social development, poverty reduction, attainment of millennium development goals, gender, regional economic integration,
		Donors	Resource mobilisation, impact investment,	Value for money, Specific programme areas, Impact
		Multi-lateral institutions and development agencies	Resource mobilisation, impact investment,	Developmental agendas, Value for money, Relevance, Impact
		Civil Society	Advocacy for reforms at continental, regional and national level	Relevance, Participation,
		Host country	Impact investment	Impact, relevance, participation

7.9 Legal and Institutional Framework

AMA would be a specialised agency of the African Union similar other organs such as African Risk Capacity Agency, African Civil Aviation Commission or African Investment Bank. Further details on the legal and institutional framework are provided elsewhere.

7.10 Prerequisites for Hosting the AMA

The host of the African Medicines Agency must provide optimal conditions including (adequate office space) supportive of the regulatory and coordinating role of the Agency, its mandate, and the demands for excellence. The hosting of AMA in a Member State will entail rights and obligations for the African Union as well as for the host country. The Member State offering to host the AMA will be expected to indicate what facilities it wishes to place at the disposal of the AMA. It is therefore necessary for the host country to extend certain facilities such as premises for the offices of AMA and to provide the requisite privileges and immunities to all staff.

8. STRATEGIC ACTIVITIES

8.1 Operating Model

The proposed business model for AMA is one that produces both a social value and revenue to ensure sustainability. The goal of this model is to ensure that the integration of the social and commercial value creation enables a virtuous cycle of revenue generation and reinvestment to build

a sustainable model for the social cause. Therefore, there is need to have a balance of the social value activities and those that enable revenue generation.

Africa is the second most populous continent in the world, which is expected to continue to grow, accounting for 25% and 40% by 2050 and end of the century respectively. Thus, harnessing this potential economic market will require elimination of the defragmentation of the market for viable pharmaceutical manufacturing business on the continent. Therefore, accelerating harmonisation activities and ensuring one common market is crucial for PMPA. To achieve these results would require significant investment in policy, regulatory and legal reforms at national level and regional level, strengthening of the capacity of national and regional regulatory systems and developing and mobilisation of resources for sustainability.

Table 4 below shows the proposed strategic themes, the target problems to be addressed, the value proposition, priorities and principal activities. AMA in collaboration with the regional agencies will focus on regulatory needs for which national authorities lack capacity such as innovative investigative therapies, GMP for other health products and APIs, and review of complex therapies among other activities. Regulatory authorities lack adequate funding as most are depended on government budgets or from fees for services or combination of both including some support from partners. It is becoming apparent that these financing models are not adequate to finance regulatory activities at the scale that is required to ensure access, and quality medicines. Moreover, the current MRH activities are 100% partner supported. Therefore, part of AMA's responsibility with respect to resource mobilisation is to develop sustainable innovative funding mechanisms for regulatory activities. Further, Africa lacks adequate regulatory capacity, thus AMA is uniquely positioned to harness the available resources in the continent and facilitate collaboration that reduces duplication, and optimise the available regulatory capacity.

Table 4: Proposed Strategic Themes, Priorities and Principal Activities for AMA

Strategic Themes	Problem (s)	Value Proposition	Priorities	Principal Activities
Regional integration and harmonisation	▪ Limited local pharmaceutical manufacturing ▪ Territorial jurisdictions ▪ Conflicting regulatory requirements ▪ Language barriers	Social and financial benefits	Towards a common market for pharmaceuticals at RECs	▪ Funded regional harmonisation projects in all the RECs ▪ Documenting & promoting best practices
Policy, legal and regulatory reforms at national and regional level	▪ Inadequate medicines policies and legislations ▪ Conflicting regulatory requirements ▪ Territorial jurisdictions ▪ Weak governance and management structures	Social value	Legal reforms - Custodian of the Model Law	▪ Approval of the Model Law, ▪ Technical assistance to MS on legal & regulatory reforms
Regulatory Capacity Development – human, infrastructure, financial, technical, governance systems	▪ Dependence on donor funding ▪ Lack of adequate financial resources ▪ Limited local pharmaceutical manufacturing ▪ Lack of training opportunities in regulatory science, chemical and pharmaceutical manufacturing ▪ Weak governance and management structures	Social value and financial benefits	▪ Facilitate capacity building of regulatory authorities ▪ Resource mobilisation	▪ Coordinate, accredit and monitor the regional centres of regulatory excellence (RCOREs) ▪ Facilitate twinning and exchange ▪ Guidance on complex or innovative therapies & continents voice on emerging issues and pandemics with respect to investigational therapies ▪ Develop policies, guidance and standards ▪ GMP inspection of API site(s), biotech products, medical devices ▪ Developing sustainable financing models.
Advocacy and knowledge management	▪ Low implementation rate of AU/REC decisions ▪ Priorities of policy and decision makers	Social value	▪ Strengthen the legal and regulatory framework for harmonisation ▪ Resource mobilisation	▪ Advocacy to AUC, RECs, partners and stakeholders for the policy, regulatory and legal reforms at continental, regional and national levels. ▪ Developing sustainable financing models. ▪ Information repository

8.2 Mapping of Key Players in Pharmaceutical Regulation

Several players are involved in ensuring that medicines and other health products are accessible, affordable and of acceptable quality, safety and efficacious. Annex II shows mapping of the current key players in this field, areas of overlap and value proposition for AMA. Key players include the NMRAs, the RECs, WHO, UNFPA and academic institutions. As noted earlier, NMRAs have the legal mandate at national level to perform regulatory functions. Therefore, AMA's role is more advisory to NMRAs and promoting best practices, standards, pooling of resources beyond MS level. AMA will use experts in the NMRAs on the continent and will not duplicate work done by NMRAs but play a supportive role and guidance on complex issues for which resources and expertise is unavailable at national level.

The work of AMA will leverage on creation of regional agencies within the identified RECs. The key function of AMA with respect to these regional entities is to coordinate and facilitate their establishment including resource mobilisation, a function that is currently performed by AMRH under NEPAD Agency. Similar to the NMRAs, there is no duplication of the work done by RECs, but AMA plays a supportive role and guidance on complex issues such as innovative investigative therapies for pandemics, for which resources and expertise is unavailable at regional level.

