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COMMISSION ÉCONOMIQUE POUR L'AFRIQUE
BUREAU SOUS-RÉGIONAL POUR
L'AFRIQUE DE L'OUEST
CEA/BSR-AO

Harnessing Agricultural Potential for Growth and Development in West Africa



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*Harnessing Agricultural Potential
for Growth and Development in West Africa*

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Abbreviations and Acronyms

3ADI	African Agribusiness and Agro-Industries Development Initiative
3N	Nigerien Nourishes Nigerien
ADB	African Development Bank
AGOA	Africa Growth Opportunity Act
AU	African Union
ASEAN	Association of South East Asian Nations
CAADP	Comprehensive Africa Agricultural Development
COMESA	Common Market for Eastern and Southern Africa
ECOWAS	Economic Community of West African States
ECOWAP	ECOWAS Agricultural Policy
FAO	Food and Agricultural Organisation
EPA	Economic Partnership Agreements
ECA	Economic Commission for Africa
GDP	Gross Domestic Product
GNAIP	Gambia National Agricultural Investment Programme
ICE	Intergovernmental Committee of Experts
ICT	Information and Communication Technology
IFAD	International Fund for Agricultural Development
IGOs	Intergovernmental Organisations
MDGs	Millennium Development Goals
MFI	Microfinance Institutions
NEPAD	New Partnership for Africa's Development
NAIPS	National Agricultural Investment Programmes
NGOs	Non-Government Organisations
OPAM	Office des Produits Agricoles du Mali
PPP	Public Private Partnerships
ReSAKSS	Regional Strategic Analysis and Knowledge Support System
RECs	Regional Economic Communities

R&D	Research and Development
SPS	Sanitary and Phytosanitary
SME	Small and Medium Scale Enterprises
TBT	Technical Barriers to Trade
UEMOA	West African Economic and Monetary Union
UNIDO	United Nations Industrial Development Organisation
UNECA	United Nations Economic Commission for Africa
WTO	World Trade Organisation

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Summary

This report shows that despite its huge agricultural potential consisting of large expanses of unexploited agricultural land, forests and rivers, West Africa remains one of the poorest regions in the world and suffers from chronic food deficits. This is due to many structural and natural challenges confronting the sector. These include; low productivity, low levels of investment, poor infrastructure in farming areas, low levels of education amongst farmers, lack of integration of the agricultural sector with other sectors, poor market integration, land access challenges, especially amongst women, lack of extension services, low levels of technology (including seed, fertilizer) and limited financial assistance. The highly unpredictable rainfall patterns in the Sahelian countries compounds the problems.

The implementation of the Comprehensive Africa Agricultural Programme through EOWAS and UEMOA Agricultural Policies and the introduction of various state-level programmes to enhance the sector have strengthened the policy and operational environment. Despite this, farm productivity remains low in the sub region compared to other regions. The report recommends a structural transformation of the sector to increase productivity and ensure that West Africa exploits the sector to address poverty. Higher multiplier effects and the stronger impact on poverty alleviation can be realised through an efficient agricultural sector through transformation. The holistic transformation of the sector should encompass (i) strengthening the policy framework for implementation of sector-specific programmes (ii) strengthening R&D (iii) provision of extension services (iv) provision of agricultural inputs (v) introduction of modern technology (vi) development of infrastructure and markets in rural areas (vii) provision of education and training to farmers (viii) investment in irrigation systems and water conservation technologies (ix) maintaining macroeconomic and political stability, (x) addressing land ownership challenges and (xi) promoting regional agricultural value chains. A holistic approach towards addressing these challenges can be consolidated and accelerated through deeper regional cooperation in West Africa through ECOWAS and UEMOA.

Introduction

1. This report on Harnessing the Agricultural Potential in West Africa for Growth and Development was the thematic part of the regular parliamentary document on Economic and Social Conditions in West Africa presented to the 15th Intergovernmental Committee of Experts (ICE) for West Africa. This report specifically focuses on the crop sector and aims to (i) provide member States with a status of the agricultural sector in West Africa (ii) highlight the untapped potential role of the sector in socio-economic development; and (iii) provide policy advice on enhancing productivity in the sector to address poverty, unemployment and under development.
2. The report is organized into four chapters following this introduction. The first Chapter, “Agriculture and the Economies of West Africa”, discusses the importance of agriculture in the ECOWAS focusing on the sector’s role in employment, exports, poverty alleviation and the alleviation of hunger. The Chapter examines the extent food deficit in West Africa and reviews of the production and markets of the main crops. Chapter 2 on the ‘Policy Environment’ focuses on continental, regional and national policy frameworks in agriculture and discusses how ECOWAS member States are implementing the policies to enhance the role of the sector. It also considers the national programmes and activities underway under these policies. Chapter 3 on, “The Agricultural Potential” concentrates on the agricultural potential of the sub region including the under-utilised productivity of labour and land and outlines what the sub region needs to do to enhance productivity. The internal and external challenges faced in exploiting the agricultural potential in West Africa are outlined in Chapter 4. Chapter 5 provides the conclusions and national and sub regional level recommendations towards strengthening the role of agriculture in growth and development.

Chapter 1: Agriculture and the Economies of West Africa

1.1 Overview

3. Agriculture is central to economic growth and development in West Africa. The sector provides about 80% of the food requirements for the nearly 300 million people in the region. It is home to about 60% of the population and also engages an average of 60% of the labour force (World Bank, 2011). Agriculture provides raw materials for industrial processing and manufacturing and contributes about 15.3% to export of goods and services in ECOWAS (IMF, 2010). If Nigerian oil exports are excluded, agriculture contributes 30% to export earnings. The sector accounts for 21% of the regional import bill (ECA, 2010). The contribution of agriculture value-added to the Gross Domestic Product (GDP) averages 35% in West Africa with significant variations among countries. In addition to this direct contribution, the forward and backward linkages with the rural economy and other sectors strengthen the importance of agriculture for overall growth and development in West Africa. Table 1.1 derived from the World Bank (2011) shows the country-level contribution of agriculture to GDP which is highest in Liberia and lowest Cape Verde. It shows the high rural population in some countries in the sub region, being highest in Burkina Faso at 80% of the population (see also Annex 1b and 1b).

Table 1.1: Agriculture and the Rural Economy in ECOWAS

Country	Agriculture Avg. Value- Added % GDP (2000 to 2009)	Agriculture % Exports (2010)	Rural Population %
Benin	33.7	...	58.4

Burkina Faso	33.8	56.0	80.0
Cape Verde	9.0	...	39.6
Cote d'Ivoire	24.2	10.0	50.6
Gambia	31.1	1.0*	42.7
Ghana	36.3	7.0	49.2
Guinea	22.8	5.0**	65.1
Guinea-Bissau	55	...	70.1
Liberia	66.6	...	39.2
Mali	37.4	48.0	67.3
Niger	39.3	3.0	83.4
Nigeria	37.2	2.0	50.9
Senegal	16.4	1.0	57.4
Sierra Leone	49.9	...	61.9
Togo	39.3	5.0	57.3
ECOWAS Av.	35.5		58.2

Source: World Bank, 2011

*2009, **2008, data not available for the last five years

1.2 Crop production

4. The fifteen countries of ECOWAS possess varying capacities and

potential for the production of different crops. Nigeria, Ghana and Cote d’Ivoire are the three leading producers of agricultural products in the sub region. The main crops produced include; cassava, yam, cocoyam, sweet potato, plantain, bananas, legumes, onions, groundnuts, yam, cassava, millet, cocoa, maize, rice, sorghum, millet, beans and legumes. Rice, cassava, yams, millet, sorghum, sweet potatoes, and maize constitute a major part of the diet in West Africa (see Annex 2a to 2d for output volumes by major producers). Although over the years, crop production in West Africa has increased, the increase has been based on expansion of land under cultivation (horizontal expansion) as the productivity of the land remains low across the sub region. Generally, agricultural productivity and yields are low in West Africa compared to other developing regions of the world. Table 1.2 derived from WTO (2011) compares West Africa with other regions. It shows that the index of cereal productivity for Cote d’Ivoire in 2009 was 52% of that of Latin America, 35% that of East Asia and 66% that of South Asia. With the exception of Ghana, all countries in West Africa are still below the 1990 levels for cereal production in Latin America and East and South Asia. This is due to a number of factors including: the mechanization levels, low level of fertilizer usage, limited access to improved seed, dependence on rain-fed agriculture, and poor water management. West Africa is yet to fully exploit its potential for irrigation. Chapter 3 addresses these factors in more detail.

Table 1.2: Agricultural Output and Productivity

	Crop production index		Food production index		Cereal production index (Kilograms per hectare)	
	1990	2009	1990	2009	1990	2009
Benin	53	110	58	116	848	1330

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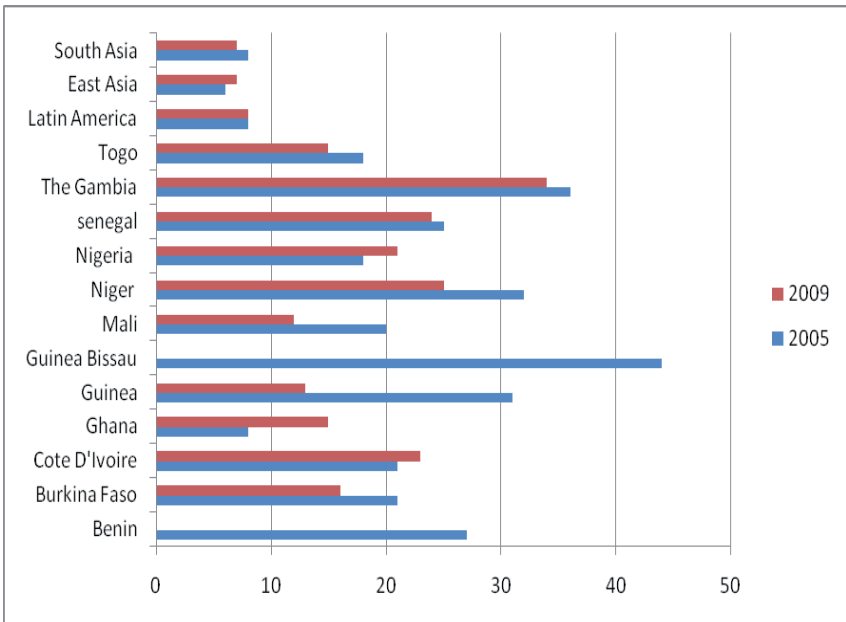
Burkina Faso	62	144	62	136	600	1036
Côte d'Ivoire	71	109	73	120	887	1724
Ghana	43	156	46	155	5411	7201
Guinea	71	133	72	133	1455	1711
Guinea Bissau	72	120	73	122	1531	1422
Liberia	71	115	88	131	1029	1553
Mali	68	162	79	183	726	1588
Niger	64	210	61	186	310	489
Nigeria	60	134	60	135	1148	1598
Senegal	72	130	73	134	795	1135
Sierra Leone	127	204	121	201	1202	989
The Gambia	55	114	60	117	1004	1053
Togo	71	109	74	132	747	1136
Other Regions						
Latin America	75.8	128.1	71.2	131.2	2089	3282
East Asia	69.9	133.1	62.7	135.1	3795	4843
South Asia	78	119.3	74.5	122.7	1926	2628

Source: FAO, 2011, no data for Cape Verde

1.3 Food Security

5. Food insecurity has been increasing in the sub region due to unpredictable climate and declining rainfall. The expected increases in the frequency and gravity of floods and droughts have raised concerns about the capacity of countries in West Africa to maintain their agricultural production. According to FAO (2009) almost 40 per cent of West African populations are malnourished. This number has almost doubled since the late 1970s, increasing roughly at the same rate as population growth. Figure 1.1 shows high dependence of ECOWAS countries on food imports in 2009 compared to other developing regions in South Asia, East Asia and Latin America. West Africa imports about 20% of its food requirements.

Figure 1.1: Food imports as % of GDP, West Africa and selected other developing regions



Source: World Bank, 2011

6. Achieving food security remains a major challenge for West Africa. The situation in 2012 in the Sahel clearly illustrates the extent of the challenges, which reminds us the food situation of this year. The sub region, as other parts of the continent, is often has faced recurring food crises that decade. Food insecurity is getting worse year by year in an environment compounded by the effects of climate change, conflict and crises in various countries, energy shortages in the sub region and the global financial and economic crisis. Food shortage has become chronic and the strong dependence of the agricultural sector reinforces the loss of livelihoods and increases the prevalence of poverty, especially in vulnerable groups such as women and children. The following table, contained in the report of the First Meeting of the UEMOA High Level Committee on Food Security of 14 February 2012, shows the downward production trend that clearly indicates increasing dependence of countries from food assistance.

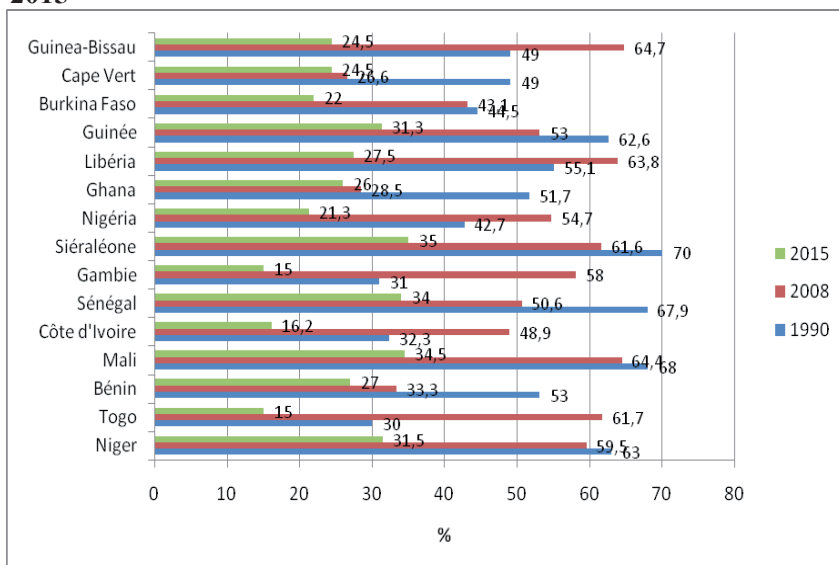
Table 1.3: Gross Crop Production and comparison with the last five years

Country	Output 2010-2011 (000 tons)	Output 2011-2012 (000 tons)	% Difference 2011/2010	% Difference 2006/2010	Difference (%) Aver. (2005-2009)
Benin	1, 527	1, 793	17%	37%	45%
Burkina Faso	4, 561	3, 823	-16%	-1%	4%
Cote d'Ivoire	1, 553	1, 446	-7%	6%	8%
Guinée Bissau	237	281	19%	36%	39%
Mali	6, 418	5, 139	-20%	13%	30%
Niger	5 4	3, 628	-31%	-14%	-7%
Senegal	1, 768	1, 213	-31%	-16%	-12%
Togo	1, 046	1, 058	1%	10%	15%
UEMOA Area	22, 314	18, 873	-18%	3%	11%
Ghana	2, 907	2, 994	3%	31%	44%
Nigeria	26, 885	26, 764	-0.40%	-0.20%	0.40%
Liberia	296	298	1%	3%	4%
Chad	3, 248	1, 620	-50%	-23%	-12%
Sierra Leone	1, 221	1, 184	-3%	30%	51%
Guinea	2, 852	3, 301	-16%	31%	39%
Cape Verde	7	6	-21%	-13%	-2%
Mauritania	259	124	-52%	-38%	-34%
Gambia	364	242	-33%	-9%	3%
Area out of UEMOA	38, 038	36, 533	-4%	3%	6%
Total (UEMOA+ out of UEMOA)	60, 411	54, 914	-9%	3%	8%
Zone CILSS	22, 124	16, 076	-27%	-5%	5%
ECOWAS Zone	56, 905	53, 170	-7%	4%	8%

Source : CILSS/AGRHYMET (January, 2012)

7. An analysis of average food availability among West Africa countries shows the high degree of heterogeneity. For example, in Sierra Leone the average intake of daily calorie is below the recommended level of 2100 kcal. In the Gambia, Liberia, Senegal and Sierra Leone, the situation has been deteriorating over the last 10 years while in Ghana and Nigeria there has been an improvement. The lack of food poses a serious threat to the attainment of Millennium Development Goals (MDGs) in West Africa. Figure 1.2 shows that progress made towards MDG 1 in the sub region has been uneven. The data show that significant progress has been made by Cape Verde, Benin, Senegal and Ghana (ECA, 2010). Yet poverty levels increased and remained high in Guinea Bissau, Liberia, Nigeria, Gambia, Côte d'Ivoire and Togo during the same period.