Setting standards and norms and capacity building is WHO's area of expertise. WHO is already a partner in the AMRH programme, providing the technical expertise to the harmonisation programme. AMA will continue to work with WHO in this regard facilitating domestication of WHO norms and standards at regional and national level. Likewise, with respect to capacity building, the concept of RCOREs is done within framework of AMRH programme in which WHO is a key partner. Prequalification systems such as WHO PQT for medicines, vaccines and diagnostics and UNFPA for condoms and devices are quality assurance systems that support procurement decisions of UN Agencies. With respect to WHO PQT, and UNFPA for prequalification of condoms / devices the role of AMA would be to complement these systems which are presently disease or therapeutic area focused, by focusing on coordinating harmonisation at regional level to streamline regulatory processes.

Medicines regulatory science is a very specialised field, for which training capacity on the continent is very limited evidenced by the limited academic institutions that offer postgraduate regulatory science related training programmes. Moreover, AMA is focused on development of the regulatory science practitioner. The RCORE model promotes and utilise collaborative network and partnerships of regulatory institutions and academic institutions for capacity building activities.

8.3 Competitive advantage

As a continental agency, AMA would be able to galvanise technical support, expertise in various countries and RECs, and resources at a scale that cannot be matched at national or regional level. Direct output of this unique position is significant reduction in times for assessment of registration dossiers for marketing authorisations. AMRH project has already demonstrated the potential impact of coordination of medicines regulatory harmonisation at a continental level. It is increasingly becoming evident that no single country, including well-resourced countries, can efficiently and effectively regulate its own market alone in this globalised market. Collaboration and cooperation is the option regardless of well-resourced or poorly resourced authorities or countries. Therefore, compared to having 54 different agencies and requirements, a single coordinating continental agency in collaboration with RECs and existing national authorities can deliver value for money, reduce the high cost of medicines, and streamline regulatory processes to enhance timely evaluation and registration of medicines. Furthermore, speaking with one single voice has more weight compared to individual voices, thus AMA would represent a single credible African voice on regulatory issues on the continent.

8.4 Marketing strategy

Table 5 below shows the segmented target market and strategies to reach these target groups. The identified targets including policy and decision makers, collaborators and implementing institutions and lastly partners and social investors. Depending on the target group, the marketing strategies include policy briefs, meetings / sensitisation workshops, value proposition, electronic platforms, investment briefs and case studies.

Table 5: Marketing Strategies for each target group

Classification	Target group	Descriptions	Interests	Marketing Strategies
Category 1	Policy & decision makers	Senior Officials at AUC & its organs including NEPAD NPCA,	Competing priorities, a health continent, Minimising costs, economic development,	Policy briefs, meetings/sensitisation workshops
		Senior Officials at RECs	Regional integration, Economic development of the regions,	
		Senior Government Officials	National economic development, Sovereignty, Getting re-elected (politicians), Health nation, Minimising costs, Competing priorities	
		Legislators	Getting re-elected, Relevance,	
Category 2	Collaborators and implementing institutions	Regulators	Relevance, Efficiency and effectiveness, Managing costs, Reputation	Value proposition, meetings/workshops, electronic platforms
		Pharmaceutical industry	Maximise returns to shareholders, Minimal regulatory barriers, Reputation,	Electronic platforms,
		Academia	Relevance, Participation	Electronic platforms
Category 3	Technical Partners	WHO, US FDA, EMA	Relevance and participations on normative standards, technical cooperation, capacity building	Policy briefs, meetings, workshops
Category 4	Partners and Social investors	African Development Bank,	Inclusive and sustainable economic growth, social development, poverty reduction, attainment of Millennium development goals, gender, regional economic integration,	Investment briefs, meetings, case studies
		Donors	Value for money, Specific programme areas, Impact	
		Multi-lateral institutions and development agencies	Developmental agendas, Value for money, Relevance, Impact	
		Civil Society	Relevance, Participation,	Policy briefs, sensitisation workshops, electronic platforms
		Host country	Participation, relevance	Investment briefs, meetings, electronic platforms.

8.5 Milestones – Outputs & Outcomes

The long-term goal is to increase the availability of affordable, quality, safe and efficacious medicines and other health products including complementary medicines on the continent. The Logical framework is presented as Annex II. Table 6 below shows a summary of the key milestones (outputs and outcomes).

Table 6: Milestones – Outputs and Outcomes

Strategic Themes	Principal Activities	Outputs	Outcomes
Regional integration and harmonisation	▪ Funded regional harmonisation projects in all the RECs ▪ Documenting & promoting best practices	▪ Increased # RECs implementing Medicines Regulatory Harmonisation ▪ Increased # of Products & facilities approved through mutual recognition, work-sharing, & centralised procedures	▪ Increase market share (value and volume) of local manufacturers ▪ Reduced time to approval & responsiveness of NMRAs
Policy, legal and regulatory reforms at national and regional level	▪ Approval of the Model Law, ▪ Technical assistance to MS on legal & regulatory reforms	▪ Increased # of Regional & National Policies, Legal Frameworks & adopted	▪ Number of MS & RECs with appropriate policies, legal and regulatory frameworks
Regulatory Capacity Development – human, infrastructure, financial, technical, governance systems	▪ Coordinate, accredit and monitor the regional centres of regulatory excellence (RCOREs) ▪ Guidance on complex or innovative therapies & on emerging issues and pandemics with respect to investigational therapies ▪ Develop policies, guidance and standards ▪ GMP inspection of API site(s)	▪ Increased # of functional and utilised RCOREs ▪ Increasing # of Technical Standards adopted ▪ Increased # of regulatory experts ▪ Increased # of NMRAs that are fully capacitated and functional	▪ Reduced incidence of SSFFCs on the continent ▪ Increased number of manufacturing facilities that are cGMP compliant ▪ Reduced time to approval & responsiveness of NMRAs
Advocacy and knowledge management	▪ Advocacy to AUC, RECs, partners and stakeholders for the policy, regulatory and legal reforms at continental, regional and national levels. ▪ Developing sustainable financing models. ▪ Information repository	▪ Information repository established and accessible ▪ Amount of funds raised through resource mobilisation	▪ Number of MS & RECs with appropriate policies, legal and regulatory frameworks ▪ Proportion of the budget funded from sustainable funding mechanisms