Figure 1.2: Proportion of the population living below the poverty level in West African countries, in 1990, 2008 and the target set for 2015

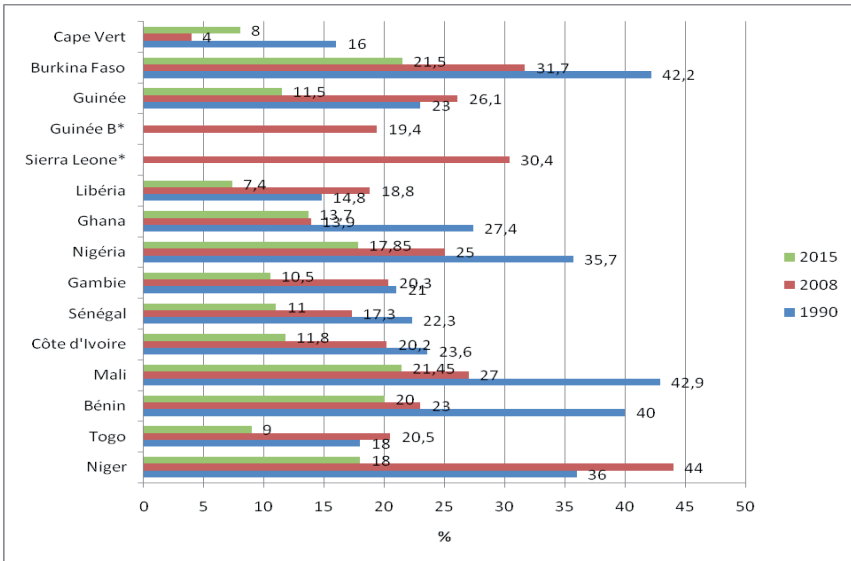


Source: National MDG progress reports

Notes: 1990 and/or 2008 unavailable data are either estimated or updated accordingly to country data available.

8. The high proportion of the hungry and malnourished is a result of poverty and hunger (see also Annex 3). The ECA review (ECA 2010) shows that five countries have recorded notable progress in reducing malnutrition among children under five with Cape Verde, Benin and Ghana having already reached the target set for 2015. For Niger, Guinea Conakry, Togo and Liberia, the proportion has increased during the period of 1990-2008. Figure 1.3 shows the prevalence of under-weight children (see also Annex 3).

Figure 1.3: Prevalence of underweight children under five years of age in West African countries in 1990, 2008 and the target set for 2015



Source : National MDGs Progress Reports and * UNSD_MDG_2010 Country Data

Notes: 1990 and/or 2008 unavailable data are either estimated or updated accordingly to country data available.

9. The positive economic growth enjoyed by the sub region in recent years, of an average of 6.3% between 2009 and 2011, some of it which has originated from in the agricultural sector, provides an opportunity for the sub region to address the challenges on high unemployment,

poverty and other socio economic challenges. The experience of the Asian Revolution shows the potent role of agriculture as a leading sector in transformation and industrialisation.

10. The overview of the agricultural sector in West Africa, the importance of the sector to socio-economic development and the extent of food insecurity and hunger in the sub region have been reviewed in this Chapter with a view to illustrate the overall actual and potential importance of the sector in socio-economic development. The potential role of the sector to alleviate poverty derives from the fact that the sector employs about 60% of the labour force and is home to over two thirds of the population. Growth of the agricultural sector can increase incomes directly to the poor, through additional demand for labour and indirectly through input, output and expenditure linkages with non-farm activities in the rural sector.

Chapter 2: The Agricultural Policy Environment : Continental, Regional and National Policies

2.1 Continental Policy Framework

11. The development of the agricultural sector in West Africa is supported by a complimentary policy and regulatory environment at continental, regional and national levels.

12. At continental level, the Comprehensive Africa Agricultural Development (CAADP) adopted in 2003 by African Union's New Partnership for Africa's Development (NEPAD) is the framework to lead the harnessing the continent's abundant agriculture potential for growth and socio-economic development. In launching CAADP, African Heads of State and Government highlighted the importance of a 'green revolution' in Africa's socio-economic development. CAADP, through its four pillars (Box 2.1), seeks to eliminate hunger and reduce poverty and thereby facilitate overall socio-economic development.

Box 2.1 CAADP Pillars

Pillar 1: Expansion of land area under cultivation and with application of irrigation and reliable water control systems.

Pillar 2: Provision of rural infrastructure and trade capacities so as to facilitate market access.

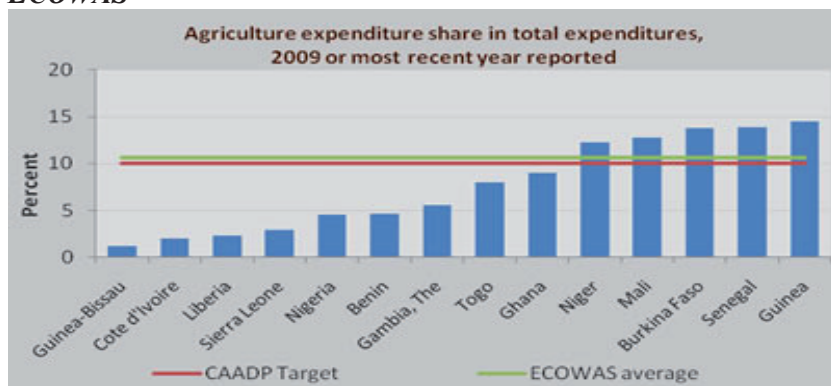
Pillar 3: Increase food supply, reduce hunger and improve responses to food-related emergencies.

Pillar 4: Enhanced agriculture research and dissemination and adoption of improved technologies.

Source: African Union, 2006

13. Through these four pillars, CAADP seeks to address and reverse, in a comprehensive and sustainable manner, the challenges faced by the sector during the last 30 years from the impact of structural adjustment programmes and production (low productivity) and marketing constraints. To attain this overall objective, African leaders agreed, through the Maputo Declaration, to increase public investment in agriculture by a minimum of 10 per cent of their annual national budgets and to raise agricultural productivity by at least 6 per cent (African Union, 2006). These targets were to have been achieved by 2008 and maintained thereafter. According to a 2008 NEPAD review, by 2007, four ECOWAS countries; Benin, Burkina Faso, Nigeria and Cape Verde were already spending between 5-10% of national budgets on agriculture. Senegal, Mali and Niger were spending more than 10% by that time. The rest of the sub region was below the threshold (see Annex 4). A report by ReSAKSS (2011), using 2009 shows that Niger, Mali, Burkina Faso, Senegal and Guinea achieved the Maputo threshold (Figure 2.1). Although resources from development partners support agriculture development in many countries, sustainability requires that governments continue to allocate the minimum budgetary resources on an ongoing basis.

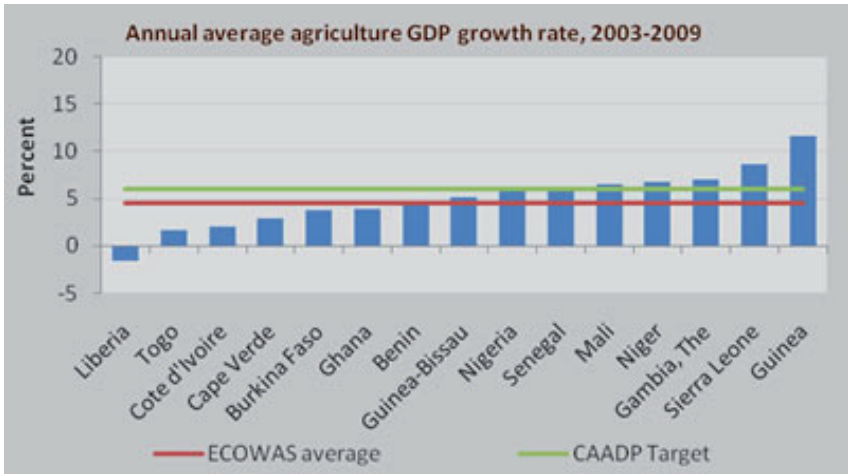
Figure 2.1: Agricultural expenditure share in total expenditure in ECOWAS



Source: ReSAKSS, 2011

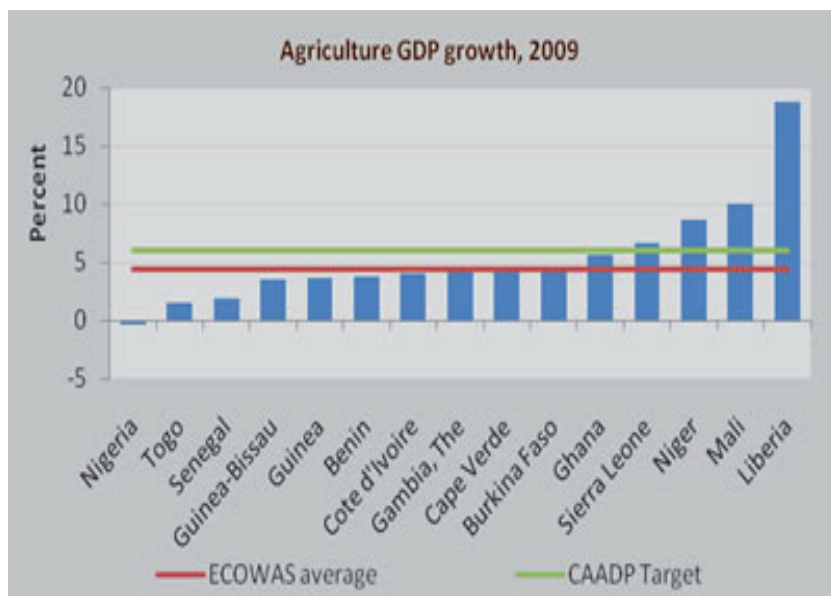
14. Using UN World Development Report data, ReSAKSS (2011) shows that the agricultural sectors of Nigeria, Senegal, Mali, Niger, The Gambia, Sierra Leone and Guinea achieved the Maputo threshold of 6% growth for the period 2003 to 2009 (Figure 2.2). In 2009 these data show that only Ghana, Sierra Leone, Niger, Mali and Liberia achieved the 6 per cent growth rate (Figure 2.3). Maintaining that growth rate is key to enhancing the role of the sector on a sustainable basis.

Figure 2.2: Annual average agricultural GDP growth rate, 2003 – 2009



Source: ReSAKSS, 2011

Figure 2.3: Agriculture GDP growth, 2009



Source: ReSAKSS, 2011

15. The African Agribusiness and Agro-Industries Development Initiative (3ADI), a CAADP component, provides a common continental vision on agribusiness and agro-industrial development. The institutional framework for the Initiatives is CAADP framework, in particular Pillar II. 3ADI is designed to spur the evolution of competitive, sustainable and inclusive agro-industries and agribusiness in Africa as a pathway to accelerated economic growth and food security through developing value chains. The 3ADI seeks to investigate and develop the potential offered by domestic and regional agri-food markets, the opportunities for import substitution of higher-valued foodstuffs, the rapid rate of urbanisation and international demand and opportunities and prioritises improved productivity and value-addition. Its vision is of a highly productive and profitable African agriculture sector with significant value chain systems which use their dynamics to

create markets for small and medium farmers by 2020. Through knowledge sharing and harmonisation of programmes and investment programme that focus on transformation of agricultural produce to high-value products, 3ADI seeks to strengthen the multiplier effect of agriculture. The support will be in four main areas; generating enabling policies; developing value chain skills and technologies; creating appropriate initiatives and services; and developing mechanisms for financing and risk mitigation it seeks to ensure agriculture facilitates poverty reduction.

16. Regional Economic Communities (RECs) are the building blocks of the African Union and thus are an avenue for the implementation of continental policies and prioritise the four CAADP pillars (Box 2.1) to reflect the regional focus.

2.2 Regional and National Policy Framework

17. The regional agricultural policy framework in West Africa consists of the ECOWAS Agricultural Policy and the UEMOA Agricultural Policy and other supporting regional and national levels policies and programmes.
18. **ECOWAS:** The adoption of the Agricultural Policy (ECOWAP) in West Africa in 2005 which is based on the platform and priorities of CAADP demonstrates the commitment of ECOWAS to address challenges in the agricultural sector. ECOWAP focuses on boosting agricultural productivity in food and export crops and eliminating poverty and hunger in the region and, especially, improving the livelihoods of the rural population (ECOWAS, 2011). The principle of food sovereignty enshrined in ECOWAS's policy attests to the importance the sub region attaches to eliminating hunger and ensuring self-sufficiency. The specific objectives of ECOWAP are shown in Box 2.2.