9. FINANCIAL PLAN

AU is largely dependent on MS contributions to finance the operational costs and dependent on partner support for the programmes. Currently, the MRH project is also largely financed from partner support. The global development sector is shifting from donor driven models to sustainability and impact investments[56]. For sustainability, developing a business model for the continental agency that combines ability to generate revenue from its activities, reducing dependence on donations, grants and subsidies would be essential. This integrated hybrid model produces both social value and revenue and position the continental agency to tap into the growing

[56] "Impact investments are investments made into companies, organizations, and funds with the intention to generate a measurable, beneficial social and environmental impact alongside a financial return. Impact investments can be made in both emerging and developed markets, and target a range of returns from below-market to above-market rates, depending upon the circumstances." Global Impact Investing Network (GIIN)

sector of impact investments which is expected to reach at least $500 billion USD within the next decade.

9.1 Diversified funding

The AU Heads of State and Government recently decided to implement the decision of the Assembly (Assembly/AU/Dec. 561(XXIV)) on Alternative Sources of Funding where Member States enhance ownership of the budget of the Union by financing 100% of the Operating budget, 75% of Programs and 25% of Peace and Security Budget effective January 2016 to be phased incrementally over a five-year period. Further, the Assembly adopted a new AU scale of assessment, which constitutes a hybrid of pure capacity to pay for some Member States and equal payment scales for others in accordance with the percentage of the budget under each tier. On this key milestone decision, AMA as an AU organ is expected to follow diversified funding mechanisms to ensure ownership and sustainability. The following options are discussed (1) direct contributions from MS through AUC, (2) direct contributions from partners, (3) revenue generation, and (4) innovative financing mechanisms.

9.1.1 Direct Contributions from MS

It is expected that MS will provide direct contributions to the operating budget through the AUC. Presently, the MRH activities are 100% funded by partners. Therefore, by the end of five-year period, it is expected that similar to other AU organs, 100% of the operating budget will be funded from direct contributions from MS.

9.1.2 Direct contributions from Partners

As noted before, partners are providing 100% funding for the MRH activities. It is expected that by adopting other funding mechanisms, the proportion of direct contribution from partners could be reduced over time to ensure sustainability. For AUC organs, presently 100% of programme funds are from partners. With this in mind, it is proposed that proportion of funding from partners could decrease to 75% of programme budget by year five and 100% of operating budget assumed by the MS.

9.1.3 Revenue Generation

The WHO PQT started with 100% financing from partners, and the model has evolved to ensure sustainability by including fees for services paid by the pharmaceutical industry. Therefore, for any regulatory guidance on specific products, AMA should be able to charge fees for such services. Further, it is anticipated that similar to the governments and partners paying for actual results delivered through social impact bonds, the pharmaceutical industry should pay for demonstrated cost savings by lowering regulatory costs for market entry and market control. Elsewhere, it is noted that Australia will act as a commercial body in conducting assessment work under the provisions of the European Community legislation as part of the mutual recognition agreement between European Community and Australia. Within the European Community, Member States receive a portion of the fees received by EMA for conducting assessments as part of the centralised procedure. Similar models would be explored for AMA. Notwithstanding potential revenue generation from AMA's activities, AMA is not expected to generate significant revenue within the first five years of operation.

9.1.4 Innovative financing mechanism

One of the key functions of AMRH is mobilise financial resources to support harmonisation activities on the continent. As such, AMA as successor of AMRH has to develop innovative financial mechanisms to complement the direct support from partners. Two options are discussed in this section, social impact bonds and endowment fund.

Social Impact Bonds (SIBs)

Social Impact Bonds (SIBs) as evidence by the IFFIm Bond for immunisation, for which the World Bank is the Treasury Manager, have the potential to unlock a new and vast pool of investment capital to finance the expansion of effective, preventive social services focusing on measurable outcomes and generating social and financial returns to investors. The SIBs have potential to raise funds from capital markets based on commitments from partners. Using this innovative financing mechanism, the following benefits are envisaged:

1) The investor may earn an acceptable rate of capital return;
2) AMA and regional harmonisation activities are financed using new, sustainable capital which enables scale-up of these interventions;
3) The partners enjoy a cost-saving (with no up-front investment);
4) Financial risk is transferred to the private investor, therefore, partners will only pay for the demonstrated results; and
5) The "underlying" social-issue of lack of access to affordable quality assured medicines and health products is improved.

Therefore, the Social Impact Bond uniquely links the monetary return on the financial product with its social delivery. In addition to the partners, the MS may also provide commitments to support the SIB. For example, South Africa is the only African country that is part of the nine IFFIm sponsors with a USD 20 million commitment. Therefore, there is potential for African countries to invest in such SIBs to fund regulatory strengthening activities on the continent to complement donor support.

Endowment Fund

Creation of an endowment fund that will ensure AMA's independence and sustainability is proposed as a second funding option. Similar models have been successfully employed in academic institutions worldwide. Notably, creation of a collection fund that will evolve to an endowment fund is one of the funding mechanisms for The African Network for Drugs and Diagnostics Innovation (ANDi)[57] to ensure sustainability and independence of ANDi.

The hybrid financial model for the African Medicines Agency is developed with a sustainability business model in mind. First, the hybrid model will enable the Agency to carefully select innovative interventions that have the greatest measurable impact on public health of Africans. Second, the model will ensure that from its launch, AMA has diversified funding model that will ensure sustainability by not depending on one funding stream either revenue from fees, AU budget allocation, Member States contributions, partner support or impact investments[58].

9.2 Measurable outcomes

To convince Member States, partners, and to venture into raising capital from capital markets for social development programmes, there is need to clearly identify measurable social outcomes for the proposed interventions that leads to the desired results of access to affordable, quality, safe and efficacious medicines for Africans.

9.3 Start up funding requirements & budget

Considering that AMRH is already in existence, and that AMRH will transition to AMA, there are no substantial start up funding requirements. The existing AMRH staff can be considered as the core

[57] WHO-TDR, Strategic and business plan for the African Network for Drugs and Diagnostics Innovation (ANDI), 2009.

[58] "Impact investments are investments made into companies, organizations, and funds with the intention to generate a measurable, beneficial social and environmental impact alongside a financial return. Impact investments can be made in both emerging and developed markets, and target a range of returns from below-market to above-market rates, depending upon the circumstances." *Global Impact Investing Network (GIIN)*

team for the establishment of AMA. Additionally, AMRH is housed under the NEPAD Agency and the same arrangement can be maintained, at least during the transitional phase. Potential sources of start up funding are developmental partners, MS contributions through the AUC and NEPAD Agency. Typically, the pre-launch activities that are already covered under the Task Team constitute start up activities. However, these activities are already budgeted for by AUC and WHO.

9.4 Sustainable funding mechanism

The targets on diversified funding by the end of five-year period are as follows:

- MS direct contributions to reach 100% of operating budget;
- Direct contributions from partners reduced from 100% to 75% of programme budget; and
- Programme funding from innovative funding mechanisms (SIBs and endowment fund) to reach 25%.

9.6 Resource mobilisation strategy

AMA with support from the NEPAD Agency will continue the resource mobilisation to support strengthening of medicines regulation on the continent. By creating a variety of funding mechanisms (e.g. SIBs, endowment and revenue streams) will tap into new potential partners in addition to the traditional donor supporters. The AMA will target MS for direct contributions to the operating budget in line with AU's decisions as well as commitments to the SIB and endowment fund. Additionally, traditional donors or partners will be targeted for continued direct contributions to the programme budget, at the same time imploring them to consider the alternative sustainable funding mechanisms. The African Development Bank, World Bank and other international institutions could be targeted for the development of the bonds and endowment funds. These institutions, already have experience with such funding mechanisms. Investors would be given an opportunity to invest for both social impact and financial return. With the advent of crowd funding, companies, individuals or foundations could be targeted as new funding options for social cause.

9.7 Funding Forecast requirements

Annex IV is the funding forecast for AM's activities from for the first five years of operation. This is based on the AMRH budget with some modifications to align with the proposed activities of AMA in the business plan.

10. MANAGERIAL, TECHNICAL AND ADMINISTRATIVE REQUIREMENTS

AMA should be structured in such a way as to maintain a lean staff and utilise a combination of internal staff and experts in the participating NMRAs. Similar approaches have been used elsewhere such as EMA and WHO PQTm. The WHO PQTm approach is of value especially for capacity building of the respective NMRAs. Notably, in the survey there was virtually no support for AMA to rely entirely on its own internal staff or to use only outside experts for its functions.

10.1 Managerial requirements

The structure of AMA is to ensure it operates as independently as possible so that it can set its own oversight strategy, and make decisions with respect to budgets, talent hiring, retention and development. While credibility before partners and investors is important, this should be balanced by ensuring it operates in the least bureaucratic environment as possible. The governance structure will include a MS, Board with strong African government and technical representation, and key stakeholders, and Secretariat lead by the Head of the institution. The Board will be responsible for the strategic oversight and direction of AMA, financial performance and account to the Member States through the AUC. The Secretariat is responsible for the operational performance and implementation of the strategy or business plan.

10.2 Technical Requirements

The structure for AMA will be small and lean as it utilises the experts within the RECs and NMRAs (Figure 5). Thus, the role of key staff will be coordination of the AMA's activities. The Head of AMA will be supported by a resource mobilisation team, an advocacy and partnership team, a legal services team and a technical capacity team. At most the team at AMA will be 10 or less and will work in collaboration with the established regional agencies.

10.3 Scheduling tasks and responsibilities

The role of the Secretariat will be coordination and facilitation of medicines regulatory activities and harmonisation. The experts for any given activities will be drawn from the Member States.