Box 2.2: Objectives of ECOWAP

- ✓ Food Security for West African people.
- ✓ Reducing food import dependence and achieving food sovereignty.
- ✓ Integration of producers into markets.
- ✓ Creating remunerative jobs with guaranteed incomes in order to improve the standard of living in rural areas and delivery of service to rural areas.
- ✓ Ensuring that production systems support sustainable utilisation of resources.
- ✓ Stemming the vulnerability of West African economy by addressing factors of instability and regional insecurity.
- ✓ Adopting appropriate funding arrangements.

Source: ECOWAS Commission, 2009

19. The operationalization of ECOWAP/CAADP was translated into six themes; (i) water development; (ii) management of other shared natural resources (iii) sustainable development of farms; (iv) markets and supply chains; (v) prevention and management of food crises and other natural disasters; and (vi) institutional strengthening. The adoption of the Regional Initiative for Food Production and the Fight Against Hunger in 2008 resulted in the revision of these priorities into three axes; (i) increasing food production; (ii) facilitating market exchange; and (iii) reducing vulnerability to food crises and promotion of stable and sustainable access to food.
20. Many interventions have been implemented to operationalize ECOWAP and with it CAADP in West Africa. These include; the development of the Regional Agricultural Investment Programme which has been domesticated through the National Agricultural Investment Programmes (NAIPs) at member State level.

21. The implementation of the Regional Initiative for Food Production and Fight Against Hunger combines policy reform, investment and support to women farmers and farmer organisations and management of regulatory instruments of the sector. The first generation of programmes is targeted for completion by 2014. Further, an institutional setup which included the Regional Technical Agency for Agriculture and Food and a Regional Fund for Agriculture and Food has been established. The operationalisation of these initiatives still remains a challenge.

22. **UEMOA:** The agricultural policy of the Union (PAU) was adopted in 2001. It aims to “make a lasting contribution to meeting the food needs of the population, the economic and social development of member states and to reduce poverty by allowing: a) achievement of food security by reducing dependence on food in the Union by improving the productivity of family farms and a better functioning of markets for agricultural products, b) improvement of the living conditions of farmers by developing the rural economy, upgrading the social status of farmers and better pay for agricultural products “. The Commission also adopted a common policy for Improved Environment (PSCP) in 2008 to complement in order to ensure the development of sustainable agriculture and better meet the challenges of climate change.

23. For its implementation, the Union adopted structuring activities with the establishment of an institutional framework, management and funding tools and regulatory measures. Programs to support Member States in several areas have been launched taking into account the effects of climate change. The main programs include:
 - Regional Project for land development of the Office du Niger, Mali;
 - Regional support program for the implementation of national adaptation programs to climate change in the sectors of water and agriculture, through the development of 1000 ha per country for agriculture, forestry and pastoral and fisheries;
 - Improving the competitiveness of the agricultural and animal priorities;

- Regulatory harmonization and capacity building for member states in terms of safety of animals, plants and food;
 - Establishment of the Regional Agricultural Information System (CRMS);
 - Concerted plan for developing fisheries and aquaculture;
 - Supply of agricultural inputs;
 - Regional Village Water program; and
 - Regional Biosafety Program of UEMOA, for a good command of modern biotechnology, etc...
24. To finance its agricultural policy, UEMOA has the Regional Integration Assistance Funds (RIAF) and the Regional Fund for Agricultural Development (FRDA).
25. The deteriorating macroeconomic situation faced by countries following the 2008 crises resulted in UEMOA providing direct financial support to all Member States and inviting them to increase budgetary allocations to agriculture in the spirit of the Maputo Declaration.

2.3 State policies

26. In accordance with the spirit of the Comprehensive Africa Agriculture Development Programme (CAADP), States have adopted agricultural policies coupled with National Agricultural Investment Programs (NAIP).. Through these NAIPs member States have developed targeted strategies and programmes to enhance agricultural productivity. Box 2.3 is a summary of Gambia's NAIP illustrating its overall thrust.

Box 2.3: Gambia National Agricultural Investment Programme

The Gambia National Agricultural Investment Programme (GNAIP) provides the basis for the development of the national and regional programmes to overcome agricultural development challenges. The main objective of the GNAIP is to increase agricultural sector contribution to the national economy. The GNAIP combines policy, institutional, infrastructural and technology-related measures to address the multiple supply-side constraints to agricultural development in the country. It focuses on small and medium scale farmers, as the precursors to large scale agriculture and the development of a virile agribusiness sector and facilitation of access to markets and promotion of value addition. The commodities of focus in the initiative include; rice, livestock, groundnuts, millet, sesame, cashew, fish and horticulture.

Source: Gambia CAADP Compact 2009

27. In line with ECOWAS/CAADP Action Plan (2005-2010), ten West African countries had signed agricultural development compacts by 2009 (see Annex 5 for orientation of compacts). Burkina Faso, Cote d'Ivoire and Senegal signed compacts in 2010 and Guinea Bissau in 2011 (NEPAD, 2011). The investment plans for the compacts for all ECOWAS countries have been reviewed and most had held business meetings by June 2011, except for Burkina Faso, Cote d'Ivoire and Guinea Bissau. These outline each country's development objectives, the role of agriculture, actions to be undertaken and implementation plans particularly the investment plans and financing strategies and partnerships.
28. Bold initiatives have been taken, at the state level, leading to the implementation of concrete actions in favor of agriculture. These include for example the case of Senegal, which has increased in recent years pro-agriculture measures, among others: the Agro-Silvo-Pastoral Orientation Law (LOASP), the REVA Plan (Back to Agriculture), The National Agricultural Development Program (NADP), the Medium Term Sector Expenditure Framework (MTEF

2008-2010) which aims to optimize investment by result – based management and finally the GOANA. The measures taken have achieved remarkable results in general on certain products. Niger at the implementation of the “3 N” (see Box 2.4) aims to protect people in Niger from famine and to guarantee the conditions for full participation in national production and improving their income. Most member countries of ECOWAS have taken similar measures, which yielded encouraging results globally.

Box 2.4: Niger’s 3N

Recalling the 7th Niger Republic President general programme, the declaration of government general policy as of June 16, 2011 emphasized the Initiative “3N: Nigerien’s Nourish Nigeriens” as one of the majors actions to be taken to ensure food security. And it shall be seen as of a stage of “renascent Niger” earmarked by the step back to planning process a major development management tool. The particular initiative consists of a set of strategies that intend to:

- ✓ Enable enhancement of level of gross cereals productivity per annum from 3 to 5 million tons;
- ✓ Expand and revamp existing hydro-agricultural infrastructures (Kandadji damming, water blockings, creating marshlands, river fall farming) to enforce promotion of high value cash crops;
- ✓ Better harvest storage and long period conservation;
- ✓ Promotion of agricultural investment through better access to agricultural loans and other required facilities;
- ✓ Enable environmental development, sustainable management of natural resources ,
- ✓ Support and revival of agricultural research by reinforcement and capacity building of national centers promoting high value chain products;
- ✓ Promote and facilitate access to agricultural credits and small grants

All these strategies are to be translated into operational plan in Niger vision 2035 (**General Declaration of his Excellency, the Honorable Prime Minister, Chief of Government of Niger Republic, Mr. Brigi RAFINI, June 2011**).

29. Other member States have, in collaboration with development partners, implemented various long-term national initiatives to strengthen food self-sufficiency such as; the Rice Initiative in Mali and PUASA in Benin. These have facilitated the growth of the sector and ensure food security. Under these programmes farmers are offered subsidies, fertilizers as well as credit. For instance, under PUASA, Benin has been able to extend irrigated land and constructed rice mills.

30. Despite the existence of elaborate policy frameworks outlined above, implementation has been slow due to many challenges including (i) limited capacity to articulate and domesticate the continental programmes at national level, (ii) lack of financial resources to implement national programmes (iii) political instability in some countries which diverts resources to security and defence priorities and (iv) the voluntary nature of continental initiatives does not provide a strong enough push for conformity and delivery on obligations. The compliance mechanism lacks penalties and sanctions; hence member States are not under pressure to comply resulting in low compliance to important developmental milestones.

31. This Chapter has discussed the various initiatives to strengthen agriculture in the sub region through continental, sub regional and national initiatives and emphasised the centrality of CAADP. The efforts made by member States to adhere to the Maputo Declaration were discussed. The Chapter discussed the collaboration of Regional Economic Communities, member States, IGOs and development partners to implement programmes in agricultural development and identified the signing of national compacts as a key step which indicates the participation of all stakeholders at country level.

Chapter 3: The Agricultural Potential of the ECOWAS Region

3.1 Overview of Natural Resources of the Region

32. West Africa possesses significant natural and agricultural resources including agricultural land, water bodies and rivers, forests and wildlife, livestock, minerals, and gas and petroleum. A landmass of some 5,112,903 square kilometres (over 236 million hectares) provides a huge agricultural potential. The land is traversed by some of Africa's major rivers, including the Niger River, River Benue which joins River Niger, Volta River in Ghana and the Mano River running from Sierra Leone through Liberia.

33. The most fundamental factor influencing agricultural production is the availability of land and this is not in short supply in West Africa. Topographically, the land is generally undulating, vast and expansive plains, dotted with river valleys, icebergs and granite rocks. The northern part of West African land is well-suited for agricultural mechanisation and cultivation. The soil is rich in plant minerals, particularly the alluvial deposits of the Niger and its tributaries as well as the banks of other rivers. The inland delta of the Niger River in Mali is the bedrock of farming in that country. Land is a resource needed for crop, animal and forestry. As can be seen in Table 3.1, only 28% of plantable land in West Africa was planted in 2005.

Table 3.1: Land availability in West Africa

Country	Plantable land (ha)	Planted area (ha)	% of plantable land planted in 2005	Pasture (1000 ha)	Forests (1000 ha)
Benin	2 710 000	1 900 000	70.0	550	N/A
Burkina Faso	7 487 000	3 487 000	36.7	6 000	7 668
Cape Verde	67 000	42 000	62.6	25	1
Côte d'Ivoire	20 350 000	2 950 000	14.4	13 000	N/A
Gambia	378 000	185 000	49.0	134	53
Ghana	13 950 000	3 600 000	26.0	8 350	N/A
Guinea	12 185 000	885 000	72.6	1 070	N/A
Guinea Bissau	1 424 000	344 000	24.0	1 080	594
Liberia	2 595 000	380 000	14.6	2 000	N/A
Mali	33 275 000	3 341 000	10.0	3 000	6 601
Niger	15 714 000	464 000	28.0	11 160	1 396
Nigeria	70 000 000	28 200 000	40.0	39 200	N/A
Senegal	8 002 000	2 314 000	29.0	5 688	4 184
Sierra Leone	2 740 000	484 000	17.6	2 200	N/A
Togo	3 630 000	2 510 000	69.0	1 000	N/A
ECOWAS	196 322 000	54990000	28.0	80 737	N/A

Source : FAO/AQUASTAT (Adapted from Bleim Roger et al, 2008)

34. The climate in West Africa is dominated by its seasonality and intensity. The seasonal movement of the West African Monsoon water-laden winds dictates the rainfall pattern and the crop production practices in the region. Precipitation is highest around the south West Coast where the Republics of Guinea, Liberia and Sierra Leone are located, with rainfall reaching 4,000 mm per annum. Along the rest of the coastline from Sierra Leone to Nigeria's Bight of Biafra rain reaches 3,000 mm per year. However, there is a drop in rainfall in the south-west of Ghana, where only 2,200 mm per annum is recorded. Rainfall then decreases as one goes from the coast to the north of West Africa where often less than 50 mm rainfall is recorded. This scanty precipitation leads to drought and stressful livelihoods of human and livestock populations in these parts of the region. Between the wet feet of the coastal areas to the dry stretches of the Sahel to the north, one passes through the sub-humid zones which support various crops, particularly roots and tubers and grains like maize and sorghum.

35. The vegetation cover of West Africa follows the rainfall pattern from the south to the north. There is the coastal swamp, followed by the mangrove zone with aerial or floating trees. The coast has coconut trees and oil palm trees. Then there is the forest zone with big and lumber trees like obeche, iroko, mahogany with lianas and tick undergrowth for which the tall trees provide a shade cover. The soil is rich as it receives organic matter from falling leaves and decaying branches and other matter. However, the zone is difficult to work on farming activities and is not amenable to easy mechanisation unlike the guinea and Sudan savannah areas to the north of the forest and deciduous forest areas.

36. As will be shown later, the wide range of ecosystems of West Africa constitutes a productive base for a wide range of crops, livestock and, indeed, wildlife. The farms are generally small family farms, about one to two ha, and rely on low level technology and farming methods and family labour is the main input into the family-owned operations. There are also some large, highly mechanised farms in the region. Such farms are about 50 ha each, highly mechanised

and are found mainly in the savannah regions.. The farms are often owned by corporate interests and are linked to other industries as suppliers of raw materials. This is particularly so for grains, tubers and tree crops, mainly citrus fruits.

37. The population of West Africa is about 300 million and is expected to reach 500 million by 2030, given the current population growth rate of about 3 per cent per annum is another resource. There are over 500 distinct groups in West Africa, making the sub region one of the most ethnically diverse regions in the world. Nigeria with 150 million inhabitants houses most of the population made up of over 250 ethnic groupings. As shown in Table 1.1, about 60 per cent of West Africa population live in rural areas and depend on agriculture for their livelihood, thus an upturn in the sector will directly affect many citizens.
38. As can be seen in Table 1, about 70% of the plantable area in ECOWAS was available for cropping use in 2005.
39. The potential irrigable land in the sub-region is estimated by FAO at about 8.9 million hectares of which less than 10% (920,000 ha) are utilized for rice production, sugar cane and vegetables mostly. (See Table 2). A recent evaluation of ECOWAS shows the potential at 10 million hectares, Nigeria and the Niger River Sea Delta, holds the largest share of this potential (more than 4 million ha) located in wetlands, while Mali is second with over 2.2 million hectares, of which nearly 1.8 million in the Niger River Valley (ECOWAS, 2009). Basin organizations are already well established in the sub-region and each has a large investment program for both the development of irrigation potential in its area of operation but also to promote other activities such as energy and transport in particular. These are:
 - The Niger Basin Authority (ABN) whose irrigation program will be increased from 265,000 ha in 2005 to 1.6 million ha in 2025;
 - The Organization for the Development of the Senegal River

(OMVS) aims the development of 370,000 ha, a power generation of 800 GWh and 1,500 km of tarred road in the short term and navigation of 905 miles from St. Louis in Senegal to Kayes in Mali;

- The Organization for the Development of the Gambia River (OMVG) which has developing and expanding plans of the Gambia, Kayanga / Geba and Koliba / Corubal rivers; and
- The Liptako Gourma

40. The data in Table 3.2 show Ghana and Nigeria, had almost 50% of sub regional irrigation potential in 2005. The fact that over 80% of the potential is in the humid and semi-humid zones means that the areas naturally amenable to crop production are still available in West Africa. Annex 6a to 6c from the World Development Report (2011) shows the current state of land utilization in West Africa and demonstrates the unused potential.

Table 3.2: Irrigation potential of the ECOWAS sub region

Country	Surface (ha)	Share of region potential (%)
Benin	322 000	4
Burkina Faso	165 000	2
Cape Verde	3 110 000	0
Côte d'Ivoire	475 000	5
Gambia	80 000	1
Ghana	1 900 000	21
Guinea Bissau	281 000	3
Liberia	600 000	7
Mali	566 000	6
Niger	270 000	3
Nigeria	2 331 000	26
Senegal	409 000	5
Sierra Leone	807 000	9
Togo	180 000	2
ECOWAS	8 909 000	100
Humid and semi- humid zones	7 496 000	84
Dry to arid zones	1 413 000	16

Source : FAO/AQUASTAT (Adapted from Blein Roger et al, 2008)

41. On water resources, it is established that all countries of the sub-region, with the exception of Cape Verde and Burkina Faso, have more renewable fresh water availability than the international standard of rarity. For surface water resources, on a renewable water potential estimated at 1,057.5 billion cubic meters, only 19.6 billion cubic meters are drained for agriculture or less than 2% (FAO, 2001). As for groundwater, they are estimated at about 316.7 billion cubic meters. Moreover, it is estimated to average 3,765 billion cubic meters the amount of water falling every year in West Africa; 77% of these waters are concentrated in the sub-equatorial and semi-humid zones. The lowlands on the other hand, with a potential of about 2 to 5% of the surfaces in West Africa (Blein and al., 2008) favour the development of agriculture, especially rice.
42. All this potential exists in three major agro-ecological zones that, despite the diversity of their production system, provide an important opportunity for the exchange of products based on complementarities in favor of sub-regional integration (cf. Appendix 3). These are:
 - ❖ In the coastal area south of the Equator, wetter and dominated by a generation constituted of roots, tubers, plantains, rice and corn; to this is added the production of cash crops such as timber, palm oil, pineapple, rubber, coconuts, cocoa, coffee, kola plantations ; it is also an area where real agro-industrial units prosper;
 - ❖ In the central semi-humid area characterized by a wide variety of productions: yams, cassava, maize, rice, sorghum, millet, beans, legumes, and mango plantations, citrus, cocoa, coffee , cashew and natural species such as Shea and Nere, it is also in this area which is the largest area extending on about $\frac{3}{4}$ of the member countries, where there are many cotton crops; and
 - ❖ The dry zone corresponding roughly to the Sahelian and sub-Sahelian zone; it is dominated mostly by cereal crops (sorghum, millet, cowpea, rice, peanuts...) and some irrigated crops (rice, wheat, onion, tomato ...), it is also the main rearing tank of ECOWAS.

There is potential for the production of phosphate fertilizers for agriculture from an estimated 2.23 billion tons of natural phosphate in the region. The major deposits currently being mined or have once been are located in Benin (Mekrou), Burkina Faso (Kodjari), Mali (Tilemsi), Nigeria (Abeokuta), Senegal (Taiba) and Togo (Hahotoè -Kpogame) (ECOWAS, 2009).

43. The land resources discussed above provide the opportunity for the production of various crops, mainly sorghum and millet in the Sahelian countries, with some rice (Mali, mainly) and cassava, maize, rice, roots and tubers in the coastal countries and inland countries with reasonable rainfall patterns.

3.2 Crop Production

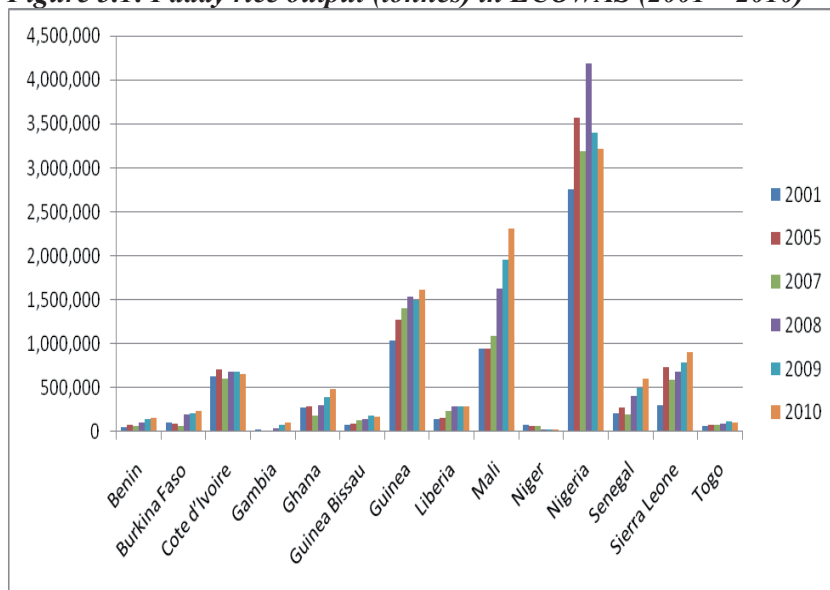
44. The fifteen countries of ECOWAS possess varying capacities and potential in the production of crops. Nigeria, Ghana and Cote d'Ivoire are the three leading producers of agricultural products in West Africa. Nigeria is the leading food for most crops due mainly to; its diverse ecosystems, surface and subsurface water resources, about 2.3 million hectares of irrigable land and another 8 million hectares of lowland that can be brought under cultivation during the dry season.
45. As noted earlier, West Africa produces cassava, yam, cocoyam, sweet potato), plantain, bananas, legumes, onions, groundnuts, yam, cassava, maize, rice, sorghum, millet, cotton, beans and legumes. Large quantities of onions and peas are produced in Niger. Burkina Faso and Mali are the major cotton producers. The coastal and tropical countries of Benin, Togo, Ghana, Cote d'Ivoire, Liberia and Sierra Leone produce, in varying amounts, cocoa, coffee, rubber as tree crops and cassava, yam, banana, rice, maize, sorghum, millet, and a host of other commodities as food crops. They also produce livestock, mainly ruminants, in the northern drier parts of the countries. Guinea and Guinea Bissau are agricultural countries with

majority of their peoples in farming and fishing. Guinea produces some coffee, rice, pineapple, banana, cassava and sweet potato and has significant unused agricultural land. Guinea Bissau produces maize, rice, cashew nuts, beans and others. Senegal and The Gambia are peanut producers mainly and also produce substantial amounts of rice, maize, millet, sorghum, cassava, sesame and tomato. Senegal and The Gambia have substantial livestock population, mainly ruminants. Cape Verde produces banana, maize, sweet potato, beans and fish.

46. Rice, cassava, yams, millet, sorghum, sweet potatoes, and maize constitute a major part of the diet in West Africa and hence the analysis in this section focuses on these crops.
47. **Rice:** With the exception of Cape Verde, all countries in West African produce varying amounts of rice (see rice data in the Annex 1a). The major producers are Nigeria which produced (3.2 million tonnes of paddy in 2010, Mali (2.3 million tonnes), Guinea (1.6 million tonnes) and Sierra Leone (0.91 million tonnes). Other important producers are Cote d'Ivoire, Senegal and Ghana. However, none of the countries is self-sufficient in rice and the sub region has to rely on imports to cover the deficit. As can be seen in Figure 3.1, Nigeria is the largest rice producer in the region. Despite this, is also the largest importer of rice in West Africa, and imports about one million tonnes a year. Yet, it possesses the largest rice potential of the sub region, 2.4 million hectares of land followed by Guinea with one million hectares and Mali with 0.5 million hectares. Although Mali is almost self-sufficient in rice and has the prospects of exports to the countries in the region, all other countries in West Africa are net importers.
48. West African rice faces market competition at home from imported rice which is generally better packed and of competitive quality. As a result of these differences (real or spurious) there is price differential and consumers tend to prefer the imported brands. This then creates a challenge local producers as it forces prices

down and impacts on attempts to expand rice production. It thus perpetuates import dependence. Quality and packaging issues need to be addressed to reclaim the market which the local product is losing to the imported rice. Further, the rice yields of between 1.5 and 3.5 tonnes/ha are low compared with over 4 tonnes/ha in other rice producing regions of the world. This thus impacts of competitiveness and demonstrates an unused potential

Figure 3.1: Paddy rice output (tonnes) in ECOWAS (2001 – 2010)



Source: Constructed from FAOSTAT, 2010

49. Sorghum and Millet: These two grains thrive well in the dry zones of Sudan savannah and the Sahel (Figure 3.2 and 3.3). The leading producers of millet are Nigeria, Burkina Faso, Niger and Mali. Millet production is highest in Nigeria with annual average production of about 7 million tonnes. Niger, Mali and Burkina Faso are the other major producers.

Figure 3.2: Sorghum production (million tonnes), 2001 – 2010

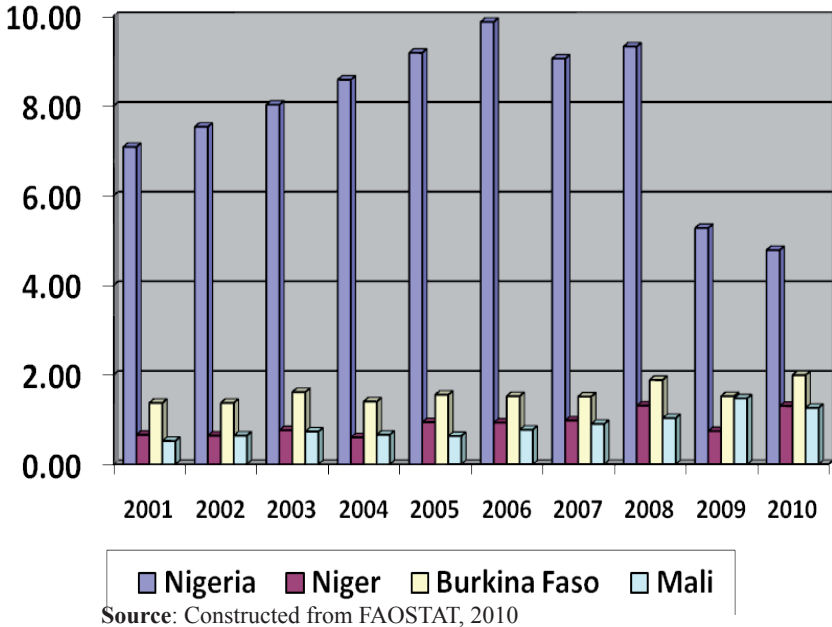
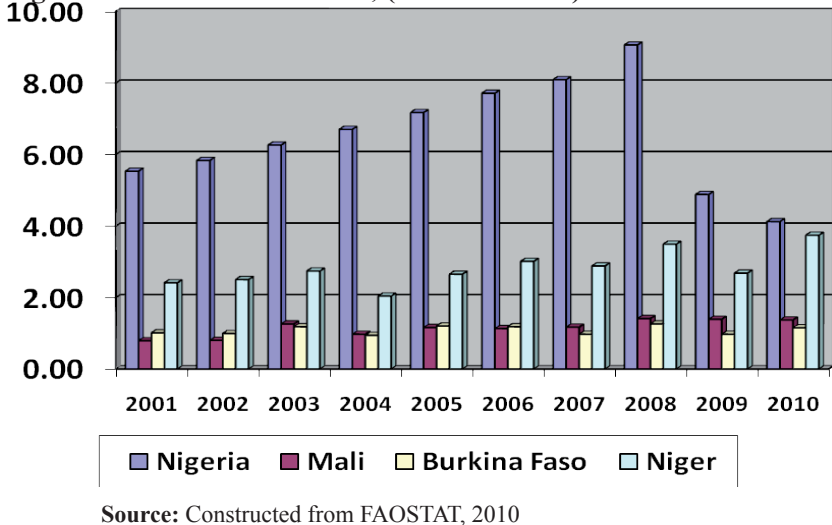
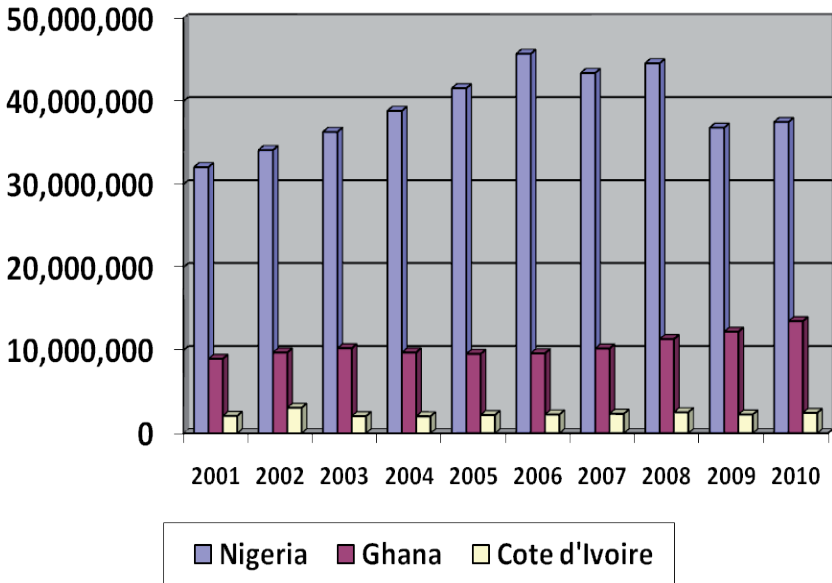


Figure 3.3: Millet Production, (million tonnes) 2001 – 2010



50. Cassava: This is a hardy food crop produced in virtually all the climatic zones of the region but mainly the humid and sub-humid zones of the region. As shown in Figure 3.4 the highest producers in 2010 were Nigeria (37.5 million tonnes), Ghana (13.5 million) and Cote d'Ivoire (2.5 million). An expansion of agro-industrial plans to use the cassava tubers for pellets, chips and other products in addition to its use for cassava flour for local food forms is expected in the medium to long-term. For example, Nigeria has already decreed a 10 per cent inclusion of cassava flour into wheat flour used for bread and other bakery products.