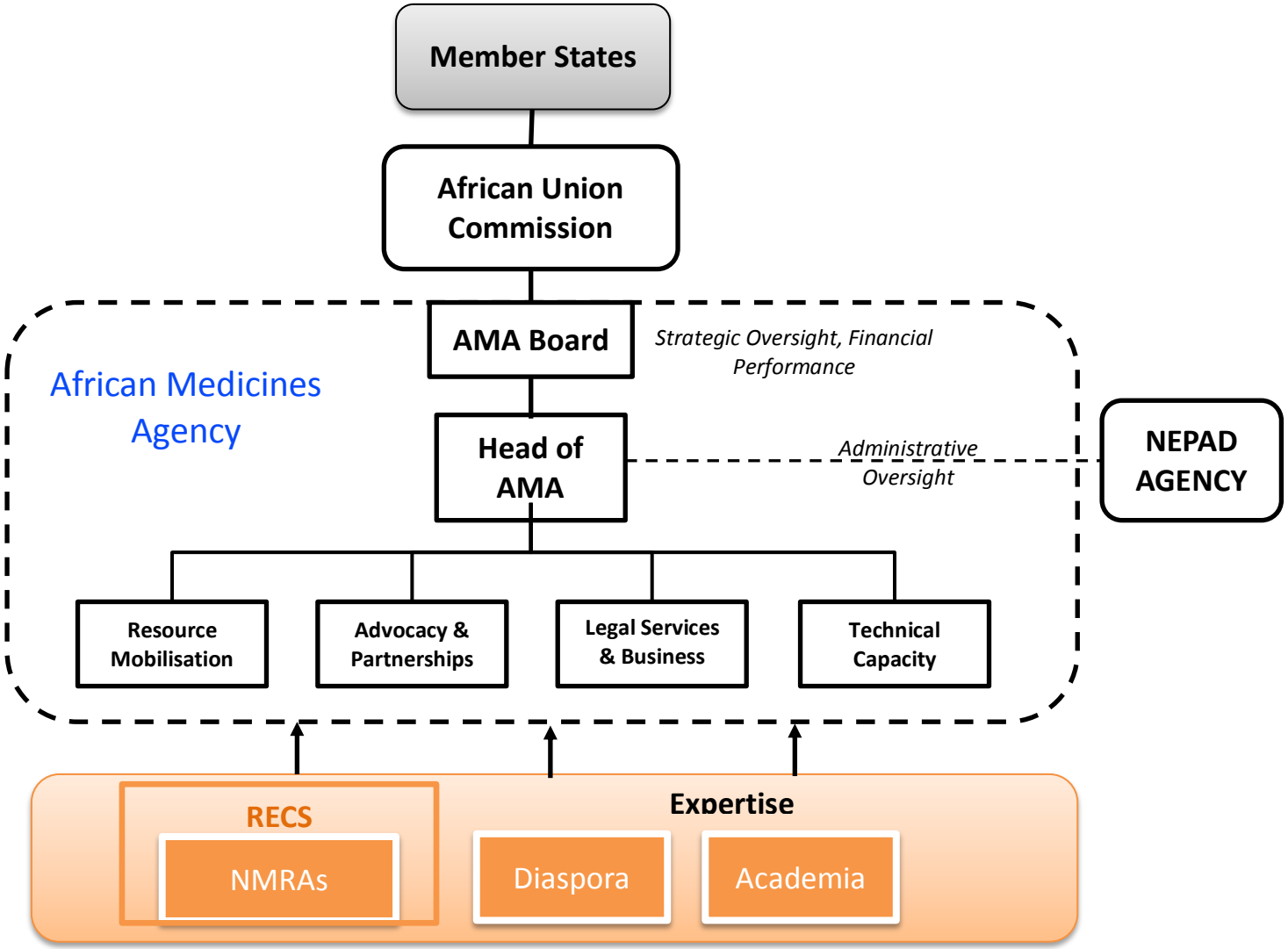

Figure 5: Proposed Structure of African Medicines Agency

11. ROAD MAP FOR ACHIEVING OBJECTIVES 2015 - 2022

Roadmap of activities for AMA Task Team are already developed leading to the official launch of AMA in 2018. In summary, the work of the Task Team is to develop the appropriate legal framework, and business plan for AMA include advocacy and regional consultations leading to review by the Health Ministers and finally approval by the Heads of States and Governments in 2018. In addition to the Task team activities, the following activities have to be done prior to the launch of AMA:

Table 7: Road Map for establishment & operationalization of AMA 2015 - 2022

Phase	Activities	Year	Output indicators
1. Preparatory phase 2015 – 2018	1.1 Development of the legal framework and business plan including consultations	2016	Legal framework and business plan for AMA available
	1.2 Advocacy & communication strategy	2016	Advocacy and communication strategy on AMA in place
	1.3 Facilitating the hosting arrangements	2017	Host country for AMA identified
	1.4 Groundwork for the formation of the Board	2017	Terms of reference and composition of the Board in place
	1.5 Governance structure and process for identifying the Head of AMA	2017	Governance structure and terms of reference for the Head available
	1.6 Legal agreements on endowment fund and / or social impact bonds. Thus AMA could prepare MS on how to handle the transitional phase	2017	Funding Model finalised (endowment fund & social impact bond framework/agreements)
2. Approval	2.1 Approval by AU Heads of State and Government	2018	AMA approved by AU and launched
3. Initial operationalization phase 2018 - 2020	3.1 Transitioning of the AMRH under NEPAD Agency into AMA	2018	Transition of AMRH into AMA completed
	3.2 Endowment fund establishment, and or issue of the social impact bonds	2019	First issue of social impact bonds and / or endowment fund established
4. Future perspective 2020 and beyond	4.1 Full implementation of activities under AMA	2020	AMA fully established and full implementation of activities.

12. MONITORING AND EVALUATION FRAMEWORK

Annex II is the Log Frame that will form the main Monitoring & Evaluation (M & E) tool, which is guided by the principles of Results – based Management (RBM) and by the AUC Policies on Monitoring and Evaluation. The objectives of the monitoring and evaluation mechanism of the Business Plan are to:

- Ensure that the outputs and outcomes are being achieved as planned.
- Provide regular information to all stakeholders on progress that would, among others, inform the basis for any reviews.

12.1 Output monitoring

In line with the Logical Framework of the Business Plan, AMA will put in place the following measures to ensure implementation of the planned activities and delivery of the outputs:

1. Set baselines and targets on access to affordable, quality, safe, efficacious medicines;

2. Develop relevant M&E tools and templates (such as M&E plan at continental, regional level & national level, standard progress report) that will guide the collection, analysis, dissemination and utilization of data on key indicators and targets;
3. Conduct periodic review meetings of relevant stakeholders to assess progress; and
4. Produce standard progress reports one a year. This will be specifically produced by the AMA's Board and submitted annually to the AU Ministers of Health and made public.

12.2 Outcome and Impact evaluation

The Board will facilitate an external mid-term review, and an end-term evaluation, of the business plan. In line with accounting standards, AMA will be required to produce audited financial reports annually. The external reviews will provide feedback on the efficiency, effectiveness and relevance of the Business plan in achieving the intended objectives. The report of findings and recommendations of the mid term review will be used to modify outputs as may be necessary. The outcome of the end-term evaluation will be used to design and inform future plans and strategies.

13. RISK MANAGEMENT

New business and financial model for AMA – faces challenges at Continental level where programme activities are dependent on donors or grants. Advocacy is required and social marketing. However, this approach is not new for medicines agencies as most perform a social obligation but rely on fees or adopt a hybrid model of fees, subventions from governments and also donors.