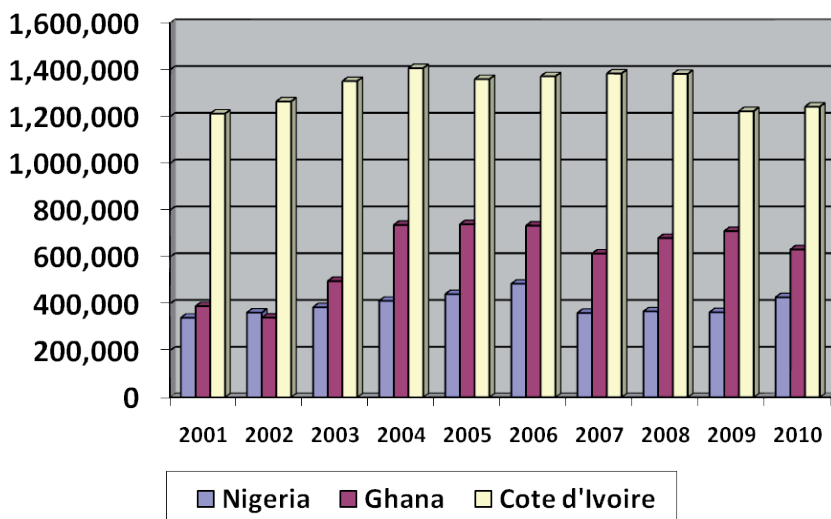
Figure 3.4: Cassava production in ECOWAS (tonnes), 2001 – 2010



Source: Constructed from FAOSTAT, 2010

51. Cocoa: The world leading producers are in West Africa – Cote d'Ivoire, Ghana and Nigeria (Figure 3.5). However, there is no domestic market for cocoa and hence cocoa is exported as beans and as cocoa butter to the European Union and the United States. Unstable international prices and fluctuating demand are the major challenges faced by the sector. Production in the major countries is currently below capacity arising from agronomic and human factors, for example, the political instability in Cote d'Ivoire in 2010 affected production. Cocoa offers an excellent agribusiness and agro-industrial prospects in West Africa if developed countries would accept to import manufactured cocoa products from Africa.

Figure 3.5: Cocoa production in ECOWAS (tonnes), (2001 – 2010)



Source: Constructed from FAOSTAT, 2010

52. Cotton: Burkina Faso is the leading West African producer of cotton, followed by Mali and then Cote d'Ivoire. West African cotton producers face severe market access because of competition from America Alabama cotton which production is highly subsidised thus making African producers less competitive. This has caused the erratic production pattern observed in the three countries data. Table 3.3 shows changes in cotton production in selected West African producers in 2009 and 2010.

Table 3.3: Changes in cotton production in selected West African cotton-producing countries, 2009–2010 (in 480-lb bales)

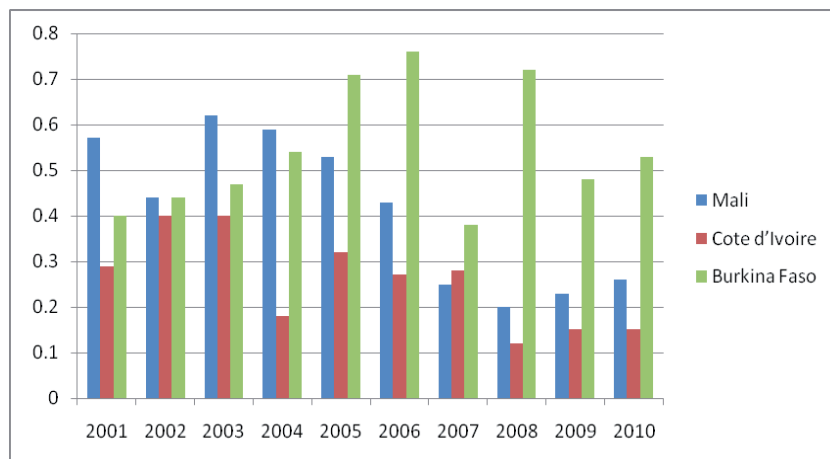
	2009	2010	% change
Burkina Faso	700 000	850 000	+21,43
Benin	350 000	375 000	+7,14
Mali	440 000	475 000	+7,95
Cote d'Ivoire	325 000	400 000	+23,08

Nigeria	450 000	475 000	+5,56
Senegal	35 000	60 000	+71,43

Source: USDA

53. The production profile for seed cotton in West Africa is shown in Figure 3.6. Burkina Faso remains the major producer despite fluctuations during the last five years.

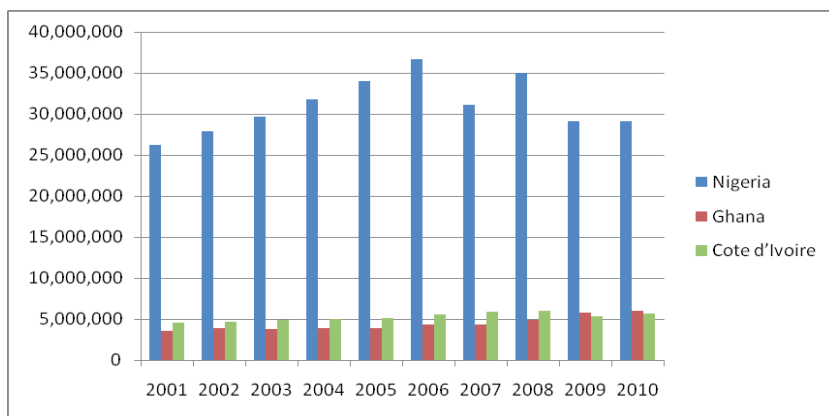
Figure 3.6: Seed Cotton production in ECOWAS (million tonnes), 2001 – 2010



Source: Constructed from FAOSTAT, 2010

54. **Yam:** Nigeria, Ghana and Cote d'Ivoire are the major producers of yam in the sub region with Nigeria being by far the principal producer. Production (Figure 3.5) in Nigeria has fluctuated in recent years due to man-made and weather related challenges.

Figure 3.5: Yam production in ECOWAS (tonnes), 2001 – 2010



Source: Constructed from FAOSTAT, 2010

55. The sub region remains a net importer of food despite its expanses of land. With the exception of maybe, cocoa for which appropriate processing technologies for final products like chocolate are not fully available in the region, all other crops or commodities can be processed further. Doubling of output of cereals, tubers, oil seeds and citrus fruits can easily support agro-processing and agribusiness. As noted earlier, yields from most crops are currently much lower than yield levels achieved in other parts of the world. The region needs to increase the average productivity of all crops by addressing structural constraints such as technology, fertilizer, seed and technical know-how amongst farmers. Increased productivity could generate sufficient throughput to justify capacity for further sub regional processing which will lead to more multipliers through the forward and backward linkages. Further, the increase in food production has to accompany by value addition activities in order to conserve food, raise its value, ensure regular supply, raise farm incomes, meet the rising demand and reduce poverty.
56. The rate of growth of food production currently lags behind population growth rates and thus the food deficit will persist and consequently nutrition, food importation, migration, conflicts and

other repercussion of an already food-deficient region will persist. There is need to intensify production and complement it with use of high yielding varieties.

3.3 Livestock Potential

57. The livestock resource of the region is made up of cattle, sheep, goats, donkeys, horses, pigs, and indigenous and exotic poultry. Majority of the livestock, particularly the ruminants, is found in the semi arid and sub-humid zones where grasses abound for grazing in the range. The two zones hold nearly 90 per cent of the cattle herd and most of the sheep and goats as well. Table 3.4 shows the dominant role of Nigeria in livestock production in the sub region in 2010. Burkina Faso, Mali and Niger are major producers of cattle, sheep and goats.

Table 3.4: Average Stock (Head) of Livestock, 2010 (millions)

Country	Cattle	Sheep	Goats	Chicken
Benin	2.0	0.8	1.6	16.5
Burkina Faso	9.8	8.1	12.4	39.0
Cape Verde	0.05	0.02	0.2	0.6
Cote d'Ivoire	1.6	1.7	1.3	34.0
Gambia	0.4	0.3	0.4	0.9
Ghana	1.5	3.8	4.9	44.0
Guinea	4.9	1.6	1.9	22.5
Guinea Bissau	0.6	0.5	0.4	2.0
Liberia	0.04	0.3	0.3	6.8
Mali	9.1	11.9	16.5	36.8
Niger	9.8	10.9	13.7	12.0
Nigeria	16.6	35.5	56.5	192.3
Senegal	3.3	5.6	4.8	46.3
Sierra Leone	0.5	0.7	0.8	7.8
Togo	0.4	2.1	1.5	21.7

Source: FAOSTAT, 2011.

58. Countries with great potential for livestock production are Nigeria, Niger, Burkina Faso, Mali, Ghana, Cote d'Ivoire, Guinea and Senegal. There is significant potential for agro-industrial processing of livestock in West Africa. At the moment, most of the livestock are sold live as meat animals in local and international boarder markets existing in many parts of the region. The productivity of livestock, as the case with the crop sector, suffers from structural constraints such as scarcity of capital, shortage of quality feed and widespread prevalence of disease. These can be addressed through research into need feed and diseases and also through technical assistance to small producers.

3.4 Fish resources

59. The fish resources of West Africa come from the vast inland fresh waters of several rivers and lakes, the brackish waters of the creeks and lagoons and the marine waters of the Atlantic Ocean to the limits of its Exclusive Economic Zone (EEZ). While the output potential of the various ecosystems is considerable, it has neither been estimated nor has it been sustainably exploited. Processing facilities for fish are inadequate and considerable losses are borne by the fisher folks. Off shore marine fishing suffers from encroachment by foreign vessels while pirates who now operate in the high seas are posing serious danger to local marine fishermen. A new development in recent years is the massive investment in aquaculture production systems. The challenge of the various ventures is the lack of good and unadulterated fish meal. But if well organized and expanded, this is a growth pole for fish protein production for the region and potential for export. Fish is important part of the diet in West Africa and expansion in production would address food challenges.

3.5 Forest resources

60. Forests contribute to economic development and food security through support to agricultural systems, maintaining environmental integrity and through providing opportunities for income and employment. Rural communities depend on forests for wood fuel and other non-wood forest products. Timber is the main forest resource of West Africa and countries with significant timber production are Nigeria, Liberia Cote d'Ivoire, Ghana and Sierra Leone. There are now forest reserves in the high forest zone with well managed and graduated harvesting practices. New growth and replanting is also gaining ground and may re-establish sustainable production of timber across the region. There are some 100,000 or more square kilometres of Savannah forest reserves in which usable but scattered quantities of timber are available. In addition, there are large areas of forest lands outside the reserves which are not under strict control but which supply almost half of the total

volume of timber produced in West Africa. Logging activities here support the sawmilling activities which are wide spread in West Africa. The area of intensive logging, however, remains in the lowland rainforest zone. The progression of the Sahara desert southwards is also being contained by tree planting and other soil conservation activities.

3.6 Wildlife resources

61. The availability and distribution of wildlife resources in the region take their varieties from the ecological zoning of the landscape. The class of wildlife inhabiting the mangrove and freshwater zone include crocodiles, sharks, hippos, crabs and an n array of amphibians. Large varieties of birds, climbing animals (monkeys, apes, etc), elephants, catlike carnivores, herbivores and a host of reptiles are located in the rainforest areas. The Sudan-Sahelian zones are the habitat for principal ungulates and hooved animals, carnivores, wild dogs, ground-nesting birds, ostrich and others. Of course, there are other varieties of wildlife such as snails, caterpillars and silkworms found in many communities throughout West Africa. While most of these resources are being exploited through traditional means in the name of ‘Bush Meat’, their value is more in tourism propensities which they have and which have not been exploited at all as countries in eastern and southern Africa have done. This Chapter has shown the majority of farmers in ECOWAS countries depend on highly variable rainfall for their farming activities.
62. The Chapter has shown that land, the fundamental factor influencing agricultural potential, remains under-exploited in West Africa. Land is essential not only for crop production, but for animal and forestry production. The potential for expanding cultivation areas exists in all countries in West Africa and so does potential for animal, timber and fish production. The discussion has alluded to the low productivity on all crops and highlighted the need to address the extension, research and science gaps in order to increase output. We investigate these supply-side constraints in greater detail in the next Chapter.

Chapter 4 : Challenges to the Exploitation of the Agricultural potential for Growth and Development

4.1 Overview

63. Agriculture is a key sector in the sustainable growth and development of economies in the sub region, especially given the abundant land and the large rural population in West Africa. The sector's contribution can be through various transmission mechanisms including, directly through incomes for farmers, linkages with other sectors in the farming areas and outside and through derived demand for other no-farming goods and services. The experience of the Asian Revolution demonstrated that agriculture can be a springboard for growth and development. However, the exploitation of the agricultural potential for transformational development in ECOWAS faces many supply-side challenges (UNECA 2002 and 2009). The following section identifies and discusses the challenges in detail.

4.2 Challenges

64. The key structural challenges in the sector include (i) low investment and productivity (ii) lack of funding for research (iii) poor infrastructure (iv) limited access to land, finance and credit (v) low industrialisation (vi) technological challenges (iv) climate change-induced challenges, and (v) markets and marketing.

65. Limited access to land, finance and credit: Agricultural production by small-holder farmers fails to attract capital and credit because of the high levels of risk and uncertainty. The lack of collateral and the informal nature of most of the farming units makes it difficult for farmers to attract finance and credit even from development banks. Further, in such circumstances, farmers turn to the informal

rural lending systems that are often expensive and have stringent conditions which are detrimental to profitability in the sector.

66. The lack of access to affordable credit adversely affects the ability to use modern technology and ultimately on productivity on the farms. In the agro-processing sector, the majority of the businesses are small and medium enterprises (SMEs) and tend to be undercapitalised. The farmers also lack collateral, management and commercial and financial skills and thus are unable to attract working capital.
67. The proliferation of microfinance institutions in most countries in West Africa to address the special development and financing needs of the under-funded lower end of the market has helped ameliorate the challenges. Yet, the interest rates charged can be prohibitive and these sources of funds have shorter repayment periods that are inappropriate for farmers. Securing long-term financing in a collateralised commercial environment is a priority if agribusiness is to grow and become competitive. Most of the emerging agribusinesses and agro-industries are not able to secure long-term funding. The specific nature of agriculture, such as seasonal demand for credit and high risks reduces the role of microfinance lending in the farming sector.
68. Land tenure systems impact on access to land by farmers and this can be a major constraint to production and productivity. The fragmented nature of land holdings may not be amenable to large-scale commercial production and may only support small scale family farms. Further, lack of title to land, especially amongst women, who constitute the majority of farmers, can be a constraint to production and productivity. Without ownership, these women farmers cannot access medium to long-term financial support as they lack of collateral. Women are the mainstay of the agriculture sector in many African countries (FAO, 2003) and thus are affected more by the challenges in the sector compared to men. According to FAO (2003) they find more difficulty than men to access credit, agricultural inputs, technology, extension services and training.

69. The changing land scene on the African continent with the emergence of the increasing acquisition of large tracts of land by international investors in countries such as Mali, Ghana, Guinea, Niger, Burkina Faso, for example, is another challenge to access to land by local farmers. For food security and the fight against hunger, it is important that these land transactions do not compromise food production and the livelihood of farmers. That many of these investments are for bio-fuels production is a cause for concern. The production of bio-fuels, while addressing energy challenges, compromises sustainable food production and the fight against hunger (UNECA, 2009). As observed in a report by UNECA (2012), transparency and consultation (with communities) is important to ensure that national development priorities remain paramount and in the case of West Africa, addressing food insecurity should be overall objective.
- 70. Low labour and land productivity:** Land productivity in Africa is estimated at 42% and 50% of that in Asia and Latin America respectively (UNECA, 2009). This is due to many factors related to under-capitalization that results from low levels of education, leading to low output and low value-added and low incomes, in a self-perpetuating cycle. Although Africa's land productivity increased from \$10.9 per hectare to \$18.3 per hectare between 1989 and 2007 (UNECA, 2009), potential exists for it to increase more and faster through productivity enhancing measures such as technology and improved seed. Labour productivity is also lower in Africa compared to other regions. Labour productivity was only 57% and 58% compared to Latin America and Asia respectively. The UNECA report shows that maize output in West Africa averaged 1 tonnes/ha in 2007, it was 2.1 tonnes/ha in Central Africa and 2.3 tonnes/ha in Southern Africa, much lower than world averages. Productivity is influenced by many other factors such education and technical skills production systems, weather, availability of inputs, technology and finance.

- 71. Low mechanisation in agriculture:** Some countries attained the Maputo levels on expenditure in agriculture in West Africa in 2009 but the level of investment in the sector in most countries is not adequate to mechanize the farms in order to enhance productivity. Development partners often provide support in the sector. However, sustainable methods of support are required and thus conformity to the Maputo target is imperative.
72. Due to the low mechanisation and capacity, most exports are largely of unprocessed products thus reducing the export receipts. A recent UNIDO study estimated that barely 20 per cent of national agricultural output is processed industrially in West Africa before export (ECOWAS, 2011). It found that less than 10 per cent of cotton produced in Mali, Burkina Faso and Benin is processed to any considerable extent by domestic industrial enterprises. Further, the industrial capacity to process some high-value agricultural commodities, such as fruits and vegetables and livestock products (hides and leather) is poorly developed. The minimal processing is currently by traditional and low productivity methods and this comprises quality and international competitiveness as it fails to satisfy international standards.
- 73. Limited availability of inputs:** The limited availability of agro-chemicals, seed, animal feed and fertilizer is another challenge to increased production and productivity. The constraint is linked to access to credit, spatial dispersion of farmers (roads, rail) and poor market infrastructure. The availability of quality seed is often compromised by either lack of seed at affordable prices or the inability to access due to poor supply strategies. The formal seed supply system may be inefficient. The informal seed supply system is the dominant source of seed/planting materials supply for resource poor farmers (FAO, 2003).
- 74. Low levels of technological adoption, adaptation and diffusion:** **Agricultural** production systems have evolved into modern and efficient practices in response to market demands. Farmers, agro-processors and agribusinesses must use new technologies and

innovations in order to enhance productivity and competitiveness. Generally, Sub Sahara Africa ranks lowest in terms of use of technology such as mechanization, use of chemicals and use of irrigated land for crop production (UNECA, 2009). For example, irrigated land is only 3.6% of total cropland in Africa compared to a world average 18.4%. As noted earlier, presently, less than 5 per cent of irrigation capacity is utilised in West Africa. The drought in Niger, Burkina Faso, Mali and Northern parts of Nigeria and, also parts of Senegal and northern Ghana, can only be significantly curtailed by harnessing the irrigation potential in these countries. The development of the irrigation potential of the inland Niger Delta in Mali can produce sufficient rice to feed all of West Africa.

75. Further, the minimal use of fertilizer is about 125g/ha compared with the world average of 1,020 g/ha. In the case of mechanisation, UNECA (2009) reports that Sub Sahara Africa only has 13 tractors/100km² of arable land compared with the world average of 200 tractors/100km². The World Bank (2011) shows that in 2007, Nigeria had seven (7) tractors/100km², Mali two (2) tractors/100 km² and Togo had one tractor/100km². Such low levels compromise productivity. Further, according to the World Development Report (2011), ECOWAS still ranks lowest in the world in the use of irrigation at 2.7% and the use of fertilizers at 100kg/ha. Another technological factor is the use of hybrid seed to improve agricultural yields and hence productivity. The introduction of Genetically Modified Seed in recent years has remains contentious. That notwithstanding, these structural constraints, low mechanisation, low utilisation of fertiliser and low use of hybrid seeds impact on productivity on the continent.
76. As markets evolve and new ways of handling produce, processing, packaging, storage and distribution emerge, the inefficient processing technologies and methods used in the sector in West Africa, especially by women, for value-addition, need to be upgraded. Requirements on the international markets including sanitary and phytosanitary (SPS) and food safety, for example, make it imperative for technological upgrade.

- 77. Limitations on Value Chain Development:** The weak integration of the agricultural sector with other sectors in the sub regional economies limits value chain development. The lack of sectoral linkages denies countries the opportunity to benefit from forward, backward and sideways linkages which can greatly enhance job creation, agricultural transformation and broad-based growth (UNECA, 2009). The processing of agricultural products creates regional agricultural markets and links production with region-wide processing. Value chains go beyond national borders and a regional strategy to this effect should be promoted. This however requires addressing the agricultural development challenges such as lack of capital, technology, lack of information, infrastructure, high perishability, variability of output and other external factors. A regional approach allows for the establishment of industrial clusters with improved infrastructural facilities, which can exchange knowledge and skill collaborate in sourcing for raw materials or developing market outlets for their products.
- 78. Limited financing for agricultural research and decline in extension:** Research is the basis for new technology and innovation and is key to increased productivity. The new crop varieties, seeds, planting materials, improved livestock, and other agricultural inputs being developed in research institutes across the region require promotion for adoption by farmers. As reported in UNECA (2009), the disengagement of the state during the 1980s resulted in a decline in support to the agricultural sector, including research. According to UNECA (2009), public spending on agriculture research as a percentage of agricultural GDP of at least 2% is adequate to support the sector. Yet it was only about 0.5% in West Africa in 2000 against 2.28% for Southern Africa, 2.5% in developed countries and 0.7% for the whole of Africa.
79. The agricultural extension infrastructure needs to be rehabilitated in most countries following years of decline, more pronounced during the 1980s as the state, either, commercialised these services, or they reduced budgetary support. Through extension services, farmers

were provided with technology, technical assistance and training in the maintenance of production, management of soil and land, and for the growth of agro- processing and value-addition sector. Small-scale farmers require extension services to deal with technical (production), harvesting, storage and marketing challenges on a continuous basis.

80. Further, the fragmented research currently being undertaken at national level, and through specialised IGOs needs to be consolidated and the outcomes disseminated in systematically across the sub region. This consolidation and networking will generate economies of scale by pooling financial resources.
- 81. Adverse Impacts of climate change:** Changes in climatic patterns involving dramatic variations in temperature, precipitation, global warming, pollution and carbon emissions impact negatively on economic activities, particularly rainfed subsistence agriculture. Although agriculture in itself is also a contributor to climate change through carbon emission, changes in rainfall patterns have become a common occurrence in West Africa. These changes have resulted in persistent and prolonged draught in key producing regions of West Africa leading to perennial problems of hunger and starvation.
82. Climate change affects smallholder farmers in several ways including, floods, crop failure, rise in disease and pests, loss of livestock, livelihood insecurity and loss of income. These factors often lead to hunger, indebtedness, out-migration and dependency on foreign aid. The impact may aggravate the stresses associated with subsistence production, such as atomistic farm sizes, informal land tenure, low levels of technology and unpredictable and unequal access to world market.
- 83. Poor infrastructure:** Agricultural development requires enabling infrastructure, roads/rail, energy, telephone, ICT, health facilities, and water and sanitation facilities. An efficient transport system is required for trade and the movement of agricultural output, more so for the perishable products. The impact of the road network on trade

is further compounded by the non-tariff barriers along the routes including, for example, 4 road checks per 100km in Mali (UNECA, 2011). The ICT penetration is low in Africa. Yet it is critical in modern day transactions. Energy coverage is also a challenge, especially for the small-holder farmers. These affect production and processing. The lack of health facilities in the farming areas also impacts on farming activities.

84. The provision of infrastructure will strengthen the linkage between the agriculture and non-agriculture sector. The lack of modern storage facilities forces early marketing, often at low prices due to excess supply on the market and also results in high post harvest losses. The FAO (2003) reports that post-harvest losses can be as high as 30% of production due to lack of storage capacity.
- 85. Limitations of Markets and Marketing:** The domestic market challenges include the poor and undeveloped markets for agricultural products in rural areas. Although marketing institutions created through market associations, and credit associations to facilitate transactions, the marketing system is not well developed. Further, the subsistence nature of farming activities means that farmers have little bargaining power at the market and maybe unable to deliver to the market on time.
86. International food safety and quality issues affect the competitiveness of domestic products. Local products are compelled to satisfy the international standards for entry into these lucrative markets where prices are usually higher. This is also important for public health purposes domestically. Areas such as food legislation, food control, food inspection and quality assurance at the production level needs to be strengthened.
- 87. Low levels of training and education amongst farmers:** Education is a major pillar in agricultural development. According to FAO (2003), primary education attainment and literacy, training in basic skills, and extension services have direct impact on farmers' productivity. Higher education levels are directly correlated with

higher productivity (FAO, 2003). The FAO report observes that a farmer with four years elementary education is, on average, 8.7% more productive than one with no education. Given the low level of education among our farmers, the productivity is thus compromised and so is the adoption of new technologies and techniques. The quality of the education available to farmers further compounds the challenges. The state might not have the institutional capacity to assist farmers within convenient distance.

The Chapter has reviewed the main supply-side challenges faced by the agricultural sector in West Africa. These challenges compromise the ability of the sector to achieve its production potential. On the demand side; factors such as population, per capita income and the income elasticity of demand are important determinants of growth.

Chapter 5: Conclusions and Recommendations

88. The existing continental, sub regional and national policies, programmes, activities, protocols, declarations, platforms and actions and processes articulated in ECOWAS were reviewed in this report. The report observes that for agriculture to effectively drive economic growth and development in West Africa, sectoral intervention by stakeholders must go beyond production expansion and productivity, but must tackle the challenges of agribusiness and agro-industrial development. This will enable the sub region to fully exploit the benefits of linkages offered by domestic and regional agri-food markets, the opportunities for import substitution of higher-valued foodstuffs, the rapid rate of urbanisation and international demand and opportunities offered by, for example, arrangements such as Africa Growth Opportunity Act (AGOA).

5.1 Conclusions

89. The following conclusions emerge from this study:

- **Stock of Natural Resources:** West Africa has a stock of natural and human resources for agricultural development and overall economic growth and development. The resource base encompasses huge arable land of which less than a third is currently under cultivation and the climatic resource that can support a large variety of crops and animal husbandry. The huge potential for surface and underground water, that could be exploited for irrigation purposes, and a diversified population and rapid rate of urbanisation are important resources in the sector's growth. The potential for the exploitation of forestry and wildlife resources, the fishery and other marine resources exists in abundance.
- **Conducive Policy Environment:** CAADP and the Maputo Declaration provide an elaborate continental policy framework for agricultural development. The ECOWAS and UEMOA frameworks such as ECOWAP, ECOWAS Regional Investment Programme, Public and Private Partnership (PPP) and the National Agricultural Investment Programmes which seek to address the challenges identified the 3ADI all complement the CAADP thrust.

90. At policy level, the challenge is for ECOWAS to strengthen its implementation and monitoring and evaluation mechanisms by making member States accountable for delivery by specific dates on the programmes. The existence of strong political will to deliver on these programmes is a key ingredient for success at all levels. Further, the UEMOA and ECOWAS Commissions programme implementation should be harmonised.

91. Despite the existence of policy framework exists, supply-side challenges in the sector need urgent attention. These include (i) low productivity (ii) lack of funding for research (iii) poor infrastructure

(iv) limited access to land (v) lack of finance and limited access to credit (vi) poor technology on the farms (vii) climate change-induced challenges, (viii) low levels of skills and (viii) poor markets and marketing strategies.

5.2 Recommendations

92. In light of the above conclusions, observations and the discussion in the report, the following key recommendations towards harnessing agricultural potential for growth and development in West Africa emerge. Overall, the four pillars of CAADP are an embodiment of strategies to address these challenges. The implementation of the components envisaged under the Regional Agricultural Investment Programme would address many of the challenges outlined above.

93. Strengthening Institutional and Policy Framework: ECOWAS Commission should develop time-bound programmes with specific reporting and monitoring and evaluation mechanisms to facilitate the implementation of programmes under CAADP through ECOWAS and through the member States. The sub regional early warning system should be strengthened through the technical intergovernmental organisations mandated to do that. More importantly, Member States should ensure that coordinated mechanisms to respond to the impacts of such predicted challenges are institutionalised through appropriate budgeting and timely donor mobilisation. The sub regional food security alerts should be prioritised by member States.

94. Strengthening Macroeconomic Stability: Member states should continue to implement sound macro-economic policies to maintain a conducive environment for effective sectoral policies. Macroeconomic stability in West Africa has contributed to the gains in growth rates achieved in recent years and maintenance of such stability is important. The stability has provided confidence to the private sector and given the new agriculture development thrust based on an active private sector, the maintenance of this stability

further sustains sectoral gains, provides resources for re-investment and helps address the poverty, income inequality, physical and social infrastructure, and other social and structural challenges.

95. Strengthening Development Partnerships: The ECOWAS Commission should facilitate and promote partnership among development partners assisting member States in addressing challenges in the agricultural sector. The harmonisation of the support of development partners in implementing the technical assistance programmes in line with the Paris Declaration will consolidate resources and minimise duplication and this will ensure expeditious implementation of the compacts and national agricultural development programmes. The coordination involving the World Bank, UNIDO, FAO and IFAD, for example, in supporting 3ADI initiatives needs to be popularised within the sub region.

96. Supporting the Agricultural Sector (Extension Services): Member States should address the (i) extension, (ii) research, and (iii) science gaps in order to improve productivity. Decentralised support to farming areas will further strengthen productive capacity. A developmental state working in collaboration with the private sector through, for example public private partnerships, is important in facilitating the provision of the necessary technical support to the farmers.

97. Member States should facilitate access to hybrid seed, fertilizer and other agro-chemicals through improvement in the supply and distribution systems. Other soil-enrichment technologies (on-farm organic manure) should be investigated and perfected to augment the chemical fertilizers which may be inaccessible for some farmers. Mechanisms could include promotion of PPPs for distribution of agricultural inputs.