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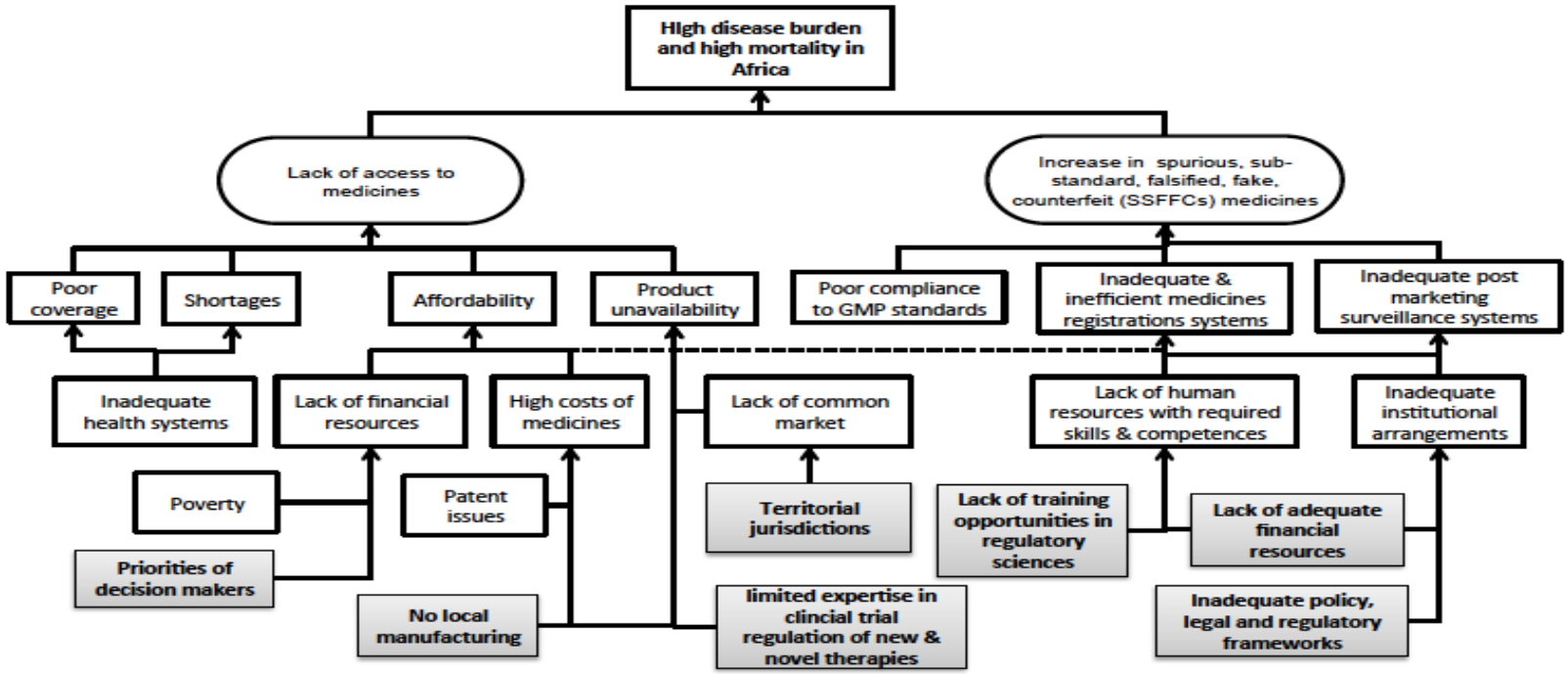
ANNEXES

Annex I: Root Cause Analysis



Root Cause Analysis. It is based on a literature review and focus group discussion with regulators in SADC. The grey shaded boxes highlight the root causes targeted by the African Medicines Agency

Annex II: Logical Framework for AMA

	Description	Indicator	Means of Verification	Assumptions
GOAL	A healthy African population with access to affordable, quality, safe and efficacious medical products and technologies	Proportion of population with access to affordable, essential medicines on a sustainable basis (SDG indicator)	National surveys of medicines prices and availability using WHO methodology	Countries will conduct surveys
LONG TERM OUTCOMES	Reduced Incidence of Spurious, substandard, falsified fake, and counterfeit (SSFFCs) medicines	• Incidence of reported SSFFCs • % failure rate of products in Post Marketing Surveillance Activities (PMS)	Reports from WHO Member States Mechanism and NMRAs	Effective PMS activities in MS
	Increased suppliers per product on essential medicines	• # of suppliers per product for key essential medicines	NMRAs registers	Information is up to date and readily available
	Increased # of facilities compliant with cGMP	• # of facilities compliant with cGMP	NMRAs reports	Information is readily available from NMRAs; common standards adopted
IMMEDIATE OUTCOMES	Reduced time to approval by NMRAs	• % of medicines registered within the planned timeframe • Reduction in medicines registration backlog	NMRAs databases	Tracking mechanisms in place; data is readily available and databases up to date
	Increased # of facilities approved through mutual recognition, work-sharing, & centralised procedures	• # of facilities approved through harmonisation processes	NMRAs and RECs reports	Functional Regional MRH programmes
	Increased # of Products approved through mutual recognition, work-sharing, & centralised procedures	• # of products registered through harmonisation processes	NMRAS and RECs reports and databases	
OUTPUTS	Increased # of Regional & National Policies, Legal Frameworks & Technical Standards adopted	• # of member states that have reviewed their policies and legal frameworks to enable participation in harmonisation activities	Reports from Ministries of Health in the Member States	Political will by member states
	Mix of financing mechanisms for AMA, RECS & NMRAs	• Diversified funding sources for the budget • Proportion of budget funded by MS	AMA, RECs and NMRAs Budget	

	Increased # of regulatory experts	• # of specialised experts in specific regulatory fields	NMRAs, RECs and AMA database	
	Increased # RECs implementing Medicines Regulatory Harmonisation	• # of joint assessments and inspections conducted	RECs reports	
	Increased # of functional RCOREs	• # of functional RCOREs	AMAs and RCORE reports	
	Increased # of NMRAs that are functional	• # of functional NMRAs	Assessments reports	
ACTIVITIES	**1.** Advocacy to AUC, RECs, partners and stakeholders for the policy, regulatory and legal reforms at continental, regional and national levels. **2.** Coordinate, accredit and monitor the regional centres of regulatory excellence (RCOREs) **3.** Governance, partnerships and resource mobilisation for regulatory activities including sustainable finance mechanisms at all levels **4.** Custodian of the Model Law, development of policies, legal and technical standards in collaboration with WHO. **5.** Delegated regulatory functions for AMA: - regulatory guidance and the continent's voice on emerging issues and pandemics particulaly with respect to investigational therapies - regulatory guidance on complex molecules, - coordination of GMP inspections of API manufacturing sites, - coordination and provision of regulatory guidance as required by RECs and Member States for complex situations, and / or where capability at national or regional level is lacking, e.g. emerging issues such as regulation of e-commerce businesses **6.** Coordinate and facilitate regional harmonisation activities and strengthen NMRAs as requested by Member States, where applicable. **7.** Establishment and maintance of accurate information and market intelligence on regulatory and pharmaceutical market (knowledge and information management)			