98. Member States should collaborate with other stakeholders, to design and strengthen frameworks to address the financing challenges faced by farmers, including the introduction and support of out-

grower schemes, or the development of targeted micro-finance programmes, for example. Mechanisms for rural financing including micro-finance schemes guaranteed by the government initially but could be introduced through PPP framework to enable the private sector to participate. Input support schemes that facilitate access to quality seed and affordable fertilizer should be strengthened. A sub regional approach through an ECOWAS fund for support to the supply-side constraints in the sector could be developed.

99. Member States should develop and implement mechanisms to compensate farmers for losses related to climate change through a national insurance system facilitated by the creation of a guaranteed fund that can be linked with other sectors. Sub regional strategies for pest control and climate change mitigation should be developed and implemented.

100. Development of Infrastructure: Member States should improve the state of infrastructure (roads, energy, etc) to facilitate production and agro-industrial activities. Isolation of farms and difficulty in accessing markets is a major factor contributing to poverty and marginalisation of the agricultural population. Integrated and manufacturing supply chains envisaged under ECOWAP will require local, regional and international efficiency and reliability of transportation systems. As such the development of value chain infrastructure (storage, packaging, etc) is an important agenda to transportation. Improvements in road and rail network will help reduce post-harvest losses and ensure that output reaches the market with greater efficiency. It will also reduce input costs by enhancing the movement of fertilizers and chemicals required on the farms. The benefits of lower costs can potentially result in higher returns for farmers.

101. A sub regional approach through the ECOWAS Commission and its specialised institutions can help address infrastructure challenges including energy. For example, the development of renewable energy sources (stand-alone), as planned under the ECOWAS

Energy Master Plan and the activities of WAPP (electricity), can enhance productivity and agro-processing. Similarly, the sub regional programmes on road development, such as Trans Africa Highway, should not only focus on the highways, but feeder roads as well, especially those in farming areas. Less costly all weather roads could be developed in rural areas to facilitate movement of produce.

- 102. Improving Water Harvesting and Utilisation:** Member States and the ECOWAS Commission should develop programmes to reduce over-dependence on rain-fed agriculture in the face of climate change challenges. While rain-fed farming can be successful in the south, it undermines the potential and possibilities available in the drier region of the Sahel. Without irrigation, it will be difficult to appropriate the full agricultural potential in West Africa given the arid nature of most countries. A sub regional approach to irrigation development will help realise the full potential of the water resources available. Investment in irrigation systems, and water harvesting techniques could bring more land under cultivation also increase productivity. The work already being undertaken by IGOs such as the Niger River Basin Authority should be strengthened to improve water utilisation for agricultural purposes. To strengthen the work of these IGOs, funding should be made obligatory and should be aligned to the benefits which countries derive from the work of the IGOs.
- 103. Maintaining Peace and Stability:** Member States should maintain peace and stability for sustainable production. The conflicts in some countries and the state of insecurity dislocate production and adversely affect resource mobilisation and utilisation. Instability affects investment into long-term agricultural development projects by the private sector. The ECOWAS Commission should ensure that peace and stability is upheld.
- 104. Strengthening Research and Development:** The ECOWAS Commission should strengthen R&D in the sector through promoting

linkages amongst the research institutions and IGOs in the sub region. R&D is important for the agricultural revolution, including agro-processing, value-addition, fertilizer and seed development. New technologies are critical to enhance productivity and so is technological adaptation and diffusion. Coordination of the regional agricultural research and development strategy can effectively help harness human and institutional expertise and optimally utilise the financial resources. In the short to medium term, efforts should be intensified to reorganise and consolidate activities and strengthen regional networking through the intergovernmental organisations and universities in the sub region. The funding challenges faced by national research institutions can be addressed through a regional strategy that links, in an effective manner, research institutions in the sector and allows for the tapping on comparative advantages more effectively. An effective dissemination strategy to enhance uptake of the new technologies needs to be developed as part of this strategy. The extension services infrastructure has a critical role to play in facilitating technology uptake. ECOWAS should develop mechanisms to learn from the successful approaches in other regions of the world, for example, ASEAN, especially Thailand's smallholder-led agricultural revolution, to enhance this effort. Learning tours could be organised for member States to these successful regions that have developed sub regional capacity to address common national level challenges.

105. Strengthening Poverty Reduction Strategies: Member states should implement poverty reduction strategies which place agriculture at centre and ensure that appropriate support mechanisms are provided. All countries in the sub region are currently implementing poverty reduction strategies and for effectiveness in reducing poverty, they should address the challenges in the agricultural sector enumerated in the previous Chapter since agriculture plays a central role in poverty reduction both directly and indirectly. It should be a central component of pro-poor growth strategies.

106. Promotion of Regional Value Chains: The ECOWAS

Commission should work with member States to investigate the prospects of regional value chains for the major crops produced by member States. A regional approach to value chains can complement the slowly evolving national level strategies. Value chains enable the sub region to benefit from region-wide forward, backward and sideways linkages and can result in higher employment levels and higher incomes. A consolidated supply base from collaboration amongst producers could have a larger market influence and could provide the critical mass for value-addition and agro-processing. Staple crops such as cereals, roots and tubers in the Sahel region and cassava, yams and cereals in the coastal areas could be targeted for value chain projects as a regional strategy. As observed in the UNECA report (2009), the development of regional value chains is feasible and profitable. The cotton value chain is, for example, identified as one that could have a regional dimension and given the cotton sector in the West Africa, this could be studied at sub regional level. The leather products value-chain case in COMESA cited in the UNECA report also provides prospects for optimism for the sub region given the level of livestock production. CAADP provides a framework for such initiatives.

- 107. Strengthen Regional Integration and Trade:** The ECOWAS Commission should facilitate the development of regional markets to expand demand opportunities for producers. Strengthened regional integration results in larger markets for all producers and overcomes the constraints of small domestic markets. This will stimulate productivity growth across the sub region as producers seek to exploit the expanded market. The already existing regional markets for agricultural products need strengthening through policy harmonization and the removal of tariff and non-tariff barriers to intra-regional trade. This would also require addressing the infrastructural bottlenecks that adversely impact trade within the sub region. The high import level of food imports alluded to earlier can be overcome through this strategy. The ECOWAS Commission should ensure that member States address non-tariff barriers to regional trade to enhance trade amongst member States.

For international markets, issues of SPS, technical barriers to trade (TBT), trading agreements and food safety need to be factored in and require a sub regional strategy. A regional strategy in EPA and WTO negotiations in paramount, especially as the sub region seeks to strengthen the export of value-added products.

108. ECOWAS should develop and strengthen the food and agricultural marketing systems in West Africa through a regional approach which utilises the national level systems already in place. The system should ensure that information on prices and market conditions is made readily available to farmers, even those in remote locations.
109. At country level, member States should; facilitate the development of efficient rural markets, assist in enhancing product quality and packaging, assist in reducing post-harvest losses, assist in the movement of products to the market, address market information flow challenges holistically. These programmes have to be supported by capacity building for farmers through agricultural extension services.
110. **Addressing land access issues:** Member States should address land ownership and land tenure systems through comprehensive land reforms to provide certainty for long-term investment in the sector. In most female-headed households, land access has been a major hurdle to agricultural expansion, mainly relating to inheritance rights. As suggested by Aryeetey and Undry (2010) member States should investigate the feasibility to establish land banks through which community land is consolidated and farmers are then allotted portions and productive inputs are supplied. Land preparation would be collective. This will eliminate atomistic farm plots spread across geographical locations and could elevate the prospects of sourcing inputs by agribusinesses reduces risks and significantly lower transaction costs.
111. Collaboration among all stakeholders including ECOWAS

and UEMOA Commissions, member States, other IGOs and development partners will be critical in addressing these supply-side constraints to the development of the sector in West Africa. There is significant effort already underway in addressing these challenges at both national and sub regional levels, consolidation of these will ensure that the sub region benefits from economies of scale.

REFERENCES

- African Development Bank, 2011, *African Development Indicators (ADI)*
- African Development Bank (2009): *Accelerating Africa's Development Five Years into the 21st Century*. An AfDB Publication. Tunis, Tunisia.
- African Leaders support Agribusiness Plan at UN-backed Conference. News Item.
- African Union (2006): "Status of Food Security and Prospects for Agricultural Development in Africa" AU Ministerial Conference of Ministers of Agriculture. January 31 – February 1, Bamako, Mali.
- Alaba, O. B. (2006): "EU-ECOWAS EPA: Regional Integration, trade facilitation and development in West Africa". Draft paper for GTAP Conference, UNECA, Addis Ababa, May.
- Aryeetey, Ernest, J. Hurrigan and M. Nissanke eds. (2000): *Economic Reforms in Ghana: The Miracle and Mirage*. Africa World Press, Inc.
- Catholic Online (NEWS CONSORTIUM): "The rape of Africa's natural resources continues unabated". Catholic Online (www.catholic.org), 11/29/2011
- Durfeldt, Caran, Ernest Aryeetey and Aida Isinaka eds. (2011): *African Smallholders: Food Crops, Markets and Policy*, CABI.
- ECOWAS Commission (2009): *Regional Agriculture*
- ECOWAS Commission (2009): *Regional Partnership Compact for the Implementation of ECOWAS/CAADP*. Adopted during the

- International Conference on Financing Regional Agricultural Policy in West Africa (ECOWAP/CAADP). Abuja, Nigeria, Nov. 12.
- ECOWAS Commission (2011): “ECOWAS Commission Progress Report on ECOWAP/CAADP Implementation” 7th CAADP Partnership Platform Meeting, 23rd – 25th, March, Yaoundé, Cameroon.
- ECOWAS Commission (2011): “ECOWAS Community Development Programme (CDP), 2010: Annual Report” ECOWAS Vision 2020: Towards a Coordinated and Participatory Regional Response. ECOWAS Commission, Abuja.
- EU/ECOWAS Commission (2008) “The Regional Agricultural Policy (ECOWAP) and the Offensive for Food Production and Against Hunger”. Preparatory note prepared by ECOWAS Commission Meeting held in Paris, 9 December, 2008.
- Federal Ministry of Agriculture and Water Resources (2009) Nigeria ECOWAP/CAADP Compact.
- Food and Agricultural Organization (FAO), 2009
- Fonseca, Jose Filips (2011) “Food Security: Africa must honour Maputo Declaration” Agri Focus.
- Holtzman, J., J. Maxwell, J. Crouze and D. DeSantis (1997): “Innovative Approaches to Agribusiness Development in Sub-Saharan Africa”. Vol. 4: West Africa. Final Report Technical Paper No. 81. USAID.
- IITA (2009) “African governments urged to step up investments in agriculture”. The Bulletin, IITA, Ibadan, Nigeria.
- IMF (2010) “World Economic and Financial Survey. Regional Economic Output. Sub-Saharan Africa. Resilience and Risks”. IMF.

International Conference on Financing Regional Agricultural Policy in West Africa (ECOWAP/CAADP) Final Communiqué, 2009.

Juma, Calestous (2011): *The New Harvest: Agricultural Innovation in Africa*. Oxford University Press.

Ken Ukaoha (Undated): *The ECOWAS EPA: A ‘Funeral Oration’ to Regional Integration?* Vol. 8 Number 5PDF.

Lancon, Frederic and H. D. Benz (2007): “Rice imports in West Africa: Trade regimes and food policy formulation”. Paper presented at EAAE 106th Seminar on Pro-poor development in low income countries: Food, agriculture, trade and environment. October 25-27.

Liberia ECOWAP/CAADP Compact, 2009. “Largarde wraps up West Africa trip” New item. December 20, 2011.

Moseley, W. G., J. Carney and L. Becker (2009): “Neoliberal policy, rural livelihood and urban food security in West Africa: A comparative study of The Gambia, Cote d’Ivoire and Mali”.

Moyo, Siphosiso (2011): “Maputo Declaration holds key to ending famine in Africa” NEPAD Planning and Coordination, Technical Body of the African Union.

Nigerian Institute of Social and Economic Research (NISER): *Socio-Economic Impact of Climate Change in Nigeria*. NISER Review of Nigerian Development, 2009/2010. NISER, Ibadan, Nigeria.

Oxfam International (2009) “Producer Organisations and the ECOWAP Development Process”. A brief on dialogue organised by Oxfam International in Dakar, Senegal, November.

Oyejide, T. Ademola and D. Njinkeu eds. (2008): *African Imperatives in*

the New World Trade Order, Vol. 1: Case Studies of Agriculture and Food Security. An AERC Publication, Nairobi, Kenya.

Regional Strategic Analysis and Knowledge Support System (ReSAKSS) (2011)

Republic of Benin (2009) ECOWAS Agricultural Policy (ECOWAP) Comprehensive African Agriculture Development Programme (CAADP) Compact

Republic of Cote d'Ivoire (2009) ECOWAS Agricultural Policy (ECOWAP) Comprehensive African Agriculture Development Programme (CAADP) Compact

Republic of the Gambia (2010) CAADP Post Compact Review: Gambia Technical Review Report

Republic of Ghana (2009) ECOWAS Agricultural Policy (ECOWAP) Comprehensive African Agriculture Development Programme (CAADP) Compact

Republic of Ghana (2010) CAADP Post Compact Review: Ghana Technical Review Report

Republic of Liberia (2010) CAADP Post Compact Review: Liberia Technical Review Report

Republic of Mali (2009) ECOWAS Agricultural Policy (ECOWAP) Comprehensive African Agriculture Development Programme (CAADP) Compact

Republic of Sierra Leone (2009) ECOWAS Agricultural Policy (ECOWAP) Comprehensive African Agriculture Development Programme (CAADP) Compact

Republic of Sierra Leone (2010) CAADP Post Compact Review: Sierra Leone Technical Review Report

Romoke W. Ahmad (2011): “West Africa: Stakeholders Endorse ECOWAP As Panacea to Volatile Food Prices”, Daily Trust: (AllAfrica.com).

Sean McDonagh (2011) *The Impact of Climate Change in Africa. Ecology and Development.*

Seckle, David (1993): *Agricultural Transformation in Africa.* EPAT/ Winrock International.

Smith-Asante, Edmund (2011) “West Africa, Sahel need new Climate Agreement or else ... - Study” Ghana Business News.

TROFCCA (2005) “Natural Resources, Communities and Climate Change in West Africa: Impacts, Vulnerability and Responses” A Literature Review and data base compiled for CIFOR’s Tropical Forests and Climate Change Adaptation Project (TROFCCA) in West Africa, with special focus on Burkina Faso, Ghana and Mali.

“UN Voices Concern Over High Food prices After Poor Harvest” UN News Service (allAfrica.com)

UNECA (2009) *Economic Report on Africa: Developing African Agricultural Value Chains*

UNECA (2012) *Analysis of Recent Land Acquisitions in Africa: Opportunity or Threat*

World Bank, 2011 (b), *World Development Indicators (WDI)*, Washington D.C,

World Bank, 2011 (a), *Global Economic Prospects, 2011*

Yumkella, K. K., P. M. Kormawa, T. M. Roepstorff, and A. M. Hawkins eds (2011): *Agribusiness for Africa’s Prosperity.* UNIDO.

ANNEXES

Annex 1a: Composition of Regional Exports (Sector % Share in Regional Total)

Region	Agriculture		Minerals		Manufactures	
	2009	2011	2009	2011	2009	2011
North America	13.5	14.7	9.7	3.8	76.8	71.5
Western Europe	12.8	13.9	8.4	11.9	79.8	74.2
Asia	8.2	12.1	10.5	16.2	79.3	71.7
Latin America	23.6	24.6	23.0	46.1	53.4	29.3
Africa	18.4	22.7	62.1	68.1	19.5	9.2
West Africa	12.0	16.4	58.7	63.0	29.3	20.6

Source: WTO, 2011

Annex 1b: Composition of Regional Imports (Sector % Share in Regional Total)

Region	Agriculture		Minerals		Manufactures	
	2009	2011	2009	2011	2009	2011
North America	8.6	9.0	13.8	14.6	77.6	76.4
Western Europe	11.2	10.1	12.5	13.8	76.4	76.1
Asia	12.1	9.7	18.9	20.0	70.0	70.3
Latin America	10.6	12.4	12.4	13.6	77.0	74.0
Africa	18.9	17.7	13.8	15.1	67.3	76.2
West Africa	14.3	13.0	11.7	12.0	74.0	75.0

Source: WTO, 2011

Annex 2a: Crop Production in ECOWAS

Rice (Paddy) output (tonnes)

Year	Benin	Burkina Faso	Cote d'Ivoire	Gambia	Ghana	Guinea Bissau	Guinea
2001	54,901	109,868	634,228	32,600	274,596	85,056	1,033,520
2002	66,161	89,104	646,899	20,452	280,000	87,865	1,088,670
2003	54,183	95,494	659,824	20,500	238,810	88,380	1,146,760
2004	64,699	74,501	681,521	32,600	241,807	89,192	1,207,960
2005	78,329	93,516	703,931	17,934	287,000	98,340	1,272,420
2006	70,972	113,700	715,898	31,024	250,000	106,000	1,340,310
2007	68,209	68,916	606,310	11,395	185,340	127,250	1,401,590
2008	109,371	195,102	679,969	38,300	301,920	148,757	1,534,090
2009	150,604	213,584	687,721	79,000	391,440	181,894	1,499,000
2010	162,200	232,861	650,000	99,890	491,603	177,022	1,614,900

Rice (Paddy) Continued

Year	Liberia	Mali	Niger	Nigeria	Senegal	Sierra Leone	Togo
2001	145,000	940,938	76,400	2,752,000	206,989	300,000	62,048
2002	110,000	710,446	79,949	2,928,000	172,395	422,066	69,242
2003	100,000	931,925	56,980	3,116,000	231,805	445,633	62,048
2004	110,000	718,086	78,099	3,334,000	201,744	542,000	68,515
2005	154,800	945,823	59,902	3,567,000	279,080	738,000	72,858
2006	164,000	1,053,240	78,377	4,042,000	190,493	1,062,320	76,284
2007	231,800	1,082,380	70,000	3,186,000	193,379	588,004	74,843
2008	295,150	1,624,250	32,031	4,179,000	408,219	680,097	85,540
2009	293,000	1,950,810	20,117	3,402,590	502,104	784,737	121,295
2010	295,090	2,308,230	29,963	3,218,760	604,043	909,236	110,109

Yam output (Tonnes), 2001 – 2010 (major producers)

Year	Nigeria	Ghana	Cote d'Ivoire
2001	26,232,000	3,546,740	4,579,720
2002	27,911,000	3,900,000	4,706,590
2003	29,697,000	3,812,800	4,836,960
2004	31,776,000	3,892,260	4,996,020
2005	34,000,000	3,923,000	5,160,310
2006	36,720,000	4,288,000	5,568,990
2007	31,136,000	4,375,990	5,842,210
2008	35,017,000	4,894,850	5,945,380
2009	29,092,000	5,777,900	5,313,380
2010	29,148,200	5,960,490	5,700,000

Annex 2b: Crop Production in ECOWAS

Cassava (Tonnes), 2001 – 2010 (major producers)

Year	Nigeria	Ghana	Cote d'Ivoire
2001	32,068,000	8,965,840	2,083,900
2002	34,120,000	9,731,040	3,073,540
2003	36,304,000	10,239,300	2,060,260
2004	38,845,000	9,738,810	2,047,060
2005	41,565,000	9,567,000	2,197,990
2006	45,721,000	9,638,000	2,267,140
2007	43,410,000	10,217,900	2,342,160
2008	44,582,000	11,351,100	2,531,240
2009	36,804,300	12,230,600	2,262,170
2010	37,504,100	13,504,100	2,450,000

Sorghum output (Million Tonnes), 2001 – 2010 (major producers)

Year	Nigeria	Niger	Burkina Faso	Mali
2001	7.08	0.66	1.37	0.52
2002	7.53	0.64	1.37	0.64
2003	8.02	0.76	1.61	0.73
2004	8.58	0.60	1.40	0.66
2005	9.18	0.94	1.55	0.63
2006	9.87	0.93	1.52	0.77
2007	9.05	0.98	1.51	0.90
2008	9.32	1.31	1.88	1.03
2009	5.27	0.74	1.52	1.47
2010	4.78	1.30	1.99	1.26

Millet Production (Million Tonnes), 2001 – 2010 (major producers)

Year	Nigeria	Mali	Burkina Faso	Niger
2001	5.53	0.79	1.01	2.41
2002	5.58	0.80	0.99	2.50
2003	6.26	1.26	1.18	2.74
2004	6.70	0.97	0.94	2.04
2005	7.17	1.16	1.20	2.65
2006	7.71	1.13	1.18	3.01
2007	8.09	1.17	0.97	2.88
2008	9.06	1.41	1.26	3.49
2009	4.88	1.39	0.97	2.68
2010	4.12	1.37	1.15	3.74

Annex 2c: Crop Production in ECOWAS

Cocoa output (Tonnes), 2001 – 2010 (major producers)

Year	Nigeria	Ghana	Cote d'Ivoire
2001	340,000	389,591	1,212,430
2002	362,000	340,562	1,264,710
2003	385,000	497,000	1,351,550
2004	412,000	737,000	1,407,210
2005	441,000	740,000	1,360,000
2006	485,000	734,000	1,372,000
2007	360,570	614,500	1,384,000
2008	367,020	680,781	1,382,440
2009	363,610	710,638	1,223,150
2010	427,610	632,037	1,242,300

Seed Cotton (Million Tonnes) 2001 – 2010 (major producers)

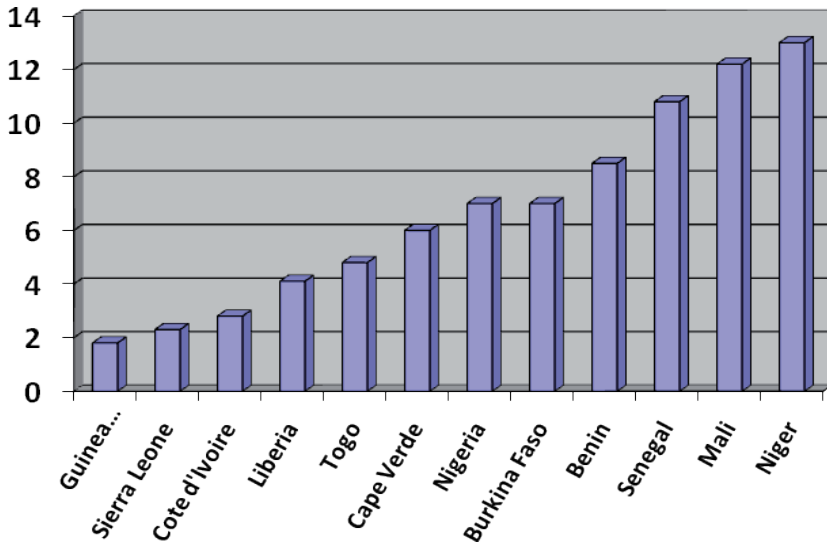
Year	Mali	Cote d'Ivoire	Burkina Faso
2001	0.57	0.29	0.40
2002	0.44	0.40	0.44
2003	0.62	0.40	0.47
2004	0.59	0.18	0.54
2005	0.53	0.32	0.71
2006	0.43	0.27	0.76
2007	0.25	0.28	0.38
2008	0.20	0.12	0.72
2009	0.23	0.15	0.48
2010	0.26	0.15	0.53

Annex 3: Poverty and Income Distribution in West Africa

Country	Share of population below PPP \$1.25 a day (%)		Poverty gap ratio at PPP \$1.25 a day (%)		Share of population below PPP \$2 a day (%)		Poverty gap ratio at PPP \$2 a day (%)	
	2000	2011	2000	2011	2000	2011	2000	2011
Benin	47.3	22.4	15.7	7.0	75.3	67.1	33.5	18.7
Burkina Faso	56.5	30.2	20.3	16.2	81.2	70.1	39.3	21.0
Cape Verde	-	21.0	17.4	6.1	42.3	27.8	16.3	8.1
Côte d'Ivoire	24.1	7.5	14.1	7.5	72.0	44.3	32.1	14.9
The Gambia	34.3	12.1	12.1	5.8	56.7	31.0	27.1	13.7
Ghana	30.0	14.4	18.0	10.6	79.5	42.7	24.8	16.8
Guinea	40.2	43.3	21.7	15.0	81.0	61.7	41.0	26.5
Guinea Bissau	52.1	48.8	16.5	7.9	79.2	60.4	34.8	19.5
Liberia	-	70.7	50.6	40.8	98.3	89.6	68.4	51.2
Mali	86.1	51.4	36.8	18.8	83.1	68.0	46.5	26.9
Niger	78.2	43.1	26.5	9.9	85.8	72.4	45.8	25.2
Nigeria	68.5	64.4	35.7	22.3	85.6	72.5	48.7	28.0
Senegal	54.1	33.5	21.2	9.8	65.8	55.4	37.0	20.5
Sierra Leone	62.8	53.4	20.3	8.2	77.9	59.0	40.5	31.0
Togo	-	38.7	22.9	8.7	74.6	53.4	33.9	22.1

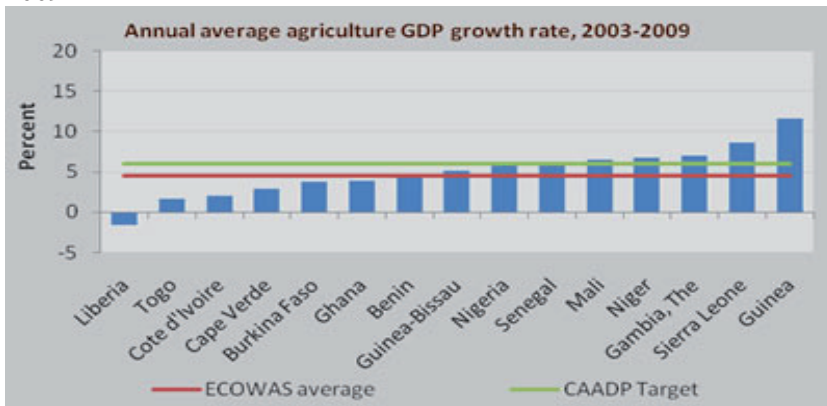
Source: World Bank, 2011

Annex 4: Compliance with AU-Maputo Declaration on Agriculture Investment (2006 Data)



Source: ECOWAS, 2011

Annex 5: Annual average agricultural GDP growth rate, 2003 - 2009



Source: ECOWAS, 2011

Annex 6a: Agricultural land (% land area) per country in West Africa

Countries	Agricultural land (% of land area) 2009	Permanent cropland (% of land area) 2009	Arable land (% of land area) 2009
Benin	29.80	2.70	22.10
Burkina Faso	43.70	0.20	21.60
Cape Verde	21.80	0.70	14.90
Cote d'Ivoire	63.80	13.50	8.80
The Gambia	66.50	0.50	40.00
Ghana	68.10	12.30	19.30
Guinea Bissau	58.00	8.90	10.70
Guinea	58.00	2.80	11.60
Liberia	27.10	2.20	4.20
Mali	33.70	0.10	5.20
Niger	34.60	0.00	11.80
Nigeria	81.80	3.30	37.30
Senegal	49.40	49.40	20.00
Sierra Leone	47.70	1.80	15.10
Togo	62.10	3.30	40.40

Source: Arable land in Sub-Saharan Africa, <http://data.worldbank.org/indicator/AG.LND.AGRI.ZS/countries?display=default> accessed in February 21, 2012. 2012 The World Bank Group.

Annex 6b: Permanent cropland (% of land area) per country in West African

Countries	Permanent cropland (% of land area)		
	2002	2005	2009
Benin	2.40	2.40	2.70
Burkina Faso	0.20	0.20	0.20
Cape Verde	0.50	0.50	0.70

Cote d'Ivoire	11.90	13.20	13.50
The Gambia	0.50	0.50	0.50
Ghana	9.40	12.30	12.30
Guinea Bissau	8.90	8.90	8.90
Guinea	2.60	2.80	2.80
Liberia	2.20	2.20	2.20
Mali	0.10	0.10	0.10
Niger	0.00	0.00	0.00
Nigeria	3.10	3.30	3.30
Senegal	0.30	0.30	0.30
Sierra Leone	1.70	1.80	1.80
Togo	2.20	2.70	3.30

Source: Arable land in Sub-Saharan Africa, <http://data.worldbank.org/indicator/AG.LND.AGRI.ZS/countries?display=default> accessed in February 21, 2012. 2012 The World Bank Group.

Annex 6c: Arable land (% of land area) per country in West African

Countries	Arable land (% of land area)		
	2002	2005	2009
Benin	23.10	24.40	22.10
Burkina Faso	17.00	17.70	21.60
Cape Verde	12.40	12.40	14.90
Cote d'Ivoire	8.80	8.80	8.80
The Gambia	28.00	33.00	40.00
Ghana	18.40	17.60	19.30
Guinea Bissau	10.30	10.30	10.70
Guinea	9.70	11.20	11.60
Liberia	3.90	3.90	4.20
Mali	4.00	4.60	5.20
Niger	11.00	11.20	11.80
Nigeria	35.10	38.40	37.30

Senegal	16.10	16.50	20.00
Sierra Leone	12.40	18.10	15.10
Togo	43.70	42.30	40.40

Source: Arable land in Sub-Saharan Africa, <http://data.worldbank.org/AG.LND.indicator/.AGRI.ZS/countries?display=default> accessed in February 21, 2012.
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