Annex III: Mapping of Key players in medicines regulatory strengthening

Key Current Players – Names of Organizations	Aspect of overlap	How will AMAs approach be different from and achieve greater results than others working in your field?	How can AMA work with, leverage, and/or improve on the work that is currently being done?
NMRAs	○ Working with same population ○ Working on same issue area ○ Using a similar model of change	Coordination and facilitation role, best practices, standards, market integration (harmonization); pooling of resources	Use experts in the NMRAs, no duplication of the work done by NMRAs, supportive role and guidance on complex issues for which resources and expertise is unavailable at national level
RECs (coordination, facilitation, harmonization etc.)	○ Working with same population ○ Working on same issue area ○ Using a similar model of change	Coordination and facilitation role, resource mobilization	No duplication of the work done by RECs, supportive role and guidance on complex issues for which resources and expertise is unavailable at regional level
WHO PQT (prequalification, capacity building)	○ Working with same population ○ Working on same issue area ○ Using a similar model of change	Focus on market integration at regional level and continental level, target areas/ disease which disproportionately affect Africa; using RCOREs for capacity building	Supporting role on regulatory guidance for specific products, expand the scope that is covered by WHO PQ especially for African manufacturing companies
WHO (standards & norms, capacity building)	○ Working with same population ○ Working on same issue area	Using existing capacities on the continent through the RCORE model for capacity building	Facilitate domestication of WHO norms and standards at regional and national level.
UNFPA (Prequalification of condoms/devices)	○ Working with same population ○ Working on same issue area ○ Using a similar model of change	Focus on market integration at regional level and continental level, target areas/ disease which disproportionately affect Africa; using RCOREs for capacity building	Supporting role on regulatory guidance for specific products, expand the scope that is covered by WHO PQ especially for African manufacturing companies
Academic Institutions (on capacity building)	○ No overlap	Utilizing RCORE and academic institutions for training	Use existing institutions in partnership with regulatory authorities to training, promote and enhance (curriculum development) the existing pre and post graduate training in regulatory science.

Annex IV: AMA Five-Year (2018 – 2022) Activity Budget

Strategic Themes	Priorities	Principal Activities	Target	Budget	Result
Regional integration and harmonisation	▪ Towards a common market for pharmaceuticals at RECs	▪ Funded regional harmonisation projects in all the RECs ▪ Documenting & promoting best practices	▪ Increased # RECs implementing Medicines Regulatory Harmonisation ▪ Increased # of Products & facilities approved through mutual recognition, work-sharing, & centralised procedures	$ 2,242,000	▪ 5 RECs implementing AMRH framework ▪ At least 2 regional medicines agencies established ▪ # of countries participating in joint reviews and GMP inspections ▪ Mutual recognition procedures implemented in 3 RECs and Member States
Policy, legal and regulatory reforms at national and regional level	▪ Legal reforms - Custodian of the Model Law; domestication of AU Model Law	▪ Approval of the Model Law, ▪ Technical assistance to MS on legal & regulatory reforms	▪ Increased # of Regional & National Policies, Legal Frameworks & adopted	$1,550,000	▪ 50% of African countries with comprehensive pharmaceutical policies and legal frameworks aligned to AU Model law ▪ 3 RECs implementing pharmaceutical policies and legal frameworks aligned to the AU Model
Regulatory Capacity Development – human, infrastructure, financial, technical, governance systems	▪ Facilitate capacity building of regulatory authorities ▪ Resource mobilisation	▪ Coordinate, accredit and monitor the regional centres of regulatory excellence (RCOREs) ▪ Facilitate twinning and exchange ▪ Guidance on complex or innovative therapies & continents voice on emerging issues and pandemics with respect to investigational therapies ▪ Develop policies, guidance and standards ▪ GMP inspection of API site(s), biotech products, medical devices ▪ Developing sustainable financing models.	▪ Increased # of functional and utilised RCOREs ▪ Increasing # of Technical Standards adopted ▪ Increased # of regulatory experts ▪ Increased # of NMRAs that are fully capacitated and functional ▪ Increased number of manufacturing facilities that are cGMP compliant	$1,135,000	▪ 80% of pharmaceutical manufacturers complying with regional and continental GMP certification schemes ▪ 50% of regional harmonized guidelines endorsed by the REC Policy Organs ▪ 50% of countries implementing regional harmonized guidelines ▪ Agreed framework for benchmarking NMRAs in Africa ▪ 50% African NMRAs meeting internationally acceptable standards of Good Regulatory Practice ▪ RCOREs adopted harmonized regulatory science curricula ▪ 20% increase in regulatory workforce in Africa

Advocacy and knowledge management	▪ Strengthen the legal and regulatory framework for harmonisation ▪ Resource mobilisation	▪ Advocacy to AUC, RECs, partners and stakeholders for the policy, regulatory and legal reforms at continental, regional and national levels. ▪ Developing sustainable financing models. ▪ Information repository	▪ Information repository established and accessible ▪ Amount of funds raised through resource mobilisation	$730,000	▪ Information repository established and accessible ▪ Programme funding from innovative funding mechanisms (SIBs and endowment fund) to reach 25%.
Operating budget for AMA		▪ Advocacy and resource mobilisation	▪	$ 2,400,00	▪ 100% of operating budget funded by MS
TOTAL				**$8,057,000**	

Annex V: Analysis of the Survey Results on Development of AMA Business Plan

The African Ministers of Health agreed to set up an African Medicines Agency (AMA) in 2014. The AMA is intended to be an organ of the African Union, legally mandated by Member States to coordinate national and sub-regional regulatory systems for medical products, provide regulatory oversight, promote cooperation, and harmonisation in Africa. The AMA will achieve this through pooling expertise and capacities and strengthening networking for optimal use of the limited resources available on the continent and complement and enhance the effects of ongoing harmonisation initiatives.

The survey of key stakeholders was done to provide input into the development of the AMA business plan. It targeted key stakeholders ranging from senior level staff in national medicines regulatory authorities or equivalent, African Union, WHO, development partners and UN agencies. This was performed using an online survey tool Google Forms. The information from the survey was used to validate and refine the models for AMA. Moreover, information was also used in the business plan in terms of funding models for AMA for delivering its mandate.

The survey focused on analysis of the problems, the potential interventions at continental level (answering the key questions of what, how, who and when). This report is a brief analysis of the survey results and it is structured as follows; first discussion of the problems, followed by the root cause analysis, interventions including priority setting, lastly funding options. In this context, acceptability of medicines and other health products is defined as safe, efficacious and of good quality.

Problem Analysis

Setting up a continental agency is a response to problems that have been identified – these problems were drawn from the Pharmaceutical Manufacturing Plan for African (PMPA) and other related background documents on establishment of AMA. The preeminent issues that were noted as genesis for AMA are regulatory systems as barrier to local manufacturing and the problem of SSFFCs on the continent. Consistent with the background documents, the problem of SSFFCs was noted as the most significant problem and the poor GMP compliance by African pharmaceutical manufacturers at outcomes level. On regulatory systems, the following problems in-order of significance was noted: clinical trial regulation of novel or complex therapies, efficient marketing authorisation systems, skills and expertise in medical product regulation, availability of functional medicines regulatory systems, transparency of regulatory decisions and lastly GMP enforcement by regulatory authorities.

Strategies

Strategies should address the most pressing issues to achieve the desired results of Africans accessing affordable, and acceptable medicines and other health products. The results show that the rank order on strategies places promotion of cooperation between regulatory authorities as priority, followed by coordination of harmonisation activities, facilitation of mutual recognition of regulatory decisions, regulatory oversight of selected medical products and lastly coordination of national and sub-regional regulatory systems for medical products. The low rank of regulatory oversight of selected medical products is consistent with comments that AMA should not duplicate what is being done by Member States; its role is to coordinate continental agenda on strengthening and harmonisation of regulatory systems.

Interventions

Principal activities

What would AMA do and how? What is the value addition that AMA would provide in product regulation to mitigate the current or potential future problems? These are key questions that a pivotal for the success of the continental agency. To unpack these issues, the top principal activities that AMA should perform based on the survey were custodian of the Model Law and assist countries on legislative framework and providing regulatory guidance on complex or innovative therapies. Furthermore, rated high by the respondents are developing policies, guidelines & standards, GMP inspection of active pharmaceutical ingredient (API) manufacturing sites and control of SSFFCs. The activities that received the lowest responses were assessment and regulatory guidance on selected products, post marketing surveillance and pharmaceutical market intelligence. Additional comments on principal activities include promotion of innovations in medicines and health technologies especially targeting neglected medical conditions. Notwithstanding the sovereignty of Member States as specified in AU Treaty, a comment was made for AMA to consider advising MS on how to factor in AMA in national statutes so that legally its actions will be binding at country level.

On capacity building, the main activities should be facilitating the twinning and exchange programmes and coordinating the regional centers of regulatory excellence (RCOREs). The RCOREs are a vehicle to facilitate the provision of training programmes, as such AMA's role in coordinating training was not considered significant. Setting up a college of regulatory professionals could be medium to long-term activity.

Level of intervention

Comments were noted on the need to finalize the model for AMA to address potential overlapping and duplication with RECs. Thus, the survey requested for participants to highlight the most suited level at which interventions should occur. Product assessment is largely a national functional, and to some extent at regional level especially within the context of joint activities. AMA has very little role in this regard, except for regulatory guidance on complex therapies (e.g. NCEs, complex molecules, investigational products) where participants had an overwhelming response (79%) that this should be performed at continental level. Clinical trial reviews for multi-country studies and GMP inspection of API sites should be positioned at regional level with continental and national support. Equally important was the observation that control of SSFFCs should be done at all levels – national, regional and continental, possibly due to the nature of the problem as it transcends national territories.

Product scope

The proposed objectives for AMA include providing regulatory oversight of selected medical products. To narrow the focus for this objective, participants were requested to rank provided options in order of priority. The top three focus areas were medical products that require high level of technical expertise such as new chemical entities, investigational products for diseases that disproportionately affect Africa and medical products for diseases that disproportionately affect Africa.

The scope of regulatory oversight varies on the continent from those with mandate for medicines only to those that include food safety. Therefore, it was necessary to seek clarification on the scope of AMA. Interestingly, the participants ranked *medical devices* as the top priority for AMA followed by *medicines and other health technologies.* Notably, herbal products feature on health strategies at regional and continental level; however, this was ranked as low priority for AMA along with food safety. Possibly, this reflects the limitations on the continent with respect to regulation of medical devices and other health

technologies.

Modus operandi
AMA should be structured in such a way as to maintain a lean staff and utilise a combination of internal staff and the experts in the participating NMRAs and outside experts. Similar approaches have been used elsewhere such as European Medicines Agency and WHO PQTm. WHO PQTm approach is of value especially for capacity building of the respective NMRAs. Notably, there was virtually no support for AMA to rely entirely on its own internal staff or to use outside experts entirely for its functions.

Funding options
Substantial resources are required to set up this Agency and operational costs. From the responses, it is anticipated that developmental partners, Member States contributions through the AUC and African Development bank, and to some extent NEPAD Agency would provide start up funding.

Based on the respondents, the target funding mix would be 30% from MS, 30% from fees, 25% from development partners, and 15% from service level agreements e.g. with Ministries of Health, NMRAs or the RECs.

Additional comments
Consider the importance of development of frameworks for transparency, good governance, **equity, rights of being heard, and participation**.